


SUMMER 2016

COLUMBIA

MAGAZINE

A close-up portrait of a young girl with dark hair and brown eyes, smiling gently. She is wearing a pink shirt. The background is a plain, light color.

Meet the Girl with the NUP214-ABL1 Gene

How Columbia physicians found the cause of
Myrrah Shapoo's cancer, deep in her DNA

EDITORS' LETTER

This Is Your Magazine

Welcome to the summer issue of *Columbia Magazine*, a publication that showcases the intellectual rigor, creative spirit, and global influence of the alumni, faculty, and students who make up the Columbia University community. The one publication that reaches more than 320,000 alumni worldwide, this magazine has a single, simple mission: to serve its readers. We create content with your interests and needs in mind.

Accordingly, you'll notice a few changes in the following pages, all of them informed by feedback from thoughtful readers. You asked for more features on alumni, so we created **Network**, a section where you can catch up not only with Columbians in the news but also those flying under the radar. (If you would like to suggest an alum for inclusion, please contact us at magazine@columbia.edu.)

At *Columbia Magazine* we also recognize that our readers are lifelong learners. You told us that you enjoy hearing about the cutting-edge research and groundbreaking studies underway across Columbia's schools and institutes, so we expanded the **Explorations** section. And because this University has the capability and commitment to take on complex, global questions, we have added **The Big Idea**. This Q&A asks key researchers to give us greater insight into those questions. In this issue we interview David Rosner, a professor of history and the codirector of the Center for History and Ethics of Public Health, about the national implications of the Flint water crisis.

Along with these and other tweaks, we are also debuting a refreshed design. Our art director, Jeffrey Saks, sought to preserve the integrity of the original magazine but modified its templates to accommodate a wider range of both long- and short-form features and multiple strong images. You may notice that we have also improved the quality of our paper and made greater investments in photography and illustration.

We hope you like the changes, and we welcome your feedback. Indeed, our goal is to build a community of readers who will actively engage with the editors and help shape future issues of the magazine, both in print and digital form. (Don't forget to download your free app on the App Store or Google Play.) If you have thoughts on this issue, suggestions for future stories, or comments on particular features, please e-mail us at magazine@columbia.edu or send a letter to *Columbia Magazine*, 622 West 113th Street, New York, NY 10025. We're looking forward to hearing from you. 📬



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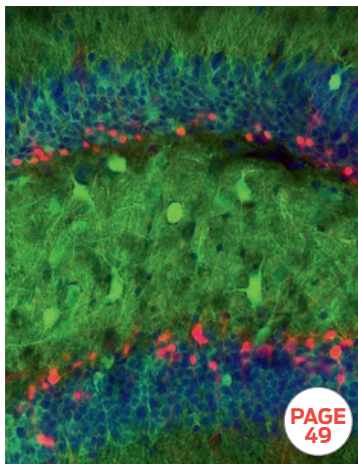
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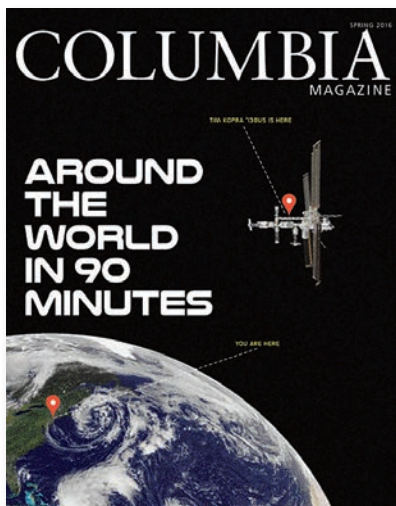
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RITES AND LIGHTS

The research that is going on at Columbia's DeathLab is long overdue ("Making Light of Death," Spring 2016). I have long felt that traditional burial lacks any real meaning, though I appreciate memorial services with photos of the life of the deceased.

When I told my children that I thought primitives had better methods, such as burying the body in the earth as is, for natural recycling, I got the equivalent of "Eeew!" in response.

What happens to my body when I no longer need it is not of great concern to me; my children will decide. I am saving the article for them to read! Thank you!

Helen Cornell Koenig
'43BUS
Bernardsville, NJ

I was pleased to read about Columbia's DeathLab in the Spring 2016 issue. This initiative highlights a frequently ignored or minimized aspect of combating global warming: namely, that the global population must be stabi-

lized or even reduced. Usually, the discussion involves increasing acreage for food production and shelter as the population rises. Cemeteries are never discussed, but they are an important component of the vicious circle in which increasing population leads to the need for more land for food production, cemeteries, and housing, and so on. Another article, in the Explorations section, discusses the looming water shortage ("Reduced snowfall could cause water shortages for 2 billion people"). It would at least be ameliorated if the population were stabilized.

Ivan Huber
Madison, NJ

STRONG REACTIONS

I was distressed by the College Walk article "Strong Opinions" (Spring 2016), which reports on a recent panel discussion on op-eds sponsored by the Undergraduate Writing Program. While the examples listed provide compelling evidence that the University Writing curriculum is effective in producing

published authors, the article led me to question why the course doesn't give equal instruction in *responding* to opinions.

I believe there is a real problem with the way students engage with one another's opinions. To see what I mean, just look at the online comments on the many opinion pieces about sexual violence published in the *Columbia Spectator* over the last two years. The student authors of the op-eds do not necessarily agree with one another, yet in sum have provided readers with the nuances of the debate over the fairness and effectiveness of the University's policies on reporting, investigating, and punishing instances of sexual assault and sexual violence. But the *response* to these pieces by readers tells another story, revealing that many students do not have the skills of respectful debate and discussion. Even more distressingly, students seem galvanized and defensive to the point of being dangerous to one another, and even *empowered* by the

LETTERS

SPIRIT OF '68

Thanks to readers who responded to my call for memories of the 1968 campus protests. Your efforts have already yielded much — two interviews lined up, lots of phone conversations, and even some photographs — and represent immeasurable contributions to the Columbia '68 research project.

Paul Cronin '14JRN
New York, NY

LETTERS

presence of an anonymous forum to employ hate speech and threats of violence.

While the op-ed may still be a viable form of professional and personal expression for “students raised on the Internet,” students desperately need instruction on how to use the forums the Internet uniquely provides. The option to provide anonymous comments severs one’s association with one’s opinion, and removes the responsibility one has — in a classroom, for instance — to offer comments that are critical and productive to advancing a discussion.

Sarah Dziedzic
’04CC, ’11GSAS
Brooklyn, NY

DIFFERING ACCOUNTS

I was involved in organizing a major discussion of white-collar crimes with University of Virginia law professor Brandon Garrett ’01LAW, author of *Too Big to Jail*, at Lille University law faculty last May. Your article in the Explorations section of the Spring 2016 issue

QUESTIONS? COMMENTS?

WE WELCOME THEM ALL!

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Letters may be edited for brevity or clarity.

TWIST AND SHOUT

I thoroughly enjoyed the Spring 2016 issue, but I wish you had included more information about the twelve-minute yoga routine, completed every other day, that seemed to give older men and women denser bones (“Yoga: It’s Good for Your Bones,” Study Hall). Would you please let me know how I may receive information about which yoga positions those were, so that I may do them myself at home?

Marilynn Talal ’63GSAS

New York, NY



The twelve poses in the twelve-minute yoga routine

1. *vrikshasana* (tree)
2. *trikonasana* (triangle)
3. *virabhadrasana II* (warrior II)
4. *parsvakonasana* (side-angle)
5. *parivrtta trikonasana* (twisted triangle)
6. *salabhasana* (locust)
7. *setu bandhasana* (bridge)
8. *supta padangusthasana I* (supine hand-to-foot I)
9. *supta padangusthasana II* (supine hand-to-foot II)
10. *marichyasana III* (straight-legged twist)
11. *matsyendrasana* (bent-knee twist)
12. *savasana* (corpse)

You can buy a copy of the DVD that study participants used, which includes simplified versions of the poses, at sciatica.org. Columbia physician Loren Fishman, who led the study, strongly recommends that osteoporosis sufferers consult their doctor or a yoga therapist or instructor before attempting the poses. — Ed.

(“In cooking their books, corporate accountants like a good recipe”) doesn’t make sense: on the one hand you write that accounting professor Shivaram Rajgopal and his coauthors cannot prove corporate intent to cook the books; on the other, you write that his analysis reveals financial fraud and copycat fraudsters.

Robert Kulp ’59GS
Mouvaux, France

Shivaram Rajgopal

responds: *Proving scienter, or the intent to deceive, is hard unless one has subpoena power. All we can do is to document suspicious empirical patterns that are consistent with “contagion” in cooking the books.*

SELECTIVE SIDEBAR

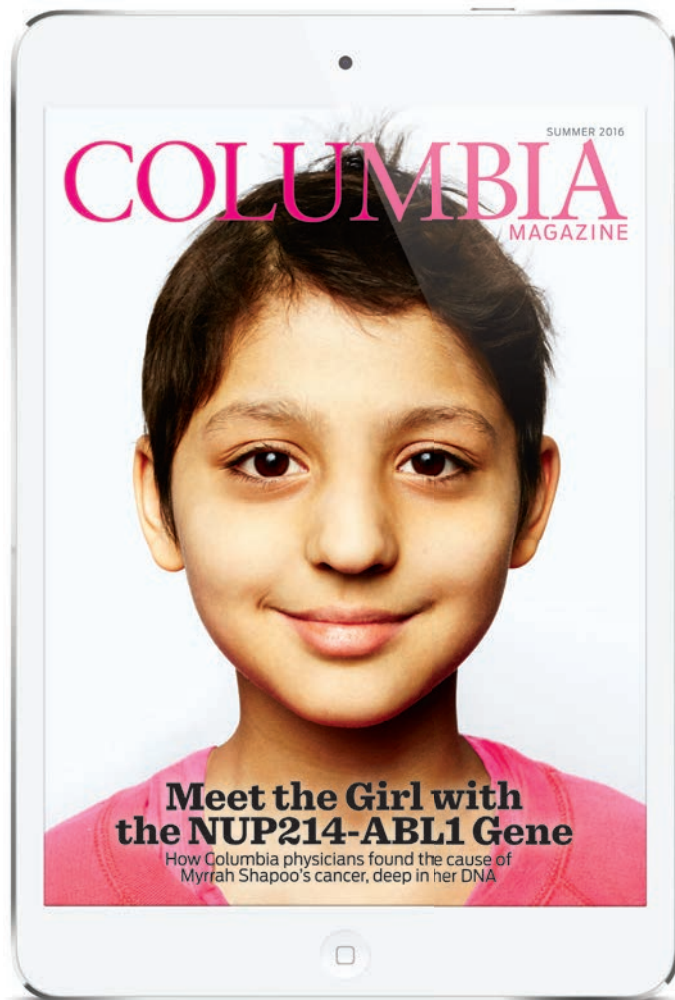
Columbia Magazine usually provides refreshingly diverse and well-informed articles. The sidebar accompanying the interview with Kimberlé Crenshaw (“Cause and Effect,” Spring 2016) was disappointing at best and dangerous at worst. The “stories of police brutality against Black women” were not stories at all — they were cherry-picked single facts from events that made police officers look like random murderers. Using selectively chosen facts to incite anger at the police is deadly for them and for all those they protect, black and white, male and female.

For example, Miriam Carey drove to a White House

perimeter checkpoint, ignored the instructions of officers, and sped off, crashing into other cars. Police were called to Meagan Hockaday’s home because of a domestic-violence dispute, and she approached them with a knife. Mya Hall was driving a stolen SUV near the gates of the National Security Agency. These are not details to be omitted casually.

Could the police have done better in these situations? Perhaps. Are these stories of unprovoked brutality? Definitely not. Crenshaw’s interview draws attention to very important issues that need to be explored, but sadly they were undermined by tabloid-style slant.

Amy Tschudin ’00BUS
Chevy Chase, MD



See the possibilities

Download the Columbia Magazine app.



COLLEGE WALK

NOTES
FROM 116TH
STREET AND
BEYOND



POLITICAL FUTURES

Who's going to win the presidential election?

If the election were held today, who would you vote for?" That's a question pollsters typically pose to generate the statistics that pundits ponder and citizens avidly watch. But to *predict* an election, there's a better question: "Who do you think is going to win?"

So says economist David Rothschild, an expert on understanding and fore-

casting public opinion, who correctly predicted the outcome of the 2012 presidential election in forty-nine of fifty states — and that was in February, long before the Republican candidate was known. (The exception was Florida, which he had "slightly leaning toward the generic Republican nominee, whoever that might be," he recalls, "and it went

lose money if they're wrong. At the website PredictIt, for example, a politically focused prediction market that Rothschild closely monitors, you can buy and sell "yes contracts" that will be worth one dollar if Hillary Clinton wins the presidential election and worth nothing if she loses; or you can buy and sell "no contracts" that will be worth one dollar

slightly for the president.")

For Rothschild, a fellow at Columbia's Applied Statistics Center, where he and his colleagues research innovative methods of data collection and analysis, polls are just raw data waiting to be analyzed — and not the best data, at that. Prediction markets are better. "A poll is a single data point that is an attempt to gather the current intentions and sentiment of the voting population," he explains. "Prediction markets are trying to determine what will happen *when the event occurs*. And what you find is that they are quite accurate."

Prediction markets, sometimes known as information markets, allow people to bet on the outcome of future events. Speculators will make money if they predict correctly — and

if Clinton loses and nothing if she wins. (Such contracts are also available for other candidates, elections, and questions — e.g., will Puerto Rico go bankrupt in 2016? will the next UN secretary-general be a woman? — that will have a clear yes-or-no answer by a certain date.) The market price of the contracts at any given time reflects traders' views on the probability of the outcome: the price of a one-dollar *yes*-Clinton contract will be eighty cents when traders believe there's about an 80 percent chance that she will be the president. Similarly, if you had bought a *yes* contract for Donald Trump back in February, you could have later sold it to a higher bidder as the *yes* probability rose, or you could have held on to it in hopes of getting

it." But those Clinton and Trump contracts will hit their true value once and for all on Election Day, in November. "A commodities futures market is the exact same thing," says Rothschild, "a very equivalent structure."

Although prediction-market participants are self-selecting and surely not representative of the population at large, as a poll tries to be, that's OK, explains Rothschild, because they tend to vacuum up every scrap of information that's out there, and they really want to be right. "Markets ultimately have one key advantage," he says, "which is incentivizing people to come and provide information at two in the morning if the information is breaking."

If one prediction market is useful, how about *three* prediction markets — plus a

Prediction markets, sometimes known as information markets, allow people to bet on the outcome of future events.

that dollar in the end. The price fluctuates with each transaction, as the market responds in real time to all information — economic and political news, public sentiment, world events, rumors — available to large numbers of people.

"These markets move in a way that is generally more efficient than stock markets, because ultimately they have to move on a given day," Rothschild notes. "Apple may be mispriced for years, and you may run out of money betting against

constantly updated aggregation of all major polls, plus a roundup of the latest bookmakers' odds? These are the ingredients that Rothschild collects, reports, and bakes into his own predictions, which he posts to his website, PredictWise.

Oh, and by the way, who's going to win the presidential election?

Said Rothschild, when we last asked, in mid-May: "There's a 72 percent chance it will be the Democrat."

Want to bet?

— *James S. Kunen '70CC*

THE SHORT LIST

Watch Talks@Columbia

Thanks to this series, lifelong learners can access online lectures by some of Columbia's most distinguished faculty and researchers. The second season tackles climate change, bioethics, and genetics.

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Join Alumni in Antarctica

Glaciers and icebergs and penguins... oh, my! Tap into your inner explorer and embark on a voyage to the southern continent. The Alumni Travel Study Program is now taking reservations for the January 21–February 3, 2017, trip.

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Listen to The Low Down

Columbia alumni share their expertise and discuss hot-button issues in this weekly podcast.

thelowdown.alumni.columbia.edu/podcast

Check Out Manhattanville: A New York Nexus

This new exhibit, open to the public and available online, charts the history of the neighborhood from 1890 to 1940, with a particular focus on the Sheffield Farms dairy and the community activists who played a leading role in the campaign to make milk safer.

manhattanville.columbia.edu/sheffieldfarms



REGARDING HENRY

Colm Tóibín reflects on a master's voice



“It’s a year for death anniversaries,” says the Irish novelist Colm Tóibín in a lively, vowel-elongating brogue that perfectly serves his wit and at times seems to provoke it. “Shakespeare, James, and” — the voice purses into theatrical smallness — “our poor 1916 rebellion.”

By James he means Henry James, the American-born, Irish-descended colossus of letters who died a hundred years ago in London, two months before the Easter Rising across the Irish Sea. It is James’s death that is foremost on Tóibín’s mind. Tóibín, a professor in Columbia’s Department of English and Comparative Literature and the author of the novel *Brooklyn* (the film version earned an Oscar nomination this year for best picture), teaches James, published a book of essays on him, and came out with a biographical novel, *The Master*, in 2004. Told from James’s perspective with heroic elegance, control, and insight, *The Master*

captures James in the late 1890s, in the wake of his failed play *Guy Domville* and on the cusp of the creative outburst that produced the towering, “difficult” novels of his late period.

But what is James to us? What place does this most elaborate and indirect of writers hold in a time of shriveled attention spans? What can James, who was born in New York in 1843 and spent most of his life in Europe, offer to the modern reader?

As the editor and public intellectual Clifton Fadiman ’25CC wrote in a 1945 essay, James’s “‘rootlessness’ furnishes him with an international viewpoint and, indeed, an international style, both far more relevant to our own time than they were to James’s” — an observation that still vibrates in 2016. For Tóibín, however, relevance is measured in more immediate ways.

“If you look at the later novels, especially — *The Ambassadors*, *The Wings of the Dove*, *The Golden Bowl* — there is so much buried in them,” Tóibín says. These works of human conspiracy set among cosmopolites, heiresses, and literate provincials “are so filled with subtlety and nuance; there’s always a battle going on between what needs to be said clearly and what needs to be suggested. These texts are very open to interpretation and yield a great deal. To that extent, the books are *supremely* relevant.”

Tóibín points to two events that, in the late twentieth century, boosted the Master’s profile: the 1990 publication of Eve Kosofsky Sedgwick’s *Epistemology of the Closet*, a foundational text of queer theory that illumines hidden gay themes in late-nineteenth-century literature; and the James family’s decision to gradually open the author’s archive at Harvard to more scholars, making available letters from James containing erotic hints that his executors had wished to keep hidden.

“People could now see James in a different light,” Tóibín says. “They began to see homosexuality as being an essential part of him, and this changed the experience of reading him. Within the academy, James moved from being this dead white male to this *intriguing* figure.”

Tóibín first read James in 1974, when, as a nineteen-year-old at University College Dublin, he opened *The Portrait of a Lady*. He presumed that it was a novel of manners: Isabel Archer, alive with American spontaneity and rawness, was, in Europe, discovering a new style that impressed her. “I thought that would be enough for her — that she would replace an almost primitive style that she had gotten in Albany with a more cultivated style that she would find in Italy or, indeed, in a grand house in England,” Tóibín says. “And it was an enormous shock when I discovered, halfway through the book, that it wasn’t about style at all — that style was a way of

concealing what was really going on in the book, which was a serious moral question about treachery.”

Portrait fascinated Tóibín, and he went on to consume the prodigious Jamesian banquet: some twenty novels, and more than a hundred stories and novellas.

“James’s best works are informed by the idea that there is a secret that, if known, would be explosive,” Tóibín says. “The secret in *Portrait* and the late novels is a sexual secret. James often takes his bearings from French farce. He’s trying to rescue that form’s major theme — adultery — from its own clichés by ennobling it with a Puritan imagination whereby he makes sexual treachery into something enormously and spiritually dark.”

But it was the later novels, in which James’s writing became increasingly dense and oblique, that held a special attraction for Tóibín.

Of the prose in *The Golden Bowl* (1904), James’s last major novel, he says, “it’s as though the characters” — a wealthy American financier, his daughter, and their conniving spouses — “are operating as *energy* being released rather than as characters being portrayed. James is trying to deal, without being religious, with the idea of the soul or spirit as a sort of energy, and he needs a different style to register this.”

Being a Jamesian circa 1974–75 was a minor social hazard in the land of that other James — James Joyce. Tóibín’s friends were divided over Henry. “Some thought that the books mattered for their quality, their nuance, their style. Then others thought that the world of all these posh characters, who had inherited money and were living in permanent states of delicacy, really needed to be broken up.”

With the present spotlight on wealth inequality, one might expect James to have slipped entirely from favor. But for Tóibín, James’s attention to personal economic circumstances only enhances his currency.

“James is very good about what *not* having money does to people,” Tóibín says. “What will someone with no money do to *get* money?”

This utterance kindles an idea that Tóibín pursues with the artist’s delight in invention: what if he team-taught a class on James with an economist?

“We could work with James to show what inherited wealth looks like in a society where not everyone inherits; where money skews relationships as much as it makes people immensely happy. We could show James being the great illustrator of this point. I’d call it ‘Trust-Fund Babies, Inherited Wealth, and the Late Novels of Henry James.’”

— Paul Hond

Class Ceilings

Women deans talk about barriers past and present

When Virginia Kneeland Frantz graduated from the College of Physicians and Surgeons in 1922, she was one of five women in a class of seventy-four students. She finished second in that class before becoming the first woman to pursue a surgery internship at New York’s Presbyterian Hospital. Frantz went on to make important discoveries about the diagnosis and treatment of thyroid, breast, and pancreatic tumors, eventually becoming the first female president of the American Thyroid Association.

A lot has changed since Frantz made her mark as a surgical pathologist. Now, women earn 57 percent of all bachelor’s and 52 percent of all doctoral degrees. Yet women are still woefully underrepresented in academic leadership roles — an issue that was addressed this spring at a colloquium hosted by the Virginia Kneeland Frantz Society for Women Faculty, a P&S group committed to the advancement of women’s careers in science and medicine. The event, which drew a largely female audience of more than 250 faculty, administrators, and students, featured a panel of seven Columbia deans — all women — who gamely tackled the subject of “Women and Leadership in the 21st-Century University.”

At Columbia, women make up 51 percent of the student body and 42 percent of the faculty overall, but they account for just 26 percent of tenured professors. This discrepancy is even more pronounced in the sciences.

“The sheer lack of women in the field is a challenge,” said Mary Boyce, dean of the School of Engineering and Applied Science. “I don’t think it’s as purposeful as it was years before, but this notion of unconscious bias” — the idea that those in positions of power tend to instinctively view female job candidates as less qualified or capable — “is a barrier for women in science and engineering.”

The problem of bias is multilayered for minority women. “A primary challenge both as a researcher of color and as a dean is that my legitimacy is never assumed,” said Alondra Nelson, dean of social science, who, before joining the Columbia faculty in 2009, was the first Black female professor in Yale’s sociology department.

Jeanette Takamura, dean of the School of Social Work, shares her experience with minority students who come to her for advice. “I speak about this as a person who has been the ‘only’ — the only Asian-American, the only Asian-American female — in so many different contexts,” she said. “And I’ve learned through that process not to wait, not to be marginalized, but to make sure I get a seat at the table.”

Then there is the case of the School of Nursing, in which women make up nearly 90 percent of the student body. “Schools of nursing often face bias as a whole because we are predominantly women,” said dean Bobbie Berkowitz. “Our science is at times dismissed as lacking value, and our practice is often associated with labor rather than science.”

Still, there has been real progress in female leadership since Frantz retired from P&S in 1962. “I think there’s a consciousness now about getting over bias and looking for talented women,” said Merit Janow ’88LAW, dean of the School of International and Public Affairs.

Consciousness, however, does not always inspire confidence. According to research cited by Linda Fried, dean of the Mailman School of Public Health, senior women professors often eschew positions of leadership because they fear they are being set up to fail.

As Amale Andraos, dean of the Graduate School of Architecture, Planning, and Preservation, put it: “The more dangerous bias is the one that we internalize.”

