"Ebola is the canary in the coal mine signaling the world's most vulnerable populations." p. 36

Northwestern

SUMMER 2019

Water at the Breaking Point

With water quality under siege, Northwestern comes to the rescue.
p. 26

On a Midsummer Night

Tucked away behind a wall of hawthorn hedges lies Shakespeare Garden, one of Northwestern's cherished hidden gems. The garden is home to various trees, shrubs, flowers and herbs that were mentioned in Shakespeare's writings, were common during his lifetime or are modern cultivars of those older plants. The Garden Club of Evanston has maintained the garden since its creation more than 100 years ago. The garden was placed on the National Register of Historic Places in 1989.

PHOTO: BILL ARSENAULT

Gear Shift
The fantastical set and projection design stole the show in the Northwestern University Opera Theater adaptation of Igor Stravinsky's opera *The Rake's Progress*. The work was inspired by a series of William Hogarth paintings and engravings that Stravinsky viewed at the Art Institute of Chicago in 1947. Directed by Joachim Schamberger, Northwestern's director of opera, the show ran at Cahn Auditorium in the winter.

PHOTO: © TODD ROSENBERG 2019

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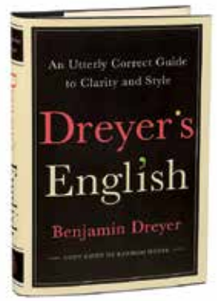
← “It’s very hard now to write a speculative dystopia that doesn’t feel like you’re reporting from this world in some ways. It is such a surreal moment. It just feels like nothing is out of bounds.”

—Karen Russell ’03, award-winning author

RUSSELL: © PETER EARL MCCOLLOUGH



LAKE: MICHAEL GOSS; SOFTBALL: S.J. CARRERA

On the Cover: Illustration by Heads of State

SUMMER 2019
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Northwestern Magazine

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Progress Toward Clean Water for All

If you drive by or stroll along the lakefront on the Evanston campus on a regular basis, you might have noticed that the color of Lake Michigan has been changing the past few years. While most of the time the water is a familiar slate blue-gray or brown-green color, there are days when it turns a Caribbean blue, almost turquoise. The photo of the Lake Michigan shore in Evanston on our table of contents [page 4] captures this strange tropical hue — it was taken in April. The image also shows that the water is so clear you can see the rocks beneath the surface. Surprisingly, Lake Michigan and Lake Huron recently surpassed Lake Superior in water clarity.

While that might sound like progress in cleaning up the Great Lakes, it's not. The reason the water is so clear has to do with an invasion of zebra and quagga mussels that began more than 30 years ago — when mollusks stowed away on cargo ships from the Black Sea and were dispersed in the Great Lakes when the ships emptied their ballast water. The mussels, estimated to number in the hundreds of trillions in Lake Michigan alone, eat 90% of the lake's phytoplankton, wiping out a critical food source at the bottom of the food chain — leaving the water crystal clear and devoid of food organisms for fish populations.

The mussels are just the latest in a large number of events that have taken a toll on the Great Lakes. Industrial pollution, agricultural runoff, increased algae blooms and recent severe flooding associated with changing weather patterns have led to more bacteria in the lakes — and lower quality of drinking water for the millions of people who depend on this freshwater source.

In March more than a dozen leading scientists and experts from Midwestern and Canadian universities and research institutions, including Northwestern civil and environmental engineering professor Aaron Packman, released a report on how climate change could further affect the Great Lakes and threaten public health, infrastructure, fish and wildlife, and the regional economy.

Packman, an expert in water scarcity, water management and urban flooding, is director of the Northwestern Center for Water Research, which coordinates water research across Northwestern and provides faculty and students with opportunities for multidisciplinary collaboration.

In our cover story, "Solutions for Troubled Waters" [page 26], you'll read about Northwestern faculty, students and alumni from a variety of disciplines — chemistry, environmental law, engineering, anthropology and public policy — who are finding innovative and cost-effective ways to keep water systems clean and sustainable in this country and around the globe.

These outstanding leaders give us hope that we can indeed solve one of the world's most pressing challenges — making clean water available to all.

Stephanie Russell
Executive Editor

ANJE JAGER

Talk Back

CARAVANS OF GOLD

The "Caravans of Gold" article in the last issue [page 26, spring 2019] fascinated me. I fondly remember studying African literature at Northwestern with a woman teacher whose husband usually taught the course but was in Nigeria that semester. Our class enjoyed the novels by the Nigerian writers Chinua Achebe and Wole Soyinka.