— *Lauren Savage*

OLD FRIENDS

The return of Greenberg and Garfunkel



TIME IT WAS:
Sanford Greenberg (left)
and Arthur Garfunkel

One day in his freshman year, Sanford “Sandy” Greenberg ’62CC, ’67BUS stood on campus by a grassy plot with his classmate Arthur Garfunkel ’65CC.

“Sanford, look at that patch of grass. You see the colors? The shapes? The way the blades bend?”

Greenberg was smitten. Other guys talked about girls and sports, but Arthur wanted to talk about — a patch of grass!

Was there a luckier guy on campus than Greenberg? Here he was, a poor kid from Buffalo on full scholarship at Columbia, taking classes from Margaret Mead, Leon Lederman, James Shenton, and Mark Van Doren. And he had a great new pal, a brainy kid from Queens with a pure tenor voice.

But in the summer of 1960, just before junior year, Greenberg’s fortune changed. He was in Buffalo, playing baseball, when his vision “steamed up.” He had to lie down in the grass until the clouds went away.

The doctor said it was allergic conjunctivitis.

Back at school that fall, Greenberg had more episodes, but he didn’t tell anyone. He didn’t believe it was anything serious. Still, his roommates — Garfunkel and Jerry Speyer ’62CC, ’64BUS — saw that he was having trouble.

On the first morning of finals, Garfunkel escorted Greenberg to University Gym, where exams were held. Greenberg started writing at 9 a.m. By 10:30 he couldn’t see a thing. He lurched to the front of the gym and handed his blue book to the proctor.

“I can’t see, sir,” he said.

The proctor laughed. “I’ve heard some terrific excuses,” he said, “but that’s the best.”

Greenberg went back to Buffalo, where he received another diagnosis: glaucoma. That winter, doctors operated on Greenberg’s eyes. The surgery didn’t work. Greenberg was going blind. He was so depressed that he refused to see anyone from college.

But Garfunkel came up to Buffalo anyway.

“I don’t want to talk,” Greenberg said.

“Sanford,” said Garfunkel. “You *must* talk.”

Garfunkel persuaded Greenberg to come back to Columbia, and offered to be his reader.

In September 1961, Greenberg returned to campus. Garfunkel, Speyer, and Michael Mukasey ’63CC read textbooks to him, taking time

out from their own studies, and Greenberg ended up scoring straight As. Still, he was tentative about getting around alone and relied on his friends to help him.

Then, one afternoon, Greenberg and Garfunkel went to Midtown. When it was time for Greenberg to go back to campus, Garfunkel said he had an appointment and couldn't accompany him. Greenberg panicked. They argued, and Garfunkel walked off, leaving Greenberg alone in Grand Central Terminal. Greenberg, bewildered, stumbled through the rush-hour crowd. He took the shuttle to Times Square, transferred to the 1 train, and got out at 116th and Broadway. At the gates, someone bumped into him.

"Oops, excuse me, sir."

Greenberg knew the voice. It was Arthur. Greenberg's first reaction was rage, but in the next second he realized what he had just accomplished — and realized, too, who had made it possible.

"It was one of the most brilliant strategies," Greenberg says. "Arthur, of course, had been with me the whole way."

After graduation, Greenberg got his MBA from Columbia and a PhD from Harvard. He married his girlfriend, Sue; was a White House fellow in the Johnson administration; and went on to become a successful inventor and businessman.

Garfunkel went on to become Art Garfunkel.

In 2014, Greenberg told the subway story on *Charlie Rose*.

Soon after, Susan Goldberg, the editor in chief of *National Geographic*, contacted him. She was planning an issue on blindness, and she asked Greenberg if he and Garfunkel would re-create their Midtown-to-Morningside journey.

The old friends agreed to do it. For one thing, a piece in *National Geographic* would bring attention to Greenberg's major cause. In 2012, he started an initiative called End Blindness by 20/20, which will award three million dollars in gold to the person (or persons) who does the most to achieve the goal by that target year.

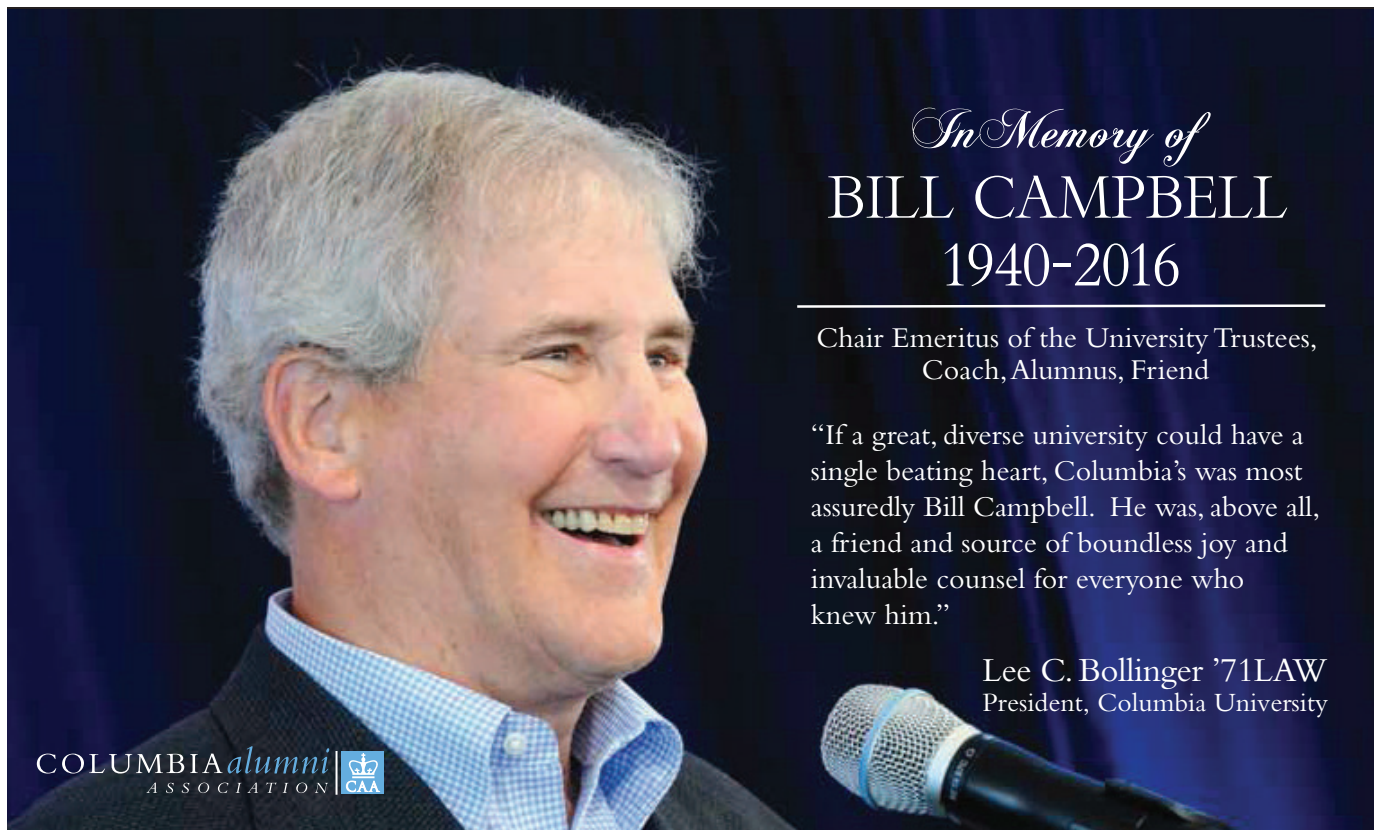
This past March, Greenberg and Garfunkel, with a camera crew in tow, made their way from Grand Central to Morningside Heights.

On Low Plaza, Greenberg, smiling, recalled Garfunkel reading him *Our Town*, which, he says, was their "manual for living." The play's message is that humans, caught up in daily concerns, fail to appreciate life's beauty and preciousness. "That's all human beings are!" says the character Emily Gibbs, a dead woman looking down upon the living and astonished by their folly. "Just blind people!"

Not Greenberg. He sees everything, sings every blessing, great and small: from the love of his family and friends to the dew-dappled grooves of a blade of grass.

"You are talking," he says, "to the luckiest man in the world."

—Paul Hond







MEET THE GIRL WITH GENE NUP214-ABL1

WHEN MYRRAH SHAPOO ARRIVED AT COLUMBIA UNIVERSITY MEDICAL CENTER LAST YEAR WITH A FORM OF CANCER THAT WOULDN'T RESPOND TO CHEMOTHERAPY, A TEAM OF PHYSICIANS AND SCIENTISTS WORKING ON A NEW PRECISION-MEDICINE INITIATIVE FACED THEIR ULTIMATE TEST

BY DAVID J. CRAIG

PHOTOGRAPHS BY WINNIE AU

By the time they landed at Kennedy International Airport on the morning of January 26, 2015, nine-year-old Myrrah Shapoo was already suspicious. Her father had promised her the trip would be fun — that they would sit in the fancy seats at the front of the plane and watch cartoons. But her mother had been crying as she rushed to pack their suitcases, and it seemed strange that all her aunts and uncles had suddenly shown up at the family's New Delhi home to hug and kiss Myrrah goodbye.

Now Myrrah was wondering why her father insisted on pushing her through the airport terminal in a wheelchair when, really, she could have walked. And why did she have to wear a silly paper mask? Finally, when a distant relative greeted them outside the baggage claim and asked her father in hushed tones about “her condition,” Myrrah figured it out.

“Papa,” she said, “am I sick again?”

In the summer of 2012, after countless doctor's appointments, dozens of tests, and months spent watching their six-year-old daughter suffer from unexplained fevers, achy bones, and deep and persistent tiredness, Sajid and Rubina Shapoo got the awful diagnosis. Their daughter Myrrah had acute lymphoblastic leukemia (ALL).

ALL is a cancer of the blood — specifically of the white blood cells. Typically those cells work with the immune system to fight infection and protect the body against disease, but in children with ALL, an uncontrollable proliferation of cancerous white blood cells upsets the delicate constitution of the

bloodstream, crowding out normal white blood cells, as well as red blood cells and platelets. This makes it impossible for the body to properly fight infection, absorb oxygen, or heal wounds.

Acute lymphoblastic leukemia is the most common form of cancer in children. It is also one of the most treatable; nearly 90 percent of children diagnosed with the condition are cured. Myrrah's parents, after getting over their initial shock, were optimistic that she would survive.

“The doctors told us that if you had to get cancer, this was the one with the best prognosis,” says Sajid, who works as a police official in India. “And, clearly,

when you're told that your daughter has a disease that most kids recover from, you expect her to be among the fortunate ones.”

Myrrah was initially treated at New Delhi's Indraprastha Apollo Hospital, which boasts a state-of-the-art cancer clinic, considered among the best in India. Her doctors there followed the same diagnostic and treatment protocols that physicians at most hospitals in the US or Europe recommend. Within hours of determining that her white blood cells were cancerous, they sent a sample of Myrrah's blood to a laboratory for karyotyping, a form of genetic analysis that involves examining a cell's nucleus through a microscope to see if any of its forty-six chromosomes are missing or misshapen. The scientists who examined Myrrah's blood were looking at those X-shaped bundles of coiled-up DNA for clues. For instance, if a particular section of chromosome 9 was lopped off and fused onto the end of chromosome 22, it would indicate a mutation commonly called the “Philadelphia chromosome.” This would suggest that Myrrah had a subtype of leukemia that is treatable with Gleevec, one of a handful of cancer drugs that have been designed to target specific genetic aberrations. But there was no Philadelphia chromosome and no other hints as to what was driving Myrrah's illness.

Without a clear road map for treatment, her doctors did what any other oncologists would do in the situation: they prescribed a cocktail of four common chemotherapy drugs — dexamethasone, vincristine, daunomycin, and PEG-asparaginase — to be administered every day for a month through a port that would be implanted in Myrrah's neck. The physicians at Apollo Hospital would subsequently give her several additional chemotherapy cocktails — typically administered for a month or so at a time — in order to maximize the chances that any cancer cells that withstood one drug would be destroyed by another. If leukemia cells migrated to her spinal column or brain, where chemotherapy drugs couldn't penetrate



**CUMC
PEDIATRIC
ONCOLOGY
CHIEF
ANDREW
KUNG**

the blood-brain barrier, they would also bombard Myrrah with radiation.

To understand the suffering that Myrrah would go through in those first arduous months of treatment, it helps to know how chemotherapy works. These drugs, most of which were developed in the 1940s, '50s, and '60s, an era of aggressive chemical experimentation on human cancer patients, attack various molecules in the body that are necessary for cell growth and cell division. The idea is that since cancer cells grow and divide at a maniacal pace, they are preferentially affected and die off before the rest of the body breaks down. But these drugs take

a severe toll on all cells that divide rapidly. They kill those found in hair follicles, which makes patients go bald; they attack the lining of the digestive tract, which causes severe nausea and diarrhea; and they annihilate the mucous membranes, which can lead to painful sores in the mouth and on the lips. Myrrah experienced all of these side effects and more: the drugs made her mentally foggy and weakened her immune system so badly that she developed repeated infections; on one occasion, she nearly died of meningitis. During this period Myrrah lived at the hospital for weeks at a time,

and her parents took turns sleeping next to her on a cot. Doctors stopped by almost every day bearing needles — small needles for delivering shots, medium-sized needles for taking blood, and impossibly long, thick needles for drawing spinal fluid out of her back, which made her scream in pain.

“We nicknamed her the Cancer Slayer because she is such a fighter,” says her father. “Sometimes she would ask me, ‘Why don’t other kids have to do this?’ And I would say, ‘Because only you are strong enough. Only you can take it.’”

And she *did* take it. Little by little, she got better. By the spring of 2013, there was no more cancer detectable in her body, and doctors stopped the most powerful chemotherapy regimens. They would continue to give her relatively mild doses of chemotherapy for the next two years, just in case any traces of cancer still lingered, but Myrrah soon regained her strength and returned to school. That summer, her parents celebrated by taking her on vacation to Europe. Life was, for a few precious months, normal again.

Then, in January 2015, during a routine checkup, Sajid and Rubina learned that Myrrah’s cancer had returned. This time, the doctors said there was nothing more they could do. “I almost blacked out,” says Sajid. “I couldn’t see anything, and there was this loud buzzing in my head that drowned almost everything out. After a few seconds, I heard my voice saying: ‘No, this cannot be true.’”

The doctors’ only suggestion was that the Shapoos take their daughter to the United States — specifically, to New York–Presbyterian/Columbia University Medical Center — where a group of pediatric oncologists was developing a new, personalized approach to treating cancer by conducting an extremely detailed analysis of each patient’s DNA. “We were told that Myrrah’s disease might somehow be treatable, but that it would require an unusually in-depth investigation to figure out how,” says Rubina, who is a television journalist and documentary filmmaker. “This was our only chance.”

Two days later, on a Friday afternoon, Sajid requested a long-term leave from his job and booked two tickets to New York. He and Myrrah left that weekend. His wife would remain in New Delhi with their newborn son, Hayder, and Myrrah's twelve-year-old brother, Ruhayl.

"This was the darkest hour for me," says Sajid. "I'd always been the one in our family refusing to entertain bad thoughts about Myrrah's prognosis. But now I struggled to keep myself together for my wife and for my little girl."

NEW TERRAIN

In 2014, the pediatric oncology unit at Columbia University Medical Center became one of the first in the world to offer whole-exome sequencing to every child with cancer in its care. Whole-exome sequencing is a method of DNA profiling that reveals the exact sequence of all thirty million nucleotides — adenine, thymine, guanine, and cytosine molecules — that constitute a person's nineteen thousand genes.

Because using this technology is expensive and time-consuming, and because it generates an overwhelming amount of data, physicians rarely use whole-exome sequencing as a diagnostic tool. Typically, oncologists simply want to know whether the person has any of a handful of genetic mutations whose roles in cancer are well understood. This is accomplished with karyotyping (the method that scientists at Apollo Hospital had used) and with slightly more sensitive computer-based genetic tests that scan a person's DNA for limited numbers of mutations that have been proven to cause cancer.

Columbia's pediatric oncologists, however, sought to look more comprehensively across all genes, with the hope of discovering ways they might save children with forms of cancer that were deemed incurable. Working alongside data scientists, cell biologists, molecular pathologists, and other medical researchers, they were determined to embrace whole-exome sequencing in all its complexity.

"By looking not only at the genes whose contributions to cancer are already well established for a given condition, but at the countless others that researchers have identified as potentially being involved in other forms of cancer, we knew we could gain an unprecedented level of insight into each child's disease," says Andrew Kung, the chief of pediatric hematology, oncology, and stem-cell transplantation at CUMC. "If a child didn't respond to the standard treatment regimen, we'd have all the information we could possibly want at our fingertips when considering alternative approaches."

Kung envisioned a network of clinicians and researchers working side by side, seamlessly integrating information the researchers gleaned from whole-exome sequencing into treatment decisions on a daily basis. He dubbed his new program Precision in Pediatric Sequencing (PIPseq).

When Kung launched PIPseq with the support of Lee Goldman, the chief executive of CUMC, and Stephen Emerson, the director of CUMC's Herbert Irving Comprehensive Cancer Center, he knew

it would be a gamble. Assessing the significance of the countless

**ONCOLOGISTS
PRAKASH
SATWANI AND
MARIA LUISA
SULIS**



possible mutations scattered across a single person's nineteen thousand genes was an ambitious task, usually undertaken only as part of a major research project aimed at identifying genes associated with a particular disease. In clinical situations, whole-exome sequencing was used sparingly. Health-insurance companies almost never paid for it, and few studies had even attempted to quantify the potential clinical payoff of analyzing DNA on this scale.

"It was a chicken-or-egg dilemma," says Kung. "Since no hospital had ever made a serious attempt to show what comprehensive sequencing could achieve in the clinic if used routinely, its benefits were unproven."

But Kung, who had been recruited to Columbia from Harvard in 2012 in part to advance the use of genomics in pediatric oncology, believed that his division had an opportunity to help shape the future of medicine. It was only a matter of time, he was convinced, before this type of highly sophisticated genetic sequencing became cheap enough, fast enough, and easy enough to use routinely, not only for the diagnosis and treatment of cancer but for a wide variety of conditions. He saw that research on human genetics was already having profound intellectual implications, causing scientists to rethink the definitions of many diseases. It had revealed, for example, how cancers that started in different parts of the body sometimes shared the same physiological roots and were responsive to the same medicines. He anticipated that genetics research would also have disruptive effects on how medical institutions are organized. Gone would be the days when physicians operated more or less independently from laboratory scientists, learning about medical breakthroughs at annual conferences and then going back to their clinics to ponder the findings. He envisioned a hospital in which physicians would be in constant conversation with geneticists, cellular biologists, and molecular pathologists. Kung thought that CUMC, which was making major investments in its genomics research and clinical programs

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— Rubina Shapoo

under the umbrella of its recently established Institute for Genomic Medicine, was ideally positioned to figure out how these new types of collaborations should work. His bosses agreed, and in the fall of 2014, Columbia University Medical Center began offering DNA sequencing and analysis to the family of every pediatric cancer patient, on the understanding that CUMC would pick up the estimated \$8,000 tab if the family's insurance company declined to pay.

"I think that many other institutions were waiting for genetic sequencing to become cheaper and easier," says Kung. "My colleagues and I thought that CUMC should chart the way forward, even if we had to absorb the costs."

ELEVENTH HOUR

When a person with advanced leukemia has blood drawn, the fluid that comes out is thin, watery, and pinkish. This is because the spongy tissue inside the

person's bone marrow, which is where all blood cells are manufactured, is now devoting itself almost exclusively to producing monstrously deformed cancerous white blood cells.

By the time Myrrah Shapoo arrived at CUMC in January 2015, her blood had a ghostly translucence. She was also beginning to feel lethargic, the first sign of oxygen deprivation. Without treatment, she likely would die within days or weeks — either from infection or from her oxygen-starved organs shutting down.

To stabilize her, a team of physicians led by Maria Luisa Sulis '15PH, a childhood-leukemia specialist, opted to give her a cocktail of chemotherapy drugs similar to the one she had received during her first few months of treatment in India. Based on the course that Myrrah's disease had taken, they could tell that those drugs had done a decent job of combating her cancer.

"The problem seemed to have occurred later, with the drug she was given at the end of her treatment, after her cancer levels had dropped so low as to be undetectable," says Sulis. "Our goal now was to knock her cancer cells back down to that level and keep her alive long enough for the genetic analysts to help us figure out a more personalized path to take."

Soon after Sajid and Myrrah arrived at Columbia, the rest of the family joined them in the United States. They stayed with cousins in New Jersey and would make the long commute to the intensive-care unit of CUMC's pediatric cancer ward every day. When Myrrah was strong, the family would Skype with relatives back home. When Myrrah felt too ill to socialize, Sajid or Rubina would read her stories from a collection of Indian adventure tales or simply cuddle with her on her tiny bed.

"Back in New Jersey each night, I'd bury myself in scientific papers about the genetics of leukemia," says Sajid, a handsome and gentle-natured man of forty-one. "It was important to me that I try to understand what was going on with my daughter's disease. Somehow that made the situation more tolerable."

As Myrrah fought for her life, clinicians and scientists from several CUMC departments and research laboratories joined forces to figure out a treatment plan. First on the case were pathologists at CUMC's Laboratory of Personalized Genomic Medicine, a diagnostic facility that provides genetic testing for a wide range of diseases. They had received a vial of Myrrah's blood and bone-marrow tissue the day after she arrived at the hospital and had immediately gone to work extracting DNA from both her cancerous white blood cells and her healthy cells. After processing the DNA, they loaded it onto a glass slide, which they placed into a computerized sequencing machine. The sequencer, which painstakingly examined strands of DNA to determine the identity of all thirty million nucleotides in the protein-coding genes of each cell, then downloaded two composite genetic blueprints: one representing a typical cancer cell in Myrrah's bloodstream, and the other its healthy counterpart. Next, software designed by bioinformaticians in the laboratory organized that data into spreadsheets that highlighted the differences between the two. This would enable scientists to spot not only mutations in Myrrah's cancer cells but also differences between the DNA in Myrrah's noncancerous cells and the DNA of an average human cell — as represented by the findings of the Human Genome Project.

"What comes next is a massive cross-referencing project, in which you're searching for commonalities among the genetic mutations you find in the patient and those that have been documented as possibly contributing to leukemia," says Mahesh Mansukhani, an associate professor of clinical pathology who, as director of the Laboratory of Personalized Genomic Medicine, oversees the genetic sequencing and analysis done as part of PIPseq. "Your analysis goes in both directions — you see if the patient carries any mutations described in the scientific literature, and you scan the literature for references to variations that the child is carrying."

Mansukhani and other members of his lab began analyzing Myrrah's genetic profile three days after she was admitted. Over the next several weeks, they would consult regularly with pathologists, data specialists, and oncologists from other CUMC labs to help them determine which statistical correlations were most relevant. This is crucial, Mansukhani says, because a team of analysts could easily spend years searching for meaningful patterns in data sets as vast as those his team wrestles with.

"Consider that you're looking at nineteen thousand plus genes in this child, and that fifteen or twenty genetic aberrations have so far been definitely linked to acute lymphoblastic leukemia," says Mansukhani. "That doesn't sound like an impossible puzzle to solve, right? But consider that each of those genes linked to leukemia has numerous mutated forms, each of which may have a different physiological effect. And consider that dozens of other genetic errors have been hypothesized to contribute to

leukemia in small numbers of kids who have rare subtypes of the disease. Now it's becoming a very complex mathematical problem, right? Meanwhile, you've got a child whose family is depending on you to solve this puzzle pretty darn quickly. So you'd better have a plan about what you're looking for when you turn on your computer."

ONE GIRL'S ILLNESS, DECODED

By early February 2015, a picture began to emerge of what was making Myrrah's disease so stubborn. The first breakthrough occurred when Susan Hsiao, a molecular pathologist in Mansukhani's group, discovered that Myrrah's cancer cells carried a mutation in a gene called NT5C2. This mutated gene does not cause cancer, but it can derail a patient's treatment by making leukemia cells resistant to certain chemotherapy drugs, including 6-mercaptopurine, or 6-MP. One of the first chemotherapy drugs ever invented, 6-MP is often given to leukemia patients in the very last stage of treatment in what is called the "maintenance" period of chemotherapy. Myrrah had received it every day for nearly two years, from the spring of 2013 through the end of 2014.

"She had variants in others genes linked to cancer, too, but this one stuck out as being the most immediately relevant to her care," says Hsiao. "It provided a perfect explanation for why she had relapsed."

The mutation that Hsiao found in Myrrah's NT5C2 gene was the simplest type of genetic aberration there is: a point mutation, which is the result of a single nucleotide being missing, inserted where it doesn't belong, or swapped out for another. In Myrrah's version of NT5C2, the 1,219th of its 1,683 nucleotides, which should have been a guanine molecule, was a thymine molecule.

Hsiao says that in the course of her analysis she will sometimes contact scientists who have studied a particular gene to discuss the clinical ramifications of the variation she has found. In this case, her job was easier than usual: the scientist who had first described

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**LEUKEMIA
RESEARCHERS
ALBERTO AMBESI-
IMPIOMBATO
AND ADOLFO
FERRANDO**

NT5C2's role in chemotherapy resistance was a CUMC leukemia researcher named Adolfo Ferrando. Ferrando is an expert on the genetic and molecular basis of the disease, and in 2013, his research team had analyzed the genes of 140 leukemia patients who had relapsed after receiving 6-MP or a closely related drug. The scientists had found that 15 percent of the patients had mutated versions of NT5C2.

"Adolfo's team was able to confirm that a point mutation at that location was likely to cause problems," says Hsiao.

Now Myrrah's physicians knew what drug *not* to give her. But what should

they give her instead? To answer this question, the PIPseq team turned again to Ferrando, whose laboratory is among several at CUMC that regularly provide analytic support to the pediatric oncologists. Ferrando's team, in addition to analyzing the chemical composition of DNA, can analyze the RNA and proteins made by genes and determine which genes are active and which are inactive, both in normal development and in cancer.

"Genes are not static entities," says Ferrando. "They turn on and off, often

as a result of their interactions with other genes. And sometimes you need that level of understanding to tease out what's happening in a particular person's disease."

In April, Alberto Ambesi-Impiombato, a postdoctoral researcher in Ferrando's group, made an important discovery. Using a computational technique called cluster analysis, he observed that hundreds of genes in Myrrah's cancer cells were turning on and off in a pattern that suggested her disease shared deep similarities with the form of ALL that is caused when a part of chromosome 9 fuses onto chromosome 22, resulting in what is known as the Philadelphia chromosome. The drug Gleevec was designed specifically to treat that form of ALL; it works by dismantling a mutant protein produced by the Philadelphia chromosome that tells other molecules inside of a cell to continually make the cell divide.

"So now the question was whether or not this patient's disease was driven by a similar mechanism," says Ferrando. "And if it was, perhaps Gleevec or a similar drug might be used therapeutically."

Maria Luisa Sulis, the physician overseeing Myrrah's care and herself a former laboratory scientist, solved the final piece of the puzzle. She ordered targeted DNA tests to look for a handful of genetic mutations that are known to cause malfunctions in a cell's metabolic signaling very similar to those caused by the Philadelphia chromosome. And they found one: in Myrrah's cancer cells, one entire gene in chromosome 9 had been folded back onto its neighbor so that their nucleotides mixed to create a hybrid gene known as NUP214-ABL1. The protein manufactured by this hybrid gene had previously been shown to act similarly to the one produced by the Philadelphia chromosome, instructing a cell to incessantly divide.

"This was a chromosomal rearrangement much smaller and more difficult to spot than the Philadelphia chromosome," says Mansukhani. "You wouldn't see this one unless you analyzed how the DNA expresses itself as RNA."

The finding was all the more remarkable because it pointed to a specific treatment strategy. In 2006, the pharmaceutical company Bristol-Myers Squibb released a drug called Sprycel, which works very similarly to Gleevec, targeting the specific types of proteins that both the Philadelphia chromosome and the NUP214-ABL1 gene produce. Experiments had shown that Sprycel would be particularly effective in Myrrah's case.

So now the path forward was clear: Myrrah's doctors would add Sprycel to the traditional chemotherapy cocktail she was receiving, and continue giving her the drug for as long as it took to wipe out any remaining cancer cells.

HOPE FOR OTHERS

On a recent Wednesday morning, about twenty-five Columbia physicians and medical researchers gathered in a conference room at CUMC to update one another on cases they were working on as part of the PIPseq program. Mansukhani took the floor first, presenting his team's analyses of the DNA of several children recently admitted to the hospital. He spoke in the dense, super-specialized language of genetics, using alpha-numeric code to describe the glitches in the children's genes. "We found a mutation at c.884C>T, p.P295 in 104 of one thousand cells," he said, referring to a young boy with a tumor. The physicians peppered him with questions: "Isn't that in the same region as the famous Sonic Hedgehog mutation?" "Would we expect to find a mutation there in someone with this kind of tumor?" "What does this tell us about his chances of relapse?" Andrew Kung, after presiding over a lengthy discussion of the case, summarized the group's consensus: the physicians should start the boy on a standard chemotherapy regimen, and the analysts would continue looking for clues about what experimental drugs he might be given, should he need an alternative.

After the meeting, Kung expressed his excitement at seeing physicians and medical researchers collaborating so intimately: "Five years ago, that wouldn't have happened. It's our ability to bring

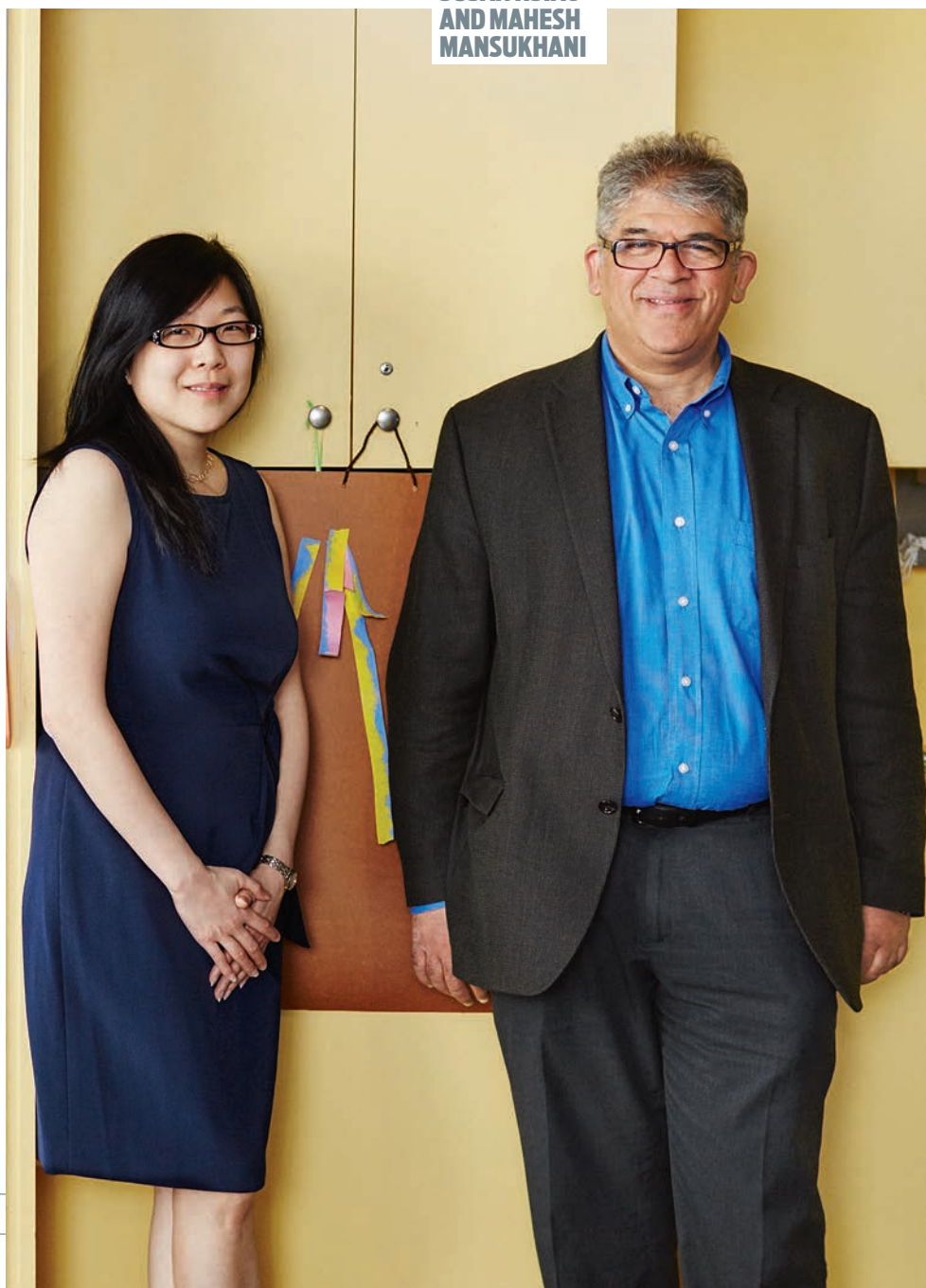
together experts from across the entire medical center that makes precision medicine work."

Since the PIPseq program was launched, in 2014, more than one hundred pediatric cancer patients have had their genes sequenced at CUMC. In about two-thirds of these cases, Kung says, Columbia researchers have discovered something in a child's DNA or RNA that has helped physicians decide how to treat the patient. The researchers' discoveries have led to children receiving gene-targeting drugs like Gleevec or Sprycel in just a handful of cases, Kung says,

because there are only a few targeted therapies approved for use in children. But the genetic analyses have guided treatment in other ways. On many occasions, they have indicated that a child has a particularly aggressive type of cancer and needs unusually high doses of chemotherapy. In other instances, the analyses have motivated physicians to perform a bone-marrow transplant earlier in the treatment process than is typical.

Conversely, the Columbia researchers' analyses have sometimes indicated that physicians could save a child with unusually

**MOLECULAR
PATHOLOGISTS
SUSAN HSIAO
AND MAHESH
MANSUKHANI**



low doses of chemotherapy, or without a bone-marrow transplant. Physicians would prefer to scale back treatment if possible, because all cancer treatments carry risks: the toxicity of chemotherapy drugs, for instance, not only cause severe short-term side effects but also increase a patient's long-term risk of developing other cancers; and a donor's bone marrow might be rejected by the recipient's body, or even attack it, both of which are often fatal.

"One of the most active areas of leukemia research today is figuring out how to identify patients who require less intensive treatment," says Kung. "Just because we're curing 90 percent of children with ALL doesn't mean that we accept the toxicities that we inflict in pursuit of a cure."

It is too soon to know if any children who have participated in the PIPseq program have been cured as a result of having had their genes sequenced. This will take several years to establish, since cancer patients are generally considered cured only after having been in remission for five years or longer. One thing that can be said for certain, though, is that there are children alive today because of this program. Among them is Myrrah Shapoo. This spring, just fifteen months after she and her father first arrived at the hospital, looking for a miracle, the family received wonderful news. There is no more cancer detectable in her blood. Her physicians are cautiously optimistic that she will stay in remission, because they have examined her blood using a newer, much more sensitive diagnostic test than the one used by her Indian doctors when they initially announced that she was in remission three years ago. Her recovery seems attributable both to Sprycel and to a transplant that CUMC oncologist Prakash Satwani performed last summer, when he replaced Myrrah's bone marrow with bone marrow from her older brother, Ruhayl. The transplant seems to have given her immune system the boost it

**"RIGHT NOW, WE'RE TRYING TO CURE MYRRAH SHAPOO'S CANCER. THEN WE'LL FIND OTHER KIDS WITH THE SAME SUBTYPE OF THE DISEASE AND TREAT THEM THE SAME WAY."
— Maria Luisa Sulis**

needed to annihilate the few leukemia cells that had remained in her body.

"What we can presume is that Myrrah's immune system originally had some sort of flaw that enabled the cancer to take root and proliferate," says Satwani, who has been overseeing her care since the procedure. "You do a transplant in the hope that the donor's marrow is innately stronger. So far, this seems to be the case."

The Shapoos are now living in Morningside Heights, where Ruhayl is attending high school and Myrrah, now ten, is being tutored at home. Her parents expect the family to remain in New York City for another year or two so that Columbia doctors can continue to monitor their daughter. This suits Myrrah fine. She has become close friends with several other young cancer patients. And she loves American television — especially the cooking shows, which she credits with inspiring her dream of becoming a chef when she grows up.

"Right now, I'm focused mostly on spaghetti, which my papa lets me cook

Friday nights," she says. "He wants me to be a doctor. I might do that, too. But first a chef."

There is ultimately more than one life at stake in the effort to save Myrrah. Many other children have similar genetic mutations. How many more children with the NUP214-ABL1 gene are out there? It is impossible for scientists to know, but studies have suggested that NUP214-ABL1 is likely to be among the most common mutations carried by the 10 percent of children with ALL who still cannot be saved through traditional chemotherapy. So identifying these children, and treating them with drugs best suited for their individual cases, could have a pronounced impact on ALL survival rates.

"The development of drugs like Gleevec and Sprycel was a big deal, because they happen to target some of the most aggressive and deadly subtypes of leukemia," says Maria Luisa Sulis. "Kids with the Philadelphia chromosome had a dismal survival rate before Gleevec was invented. And we need more targeted therapies to be invented, of course. But we also need to identify everybody who could benefit from the targeted therapies we do have. And we're not yet doing that as well as we could."

Sulis is now working with other members of the PIPseq team to fine-tune their procedures for identifying children with mutations whose effects are similar to those of the Philadelphia chromosome, in hopes of diagnosing them more quickly. "People often talk about curing cancer as if there is a magic pill we'll find that heals everybody," she says. "The reality is much messier, slower, and more incremental. Cancer is hundreds of diseases. Right now, we're trying to cure Myrrah Shapoo's cancer. Then we'll find other kids with the same subtype of the disease and treat them the same way. This is how we'll push the cure rate for pediatric ALL up from 90 to 95 percent, and so on. And this is how we'll beat all cancers. We will cure them one by one." 🍷

To learn more about precision-medicine initiatives at Columbia, visit newsroom.cumc.columbia.edu/precision-medicine.

The Revenge of Jenji Kohan

Smart. Funny. Obsessive. Subversive. How the creator of the hit TV shows Weeds and Orange Is the New Black smoked the doubters and got the last laugh

By Paul Hond

Jenji Kohan '91CC is a rare bird among television showrunners: blue-haired and female, a punkish Jewish earth mother with a darkly comic vision so basic to her nature that the goblin of political correctness shrinks in her presence. As a writer, she is fearless. She will go there, and keep going.

"I find the funny in everything, especially the inappropriate," she says. "Maybe it's my survival technique."

Kohan's company, Tilted Productions, is based in central Los Angeles, in a Spanish Colonial-style building of pink stucco, arched windows, and iron grillwork. Built in 1926 as the Masque Playhouse, it was later renamed the Hayworth Theatre (legend has it that Rita Hayworth's father once ran a dance studio there). Kohan bought the place in 2013. Now, after a major renovation, it's a clean, spare, sunny, feng shui triumph of orderly space and calming energy, with long hallways and private writing rooms, a large open kitchen and dining area, and even a children's playroom filled with brightly colored educational toys. This is where *Orange Is the New Black*, Kohan's award-winning women's-prison dramedy series, is conceived, discussed, mapped out, written, edited, and birthed.

With the latest season of *Orange* in the can, the building is quiet today, and Kohan is relaxed. Her private office exudes warmth and comfort, as does Kohan herself. Her hair is the vivid indigo of blue velvet. Her cat-eye glasses could have been teleported from a 1962 mahjong game. Objects on her desk attest to a fondness for thrift-shop flotsam and novelty doodads: two Magic 8 Balls, a *Weeds* condom, and a beanbag emblazoned with an unprintable four-letter word starting with the letter C.

Life wasn't always this good. "I spent the first part of my life very frustrated, feeling patronized, and fighting injustice, and it doesn't work when you're young," Kohan says, seated in an armchair with her feet tucked under her. "But that frustration turned into *this*." *This* being the whole schmeer: the hit shows, the peaceful office. "Whenever anyone told me I couldn't do something, it pushed my buttons. Basically, I'm driven by vengeance."

From early on, Kohan clashed with naysayers. In fifth grade, as a "strange, depressed, and chubby kid," she circulated an anti-censorship petition after her play was canceled when a teacher objected to a scene in which an Asian character gives someone egg foo young.



Another time, she was suspended for saying to an administrator, “I’m sick of this bureaucratic bullshit” — a line that could have easily come from one of her child characters. She was hot on the

scent of hypocrisy and found battles everywhere. “I did a lot of tilting at windmills,” she says. “It’s really hard to be a kid, because you have no power. You are written off.”

Not surprisingly, Kohan’s child characters are often the moral center of the damaged adult universe they inhabit. Her first show, *Weeds*, was a half-hour Showtime comedy about a widowed suburban California mom (played by Mary-Louise Parker) who becomes a pot dealer to maintain a comfy lifestyle for herself and her young, hypocrisy-sniffing sons. Noted for its crack writing, its warped humor, and Parker’s nuanced performance, *Weeds* ran from 2005 to 2012.

The show’s success led to a great leap in Kohan’s career, and for the television paradigm generally: Kohan was one of the first showrunners to sign with the streaming service Netflix, which, after hearing Kohan’s pitch for *Orange Is the New Black*, offered her the remarkable opportunity to make an entire thirteen-episode season up front. The season would be released all at once, and subscribers could stream it online. It was a new way not only to create television but also to consume it. Best of all, Netflix granted Kohan an unprecedented level of creative freedom.

Orange, now entering its fourth season, is loosely based on a memoir by Piper Kerman, a Smith College graduate from a patrician family who served thirteen months in the federal correctional institution in Danbury, Connecticut, on drug-related charges. Critics regard *Orange* as one of the best and most important shows on television.

“The characters Jenji creates are dark, twisted, funny, and startlingly honest,” wrote Shonda Rhimes, creator of *Grey’s Anatomy* and *Scandal*, in *Time* mag-

azine, which in 2014 named Kohan one of its hundred most influential people. “She’s turned criminals into women we know, women we care about, women we root for.” Rhimes, who is Black, also praised the “breathtaking riot of color and sexual orientation” of *Orange*, crediting Kohan with “creating characters of all backgrounds who are three-dimensional, flawed, and sometimes unpleasant, but always human.”

Kohan pleads guilty. “I love flawed people,” she says. “I love the damage in these characters. It’s so human and so relatable. People spend so much time trying to hide it and cover it, and no one’s succeeding. I love embracing it. I love mess. I love gray areas. I want to live in the gray areas.”

EXT. A HOUSE IN BEVERLY HILLS - 1982

From within, we hear sounds of
PARENTAL EDICTS: “Shut off the TV! Go
be social! Go do something productive!”

INT. SAME HOUSE - CONTINUOUS

As THE CAMERA pushes through the
rooms, we see a crammed bookcase, a
menorah, a shelf crowded with Emmy
statuettes.

THE CAMERA arrives in the TV room,
where a TEENAGE GIRL is curled on a sofa,
watching Cheers.

PARENTAL VOICE

(from next room)

Go learn to play tennis!

Jenji Kohan grew up in Beverly Hills with her older twin brothers, David and Jono, and her parents, Rhea and Buz. Rhea was a novelist, and Buz was an award-winning TV writer who worked on hundreds of network specials and series, including *The Carol Burnett Show* and the Academy Awards. But the most sacred objects in the house were not his collection of Emmys — they were books. The kids were encouraged to be readers, not viewers. And not writers. Doctors and lawyers, preferably. Something secure.

Kohan was an erratic student, but she tested well. After some unhappy years in an all-girls private school, which had cutthroat social divisions, she transferred to the coeducational wilderness of Beverly Hills High.

“It was a fascinating culture,” she says. “Everyone was trying so hard to be sophisticated that there weren’t strict hierarchies. It was more like interest

“Whenever anyone
told me I couldn’t
do something, it
pushed my buttons.
Basically, I’m driven by
vengeance.”

groups. And the parties were amazing: ‘So-and-So Productions Presents: Party at Larry’s Mom’s House.’” Kohan recalls John Hughes–caliber blowouts, the kind that end with a mannequin in the pool and a pizza on the turntable. UCLA football players were hired as security. “Once you got past them, it was like the rings of hell: friends of friends on the tennis courts, friends in the house, then *really* good friends in the room with the cocaine, because it was the eighties.”

College was next. Kohan desperately wanted to go to New York, to Columbia. But there was a snag.

“Columbia wouldn’t let me in,” Kohan says. “So I started at Brandeis. Every few weeks I’d write to Columbia and say, ‘I think you made a mistake. Look! I just won a writing contest! I’m doing so well! Let me in, let me in, let me in.’ Then two weeks later: ‘Hi. Remember me? I just won \$250. You should really let me in.’”

“*Revenge* is an act of passion; *vengeance* of justice,” wrote Samuel Johnson. “Injuries are revenged; crimes are avenged.”

That’s a helpful distinction, but clearly, Dr. Johnson never saw *Orange Is the New Black*. At the fictional Litchfield Prison in upstate New York, justice is so arbitrary, and passion so suppressed, that payback becomes less a legal or moral question and more a matter of style. The dynamics of retaliation enter every relationship in *Orange*.

Fortunately, Kohan also has great love for her characters, who in turn love each other — intensely, agonizingly, clumsily. And as they play their risky games, the show exacts its own reprisals against pieties of all sorts, while smartly skewering what Kohan calls the “out-of-control prison-industrial complex.”

“It’s not a secret that the work I do is also my soapbox,” she says. “Having a soapbox is a great privilege. However, it’s not effective if you’re scolding people. I always have an agenda, but my first job is to entertain and make the audience care about those characters and stories. You’ll never get your point across or move the needle or plant ideas unless people are invested. No one wants to be lectured. People watch TV for pleasure. It’s got to be fun. Prison is a dark, dark world, but I don’t think we’re being disingenuous by making it comedic. Humor is how you survive the darkness.”

Orange is essentially a comedy. Its snappy “*Private Benjamin* goes to jail” hook got the show past the gates, where it morphed into a human mosaic of faces and figures and sexualities unlike anything on television. (“Piper was my Trojan horse,” Kohan has said, meaning that she needed a pretty white lead to sell the show, and could not have sold it on the “fascinating tales of Black women, and Latina women, and old women, and criminals.”) Equally striking is the show’s

ability to stay emotionally trenchant even as it deploys gross-out gags and takes sex to places several light years from family hour. “When we go dark, we go dark; when we go funny, we can get big sometimes,” Kohan says. “But I think both are more powerful when you juxtapose them — slam comedy right up against tragedy.”

Though Kohan considers herself an entertainer, and leaves activism to people “who are far more capable and organized,” she takes pride in the show’s influence on the discourse. “I think *Orange* has helped bring attention to prison reform, and we’ve opened discussions about the portrayal on TV of all sorts of bodies,” she says. “People are talking about things they weren’t talking about before. But I didn’t set out saying, ‘I’m going to change the face of television.’ It was just the natural extension of what I wanted to do: make a great show with people I wanted to watch.”

INT. WELFARE HOTEL - NEW YORK, 1990

A room inside a hotel on W. 110th Street.
PAN to show: roaches crawling over a kitchen counter; dead roaches on a hot plate; half-empty containers of hot-and-sour soup; a stack of books, with titles by Anthony Trollope, Homer, Gabriel Garcia Marquez, and John Cheever.

THE CAMERA reaches the couch, where a YOUNG WOMAN is watching her favorite TV show -- The Days and Nights of Molly Dodd, a half-hour magical-realism-inflected comedy-drama about the personal and professional life of a thirty-something divorced woman in New York, played by Blair Brown.

We hear SIRENS and SHOUTS out the window. The young woman is too engrossed in the show to notice.

Kohan transferred to Columbia halfway through her sophomore year. Her academic tastes were eclectic: she took classes on shamanism, film editing, and physics for poets. (According to one former classmate, she used her musings on an Elvis-bust lamp to kick off a paper on Locke and Hume, and got an A.) She had a concentration in English but didn’t declare a major. She just wanted to do the Core and get a liberal-arts education and be in New York. She was young and broke in the big, wild city. She felt free.

In her senior year she didn't get campus housing and moved into a welfare hotel. It was all part of the adventure. Off campus, she got a different education. "I had a Japanese sugar daddy," she says with a laugh. "But it was mostly chaste." On weekends, she'd take long walks downtown, ending at Franklin Furnace, a performance-art space in Tribeca. As the intern, Kohan helped set up shows ("I was told I had no visual sense; apparently, I made very ugly fliers"). She was a devotee of spoken-word performance, and caught shows around town by artists like Eric Bogosian, Spalding Gray, and Laurie Anderson '69BC, '72SOA. She dreamed of sitting on a stool in an empty space, holding an audience rapt with her own tales. But in truth, she wasn't comfortable onstage. She was too blinky, she felt. Too nasal.

She would have to write, then. After college, she returned to Los Angeles and picked up odd jobs. She worked in a juice bar in Venice and a video store on Sunset, and wrote restaurant reviews for the *Los Angeles Reader* ("they didn't have a budget to send me to restaurants, so whoever was nice to me on the phone got a good review"). One day, her boyfriend told her about his best friend from camp, who was a writer. This friend, he said, was having success in television.

Success in television. The words raised Kohan's competitive hairs. She'd written short fiction, but TV, too, was in her DNA. Maybe, then, she should give TV a shot.

That's when the boyfriend uttered his fateful opinion. "He told me I had a better chance of being elected to Congress than I did getting on the staff of a show," Kohan says, winding up to her signature one-liner. "My whole career is 'Fuck you, David Gershwin' — er, Schmavid Schmershwin."

Kohan's buttons were pushed. Missiles stirred in their silos. Schmershwin had unleashed Schmarmageddon. Kohan quit her jobs and moved to Santa Cruz to stay with a friend who was going to medical school. There, in the friend's "shitty apartment," she watched tapes of *Roseanne* and *Seinfeld* and wrote spec scripts.

She returned to LA with a stack of scripts and got her ex-sister-in-law's father to pass them to an agent who worked in the same building (the hand-off occurred, naturally, in the elevator). Kohan had always known that if she pursued television, she'd have to be resourceful. "My parents' philosophy was, 'You've got to make it on your own.' We had support, we had education, but it was not like, 'Give my kids this job.' I was supposed to be a lawyer or a well-heeled housewife, and my brother David was supposed to be a doctor, even though he can't stand the

"I always have an agenda, but my first job is to entertain and make the audience care about those characters and stories."

sight of blood." (David Kohan went on to co-create the NBC show *Will & Grace*.)

The agent was receptive, and soon Kohan, at twenty-two, joined the staff of the NBC sitcom *The Fresh Prince of Bel-Air*. She remembers a dysfunctional, quarrelsome writers' room — a "rough entrance" into show biz. Her next job was on *Friends*, where she argued with her older bosses for the inclusion of more authentic details about the lives of twenty-somethings. She was fired after thirteen episodes. Distraught, she escaped to the Himalayas to figure out her life. There, between hikes, she couldn't help writing a spec script for *Frasier*. She took it as a sign that she wasn't done with television.

Meanwhile, Tracey Ullman, the protean performer and writer, had gotten her hands on one of Kohan's scripts. Ullman hired Kohan to work on the staff of HBO's *Tracey Takes On* . . . Kohan was part of the producing team that won the 1997 Emmy for outstanding variety, music, or comedy series.

"Tracey Ullman was a huge turning point for me," Kohan says. "It was so healing, because she ran a sane and wonderful room. She gave everything a shot and set an incredible example. She packed the room with old-school heavy hitters, and then we would go off and come back for one serious day of work per week. She had a wonderful family life and did everything right, and she's just a stellar example and talent. My time with her was invaluable. I was the baby in the room, and they were lovely to me. I'll always be grateful to Tracey."

Kohan spent three years with Ullman and would later heed the lessons, implementing a "no-assholes" policy in her own writers' room and prioritizing her family. She and her husband, Christopher Noxon, a

journalist and author, have three children, ages ten, fourteen, and sixteen. Kohan is a hands-on mother (“I didn’t have kids for other people to raise”) and exerts a similar influence at work. “I’m definitely a mother hen,” she says. “Tough love, and a need to do a million things at once. I’ve worked a lot and really learned over time what I wanted my work life to be like. So we have fairly sane hours. I’m usually home for dinner. I think it can all be accomplished if you’re organized.”

INT. WRITERS' ROOM - DAY

A long table in a sunny room. Jars of colored markers on the table. The front wall is covered with photos of characters from Orange Is the New Black. There's the fish out of water PIPER (played by Taylor Schilling); the Shakespeare-quoting savant Suzanne "CRAZY EYES" Warren (Uzo Aduba, who has won two Emmys for the role); the hard-bitten prison-kitchen empress "RED" (Kate Mulgrew); the transgender hairdresser SOPHIA BURSET (Laverne Cox); the burly, tank-top-clad BIG BOO (Lea DeLaria); the young, dreamy pen-and-pad artist DAYA DIAZ (Dascha Polanco); and dozens more, including a new inmate, JUDY KING, a tax-evading TV cooking-show host played by Molly Dodd star Blair Brown. (The season-three cast won the 2015 Screen Actors Guild Award for best ensemble in a comedy.)

ANOTHER ANGLE: We see the Orange creative team, many of them women. The team is seated around the table, tossing out ideas.

KOHAN (v.o.)

We have a lot of women on the show and on our crew, and behind the scenes at our company. And they're all talented. It's always about talent. Talent overrides gender for me. It's hard enough to find a good writer, so I don't care what's dangling. If you can find talent with tits, terrific.

“Revenge,” wrote the philosopher Robert Nozick ’59CC, “involves a particular emotional tone — pleasure in the suffering of another.” Nozick argued that vengeance (he used the word “retribution”), by contrast, “need

involve no emotional tone, or involves another one, namely, pleasure at justice being done.” But Nozick admitted that the two concepts often overlap. “I do not deny that there can be mixed cases, or that people can be moved by mixed motives.”

Such are the gray areas where Kohan likes to live.

Then there’s the wisdom of the philosopher Frank Sinatra. “The best revenge,” said the great showman, “is massive success.”

Kohan seems to be an adherent of the Sinatra school. And like Ol’ Blue Eyes, she can certainly be said to have done it Her Way.

It hasn’t been easy. She’d written seventeen pilots before she scored with *Weeds*. She knows, too, what it’s like to be a minority in the room. “There’s a way that men network that women don’t, and it’s been very good for them,” she says. The result, she suggests, is that women, vying for limited spots, have tended to view each other as competition, and been reluctant to offer help. “I love to help, and I call for help,” Kohan says. “Communication among women is changing, and as that happens I think there will be an explosion.”

But Kohan isn’t a finger-pointer. She looks at a system the way she looks at a joke: either it works or it doesn’t.

“I just think the business has been incredibly stupid and shortsighted in not acknowledging that the majority of the audience is female,” she says. “I don’t think it’s necessarily intentional — I don’t think there’s a cabal of men saying, ‘Let’s keep women out.’ I deeply understand tribalism and wanting to be surrounded by what’s comfortable. But sometimes you have to force yourself out of that bubble and realize that there’s stuff to talk about with people who aren’t like you. You have to get over your bias. Once you do that, you’ll find that comfort with others.”

She could easily be talking about the women in *Orange*, for whom tribalism is a fundamental matter of self-preservation. Much of the drama concerns people’s struggles to break away, to cross boundaries, to seek acceptance, at the hazard of physical or emotional violence. Where are they going? Where will they end up?

Kohan is tightlipped about the new season (release date: June 17), for obvious reasons. “I’m very proud of it, and very excited,” she says. “It’s going to be big.”

Coming from Kohan, that’s a potent promise. Her baseline is high. But whatever she’s got in store, it will be sure to amuse and offend, inspire and enrage, stroke and poke. When it comes to her work, Kohan, as the phrase goes, takes no prisoners.

“This is *my* fun and *my* entertainment, too,” she says. “I’ve been given this opportunity, and I’m not going to pull my punches. I’ve worked too hard to get here, and this is where I want to be, and I’m not afraid.” 🍷

DIAMOND DAY

NCAA Ivy League baseball champs
past and present meet on
their home turf

By Eric Kester '15SOA



N

ormally, Rolando Acosta '79CC, '82LAW cherishes shadows.

Like the double play, shadows are a pitcher's best friend, adding an extra layer of deception to a curveball as it flitters toward the batter through the dark lines cast by a tree or grandstand. But during a frigid afternoon last February, Acosta, four decades removed from his days as ace of the Lions' pitching staff, became troubled when he looked out on Robertson Field and noticed a cluster of shadowy figures in the distance.

Acosta had been running on the track next to the diamond, trying to sneak in some exercise. Free time had become scarce since he'd been elected a New York Supreme Court justice in 2002. What puzzled him now was why, in such un-baseball-like weather, people were on the field — *his* field, the one he'd played on as a Lion and over which he felt a kind of guardianship.

That feeling is understandable, given what he achieved there. In the history of Columbia baseball, nobody has pitched more innings (336.2) or won more games (22) than Acosta. This slice of real estate at the northern tip of Manhattan is as much a home to him as the Dominican Republic, where he was born and raised. He often jokes that the only two things that matter in the DR are religion and baseball, and that sometimes it's hard to tell the difference between the two.

Acosta's childhood revolved around baseball. When he wasn't playing it, he'd gather in the center of town with other poor kids to watch the San Francisco Giants on television. In the 1960s, the Giants were island favorites: their star pitcher was Juan Marichal, known as the "Dominican Dandy." But Acosta's parents wanted more for their kids. So, at the age of fourteen, Acosta moved with his parents and four siblings to the Bronx, where he had to learn a new language, a new measuring system, and a new culture.

Baseball, though — that was the same. Here, the mound was still 18.4 meters (or 60 feet, 6 inches) from home plate. Here, a catcher flashing an index finger still meant "bring the heat." Upon arriving in the Bronx, it didn't take long for Acosta to find the nearest pitcher's mound — that little island where he felt most at home.

Home for Randell Kanemaru is Santa Ana, California. But on that February day, as wet



JUSTICE ON THE MOUND: Rolando Acosta, a New York Supreme Court judge, was once a star pitcher for Columbia.

MIKE McLAUGHLIN

snowflakes pelted his cleats and cap, home surely felt even farther away.

The sophomore second baseman took the 1 train up to Hal Robertson Field at Phillip Satow Stadium, where he joined a small group huddled on the infield. The snow was picking up, but when it landed on the field's synthetic turf, it instantly melted.

"It doesn't matter if it snows or rains," Kanemaru says. "If it's above 32 degrees, we're definitely going to squeeze some work in."

For college-baseball powerhouses like the University of Central Florida and the University of Houston, year-round mild weather is a major advantage. But what the Lions lack in climate they make up for in commitment (and synthetic turf). That's why they're out there on days when fly balls twist wildly in winter gales, and when cold metal bats punish your hands with a bone-rattling sting if you miss the sweet spot.

The hard work has paid off. From 2013 to 2015, the Lions won three consecutive Ivy League championships. The program is now capable of attracting even the most elite players, like Kanemaru, who, as a freshman, started 41 games and batted .296 on his way to being named the 2015 Ivy League Rookie of the Year. It was one of the best years by a Lion freshman since 1976, when a young right-hander notched



So instead, Acosta planted himself on the third-base line and watched. He had an endless list of things to do: appeals to hear; decisions to write; Columbia trustee business to attend to; a workout to finish. But as the late-day sun began to push through the clouds, and the sound of balls popping in leather mitts echoed across the field, he knew he wasn't going anywhere.



When Acosta first stood on the mound for Columbia in 1976, he was standing atop a tradition already more than a hundred years old. Columbia's first recorded baseball game took place on May 27, 1867, when a group of young Columbia men, the Civil War and its raw lessons of mortality still fresh in

the hands of the Elis didn't exactly spread baseball fever across campus.

Baseball returned to Columbia in 1884, but the sport truly caught on in 1921 with the arrival of a student-athlete known around campus as "Biscuit Pants." This moniker, a reference to the baggy trousers he wore over his thick lower body, was probably not one he relished. No matter: when the slugger, the quiet son of German immigrants, began launching majestic blasts that soared over the wall of old South Field, over 116th Street, and landed on the steps of Low Library, a new nickname took hold. "Biscuit Pants" would no longer suffice; he became known simply as "Columbia Lou," a name that stuck on campus even after Lou Gehrig '23CC left for Yankee Stadium to become one of the greatest hitters the game has ever known.

In 1930 the Lions joined the Eastern Intercollegiate Baseball League (EIBL), which included Army and Navy teams

"I didn't *exactly* guarantee victory over Harvard in my interview with the *Crimson*. But I came pretty close."

52 strikeouts in 73 innings and posted a 3.33 ERA. Those numbers belonged to the lone figure now poised by the running track, watching Kanemaru and his teammates.

"Hey, isn't that the judge?"

The players waved, shouted hello, urged Acosta to come down and throw some batting practice. Acosta smiled and declined. The last time he accepted their invitation, his body couldn't keep pace with his ageless competitive streak. He threw hard and he threw well, but he was so sore the next day that he couldn't raise his arm to wash his hair.

their minds, happily traded bayonets for bats. They defeated a squad from NYU by the no-that's-not-a-typo score of 43-21. The following fall, the team traveled to New Haven to face Yale. This was the last Columbia baseball game for almost two decades, and while the reason for the sport's sudden disappearance remains unknown, one imagines that the 46-12 drubbing at

in addition to the traditional Ivy League. They had some early success, but as the decades wore on, the Lions' luck faded, until they found themselves entering the 1976 season with a thirty-two-year championship drought (excluding a three-way share of the EIBL title in 1967). Harvard had a death grip on the league, gunning for a fifth straight title. Of course, they had yet to meet Columbia's freshman



DIAMONDS ARE FOREVER: The 1976 Ivy League champs, then and now.

pitcher, a kid from the Bronx who brought with him an electric fastball and something more than confidence.

"I didn't *exactly* guarantee victory over Harvard in my interview with the *Crimson*," Acosta recalls now with a wry grin. "But I came pretty close."

Closer, at any rate, than Harvard bats came to Acosta's pitches. Despite a hostile Harvard crowd jeering the freshman, Acosta took the mound with a cunning game plan and a sense of justice befitting a future judge.

"The best hitters are always crowding the plate," he explains, "not letting you pitch to the inside corner. But I went out there with an attitude of, 'Hey, that plate is just as much mine as it is yours.'"

Acosta owned the inside corner that day, shutting down Harvard in one of the great performances of a career that featured four straight All-Ivy honors and EIBL Pitcher of the Year honors in 1977 and 1979.

Today, you'll find Acosta at most Lions home games, in dark sunglasses and a polo shirt, riding the umpire ("Come on, Blue! It's right down the middle, Blue! You've got to call it both ways!"), and happy to recount those magical seasons. You won't hear even a whisper of his honors. Instead, the Columbia Hall of Famer will proudly reel off the names of his teammates. He'll gush about Mike Wilhite '78CC, '07GSAPP, the center fielder who batted .448 in 1977, and then, in 1978, hit eight home runs, breaking the Lions record set by Columbia Lou. He'll recommend the baseball books written by pitcher Bob Klapisch '79CC. He'll tell you Paul Bunyan-esque tales

of Bob Kimutis '76CC, the 245-pounder so intimidating that opposing pitchers walked him 25 times in 29 games.



On April 23 of this year, in the middle of a Lions double-header against Princeton, the 1976 team gathered on Robertson Field to celebrate the fortieth anniversary of their championship season. When these guys get together, it's like stepping into a time machine. Yes, Acosta is now officially titled the Honorable Rolando T. Acosta. But Bob Kimutis still calls him "Freshman."

Among the '76ers on hand that sunny Saturday was the coach, Dick Sakala '62CC, who led the Lions from 1973 to 1977. Ask Sakala about Acosta, and he has two words: Juan Marichal. "That high leg kick, that beautiful motion. Rolando was our difference maker," Sakala says. "We played three games a week, one on Friday and a double-header on Saturday, and we always started Rolando on Friday so that we could go into the weekend feeling relaxed."

Right fielder Charlie Manzione '76SEAS was there with his Worth aluminum bat, with which he hit .303 in 1976. He points to his head when he talks about Acosta. "Rolando was an extremely smart pitcher. He had this ability to read the hitter and set him up so that certain pitches were almost impossible to hit. And he'd locate his pitches: up and down, side to side. He never threw down the middle of the plate." As for the team, Manzione says,

"Everyone got along. No cliques, no personality questions. We had a great mix of upperclassmen and newer players, and we fed off of each other."

Forty years later, the Lions, under coach Brett Boretti, are making their own history. Since Boretti took over in 2005, the Lions have won four Ivy League titles.

"The coaches do a great job at building team culture," says Kanemaru.

"They're different because they don't necessarily recruit the guys who are the best players but the guys who are the best fit. We want the players who will become


a part of our family, not selfish players who care about stats."

A tight-knit clubhouse has become one of the program's main selling points to recruits, and it's yielded tremendous return. Kanemaru is a prime example. "Aside from Columbia, a few schools in California were recruiting me," he says. "So I called around and asked about the environment on campus and in the locker room. I talked to Coach Boretti, and he really emphasized what the team is all about."

Kanemaru hopes to soon join teammates George Thanopoulos '16CC (drafted as a pitcher by the New York Mets), Jordan Serena '15CC (drafted as an infielder by the Los Angeles Angels), and Gus Craig '15SEAS (drafted as an outfielder by the Seattle Mariners) as a Major League Baseball draft pick. His 2016 numbers shouldn't hurt his case: a .340 batting average (second on the team to infielder Will Savage's .367), and a team-leading .573 slugging percentage.

Still, he considers himself as much a psychology major as a ballplayer. After all, like Acosta, Kanemaru chose Columbia primarily for the education.

"I know baseball won't be there forever," he says.

It's a mature perspective. But someday, perhaps, Kanemaru will be like Acosta, sitting in the stands with his old teammates, telling stories of the past while watching the future, and he'll know that this perspective, while wise, is not necessarily true. 

UNDER THE

Today, there are thousands of LGBTQ groups on college campuses around the world.

In 1966, there was only one

By Bill Retherford '14JRN

Unlike Dorian Gray, whose portrait festered in an attic, the photograph of Stephen Donaldson languishes underground, framed yet unhung, placed unceremoniously on a tile floor and shoved uncelebrated next to a bookcase in a basement room of Furnald Hall, a century-old dorm on the Columbia campus. Sunshine-yellow walls and Caribbean-blue support beams brighten the room, known for twenty years as the Stephen Donaldson Lounge. Little happens here until Sunday afternoons, when the students of the Columbia Queer Alliance meet. They “vaguely” know about Donaldson. “He started the precursor of our group,” said one, which is true. And he “looks jaunty in his portrait,” which he does — half-Italian, young, grinning and buoyant, his dark curly hair topped by a sailor hat.

The queer lounge, in a delicious historical paradox, actually functioned as a closet for quite some years, a place for the building’s janitors to stash supplies. When the room was posthumously dedicated to Donaldson in November of 1996, its namesake had largely been forgotten. Donaldson surely would have hated that. “He was very self-promoting,” said Wayne Dynes, a friend and former Columbia professor. “And very solicitous of his role in history.” A role indisputably singular: a half century ago, in Columbia’s 1966 fall semester,



Illustration by Brian Stauffer

RAINBOW



twenty-year-old Stephen Donaldson, a sophomore, founded the first queer student organization ever on a college campus. Undercover, unofficial, and unfunded — the Columbia administration dithered a while before coming around — but still, the first of its kind in the “whole wide world,” as Donaldson liked to say.

For a man adoring of attention, a glaring absurdity exists. Stephen Donaldson was not his name. But the pseudonym reflected a sensible precaution; in 1966, one rarely revealed his real name in a gay bar, and absolutely never as the de facto president of a clandestine queer club at Columbia University. Donaldson, actually Robert Martin, was interchangeably called Bob, Stephen, or Donny by friends, acquaintances, and lovers, all of whom repeatedly corroborated one thing about him — Martin, the gay activist, wasn’t gay. Not by the rigorous definition of the word, at least. Wildly adventurous sexually, yes. Crazy about men, sure. But exclusively gay — no. “He always claimed to be bisexual,” said Dynes.

College in Oakland, California. “But then he would try to fix the problem. He was always fixing things for the people ahead of him, to make sure it never happened to them.” And as Martin’s activism accelerated, and the fallout landed, the pummeling he took, whether physical or psychological, never stopped him. “Just an extraordinary figure,” said Peter Awn, the venerable Columbia professor of religion who spoke at the Donaldson Lounge dedication. “He fought the culture.”

“That was the thread of his life,” said the Reverend Troy Perry, founder of the Metropolitan Community Churches, and Martin’s friend from the sixties. “Bob willingly gave of himself to see the movement grow. He was actually a very gentle man. In the weirdest way, he was almost Christlike.”




If Bob Martin was a martyr, consider the following a national act of veneration: in 2016, thousands of LGBTQ student organizations endure on US

(Columbia Law School), Queer TC (Teachers College), Cluster Q (Columbia Business School), and Q (Barnard College). And then, subcategorizing: GendeRevolution (transgender), Proud Colors (queer/trans people of color), and JQ (Jews). No one knows exactly how many queer students attend Columbia — there’s no data — but educated conjecture suggests at least three thousand, about 10 percent of the total campus population.

“Inclusion is now a core value,” said Dennis Mitchell ’97PH, a Columbia professor for twenty-five years and vice provost for faculty diversity and inclusion. “Today you can’t achieve excellence without diversity.” Or without investment. Mitchell’s \$3 million LGBTQ faculty-diversity initiative, a plan to hire four professors focused exclusively on queer studies, is “a very big deal,” he said. “A first. No other university has ever supported a cluster hire of scholars engaged in LGBTQ studies.” The new faculty could be in place as early as the fall semester of 2017.

“This really changes the game for queer students,” said Jared Odessky ’15CC, an LGBTQ advocate and legislative aide to Brad Hoylman, New York’s only openly gay state senator. “The hires are a clear message from the university that this is a priority.” Right now, the school’s LGBTQ classes, though out there, aren’t always available; ferreting out Columbia’s fitful offerings is chancy. “I had to hunt them down,” remembered Odessky. “But now we’re going to see a robust program. This may encourage more Columbia students to pursue research on LGBTQ topics.”

Not that long ago, the notion of any queer academia at all, much less a burgeoning curriculum, was “a joke, just ridiculous,” said Sharon Marcus, Columbia’s dean of humanities. But today, not only do queer students demand the classes — so do straights. “Students are interested in these issues no matter how they identify,” said Marcus. “No one knows what the sexuality of their child will be. They’re interested in learning about sexuality, period.”



The pummeling Martin took, whether physical or psychological, never stopped him.

Something else about Martin, and this too is completely contrary to his supposed self-aggrandizement: he’d always take the hit, and usually without a shield. “Terrible things happened to him,” said Ellen Spertus, a colleague during the mid-nineties, and now a computer-science professor at Mills

college campuses. Any university without one is now the deviation; Columbia currently maintains more than a dozen. “Each school has its own group,” said Chris Woods, assistant director of multicultural affairs and LGBTQ outreach. “Like Lambda Health Alliance — that’s the medical school.” Also OutLaws

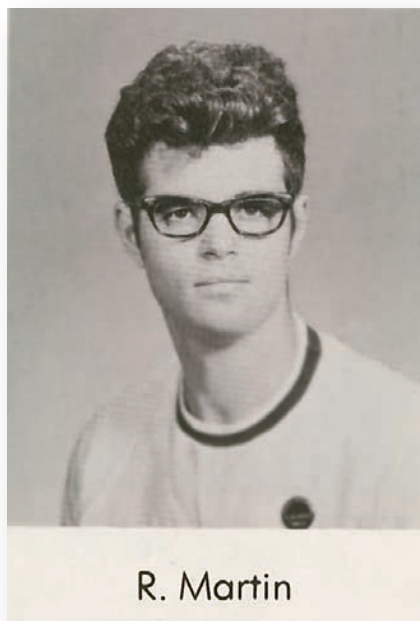
Although Columbia has no major in LGBTQ studies, the school may offer a minor “as we go down the road,” said Mitchell. That road, he hopes, will leave the other Ivies staring at Columbia-blue taillights: “I’m clearly biased, but I believe we lead on this.”

“Fifty years of remarkable change,” said Awn, summing up a half century of progress. “It represents a triumph of the human spirit. To engage in a battle that no one ever thought you could win. And then — to actually win.”



During Bob Martin’s early years at Columbia, barely anyone was battling; politically speaking, not even a spat had occurred. Nobody dared. Stonewall was still to come. New York’s Gay Pride Parade was nary a figment. Go to a gay bar in the Village and the cops could jail you. Reveal your real orientation at work and the boss might fire you. Open up to friends and most would ostracize you. Dis-close to family and they could disown you. Walk down the wrong street and they’d scream out an F-word: fairy, faggot, fruit, flower, flamer. (Or pansy, perv, limp wrist, lesbo, homo, or any of another hundred pejoratives, most far nastier.) More erudite company chose the word “degenerate” — not any better, really — icy, unforgiving, and clinical.

Admittedly, Paul Lynde was spouting double-entendres, saturated with gay subtext, as the amusing center space on *The Hollywood Squares*; Truman Capote was suitably celebrated for his masterpiece *In Cold Blood*, which came out about the same time Martin did at Columbia. But otherwise, media depiction of gays, negligible anyway, nearly always portrayed them as frightening, predatory creeps. *The Homosexuals*, a relatively sympathetic CBS-TV documentary of the time, nevertheless sustained a gloomy and sometimes spooky narrative. From the voice-over of correspondent Mike Wallace: “The



Columbia
yearbook photo
of Robert
Martin.

average homosexual, if there be such, is promiscuous. He is not interested in, nor capable of, a lasting relationship like that of a heterosexual marriage.”

“We had to keep our sexuality a secret,” said Don Collins, a retired psychologist and a friend of Martin’s. “I would go down to the Village on the weekend and hang out in gay bars. But you couldn’t relax in straight company. They would hate you if they found out. So you would say, ‘I saw the gals in the Village — man oh man, they were hot!’” Collins, who could pass for straight, got by: “You know what the word ‘butch’ means, right? Well, I came from the Bronx, from working-class people. I had a front.”

On campus, queer students were watchful. “Columbia was not a welcoming place,” recalled Dotson Rader, a celebrity interviewer and writer, and one of Martin’s classmates. “If you were openly gay at Columbia, they would send you to a shrink. Or kick you out. The basic attitude was ‘go away.’” Even the school’s queer faculty, always on yellow alert and ruminating about job security, stood cautious. “Everyone knew who was gay,” said Awn, today the dean of the School of General Studies. “But the fear was whether or not it would impact your tenure review.”

“I went to a faculty meeting to evaluate student applications,” said Dynes, who taught art history at Columbia in the sixties and seventies. “Someone would see a photograph and say, ‘This looks like a weak sister.’ That was the euphemism for it.” Presumably queer students weren’t blacklisted, but “the assumption was they would not do well.” Dynes, who is gay, didn’t protest. But the “gossip mill was working,” and he remembered how one homophobic male professor would recurrently scold a female colleague: “He’d say, ‘Why are

you hanging around with Dynes? He’s a fag.’ She would say, ‘Well, I don’t know anything about that.’” Later, Dynes learned his

female friend was a lesbian.

Against this monolith, Martin hardly appeared a candidate to sling the first stone. Arriving in New York City in August of 1965, he had no money, no friends, and no plan. Friends he found quickly. After all, he was “gorgeous, just a stunner,” said Perry. “With a charisma. When Bob spoke, people would lean in. He could talk about anything. I thought he was one of the smartest men I had ever met.” (Martin claimed a Mensa-certified IQ of 175.) But he was “soft-spoken,” said Perry. “And spiritual. I never saw him hateful with anybody.”

Over the decades, Martin would morph from Quaker pacifist to Buddhist monk. But even he would not declare that Divine Providence drove him to Columbia University at age nineteen. That one’s on Lois, his mother; long divorced from Martin’s father, she lived alone in Miami. Martin tried to spend the summer there, but she ran him off, with her “hysteria over homosexuality,” as Martin put it. He doubted Columbia would take a queer, but a friend called the dean’s office to ask. Columbia said yes, it would. With two stipulations. Commit to ongoing



Recruiting members on campus for the Student Homophile League, 1970s.

psychotherapy — and promise not to seduce classmates. Martin agreed.

During freshman year he found no gay students or faculty. And his three roommates, with whom he shared a suite at Carman Hall, told the dean they didn't want to live with a homosexual. The boys tried to be decent, and tendered awkward apologies. But the incident, Martin wrote, was "traumatic." Columbia assigned him a single room. Now he felt truly alone.

Perhaps nothing characterized his isolation more than this wistful postscript in a letter to a friend: "Now and then, say a prayer for me. There is no one on Earth who doesn't need it."



Notwithstanding society's ever-quickening acceptance of queer — in 2016, coming to terms with your sexuality, while simultaneously coming out to everyone around you, remains an agonizingly lonesome place.

At the Donaldson Lounge, the students of the Columbia Queer Alliance, like Bob Martin, carefully guard their

identities. Only four of the ten members interviewed would reveal a first name, and none their surnames.

"They are cautious," said Chris Woods, who oversees the group. "Oh, yeah. Cautious on Facebook, cautious about who they tell." Including family members — many queer kids haven't yet come out to their parents.

"And they have no intention of doing it anytime soon," said Woods. "Some depend on parents for financial support. What happens if you are disowned?"

Said one student: "I have lots of friends who have been cut off financially. Or the parents say, 'I'll pay for college, but after that, don't come home.' How do you get through school, how do you live, if your parents won't pay for your education? It's a disaster."

Conversely, and perhaps curiously, a May 2015 survey by the Pew Research Center said most Americans — 57 percent — claim they "would not be upset" if they had a child who came out as gay or lesbian; only 17 percent would be "very upset."

But that's a what-if hypothetical. Smacked with unwelcome news in their living room, many parents react with resentment and rage. "They have a lot of expectations," said Woods. A sense of ownership prevails, as "parents think of the investment they've made all these years."

At the lounge, students readily confirmed family conflict and cutoffs. Acknowledged one: "A lot of us tend to have terrible relationships with our parents."

Said another: "My dad doesn't believe bisexuality is real. My mom just believes it's a phase."

And another: "I told my mom when I was a senior in high school. She told me she should have sent me to church when I was a kid. I never brought it up again."

Just ahead for Columbia's queer students is graduation, which today carries a new risk — job hunting while out. As described in a January

2016 study published in *Socius*, a journal of the American Sociological Association: a researcher sent a pair of fake résumés from fictional women to more than eight hundred employers. One résumé listed membership in an LGBTQ student organization. The other did not. Those with the queer distinction received 30 percent fewer responses.

"For graduates going out into the world, it's an eye-opening experience," said Adam Nguyen '98CC, president of the LGBTQ alumni group Columbia Pride. "Your self-expression may not be easily accepted." And even after you get the job, you're not always sheltered. "There's subtle, day-to-day discrimination," he said. "Like not being promoted. Not being staffed on certain projects. 'Is so-and-so too flamboyant to meet a client?'" That's "prevalent," Nguyen said, even at companies with nondiscrimination policies in place.

"The fight is not over," said Troy Perry, alluding to the same-sex marriage

victory in the US Supreme Court. “Now we’ve got to fight for everything else.” Perry, along with many LGBTQ leaders, contends the win induced a drowsy languor; that within the queer community there lolls a widespread conceit — that marriage is not just a milestone, but a capstone. “In other words, ‘Now we have same-sex marriage, so we’re done,’” said Nguyen.

But in twenty-eight states, gays and lesbians don’t have full job protections. A queer couple can marry on Saturday, share wedding photos online Sunday, and be terminated by a social-media-savvy yet homophobic boss on Monday. Not only is the movement not over — perhaps it has not even entered the endgame. Perhaps, in too much of the queer community today, the battle is not only about discrimination from the outside — but disengagement from within.

“We’re not under siege anymore,” said Peter Awn. “So we’re not all that well-organized anymore. The perception is that the battle is won. And that’s a shame.”



October 28, 1966, was the “birthday,” as Bob Martin called it, of Columbia’s Student Homophile League. But in lieu of a party that Friday afternoon, a rather twitchy engagement was held at Earl Hall, attended by two dozen of the school’s administrators and mental health counselors. All had assembled to absorb a mortifying announcement: the world’s first homosexual student organization was starting, right there, at Columbia. Granted, the group was tiny — early on, there were maybe three members, scarcely enough for the school’s skeptical bureaucracy to take seriously. But Martin had procured a formidable sponsor — the University’s controversial chaplain, the Reverend John Cannon, a straight Episcopal priest. “Our lightning rod,” wrote Martin. “He put his own neck on the chopping block for us.” As for the Earl Hall meeting: “A lively debate.”

From the outset, Martin knew the trickiest part would be finding members for the organization. Plenty of homosexuals were on campus, certainly, but very few ever bolted from the closet. Martin had met another gay student, Jim Millham ’67CC, a psychology major; Millham, in turn, pushed several highly disinclined gay classmates to join up. (“Keep us out of it” was the initial response.) Superstar students were recruited, whatever their orientation — popularity and clout were what counted — and a few went along. “Seems to me I signed a paper that made me a member,” said Dotson Rader, who then identified as bisexual. “But I don’t remember going to any meetings.” Two straight women from Barnard enlisted; Martin, though more into men, briefly dated one of them. “And I wanted to pursue the relationship,” said Seana Anderson. But when Martin sat her down to explain he liked guys too, Anderson made it easy. “That’s OK,” she said.

rides” while in elementary school. With that background, signing on with a queer organization didn’t seem much of a stretch. “Anyone who was oppressed,” said Lee. “To us, it was all relevant.” The stitched-together alliance now had about ten members.

Not a few administrators envisioned alumni contributions hitting cement. Others wondered about government harassment. Surely the FBI would deem any homosexual organization subversive. But Columbia’s Committee on Student Organizations, charged with conferring recognition to campus groups, was receptive to Martin’s request for a charter. There was one caveat: provide a membership list — and no pseudonyms, please. That was a sticking point; nearly everyone rankled at identifying themselves publicly. Martin demanded anonymity. “Bob thought it would be dangerous to give them our real names,” said Anderson. Six months of wrangling followed until the school relented. Their identities would remain confidential.



Barely anyone was battling then; politically speaking, not even a spat had occurred. Nobody dared.

“Let’s just be friends.” Named group secretary, Anderson then conscripted her roommate, Carol Mon Lee; that was easy too. “Seana and I didn’t have a big conversation about it,” recalled Lee. “I just said, ‘Sure, of course, I’ll help any way I can.’” Already, both women had been energized by the escalating women’s movement, and Anderson was immersed in “civil rights and freedom

When Columbia granted approval on April 19, 1967, Martin instantly dispatched a press release to every media outlet he could think of, and received nearly no response at all — just a brief interview on WNEW, a New York radio station, and a front-page article in the *Columbia Spectator*. Not much else happened until May 3, when the *New York Times* sniffed out

the story and slapped it on page one. Now, suddenly, everyone noticed. “All the papers, all the TV stations, all the radio stations,” wrote Martin. “The next couple days were frantic as media — which had ignored the press release — suddenly wanted the information I had already given them.”

If October 28, 1966, was the group’s birthday, then May 3, 1967, was its baptism. The story went worldwide. Columbia administrators were horrified by the publicity; a homophile organization was “a quite unnecessary thing,” said one, “and sure as hell won’t help” funding or recruitment. Sacks of mail — fuming, hysterical — arrived at the school. Martin was not displeased. “We were celebrities,” he chortled. And already he had a vision: “I saw Columbia as the first chapter of a spreading confederation of student homophile groups.”

That’s exactly what happened. Within two years, Cornell, NYU, Stanford, MIT, and Rutgers, inspired by Columbia’s daring, established gay organizations. Within four years, about 150 queer student groups had launched on college campuses. And at Columbia, within a few months of the *Times* article, much

accruing tax on his psyche. A couple of years following the commencement of the Student Homophile League, Dotson Rader was visiting Cowboys and Cowgirls, a gay bar in Manhattan. There he saw Martin, in a sailor suit. Rader brought Martin to his table and introduced him to Tennessee Williams the Pulitzer Prize-winning playwright, and Rader’s companion for the evening. Martin stayed about fifteen minutes, long enough for both men to notice something peculiar. “Bob had a resentment, an anger inside of him,” said Rader. “I had the sense he was walking on the edge of hysteria. Tennessee didn’t like him.” Indeed, when Martin departed, Williams lyrically opined that Martin was “a collector of grievances.” He seemed “so twisted by abuse,” said Rader, “that all that was left was victimhood. He took on victimhood as an identity.”




Martin graduated from Columbia in 1970 with a degree in political science, and straightaway joined the Navy. (“He told me he went in because of

protest; he was put in a cell called “the playground,” where dozens of prisoners took turns raping him. (“Forty-three times,” said Perry.) Martin went public with the hideous story and made national news.

Then, in 1980, what Martin characterized as “the last straw” — actually, a staggering act of self-detonation — unspooled at the VA hospital in the Bronx. Seeking treatment for a sexually transmitted disease, he was turned away by the attending physician after a four-hour wait. Martin went home, drank “two tall glasses of straight liquor,” returned to the hospital, pointed a loaded pistol at the doctor’s throat, and demanded a penicillin injection. “I don’t want to hurt anyone,” he said. “I’ll surrender as soon as I get treated.” They convicted him on six felony counts, including kidnapping and attempted murder. Sentenced to ten years, Martin got out in four. He described his folly as “a revolt against the system.”

Martin always said prison gave him HIV. Even in his last years, he occasionally submitted to interviews on television talk shows to detail his gruesome jailhouse experiences. “So we bought him a suit at Bloomingdale’s,” said Ellen Spertus. “By then he had a big middle and his hair was gray. You could tell he had a rough life.” Martin had little opportunity to wear the suit. AIDS killed him a few months later, in July of 1996, about a week before his fiftieth birthday, and four months before the dedication of the Donaldson Lounge.

Throughout much of his life, Bob Martin suffered from depression, insomnia, and panic attacks. As did his mother, Lois. Somewhere along the way, between his battles, they reached out to each other. The son wanted reconciliation. The mother needed absolution. What she had done, he forgave; what he had become, she accepted. They resurrected their relationship. Martin saved her letters until his dying day. “I hope very much you have love, Cheri,” she once wrote. “Always I hope that. I don’t care what kind. As long as it’s love.” 🐾



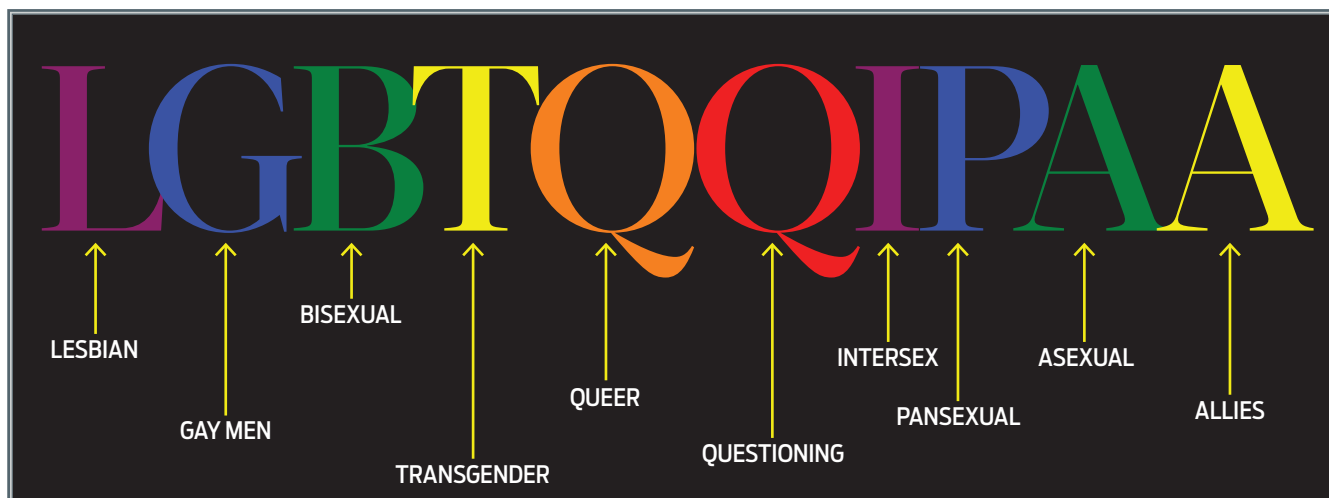
“Inclusion is now a core value.
Today you can’t achieve
excellence without diversity.”

of the initial controversy had subsided. As Martin noted: “All my friends know about me now, but I have not encountered any hostility yet.” A penniless outcast had kindled a global movement.

But commingling with Martin’s ceaseless crusading was a swiftly

all the beautiful men,” remembered Anderson.) In 1971, the Navy kicked him out for “suspected homosexual involvement”; he fought six years before getting an honorable discharge. In 1973, police arrested him in front of the White House during a Vietnam War

ACRONYM ACROBATICS



Even those who resolutely cling to the lumbering acronym LGBTQ readily concede its linguistic clumsiness. Unmemorable, unpronounceable, unhitched from vowels, and untethered from cadence, the ungainly LGBTQ serves our syntax as a shorthand for the spectrum: L (lesbian), G (gay men), B (bisexual), T (transgender), and Q (queer or questioning, your pick). Hence, the acronym's singular virtue — inclusiveness. Supposedly, LGBTQ, an earnest if inelegant cipher, embodies the entire rainbow community.

"LGBTQ attempts to be inclusive, and I applaud that," said Marcellus Blount, an associate professor of English and African-American studies at Columbia.

"But it's still imprecise."

Imprecise, because so much is missing. LGBTQ avoids A (asexual). LGBTQ ignores I (intersex). LGBTQ precludes P (pansexual). LGBTQ averts another A (allies). LGBTQ quashes a second Q (queer or questioning — again, your pick).

But cram those together and create an even clunkier pile-up: LGBTQQIPAA. (Or concoct a mathematical amalgamation, and conjure this gargyle: LGBTQIP2A.)

"We don't really have a terminology that does what we want it to do," said Blount. "It gets in the way of what we want to say."

Even LGBTQQIPAA (ten letters!) is hardly all-inclusive. Consider C, for cisgender. D, for demisexual. TS, Two-Spirit. Bigender, genderqueer, aromantic — just do a Google reconnaissance — and discover all the ways of slicing the spectrum.

"No matter how many letters you add to LGBTQ, it will never be the perfect term," said Jared Odessky '15CC.

Which is why another descriptor — long familiar, but reconstituted by a new generation — is an easily pronounced, eminently spellable one-syllable word.

"Queer," said Odessky. "A much better umbrella term." As one member of the Columbia Queer Alliance put it: "Queer is more encompassing."

And not just at Columbia. Queer, as a new and improved synonym for the LGBTQ acronym, trends globally, though mostly among millennials.

Odessky confirms it's an age thing: "Around my parents, I generally use gay, but among friends I tend to say queer."

But Blount, a Columbia professor for thirty-one years, has issues there, too. "We should be very careful how we use queer," he said.

The word's jarring etymological narrative traces back to the early 1500s, when it denoted something strange, even eerie. By the late nineteenth century, queer became "a term of ridicule," said Blount — a slur aimed at homosexual men. In the 1990s, gay activists politicized it ("we're here, we're queer, get used to it" was their prevailing mantra). About that same time, LGBTQ attained wide acceptance — and commenced to compete with queer for usage in both academia and pop culture.

"Queer is now a sign of pride, not derision," said Odessky. "We've reclaimed a word that was used to harm the community."

Reclamation is laudable, acknowledges Blount. "But by itself, queer is a weak umbrella," he said. "It has been used so unevenly it can mean anything." Plus the word's pejorative history: "That, unfortunately, is lost on my students." Picking between the two, Blount prefers the admittedly imperfect, but slightly more specific, LGBTQ.

"At least LGBTQ attempts to enunciate differences, rather than smoothing over them," he said. "It doesn't speak of identities in a single breath." Then, he suggests: "The language is evolving, just as identities themselves are evolving. Let's agree to disagree and put this aside." Otherwise, get stalled in semantics — and the community won't go forward. "I care about the language, but I care more about the movement," he said.

Till then, though, the tiff over terminology remains "hotly debated" in Blount's classes. "Language and identity cannot be separated, so students are passionate," he said. And in this war of words, Blount rarely gets the last one. "I just try," he said with a sigh, "to keep the peace."

— Bill Retherford

Don't Drink the Water

David Rosner, Columbia's Ronald H. Lauterstein Professor of Sociomedical Sciences and the codirector of the Mailman School's Center for the History and Ethics of Public Health, is known for his work on occupational disease and industrial pollution. An expert on lead poisoning, he helped bring the water crisis in Flint, Michigan, to national attention, and he regularly serves as an expert witness in lawsuits against the lead industry. We asked him to explain what went wrong in Flint, and how we might prevent future public-health catastrophes. **By Claudia Dreifus**



Columbia Magazine: How did you first learn of the situation in Flint?

David Rosner: I got an inquiry from an editor at the *American Journal of Public Health*, asking if I'd peer-review an article on poisoned drinking water in Michigan.

The paper under review had been written by Mona Hanna-Attisha, a pediatrician at a hospital in Flint. By crosschecking the medical records of her patients, she'd observed that the lead levels in their blood had spiked after Flint stopped buying clean water from Detroit in 2014 and started using the Flint River as its primary source of drinking water. This doctor, I could see, had documented a major public-health failure.

Of course I recommended publication. At the editor's behest, I also wrote an accompanying editorial, "Flint, Michigan: A Century of Environmental Injustice." In coupling Dr. Hanna-Attisha's report with my editorial, the journal's editors were putting their prestige behind her. They were signaling to the public-health community: "Pay attention — this isn't hype."

What was your initial reaction to her findings?

I was upset and angry. Anyone who knows the history of Flint knows that beginning in the 1920s, and for roughly the next



fifty years, the automotive industry used that river as an open sewer. We're talking about acid from batteries, remnants of lead paint, plastics, and solvents being dumped into it. The history of that river is a history of pollution, which is probably why in the 1960s, the municipality's leaders stopped using it for drinking water and started buying clean, properly treated Lake Huron water from the City of Detroit.

So what was my reaction? It was outrage. This disaster was entirely preventable. Why hadn't this city's leaders carefully checked the water for heavy metal and bacterial contamination? Why would anyone allow children to drink from that river?

What's your guess on that?

Money. That's the surface reason. As more information emerges, we are also learning about leadership failures, cover-ups, and what seems like a bureaucratic indifference to the fate of the city's residents. Flint is a bankrupt town. Once a bustling hub of factories, it has lost much of its tax base since the decline of the American automotive industry. It's a very poor place, with a shrinking and impoverished population.

Given this genuine financial crisis, the city's leadership announced they would stop buying water from Detroit and use treated water from the Flint River. Five million dollars could be saved.

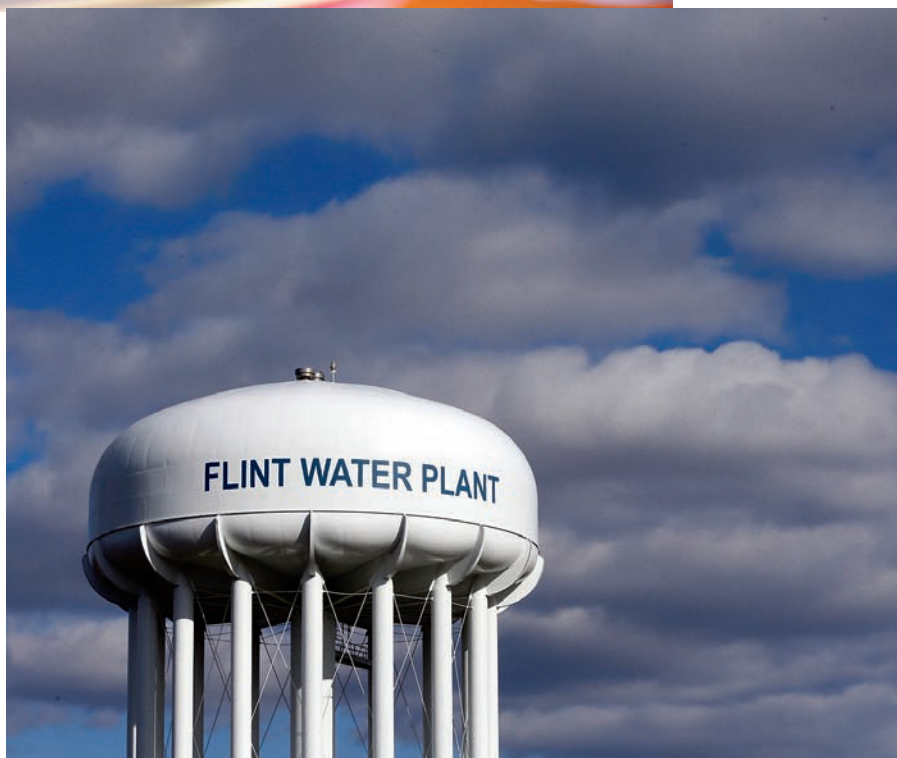
What was unforeseen was that the very old pipes connecting the municipal water supply to many homes were made of lead. Once the highly corrosive water was released into the water mains, it ate at the lead in the pipes, interacted with it, and allowed it to leach into the drinking water.

Why is lead so dangerous?

It's a neurotoxin. It can harm people of all ages, and when ingested by children, it can lower IQ, make for behavioral problems, and create permanent neurological damage. The damage is mostly irreversible.

The thing that's so troubling is that we don't have any idea what a safe level of lead exposure might be. With children especially, it has become clear that you don't need a lot. In recent years, the medical community has come to recognize that even small amounts can be toxic.

But what happened in Flint isn't small. Among public-health experts, there are consensus guidelines suggesting that *fifteen* parts of lead per billion parts of water is the upper level for "acceptable" drinking water. In Flint, levels were sometimes at *eleven thousand* parts of lead per billion parts of water. I recently saw a report about one Flint home where the contamination was at fifteen thousand!



TOP: DIANE BONDAREFF; BOTTOM: AP PHOTO / CARLOS OSORIO

Has anything good emerged from the Flint water crisis?

Flint has put lead poisoning back into public discussions, where it badly needs to be. When I was an undergraduate in the late 1960s, people talked a lot about lead poisoning. The issue was seen as symbolic of all that was wrong and all that needed fixing in society, because it was so devastating to the poor.

Over the decades, the threat has slipped from public consciousness. Yet the Centers for Disease Control and Prevention tell us that about a half million American children have elevated blood lead levels, mostly because of contact with lead-based paint in dilapidated older housing. Until the 1950s, lead was a key ingredient in house paint. About fifteen pounds of lead were in every gallon. In many older homes, layers of lead paint are still on the walls. When it disintegrates, lead dust and chips can fall to the floor, where curious toddlers will sometimes handle them. If they eat the chips or ingest the dust, the children could be sick for the rest of their lives.

Flint has pushed many leaders in at-risk communities to investigate the environmental hazards around them. I know of some people in Jackson, Mississippi, who read about Flint and then went out and tested their local reservoir for lead contamination. It turned out to be OK. However, when they ran tests on tap water, the lead levels were high. I'd guess that, as in Flint, they've got lead-lined pipes connecting private homes to the water system. In older cities where the infrastructure was installed between 1880 and 1930, lead piping is fairly common, since lead pipes were easier to install and generally cheaper than copper ones.

There has been a great effort in recent years to revitalize older urban neighborhoods. Should lead be a particular concern to people in these areas?

I think so. We know there's lead in the water of some of the up-and-coming neighborhoods of Washington, DC. There again, lead is probably in antiquated connector pipes. But we don't know for sure. There's no central federal agency identifying where lead pipes were installed. In most situations, you literally have to go door-to-door and look at the pipes themselves.

I'd say a rule of thumb might be: if you're in a neighborhood originally built for the poor or the working class, homes there are more likely to be at risk for lead piping. In terms of lead paint, anything built before 1950 probably has it.



“This disaster was entirely preventable...Why would anyone allow children to drink from that river?”

of why Flint's water supply was, in 1967, switched over to Lake Huron and Detroit. Before that, we know the drinking water had come from the Flint River. This may tell us something about the consciousness of pollution at that moment and why we should have paid attention to it in 2014. In that same class, we have a group looking at how different sources — new media and old — covered congressional hearings on Flint. They're hoping to determine if we, as a culture, are framing that event as anomalous or as the symptom of a larger problem.

If you put it all together, we're trying to understand, in real time, how the history of public health is being written.

Though you research and write about other issues, lead poisoning has been a constant theme in your career. Why is it so important to you?

After I graduated from the City College of New York in 1968, I wondered what I was going to do with my life. I had studied with Kenneth Clark, the great social psychologist whose testimony was a key element of the Supreme Court's *Brown v. Board* school-integration decision. I admired him tremendously. I thought that maybe I'd also become a social psychologist, and took a job at a state psychiatric institution. There I gave tests to institutionalized children to rate their eye-motor coordination. They had none. The kids would be asked to trace a circle on a piece of paper, and they could not do it. The pencil would go just everywhere.

Later, I looked up their medical records and realized that many had lead poisoning. Their suffering was the result of society's failure to protect them from a preventable disability. That understanding propelled me to study public health. Ever since, I've tried to use writing and scholarship to help. 🐾

You teach courses in public-health history at both the graduate and undergraduate levels. Has the Flint water crisis been a “teachable moment”?

Absolutely. There's an old saying that journalism is the first draft of history. Well, I've been engaging my students in that first draft. In my undergraduate course, one of our students has been following Twitter to see what people are saying about the Flint crisis. She wants to see if the scandal is expanding the national discussion on environmental toxins.

In my graduate-level course, there's another student who is reading newspapers and magazines from the 1950s and 1960s to solve a key question: she's trying to pin down the details



“My gifts to Columbia over the past 25 years have brought me closer to my personal goals than I ever had been before.”

—JEROME CHAZEN '50BUS

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EXPLORATIONS

FRONTIERS OF
RESEARCH AND
DISCOVERY



Big guys, tender hearts

A team of Columbia cardiologists is collaborating with the National Basketball Association to identify athletes who are at risk for sudden cardiac death (SCD).

Basketball players have the highest incidence of SCD among all competitive athletes in the United States, in part because of the intensity of their sport and also because African-Americans, who dominate the sport at its highest levels, have a genetic predisposition to certain heart defects that can lead to SCD. Many high-school

and college teams, as well as all thirty NBA franchises, now mandate that their players undergo routine cardiac screening. But these screening efforts have a major weakness: physicians must examine echocardiogram images of players' hearts for structural abnormalities — such as enlarged ventricles or arteries — without knowing what the healthy heart of an unusually tall and fit person should look like.

The Columbia cardiologists, led by David Engel, Shunichi Homma, and Allan Schwartz '74PS, hope to

address this problem by analyzing echocardiogram results from all NBA players over the next several years. They will use the data to establish the first empirical standards of heart anatomy for men of their size and level of fitness.

Engel and his colleagues began their work last year by examining echocardiogram images from 526 NBA players who played in the 2013–14 and 2014–15 seasons. They say their analysis has already shed light on several issues that have flummoxed cardiologists in the past.

“Until now, no study had ever looked to see whether the heart necessarily grows in direct proportion to a tall person's body,” Engel says. “We didn't know, for instance, if its growth might ordinarily plateau at a certain point.”

Among the Columbia team's preliminary findings is that the left ventricle, or chamber, of an NBA player's heart is usually proportional to his overall body size, while the root of his aorta, which is the major artery that carries blood from the left ventricle to the vital organs, is typically smaller than might be expected, based on his height. These two sections of the heart are inspected closely by cardiologists, Engel says, because the enlargement of either can indicate a deep physiological imbalance in the heart that can result in SCD.

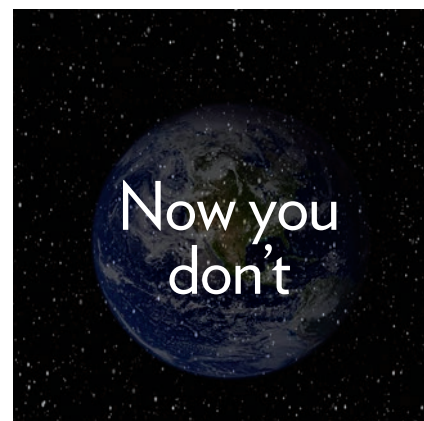
The researchers have also identified several race-specific variables that they say must be considered

when interpreting echocardiogram images, such as the fact that the hearts of African-American men grow in a slightly different pattern than those of white men when they become enlarged.

“Knowing exactly what an African-American player’s heart looks like when it is enlarged, as opposed to a white player’s, is a huge step forward in screening and prevention,” says Engel, whose findings appear in the journal *JAMA Cardiology*.

In addition to establishing new standards for interpreting echocardiograms, the Columbia researchers are also developing guidelines that will help physicians integrate the results of echocardiograms with those of other heart tests — like EKGs, which measure the heart’s electrical activity — to ultimately determine if a player is fit to play. This is a high-stakes decision, because if a player is judged to be at risk for SCD, it usually means that his playing career is over.

Over the next few years, Engel, Homma, and Schwartz will be providing expert advice to NBA team physicians in evaluating the cardiac health of individual players. They say the diagnostic standards they are developing should also be applicable to basketball players and other tall athletes of high-school age and up. Meanwhile, they are looking for opportunities to conduct similar research on female basketball players.



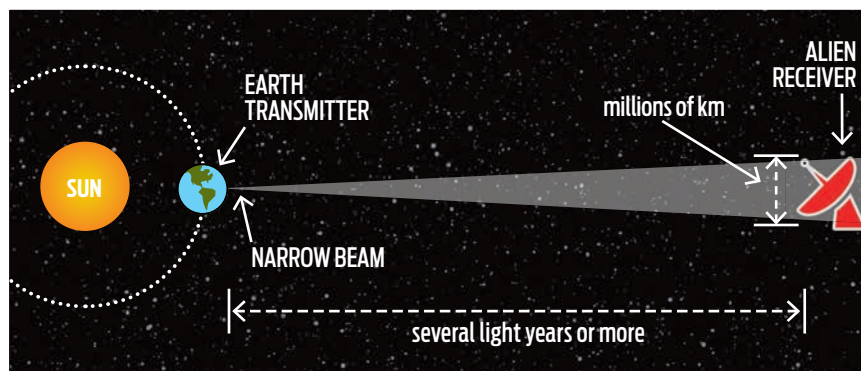
Could a laser-powered cloaking device make planet Earth invisible to extraterrestrial invaders? It sounds like a plot from *Star Trek*, but in a paper recently published in the *Monthly Notices of the Royal Astronomical Society* (MNRAS), Columbia professor David Kipping and NSF graduate fellow Alex Teachey detail how such a device might work, and even suggest that advanced civilizations could be using the technology to hide their planets from us.

Kipping, an assistant professor of astronomy, leads the Cool Worlds Lab at Columbia, and is well known for his research on moons and planets outside our solar system. Many of these exoplanets have been discovered using the transit method, which is a way of detecting planets by looking for changes in the intensity of light from distant stars. As Teachey explains it, as a planet orbits a star it periodically crosses (transits) in front of that star, causing a small dip in the starlight’s intensity. Using data from the Kepler telescope to observe these periodic dips, astronomers have discovered more than a thousand new planets.

Kipping and Teachey suggest that we could cloak Earth’s transit by using laser beams to compensate for the periodic dips in our sun’s light. “Using lasers might sound counterintuitive, because laser beams are very narrow when they are emitted,” says Teachey. “But if that laser beam travels across many light years, it widens significantly. The beam width when it reaches another solar system might be tens of millions of kilometers across.” (See illustration below.)

What’s more, it would not take a huge amount of energy (or *Star Trek*’s “dilithium crystals”) to power the laser: “We’ve calculated that it would take somewhere between thirty and 250 megawatts of power at peak intensity,” Teachey says. “The solar array on the International Space Station can generate this amount of power.”

Kipping, who was named one of *Popular Science*’s “Brilliant Ten” last year, is the principal investigator of the Hunt for Exomoons with the Kepler project. He has often said that his interest in astrophysics began when he was a kid watching *Star Wars* and *Star Trek*. We can only hope that the Klingons don’t subscribe to MNRAS.



To watch video of Alex Teachey explaining his research, visit magazine.columbia.edu/cloaking.

The great salt debate that wasn't

Are you eating too much salt? Or are warnings about the sodium content of the modern American diet greatly exaggerated?

With respected scientists lined up on both sides of the debate, you may despair of ever getting a straight answer to this question. The reason for this impasse, according to a recent investigation by researchers from Columbia's Mailman School of Public

Health, is that scientists — like the rest of us — tend to pay more attention to information that reinforces what they already believe. According to their meta-analysis of hundreds of studies investigating the health effects of salt published between 1979 and 2014, experts on both sides of the issue were 50 percent more likely to cite reports that drew conclusions similar to their own, which means they did a poor job of addressing



evidence that contradicted their hypotheses.

The Columbia researchers, who include postdoctoral fellow Ludovic Trinquant, doctoral student David Johns, and adjunct professor Sandro Galea '03PH, discovered this practice of academic logrolling by studying the citation patterns of 269 studies. About half the papers concluded that

reducing salt intake lowers a person's risk of heart disease, stroke, and death; the other half argued that there was scant evidence to support that claim. "There are two almost distinct bodies of scholarship," says Johns. "Each is driven by a few prolific authors who tend to cite other researchers who share their point of view."

"There's probably a lesson in here for all scientists, which is that we seldom pay attention to how long-held beliefs bias the questions we ask and the results we publish, even when new data becomes available," says Galea, who is also the dean of public health at Boston University.

Gene-editing technology could treat blindness

The scientific community has been abuzz the past two years about the potential of CRISPR, a new gene-editing technique that promises to revolutionize the treatment of some inheritable diseases by enabling physicians to correct mutations as quickly and efficiently as manuscript editors fix typos.

Now a team of ophthalmologists from Columbia and the University of Iowa have demonstrated what they hope will be one of the first practical applications of the technology: repairing a genetic aberration that causes retinitis pigmentosa, a condition that causes tunnel vision or complete blindness. In a study published in the journal *Scientific Reports*, the researchers demonstrate how they were able to successfully modify stem cells derived from the skin of a person who suffers from the condition. The next step, if the procedure were to be approved by the FDA, would be to inject the corrected stem cells into a patient's retina, where the

researchers hope they would grow into healthy tissue and thereby restore the person's vision.

"This would be an example of precision medicine, in that we'd first identify which of the handful of genetic mutations that can cause retinitis pigmentosa is carried by the patient, and then fix it specifically," says Stephen Tsang '98PS, who is the László Z. Bitó Associate Professor of Ophthalmology, Pathology, and Cell Biology at Columbia University Medical Center and one of the paper's senior authors.

CRISPR, which stands for "clustered regularly interspaced short palindromic repeats," is an adaptation of a natural defense mechanism that some bacteria use to identify and disable the DNA of viral intruders. It has not yet been approved for manipulating the human genome, in part because it can sometimes cause unintended modifications. Tsang and his colleagues are now working to show that their corrected cells are safe for transplantation.



Retinitis pigmentosa gradually causes the loss of peripheral vision, as depicted in the view at right.

ALL WORK . . . AND SOME PLAY

On May 5, Columbia Engineering held its third annual Senior Design Expo to showcase the creativity, teamwork, and problem-solving skills of its fourth-year students. In a nod to a traditional science fair, teams of students displayed their prototypes of new medical devices, biodegradable materials, robotics technologies, game systems, bridge designs, and programming languages. Before the event, students in the school's mechanical-engineering department gave *Columbia Magazine* a sneak preview of some of their more whimsical product ideas.



POOL TABLE FOR ONE

Shooting pool by yourself is no fun, especially since an essential part of the game is dealing with the mess left by your opponent's last move. Pool sharks who want to polish their tricks in private, though, might enjoy this table designed by Stefan Boyce, John Del Latto, Amogh Kumar, Dennis Mars, and Michael Trietsch. The table is overlaid with a contraption that can compete against a human opponent. It relies on a camera positioned above the table and a computer program that analyzes the likelihood of its making various shots. With this technology, it can determine which way to whack the cue ball with a metal hammer. "It's not capable yet of planning multiple shots ahead of time," says Mars. "But that could come in a later version."



GIDDYUP TO FEEL BETTER

"A mechanical bull wants to throw you off and hurt you, but this guy wants to help you," says Matthew Heartney, who, along with Claudia Moreira, Matthew Sheridan, and Kirsten Arnell, designed this rig to help improve the core strength and blood circulation of people with conditions like cerebral palsy or muscular dystrophy. Horseback riding is a commonly prescribed form of physical therapy for people with a variety of ailments, and with this invention patients wouldn't have to travel to a special ranch to ride. "The machine's movements are based on our computer analysis of how real horses walk," says Heartney. "It would be a pleasure in the saddle, nice and gentle."



TENNIS ROOMBA

Imagine what a great tennis player you would be if all the time you spent collecting loose balls strewn around the court were devoted instead to perfecting that backhand. Now with the assistance of a self-propelled ball collector invented by Gerardo Cervantes, Devon Harvey, Eric Simmons, and Nicholas Sun, you can focus on improving your form rather than filling your basket. The device has a webcam that can spot tennis balls that have rolled to a stop. It then uses an open-source computer program to orient itself toward the balls, finally sweeping them up with a bristle-wheel brush. Says Cervantes: "One of the tricky parts was getting it to recognize tennis balls specifically, so that it's not collecting anybody's cell phone."



PERFECT PUTTER

Golfers cannot blame their equipment, so goes the adage. But what if the golfer *is* the equipment? Turki Alrashed, Andrew Arrendondo, Spencer Hobson, and Rebecca Stussman are confident that their robotic putter won't be missing many shots — so long as it's swinging at a ball within a few feet of a hole on a perfectly flat green. "We designed it mainly to demonstrate our ability to combine multiple technologies in one robot," says Stussman, who explains that her team's putter uses a camera to locate a golf ball and numerous computer programs to gauge the ball's distance from the hole and to hit it. "It's a fun way to show off what we've learned — and that's what the Design Expo is all about."

Behind the scenes at Hadrian's Villa

Hadrian's Villa, an enormous countryside compound built for the second-century Roman emperor in what is today Tivoli, Italy, has long been admired for its architectural and artistic significance. Since its ruins were discovered in the fifteenth century, scholars have marveled at the site's unique blend of classical Greek and

Over the last two years, Francesco de Angelis, an associate professor of art history and archaeology, and Marco Maiuro, an assistant professor of ancient history, have been collaborating with local scholars to identify previously unexplored areas of the three-hundred-acre compound. The Columbia team has already made several significant discoveries. For instance,

off the ceiling and scattered on the floor. This tells us that the person who lived here was pretty important."

Using ground-penetrating radar equipment, the excavation team has also spotted the buried foundations of what appear to be several other living quarters on the same plot. Dozens of Columbia undergraduate and graduate students will begin unearthing these structures over the next year or so. As they dig, they will be looking for clues about whether the people who inhabited the buildings were freemen or slaves,

of the compound is unclear. Scholars have previously speculated that the villa fell into disuse during the decline of the Roman empire in the fourth century, but no solid evidence has ever been found to indicate that was the case. The Columbia researchers are using their detective skills to determine exactly when the villa was abandoned, why, and whether abruptly or in stages.

"We're looking for signs that would indicate, for instance, that the villa was adapted for more practical purposes after the emperors stopped coming here," says de Angelis.



Roman design elements and written extensively about its lavish buildings, baths, pools, and fountains.

But although academics have devoted considerable attention to the site's aesthetics, little is known about the lives of the estimated two or three hundred administrators, craftspeople, and servants who labored on the estate. That is why Columbia faculty members and students in the Advanced Program of Ancient History and Art are leading a major excavation of the site aimed at learning more about the villa's workers, not its wonders.

near the center of the complex, on a small plot of land surrounded by the standing remains of the emperor's own living quarters, they unearthed the foundation, floors, and partially destroyed walls of what appears to be the home of a high-ranking administrator — possibly a manager of the estate.

"It's not as lavishly decorated as the emperor's quarters, but it's not a lowly servant's quarters, either," says de Angelis. "There are some gorgeous marble mosaics on the floors, which our team is now preserving. And we've found bits of a brilliantly colored fresco, which fell down

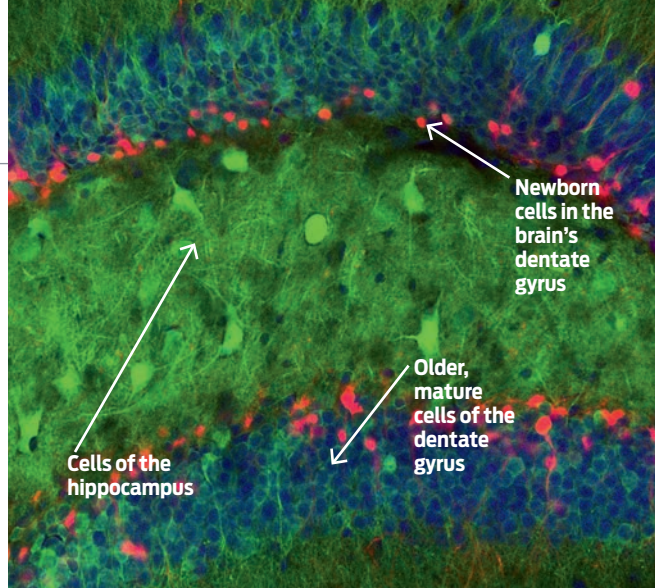
whether they raised families, whether they had time for leisure activity, and how they worshiped.

One of the most important questions the researchers hope to answer is how life at the villa changed after Hadrian's death in 138 CE. While Hadrian is known to have visited the estate regularly, and even to have lived there for periods of two or three years at a time, the extent to which his successors, including Antoninus Pius, Marcus Aurelius, and Lucius Verus, made use

Columbia students, from left, excavating the remains of a residential building at Hadrian's Villa; removing limestone buildup from the surface of the building's mosaic floor; and restoring wall paintings and marble decorations.

It will take the researchers years to piece together any clues they find. But the quest itself is exciting, they say, because the questions they are asking are new.

"Until now, scholars have always come here to study the art and architecture of Hadrian's Villa, since those aspects of the complex are truly exceptional," says de Angelis. "But this has led them to ignore the fact that this was a thriving miniature city that was abandoned at some point for reasons no one has ever explained."



To create a memory, fresh cells required

Most of the cells in our body have a finite life span. They are continually dying and being replaced. But the majority of our brain cells have to last an entire lifetime — which means our cerebral cortex just keeps operating on the same road-worn neurons it came with.

There are a few select brain regions, though, that do grow new cells into adulthood. One of these is the dentate gyrus, a tiny sliver of tissue in the hippocampus, where memories are formed. Ever since scientists discovered, almost five decades ago, that this part of the brain can sprout new cells, they have wondered: what special role do these fledgling neurons play in memory formation?

A team of Columbia neuroscientists say they have found at least part of the answer to this question by demonstrating that the dentate gyrus's youngest cells play a crucial role in the brain's ability to distinguish between similar — yet different — contexts when forming memories. This process, called pattern separation, is a key component of the brain's internal GPS: it helps us remember, say, where we parked our car this morning, versus where we parked it yesterday.

The idea that newly generated cells in the dentate gyrus may be involved in pattern separation is not new; other neuroscientists have hypothesized this before. But the Columbia researchers, led by assistant professor of neuroscience Attila Losonczy, are the first to observe the activity of neurons in this part of the brain in such detail that they could tell what different-aged cells were doing as they formed a memory.

Losonczy and his colleagues say their discovery could one day have therapeutic implications, since the merging of memories — what happens, for example, when a person with posttraumatic stress disorder mistakes a car backfiring for a gunshot — is considered a key feature of many psychiatric disorders, including anxiety and depression, as well as PTSD.

STUDY HALL RESEARCH BRIEFS

You're not the boss of me

People tend to seek promotions at work not because they want to ascend the hierarchy but because they crave autonomy, according to researchers from Columbia, the University of Cologne, and the University of Groningen. The researchers, led by Columbia business professor Adam Galinsky, found that people are three times more likely to accept a new job in which they are promised greater freedom than a similar job in which they are promised increased authority over subordinates.

The science of happiness Denmark is the world's happiest country, according to the United Nations' 2016 World Happiness Report, co-edited by Columbia economist Jeffrey Sachs. The US came in thirteenth, behind Austria and just ahead of Costa Rica. First published in 2012, the report ranks 156 countries, weighing factors such as life expectancy, mental health, per capita gross domestic product, and level of corruption.

Even geniuses have bad days Learning about the struggles of famous scientists can inspire students to perform better in science classes. Columbia psychologists led by Xiaodong Lin-Sieglar divided high-school students into two groups, one of which learned about the personal and professional hardships of scientists like Albert Einstein and Marie Curie as well as their successes, and one of which learned about the successes alone. The results showed that after six weeks, students who had learned about the scientists' setbacks were earning better grades than those who had learned only of their triumphs.

High-prescribing docs brush off warnings Telling doctors that they overprescribe opioids doesn't make them stop, according to a new study by Mailman School public-health expert Adam Sacarny '07CC and colleagues from MIT and the White House Social and Behavioral Sciences Team. The researchers used Medicare data to identify health-care providers who prescribed drugs like Vicodin and OxyContin at higher rates than their peers. The federal Centers for Medicare and Medicaid Services then sent letters to the physicians informing them of their high prescription rates, but subsequent Medicare reports showed that the intervention had no impact on prescribing patterns.

Playing for grades A new study suggests that playing video games may be good for kids' cognitive and social skills. In a study of 3,195 European children aged six to eleven, researchers from Columbia's Mailman School and Paris Descartes University found that children who played video games more than five hours per week were twice as likely to do well in school compared to those who infrequently played video games.

— Lauren Savage

BULLETIN

UNIVERSITY NEWS AND VIEWS



Peter deMenocal

COLUMBIA LAUNCHES NEW CENTER FOR CLIMATE AND LIFE

Columbia has launched a new research and education initiative — the Center for Climate and Life — that focuses on understanding how climate change affects our access to basic resources like food, water, shelter, and energy. The University is providing initial seed funding to the center, which is based at the Lamont-Doherty Earth Observatory, for its first five years of operation.

“Government support for science research has been declining in recent years, and

the federal budget for climate research has been subject to some of the worst cuts,” says Peter deMenocal ’92GSAS, a Columbia paleoclimatologist who is the director of the new center. “Our goal is to make sure that this essential science gets done and that we attract and retain the best talent.”

The Center for Climate and Life administered its first two grants earlier this year, awarding the hydrologist Michael Puma ’98SEAS, ’99SIPA a \$190,000 grant to study the impact of climate change

on global food systems and bioclimatologist A. Park Williams a \$180,000 grant for his research on historical drought and fire cycles.

The University is engaging philanthropists to build an endowment for the center, which will enable it to distribute research grants annually. “This will be a new way of funding science,” says deMenocal. “And it will give Columbia scientists the flexibility to invest immediately in the climate-research projects that we feel are most critical.”

The center will also transfer emerging scientific knowledge to global business and finance institutions, in order to help them make environmentally sustainable business decisions.

“Our new Center for Climate and Life is a critical next step in applying interdisciplinary environmental scholarship to the social and finance sectors,” says G. Michael Purdy, the University’s executive vice president for research. “The center complements Columbia’s existing strengths in environmental science and policy by highlighting ways that interventions from the business and finance communities can powerfully improve our current state of human sustainability.”



MICHAEL A. NUTTER WILL JOIN SIPA FACULTY

This spring, Michael A. Nutter, who recently completed his second term as mayor of Philadelphia, joined the School of International and Public Affairs as a professor of professional practice. During his time in office, Nutter was widely praised as a reformer, overseeing changes in policing, economic development, taxation, and environmental policy. “The opportunity to work with such distinguished faculty and incredible students at this internationally recognized university is an enormous responsibility, and creates an important platform to continue my focus on the leading urban challenges in the United States and around the world,” says Nutter, who joins David Dinkins as the second former mayor on SIPA’s faculty.

TEAMS WIN NATIONAL AND IVY CHAMPIONSHIPS



For the second consecutive year and fifteenth time in program history, the Columbia fencing squad was crowned the best collegiate team in the country as it earned the 2016 NCAA Division I fencing title. Two fencers also took home individual trophies: Jake Hoyle '16CC claimed his second consecutive gold medal in the

men's épée, while Jackie Dubrovich '16CC won silver in the women's foil. Several other Lions teams triumphed this year. In March, the men's basketball team became the first Ivy League hoopsters in more than four decades to win a postseason tournament when they beat UC Irvine 73-67 to claim the 2016 CollegeInsider.com

Postseason Tournament championship crown; the men's tennis team captured its third consecutive Ivy league title in April; and both the men's and women's cross-country teams excelled at the Ivy League championship meet last fall, finishing first and third, respectively. To read more, visit gocolumbiaions.com.

Net gain: Lions hire two new basketball coaches

This spring, the Columbia Lions hired new head coaches for both its women's and men's basketball teams. Check out this chart and get to know Megan Griffith '07CC and Jim Engles.

MEGAN GRIFFITH		JIM ENGLES	
			
King of Prussia, PA		HAILS FROM	Staten Island, NY
Assistant coach and recruiting coordinator, Princeton Tigers		PREVIOUS JOB	Head coach, New Jersey Institute of Technology Highlanders
The Tigers won five Ivy League titles during Griffith's tenure, and Griffith mentored thirteen All-Ivy League players.		CAREER HIGHLIGHTS	Engles turned the Highlanders into winners, going 41-27 over the past two years, and he was named the National Coach of the Year by CollegeInsider.com in 2015.
A Lions hoops star, Griffith captained her team for three seasons and was recognized with All-Ivy League honors in both 2006 and 2007.		COLUMBIA CONNECTION	Engles served as a Lions assistant coach under Joe Jones from 2003 to 2008.
Griffith played professionally in Europe from 2007 to 2010.		FUN FACTS	Engles comes from a family of hoopsters: his grandfather played for Georgetown and his uncle for Penn.
"As a player, I walked in their footsteps. I've worn their colors. I will outwork anybody because of that."		IN THEIR OWN WORDS	"We want to play pretty fast. We really focus on sharing the basketball and playing as unselfishly as possible."

LEFT: PRINCETON ATHLETICS; RIGHT: LARRY LEVANTI PHOTOGRAPHY FOR NJIT

BULLETIN

HOLLAND GREENE JOINS TRUSTEES

Wanda M. Holland Greene '89CC, '92TC has been elected to the Trustees of Columbia University, succeeding the late Bill Campbell '62CC, '64TC, '15HON, who stepped down in 2015. Holland Greene is the head of the Hamlin School, a private girls' school in San Francisco known for its innovative approach to education. An advocate for racial and gender equity in educational leadership, she also serves as a trustee of the National Association of Independent



Schools and the Head-Royce School in Oakland.

A Brooklyn native, Holland Greene began her career in education at the Columbia Greenhouse Nursery School in Morning-side Heights and subsequently worked as a teacher, adviser, and director of student life at the Chapin School on Manhattan's Upper East Side. She was a senior administrator and ex officio trustee at the Park School in Brookline, Massachusetts, before leading the Hamlin School.



Daveed Diggs (left), Okieriete Onaodowan, Anthony Ramos, and Lin-Manuel Miranda in *Hamilton*.

HAMILTON WINS 2016 EDWARD M. KENNEDY PRIZE

Lin-Manuel Miranda's *Hamilton* recently won Columbia's 2016 Edward M. Kennedy Prize for Drama Inspired by American History. The hip-hop musical based on Ron Chernow's 2004 biography *Alexander Hamilton* reimagines the American Revolution and the early years of the Republic with a cast of predominantly Black and Latino actors. Ambassador Jean Kennedy Smith created the \$100,000 prize, administered by Columbia Libraries, to honor her brother, the late senator from Massachusetts. This year's jury, which included Columbia professors Farah Jasmine Griffin, Rashid Khalidi, and James Shapiro '77CC, selected *Hamilton* because it "celebrates the evolving history of the United States, of hip-hop, and of the musical theater." (For more on *Hamilton*, see *Columbia Magazine's* Winter 2015 feature story "Hamilton Is in the House.")

DEFRIES, SACHS NAMED UNIVERSITY PROFESSORS

President Lee C. Bollinger recently appointed Ruth DeFries and Jeffrey Sachs as University Professors, the highest rank Columbia bestows on its faculty. DeFries, an environmental geographer who is an expert on sustainable land-use practices, is codirector of the undergraduate program in sustainable development at Columbia's Earth Institute and the Denning Family Professor of Sustainable Development. Sachs, an economist who specializes in poverty eradication, is director of the Earth Institute, the Quetelet Professor of Sustainable Development, and a professor of health policy and management. "It is fitting that Professors DeFries and Sachs receive this honor in tandem, as they are two of the world's foremost scholars investigating how to ensure a sustainable future for our planet," Bollinger said in making the announcement on April 13.

LEE C. BOLLINGER'S TERM EXTENDED

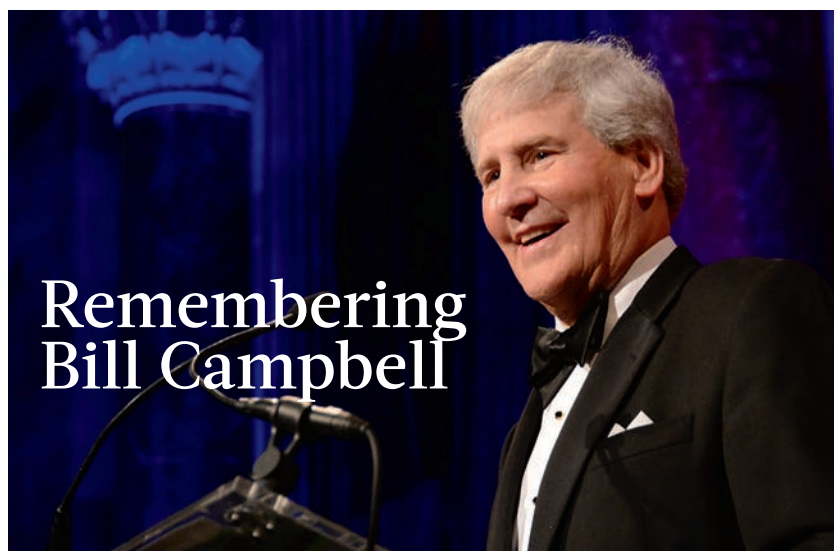
In March, the University's Board of Trustees announced that President Lee C. Bollinger has agreed to lead Columbia through 2022, thus adding four more years to a term that was due to end in 2018.

"The Board of Trustees makes the decision to extend Lee Bollinger's term with great enthusiasm and conviction," said Trustees chair Jonathan Schiller '69CC, '73LAW. "Under Lee's exemplary leadership, Columbia is firmly established as one of the world's indispensable research universities."

Schiller credited Bollinger with enhancing student financial aid; diversifying the faculty; appointing women to a majority of deanships; heightening the University's global presence; and leading the development of the seventeen-acre campus expansion in Manhattanville.

Many of these achievements, he pointed out, can be attributed to the alumni-outreach and fundraising operations that Bollinger and his senior staff have built.

"Unprecedented levels of alumni engagement and financial support have provided a foundation for Columbia's continued progress, including financial aid for our students and faculty recruitment and retention," Schiller said. "We believe Lee's compelling intellectual vision and his record of fiscal management and fundraising success have made Columbia the most dynamic place in higher education."



Remembering Bill Campbell

He was forged in the steel town of Homestead, Pennsylvania, and his first coach was his father, a phys-ed teacher who also worked nights at the mill. He was crazy for football and made it to the Ivy League, to Columbia, where he wore the number 67 on his wiry 165-pound frame. He was small even for a linebacker, but more than once, his coach, Aldo Donelli, put him on the offensive line, among the giants.

Bill Campbell '62CC, '64TC, '15HON, who died on April 18 at age seventy-five, would become a giant himself. In 1983 he joined a young company, Apple Computer, Inc., as vice president of marketing, and eventually became the CEO of Intuit, the maker of the software applications Quicken and TurboTax. Along the way, Campbell made a name for himself as a preternaturally savvy management guru to tech titans like Steve Jobs of Apple, Larry Page of Google, and Jeff Bezos of Amazon. Campbell was "the Coach of Silicon Valley" — a shrewd, salty, bighearted, exuberant, high-octane mentor, of whom former Google CEO Eric Schmidt once said, "Our basic strategy is to invite him to everything."

It was a strategy that Columbia was privileged to share.

"Bill was a beloved alumnus, football coach, trustee, former Chair of the Trustees, and, above all, a friend and source of boundless joy and counsel to everyone who knew him," President Lee C. Bollinger wrote in a letter to the Columbia community on April 18.

At Columbia, Campbell was captain of the 1961 football team, which won the only Ivy League title in Columbia's gridiron history. He got a master's in education from Teachers College, then worked as an assistant football coach at Boston College before returning to serve as head coach of the Lions from 1974 to 1979. After leaving Columbia, Campbell got a job with an advertising agency, which led to a gig with Kodak in Europe — his last stop before heading to Northern California.

The Coach of Silicon Valley had a few points aggressively underlined in his corporate playbook. He emphasized product innovation as the key to a company's survival; warned that internal conflict can bring a company to its knees; and viewed engineers — not product managers or salespeople — as the most important players in a company's success. Then there was his personal playbook, which was all about giving back, in ways big and small, without fanfare.

Though Campbell's life was based in Palo Alto — he even owned a bar there, the Old Pro, where he often held court — he never forgot his roots back East. He became a University Trustee in 2003 and was appointed board chair in 2005. Over the next decade, Campbell helped guide Columbia through a period of growth that included the Manhattanville expansion, a record-breaking capital campaign, the creation of the Columbia Alumni Association (CAA) and Global Centers, and the opening of the Campbell Sports Center. Campbell became chair emeritus of the Trustees in 2014, and received an honorary degree last year.

When news of Campbell's death reached Columbia, the flags on the playing fields at Baker were lowered to half-mast and the number 67 was painted on turf on either side of home plate at Robertson Field. No member of any Columbia varsity sports team will ever wear the number again.

On April 25, in Atherton, California, some two thousand mourners gathered on the high-school football field where Campbell had continued to coach middle-schoolers. The funeral service included a eulogy by Campbell's teammate Lee Black '62CC and a gospel song sung by Ted Gregory '74CC. Afterward, hundreds of Campbell's family and friends, including President Bollinger, Columbia Trustees chair Jonathan Schiller '69CC, '73LAW, and former CAA chair George Van Amson '74CC, repaired to the Old Pro in downtown Palo Alto to raise a glass to the Coach.

"Bill was a one-of-a-kind, truly unique human being," Bollinger told the crowd. "He was brilliant at friendship and had a genius at making groups and institutions be their best. The Campbell name will deservedly grace countless buildings, programs, scholarships, and awards. But Bill's friendships are the most enduring of all."

NETWORK

YOUR ALUMNI CONNECTION



Laurinda Spear '75GSAPP and the grounds of Miami's Pérez Art Museum, which she designed.



Miami Voice

In 1977, when Laurinda Spear '75GSAPP started the Miami-based architecture firm Arquitectonica, *Time* magazine described the area as “a seedy backwater of debt-ridden hotels, gaudy condominiums and decaying apartments.”

Not for long. Money began to blow in, and the land of pink flamingos was met with white marble and TV's *Miami Vice*, whose opening credits showed a pink spiral staircase in a cube of space that, as the camera pulled back, proved to be a hole in the middle of a massive edifice of glass. That building, the Atlantis, was to become Arquitectonica's most famous structure.

Spear, who was born in Miami in 1950, had always

wanted to be an architect, and after grad school, she wasted little time making a splash. Her first project, the red, ziggurat-shaped Babylon Apartments, finished in 1982, “set a new bar for urban architectural pizzazz in Miami,” according to the *Miami Herald*.

For two decades, Spear used steel, brick, and glass to build instant Miami landmarks. Then, in 2005, she formed Arquitectonica-GEO, shifting to landscapes and a more fragile palette of plants, soil, and water. As a landscape architect, Spear must consider the ecological implications of her designs, and make them adaptable to environmental changes, such as rising seawater.

For the Pérez Art Museum, which opened in 2013 on the shoreline of Biscayne Bay, she created a lush oasis of 64,000 subtropical and tropical plants. “It's a resilient design because it anticipates extra water on the site in the future,” Spear says. In recognition of this feat, the American Society of Landscape Architects gave ArquitectonicaGEO a 2015 Honor Award for design.

Whether with delicate flora or impressive facades, Spear continues to make her mark on Miami according to one consistent philosophy: “We should know about the sun, the air, the light, the natural conditions. We have to be thoughtful about the way we put a building on the earth.”

LEFT: JEFFREY SALTER; RIGHT: ROBIN HILL

Pulitzer Pride

When the 2016 Pulitzer Prize winners were announced in April, four alumni were among the honorees. This year marks the centennial of the awards, which Columbia Journalism School founder Joseph Pulitzer '52HON established to honor excellence in journalism and the arts.

Cara Fitzpatrick '06JRN, a staff writer at the *Tampa Bay Times*, won the Pulitzer for local reporting. She and two other journalists were honored for exposing how a local school board turned five average schools in Black neighborhoods into some of the worst in Florida.

Sanghamitra Kalita '00JRN, the managing editor of the *Los Angeles Times*, won the Pulitzer for breaking-news reporting. She was part of a team of staffers that covered the San Bernardino mass shooting and the terror investigation that followed.

Alissa J. Rubin '85GSAS, the Paris bureau chief of the *New York Times*, won the Pulitzer for international reporting for her thoroughly reported and movingly written accounts of cruelties endured by Afghan women.

T. J. Stiles '91GSAS won the Pulitzer for history for his book *Custer's Trials: A Life on the Frontier of a New America*. The citation describes the book as a rich and surprising new telling of the journey of the iconic American soldier, whose death turns out not to have been the main point of his life.

STARTUP SPOTLIGHT

Stay Local, Eat Local

For Manal Kahi '15SIPA, it all began with hummus. Or, rather, the lack thereof.

Kahi, a Lebanese environmental consultant and the cofounder of Eat Offbeat, a catering company that employs refugees as cooks, says that three years ago, when she moved to New York to start a master's program at Columbia, she couldn't find good hummus — at least none as authentic as the stuff her Syrian grandmother used to make.

"At first it was just going to be a hummus company," Manal Kahi says. "But this was 2013, the beginning of the Syrian refugee crisis in Lebanon. We wanted to figure out a way to help from New York."

Then it dawned on the Kahi siblings that they could have Syrian refugees make the hummus. "The idea got bigger from there," Manal Kahi says. "Syrians aren't the only refugees resettling in the United States. And they all have native dishes that are so

much better when they're homemade rather than mass-produced."

With the help of the International Rescue Committee, the Kahis began to identify and recruit refugees who are also excellent home cooks. The chefs — from Nepal, Iraq, Eritrea, and Syria — work with Eat Offbeat chief culinary officer Juan Suarez de Lezo to adapt their recipes for a professional kitchen.

Based in Long Island City, Queens, Eat Offbeat caters a wide variety of events, from private dinner parties and small office lunches to much larger functions, such as corporate retreats.

"It's really a win-win-win," Manal Kahi says. "These are people who desperately need jobs, and

that's at the forefront of our mission. But we're also able to introduce people to new, exciting dishes. And we're helping to change the narrative around refugees. They shouldn't be seen as a potential burden but as a rich cultural asset."



TOP: Eat Offbeat sibling cofounders Manal Kahi (center) and Wissam Kahi (right), with tech adviser Christian Chemaly.

BOTTOM: The Eat Offbeat team.



So Kahi borrowed the family recipe and started to make big batches, sharing it with family and friends. It was such a hit that her entrepreneurial brother Wissam Kahi '04BUS quickly decided that it was good enough to sell.



Allison Janae Hamilton '10CC, a visual artist and School of the Arts MFA candidate who is known for her haunting images of the American South, was a finalist in the Outwin Boochever Portrait Competition, a juried contest run by the Smithsonian's National Portrait Gallery, in Washington, DC. Her work *Haints at Swamp II* (above) will be on display there through January 8, 2017.

The Producer

Hamilton, the hip-hop musical phenomenon — co-produced by Jill Furman '97BUS — made Broadway history in May when it was nominated for a record-breaking sixteen Tony Awards.

Furman has been a supporter of *Hamilton* creator Lin-Manuel Miranda since 2003, when she saw him perform an early work in the basement of a Midtown bookstore. She went on to co-produce Miranda's first musical, *In the Heights*, which debuted on Broadway in 2008 and won the Tony for best musical that year.

Even before the nominations, *Hamilton* was already a producer's dream — tickets are sold out through 2017.

ASK AN ALUM ROAD TO RIO

Fencer **Nzingha Prescod '15CC** is twenty-three years old and already an Olympic veteran. We caught up with the number-one-ranked US fencer as she prepared for her second Summer Games.

COLUMBIA MAGAZINE: How did you get interested in fencing?

NZINGHA PRESCOD: When I was nine, I started taking lessons at the Peter Westbrook Foundation, a New York nonprofit that seeks to expose more minorities to the sport of fencing. I didn't like it at first, but I'm competitive by nature and I wanted to beat my sister, who also did the program.

CM: What does your training schedule look like now?

NP: I've been training full-time since I graduated last May and am still with the same coach I had as a kid. Every day is different — a mix of physical therapy, gym workouts, drills, and sparring with partners at different fencing clubs across the city.

CM: What are the most important qualities in an Olympic fencer?

NP: Confidence, discipline, and strong legs. Fencing is not an intuitive sport: you can't just attack someone; there is a complicated set of rules. So you have to be disciplined about the rules and confident in executing them. And you squat a lot: that's where the strong legs come in.

Campaign Cognoscenti

With hotly contested primaries in both major parties, the 2016 presidential election season has been particularly feverish. Meet a few of the Columbians behind some of this year's top-office seekers.

ROBBY MOOK '02CC

Campaign manager, Hillary Clinton campaign

Robby Mook has been working with Clinton since her first presidential campaign, in 2008, where he earned respect as the state director for Nevada, Indiana, and Ohio (Clinton won in all three). After managing several congressional campaigns, Mook rejoined the Clinton team in January 2015. A Vermont native, Mook is known for his obsessive organizational skills and calm management style. He studied classics at Columbia and is the first openly gay manager of a presidential campaign.



NICOLE WILLIS '08LAW

National tribal-outreach director, Bernie Sanders campaign

Willis began her political career in 2008 as an adviser to Barack Obama's presidential campaign. After serving in his administration as special assistant for Indian affairs in the Department of Labor, Willis joined the Sanders campaign as the national tribal-outreach director. The Sanders campaign subsequently made several pledges to Native American voters: it offered to create a position in the Office of Management and Budget serving tribal affairs, and to mandate that all federal grants open to state and local governments also be open to tribes. Willis, who was president of the National Native American Law Students Organization while studying at Columbia, is a member of the Confederated Tribes of the Umatilla Indian Reservation, based in Oregon.



CHAD SWEET '91CC

Campaign chairman, Ted Cruz campaign

Sweet is a Texas-based former CIA operative and an expert in finance and national security. He earned a degree in East Asian studies at Columbia and, after a short stint in covert intelligence operations, worked as an analyst at Morgan Stanley and Goldman Sachs. In 2007, he returned to the public sector to serve as then Homeland Security secretary Michael Chertoff's chief of staff. Sweet and Chertoff are the cofounders of the Chertoff Group, an international security and risk-management consulting company.



NEWSMAKERS

● **Jack Starcher '14LAW** was selected to serve as a Bristow Fellow in the Office of the Solicitor General, where he will assist attorneys representing the federal government before the Supreme Court. Starcher, who graduated first in his class at Columbia, plans to pursue a career in public-interest law. Before attending law school, he taught remedial math in Phoenix as a part of the Teach for America program.

● **Séverine Autesserre '00SIPA**, an associate professor of political science at Barnard College, was awarded a \$200,000 Andrew Carnegie Fellowship. The award will support her analysis of the effects of international peace-building efforts in the eastern Congo.

● Two Columbians appeared on *Crain's New York Business's* "40 Under 40" list. **Julian J. Moore '01LAW** was honored for his work investigating and prosecuting white-collar crimes. He was the lead prosecutor in the Bernie Madoff case and served as deputy chief investigator on the Moreland Commission, which reported on public corruption in the New York state government. **Joseph L. Mayer '11PS**, a psychiatrist, was recognized for developing Cureatr, an app that helps doctors and other clinicians keep in touch with all their patient's caregivers.

● The Asian Columbia Alumni Association, which celebrated its twentieth anniversary in April with a black-tie gala at Low Library, has awarded **Victor Cha '83CC, '93SIPA, '94GSAS** the Alumni Achievement Award. Cha, a Columbian from birth (his parents met at a mixer for overseas students in Earl Hall), is a professor of international affairs at Georgetown University and an expert on security issues in Japan, South Korea, and the United States.

● Two Columbia playwrights have been awarded major theater residencies in New York. **Paola Lazaro-Muñoz '13SOA** will be a Tow Foundation playwright in residence at the Atlantic Theater Company, and **Rehana Lew Mirza '07SOA** will be a Mellon Foundation playwright in residence at the Ma-Yi Theater Company.

● **Joshua Jih Pan '67GSAPP** has won Taiwan's National Award for the Arts, the highest artistic honor in that country. Pan is the founding principal at J. J. Pan and Partners, a 250-member architecture firm in Taipei known for sustainable design.



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The Girls

By Emma Cline (Random House, 368 pages, \$27)

Few criminals have captured the public imagination like deranged killer Charles Manson. But when Manson and his cult of followers went on trial in June 1970 for the gruesome murders of seven people, the most haunting image in the media was not of Manson himself but

of his three codefendants: Leslie Van Houten, Patricia Krenwinkel, and Susan Atkins. Lithe, fresh-faced, and shiny-haired, the girls — all in their early twenties — giggled and held hands as they were led into the courtroom, like they were off to a slumber party instead of death

row. America watched in horror: these women could have been their daughters, their sisters, their neighbors. How could they have been led so far astray?

That question is central to *The Girls*, the deeply disquieting debut novel from Emma Cline '13SOA. The book — which garnered a media frenzy of its own when Random House offered Cline a \$2 million advance after a heated bidding war — follows a lonely teenager as she gets caught

up in a thinly fictionalized version of the Manson cult. Suspense isn't a key element — we first meet Evie Boyd nearly fifty years after the crimes that made the cult famous, and we know that she has escaped essentially unscathed. But following her, in flashbacks, from suburban banality to the brink of unspeakable violence, is gripping.

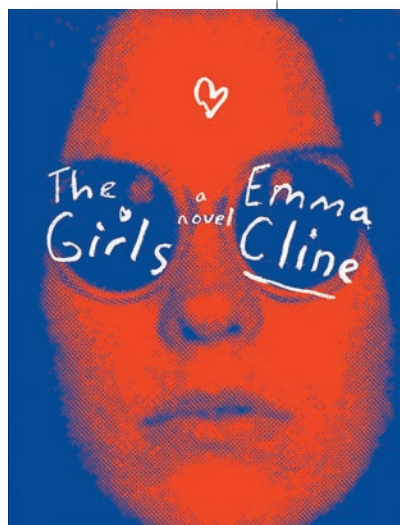
For fourteen-year-old Evie, the summer of 1969 — an “endless, formless summer” — is her last at home in a sleepy San Francisco suburb before being shipped off to boarding school. Her parents have recently divorced, and both are more interested in their new romantic relationships than in their daughter. Then Evie makes a social gaffe when out with a group of older boys that ends up costing her a crush and her best friend.

So Evie is lonely, and when she sees a trio of disheveled girls dumpster-diving for discarded food in a nearby park, she is intrigued. As she rides her bike idly around town, she starts seeing them everywhere. And unlike most of the other people in her life, they seem to see her too: “Back then, I was so attuned to attention. I dressed to provoke love, tugging my neckline lower, settling a wistful stare on my face whenever I went out in public that implied many deep

and promising thoughts, should anyone happen to glance over.”

Evie's nascent sexuality is important to the girls, disciples of a self-described guru named Russell, who deflowers Evie the first night he meets her. But she has something else integral to the group's survival: money. Thanks to a small fortune left by her grandmother, a once-famous actress, Evie has grown up sheltered, on the right side of town, not wanting for anything. The cult has set up a makeshift commune on a llama ranch in the hills of Sonoma County, and apart from periodic gifts from a rich musician (perhaps a proxy for Beach Boy Dennis Wilson, a one-time benefactor of the Manson family), they are destitute. Evie starts staying with the cult most nights, and earns her keep buying basics like food and toilet paper; weeks later, the stakes get higher, and Evie is forced to prove her loyalty to her new world by more fully betraying her old one.

Cline borrows heavily from the Manson story, which undercuts the novel's ability to be truly original, despite fresh, commanding prose. But Cline does make one crucial departure. By all accounts, Manson was the driving psychological force behind his cult; as Vincent Bugliosi, who prosecuted the Manson family, once



It's easy to empathize with the teenage Evie. But this is not just a story about the recklessness of youth.

said, Charles Manson “had a quality about him that one thousandth of one percent of people have.” For Evie, it’s not Russell — the Manson figure — that intrigues her, but Suzanne, one of Russell’s girls. It’s Suzanne’s embrace that Evie craves; and when Evie’s family eventually makes her return home, it is Suzanne who lures her back. As Evie says, “I couldn’t explain it to myself, the wrench I got from looking at her.”

Evie’s isolation and desperate need to belong are extreme, but Cline excels in making these traits relatable. The anguish of being a teenager is universal, and Cline captures that in perfect descriptions of Evie’s near-constant humiliation (at things she does, at things her parents do, at things her friends do). She knows the cult is dangerous, and yet she is so obviously relieved to be accepted *somewhere* that she can’t stop herself from going back.

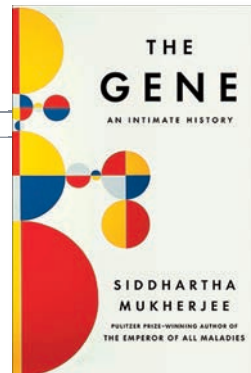
It’s easy to empathize with the teenage Evie. But this is not just a story about the recklessness of youth. When we encounter Evie again as an older adult, her emotions about the cult are still unsettlingly complex. Mixed in with guilt and sorrow, there is, unexpectedly, a twisted nostalgia: “Some nights, unable to sleep, I peeled an apple slowly at the sink, letting the curl lengthen under the glint of the knife. The house dark around me. Sometimes it didn’t feel like regret. It felt like missing.”

— Rebecca Shapiro

EXCERPT

THE GENE An Intimate History

By **Siddhartha Mukherjee**, an assistant professor of medicine at Columbia. Mukherjee won the 2011 Pulitzer Prize for his first book, *The Emperor of All Maladies: A Biography of Cancer*.



Gender. Sexual preference. Temperament. Personality. Impulsivity. Anxiety. Choice. One by one, the most mystical realms of human experience have become progressively encircled by genes. Aspects of behavior relegated largely or even exclusively to cultures, choices, and environments, or to the unique constructions of self and identity, have turned out to be surprisingly influenced by genes. But the real surprise, perhaps, is that we should be surprised at all. If we accept that variations in genes can influence diffuse aspects of human pathology, then we can hardly be astonished that variations in genes can also influence equally diffuse aspects of *normalcy*. There is a fundamental symmetry to the idea that the mechanism by which genes cause disease is precisely analogous to the mechanism by which genes cause normal behavior and development. “How nice it would be if we could only get through into Looking-glass House!” says Alice. Human genetics has traveled through its looking-glass house — and the rules on one side have turned out to be exactly the same as the rules on the other.

Alice & Oliver

By **Charles Bock** (Random House, 416 pages, \$28)

It is late autumn in New York, 1993. A young couple is on their way to Vermont for Thanksgiving with their infant daughter. Alice, a successful fashion designer, is vibrant and ambitious, thrilled to be a new mother. Her husband Oliver, a computer programmer, is working hard to get his tech startup off the ground.

Yet within the span of a few pages of Charles Bock’s novel *Alice & Oliver*, Alice — coughing, weak, feverish —

receives a devastating cancer diagnosis. Instantly, we are swept into a world of hospital stays and cancer treatments, medical professionals and insurance representatives. In the midst of debilitating chemotherapy, in the space of cramped hospital rooms, the couple is confronted with issues of trust and partnership and forced to redefine what it means to love and be loved. As Oliver says: “It’s a necessary pain: understanding there are fissures that cannot

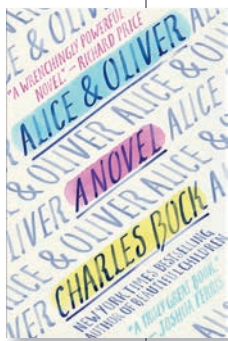
be healed, our time here is messy.”

It is, sadly, familiar territory for Bock, who teaches writing at Columbia’s School of the Arts. In 2009, when Bock’s daughter was six months old, his wife was diagnosed with leukemia. She ultimately died of it, and Bock faced financial ruin from the medical expenses. Armed with his memories, Bock expertly juxtaposes the many frustrations of the health-care system (arguments with insurers, painful medical procedures) with the small joys of life (an infant’s hand reaching toward her father’s, secret jokes shared between a couple).

The story is perhaps most deeply affecting when it focuses on Alice. Oliver often fades in relation to the agony and complexities of her plight. With her body and mind pushed to their limits, Alice is vulnerable and exposed, and desperately grasps at the familiar moments, the glimmers of normalcy that break through even the darkest times. *Alice*

& *Oliver* is a window into the heartbreak of helplessness and the struggle to maintain a sense of self and dignity when nearly all else is stripped away. With clarity and care, Bock has created a beautiful, challenging story.

— *Becky Nordensten*



Kill 'Em and Leave: Searching for James Brown and the American Soul

By **James McBride** (Spiegel & Grau, 232 pages, \$28)

During his career, which spanned nearly five decades, James Brown was known as the hardest-working man in show business: he toured constantly, wrote 832 songs, sold more than two hundred million albums worldwide, and

made forty-five gold records. It's no surprise, then, that Brown's life has been well documented — gallons of ink and mountains of celluloid have been spent chronicling his dirt-poor childhood in Georgia, rowdy tours through the chitlin' circuit,

and his rise from gospel singer to the Godfather of Soul.

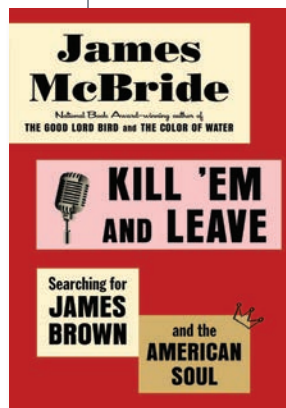
But these milestones are of little concern to James McBride '80JRN, an admitted lifelong fan who claims that Brown is “nearly as important and as influential in American social history as, say, Harriet Tubman or Frederick Douglass.” In *Kill 'Em and Leave: Searching for James Brown and the American Soul*, McBride eschews the conventional cradle-to-grave biography and sets off in search of the people who knew the musician best: friends, family, collaborators, former band members, and musical colleagues. Their testimony to the man's complex genius makes for a far more compelling story.

In McBride's last book, *The Good Lord Bird*, a novel that won the 2013

National Book Award, he painted an often unpleasant portrait of the legendary and much revered abolitionist John Brown. Here, too, his feelings about his subject turn out to be mixed. Most of the people he meets are respectful of James Brown's work but deeply bitter about the way they were treated by him. Brown was, in his later years, a generous philanthropist, but McBride learns that he was also a hard-driving bandleader who fined and berated his musicians for the smallest infractions.

McBride has toured extensively as a saxophonist, and his background as a professional musician informs his account of his subject's less-than-savory behavior on the road. It also makes him a reliable authority on the music. For example, he gives us a pages-long lesson on the virtues of funk music, often belittled by jazz musicians as too simple. “You must know *when* to enter the groove, and *what* to play,” he writes. “Funk — any good music, really — requires space.”

All of this is entertaining and insightful material, catnip for Brown, funk, and R&B aficionados, but McBride has higher ambitions, examining the many angles from which we have viewed Brown's legacy in the decade since his death. At the beginning of the book, he states his purpose: “to walk through the carcass of a ruined, destroyed life . . . to navigate the maze of savage lawyers who lined up to feed at the carcass; to listen to the stories of the broke musicians who traveled the world in glory only to come home with a pocket full of nothing; to make sense of the so-called music experts who helped



themselves to a guy's guts and history trying to make a dollar change pockets."

Black life, Black culture, and the overall Black experience in America form the backbone of this consistently fascinating character portrait. As McBride makes abundantly clear, race was of paramount significance in the life and legacy of Brown, and his experiences of racial injustice motivated much of his bizarre behavior, especially concerning money, which he would stash by the thousands of dollars in bags and boxes — anywhere but the bank. That fear, writes McBride — "the knowledge that a single false step while wandering inside the maze of the white man's reality could blast you back home with the speed of a circus artist being shot out of a cannon — is the kryptonite that has lain under the bed of every great black artist from 1920s radio star Bert Williams to Miles Davis to Jay Z."

McBride succeeds in laying out some of the most unseemly moments in Brown's life, challenging our assumptions about them, and showing how those assumptions have been informed and fed by deeper currents of racism. Fans of Brown and his music will be thankful that McBride brings them along on his turbulent journey through an endlessly complex tale. *Kill 'Em and Leave* is a passionate drama that properly fits the contours — as best they can be established — of its subject's monumental life and afterlife.

— Eric Liebetrau

READING LIST

New and noteworthy releases

THE FIRST CONGRESS

by Fergus M. Bordewich

'77JRN In many ways, the first Congress was mired in the same issues that face the legislative branch today: competing factions, financial concerns, and a Constitution that provided a set of principles but few instructions for interpreting them. Yet it was also the most productive Congress in history. Independent historian Fergus Bordewich's latest book captures its dramatic term.

100 YEARS edited by Joshua Prager

'94CC In a true journey through the human experience, Joshua Prager compiles quotes from literary giants — everyone from Shakespeare to Maya Angelou — about each year of life from birth to age one hundred. The book is designed by Milton Glaser, who created the iconic I♥NY logo.

TENDER by Belinda McKeon '10SOA The heart wants what it wants, no matter how inconvenient or improbable its object may be. But Catherine, the heroine of Irish writer Belinda McKeon's second novel, wants James, a free-spirited artist, and James, unfortunately for Catherine, wants men. The result is a lyrical ode to youthful obsession.



HYSTOPIA by David Means

'87SOA In the alternate universe of David Means's first novel (he has previously published four short-story collections), John F. Kennedy has survived the assassination attempt in Dallas and is leading a project that will erase the memories of veterans returning from Vietnam. And that's only one of the dark and dangerous things happening in this tumultuous, dystopian look at 1960s–70s America.

REPUBLIC OF SPIN

by David Greenberg '01GSAS It's election season, and more than ever it seems impossible to tell if we're electing the candidates themselves or the spin machines that created them. According to David Greenberg, who carefully chronicles the rise of speechwriting and political branding from Woodrow Wilson to the present, that cynicism is warranted.

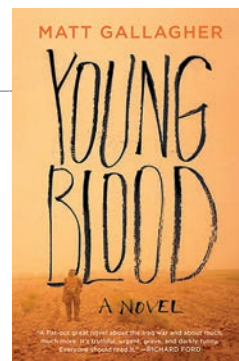
SAILOR AND FIDDLER

by Herman Wouk '34CC Herman Wouk, the legendary author of *The Caine Mutiny*, turned one hundred last May. In this chatty memoir, the self-described "cheerful centenarian" looks back on his life and career — including his time at Columbia, which turned the Bronx-bred son of Russian-Jewish immigrants into a bona fide "Manhattan smoothie."

SUPERBOSSSES by Sydney Finkelstein '88BUS What do Alice Waters, Ralph Lauren, and George Lucas have in common? According to Sydney Finkelstein, they are all legendary not only for their own accomplishments, but for spawning spectacular protégés. Finkelstein, a professor at Dartmouth's Tuck School of Business, spent ten years studying these kinds of influencers and explores their key characteristics.

Rules of Engagement

Former US Army captain Matt Gallagher '13SOA discusses his new novel, *Youngblood* — which follows an American lieutenant in Iraq as he investigates a sergeant's misconduct and another soldier's disappearance — with former US Marine captain Michael Christman '00SEAS



Michael Christman: I found it interesting that your novel spends so much time exploring conflict within the American unit, and rumors surrounding the sergeant, as opposed to conflicts between the Americans and the Iraqis.

Matt Gallagher: As you know, there are a lot of social and cultural dynamics at play in a military unit. My experience was positive: I had incredible sergeants who viewed my development as a lieutenant as part of their job. But I saw from other units that it isn't always like that. In *Youngblood*, I wanted to explore a much darker side of the military.

MC: We both fought a counterinsurgency in which a typical day might include a firefight in the morning and tea with village elders in the afternoon. This dichotomy is evident in your writing, particularly since you include a lot of strong Iraqi characters. Why was showing that important to you?

MG: Being a part of a counterinsurgency means dealing with people face-to-face, but most war literature tends to dehumanize the enemy. We're starting to see some examples of books that more

accurately depict these kinds of interactions — Elliot Ackerman's *Green on Blue* is told from an Afghan's perspective, and in Mike Pitre's *Fives and Twenty-Fives*, one of the narrators is an Iraqi interpreter. Otherwise, you'd have to go back to World War I literature for the enemy to really appear at all.

MC: You include both military jargon and Arabic in *Youngblood*. Were you ever nervous that a civilian reader would find that distancing?

MG: Writing drafts of the book at Columbia helped with that, because I had a whole classroom full of civilian readers who helped me find balance. I wanted to keep the lingo in there for texture, but still make sure it would be accessible for readers of all backgrounds. I'm sure there are some readers out there who think I failed in that regard but inshallah — all you can do is your best.

MC: Your memoir *Kaboom* started as a blog while you were stationed in Iraq. What inspired you to return to the same subject in fiction?

MG: I thought I was done with the subject. I started my MFA at Columbia in the fall of 2011, and I was writing about pretty much anything *other* than Iraq or the military. But then the American military began withdrawing from Iraq. I'd write during the day and stay up at night watching news clips. It seems almost quaint now, but when our unit came home in early 2009, we thought we'd won the war. Two years later, it felt very tenuous, so all these questions were swirling in my mind. I just let myself do one short story at first. It was a slow process of bargaining with myself until I finally gave up and started the novel.

MC: There is an emerging group of authors who are veterans of the wars in Iraq and Afghanistan. How has that community impacted you as a writer?

MG: I became part of a veterans' writer group based in New York, with members like Phil Klay, who won the National Book Award in 2014 for his book *Redeployment*. We worried that people wouldn't care or take us seriously, but at the same time we felt like we had something unique to say that wasn't being represented in the literary community. With that common goal, we made each other better writers.

MC: Why did you decide to join the military?

MG: For me, it was a combination of factors. I came from a military family, so that mattered. History was being made, and, like a lot of young people, I wanted to participate in it, even if I had some personal misgivings about Iraq.

MC: Do you miss the Army or Iraq — and are those two different things?

MG: It's the old truth: you miss the people, but you don't necessarily miss the institutional madness. Yeah, I miss Iraq. There was a daily sense of purpose, a clarity of being. Every patrol is important because the stakes are so high. I'm no adrenaline junkie, by any means. I don't like jumping out of planes, and I barely speed when I drive, but I did really appreciate having the sense of purpose. But that's so easy to say. I have all of my limbs. I came back and went to grad school. With one wrong turn or one misstep, this would have been a completely different conversation.

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FINALS

For Bard Brains Only

Up for a little toil and trouble (or, for College alums, a flashback to the Core Curriculum)? To mark the 400th anniversary of William Shakespeare's death, we asked Columbia English professor James Shapiro '77CC, author of *The Year of Lear*, to help us create a quiz to test your knowledge of the Bard's life and works. Can you ace it? *By Marley Marius*



1 Where did William Shakespeare die?
A) London
B) High Wycombe
C) Stratford-upon-Avon

2 In what meter are the majority of Shakespeare's plays and sonnets written?
A) iambic pentameter
B) trochaic tetrameter
C) dactylic hexameter

3 What outbreak caused English theaters to close — and granted Shakespeare more time to write poetry — in early 1593?
A) smallpox
B) typhoid
C) the bubonic plague

4 Which of the following first names did Shakespeare popularize?
A) Paige
B) Lorelei
C) Bianca
D) all of the above

5 Who composed the "fantasy overture" *Romeo and Juliet*, inspired by the Shakespeare play of the same name?
A) Tchaikovsky
B) Brahms
C) Dvořák

6 Which of the following movies borrows important plot points from *Hamlet*?
A) *Throne of Blood* (1957)
B) *The Lion King* (1994)
C) *Ran* (1985)

7 What was the name of Shakespeare's wife?
A) Emily Blunt
B) Judith Light
C) Anne Hathaway

8 In what year did Columbia's copy of Shakespeare's First Folio, donated by Stephen Whitney Phoenix 1859CC, 1863LAW, enter its rare-books collection?
A) 1869
B) 1871
C) 1881

9 Which is Shakespeare's shortest play?
A) *As You Like It*
B) *The Winter's Tale*
C) *The Comedy of Errors*

10 Which is the missing word from the following line from *Othello*? "To mourn a ____ that is past and gone / Is the next way to draw new ____ on."
A) mischief
B) romance
C) vigor

11 Who of the following once referred to Shakespeare as "the nearest thing in incarnation to the eye of God"?
A) Winston Churchill
B) Laurence Olivier
C) Joseph Conrad

12 What are the final words of Shakespeare's epitaph?
A) "... the owner of no one good quality."
B) "... cursed be he that moves my bones."
C) "... all losses are restor'd, and sorrows end."



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