Something particular that caught my interest was the statement that the copper from that time in history "was likely sourced in Europe."

Because these ancient Nabataean caravan routes continued to pass through the Middle East (in modern-day Israel), could the copper not have come from the famous mines at Timna in what is now southern Israel?
Rita Winslade Steele '66
New Canaan, Conn.

You pose a very interesting question. There were indeed multiple sources for copper that were active in the medieval period, between the 8th and the 16th centuries. Materials scientists use a process of isotopic analysis to determine the likely sources of metals. While the testing of copper and copper alloys of objects from Igbo Ukwu and Ife in Nigeria has not been extensive, the testing that has been done suggests that the source of copper for the Tada Seated Figure ["Caravans of Gold," page 29] is Western Europe's Massif Centra [a highland region in southern France]. However, at Igbo Ukwu the most likely sources for copper and its alloys were local, though there is also some indication that during the later phases of metal casting at Igbo Ukwu these materials may have been supplemented with copper from sources in the Sahara.
Kathleen Bickford Berzock
Curator, Caravans of Gold
Block Museum of Art

Catalan Atlas mapmaker Abraham Cresques [page 29] was not merely Majorcan. He was the son of a rabbi and a distinguished Sephardic Jew who lived in Palma. Only four years after his death, there was a massacre of the Jews of Palma (1391), and many hundreds were killed or forcibly converted.
Norman Miller '70
Houston

A BEACON OF HOPE

There was a lot to like about the spring issue of the *Northwestern Magazine*. The "Caravans of Gold" article was especially interesting. And the article on Uzoamaka Emeka Nzelibe ["A Beacon of Hope for Asylum Seekers," page 38] was fabulous! What an inspiring woman she is! Not only is she doing such good, important and difficult work, she is leading a crew of young lawyers who are greatly magnifying her impact. I hope some of them will follow in her footsteps. Thank you for telling us about her. I have a new hero! And thank you, Northwestern Law School, for recognizing Nzelibe's talents and supporting her work with this neglected and vulnerable population.
Mary Jo Deysach '68
Evanston

The passion for justice for humanity is apparent in every line of your story, Professor Nzelibe. You inspire me and give me hope to keep believing that nothing is impossible. You are indeed born to do what you are doing for the least and the voiceless of the world. Immigration law practice needs more people like you who know and understand the crux of the immigration matter in our nation and globally.
Maureen Okoli '18
Aurora, Ill.

↑ **The Catalan Atlas**

"The article on Uzoamaka Emeka Nzelibe was fabulous! Thank you, Northwestern Law School, for recognizing her talents and supporting her work with this neglected and vulnerable population."
— Mary Jo Deysach

I am a Northwestern law grad just returned from a week volunteering at the Dilley Pro Bono Project in Texas. There are many ways that nonimmigration attorneys can volunteer to help. We will continue to spread the word.
Julie Sommers Neuman '86 JD
Indianapolis

The article ["Immigration Misconceptions," Online Exclusive, bit.ly/NU_Mag_ImmigrationMyths] is at odds with actual data. For example: "People are coming to the United States to give birth to U.S. citizen 'anchor babies,' so they can get legal status."

We want to hear from you: letters@northwestern.edu @NorthwesternU /NorthwesternU @NorthwesternU

It may be the case that parents are not pursuing legal status through such activity but that does not mean that such activity is not taking place to benefit their children.
Gregg Barrett '16 MS
Johannesburg, South Africa

Professor Nzelibe, thank you so much for providing this clarifying information and for all of the work that do on behalf of immigrants and refugees.
Art Chwalek '81
Asheville, N.C.

Facts about the border people are welcome in light of today's politics.
Gini Tingley Duval '61
Fargo, N.D.

WILDCAT STYLE — NO FILTER

This is hysterical. "I like to wear my parents' clothes from a long time ago" ["Wildcat Style: No Filter," page 34]. Like 1980 or 1990. Somebody is in for an awakening.
Bob Norris '78
Dixon, Ill.

The story "Wildcat Style — No Filter" by Marla Paul was quite touching. It's a great way to feel in touch with how students on campus are actually expressing what they're thinking and feeling in their everyday lives, not just in their milestone accomplishments. Would love to see more stories like this.
Becca Donaldson '08
Milwaukee


Saul Osorio

FIVE QUESTIONS WITH JOHN STROUP

I feel proud to be part of a company [Belden] run by John Stroup ["Five Questions with John Stroup '88," Alumni, page 46], that even with all his business pursuits, he still cares about the humanities. Congratulations on the initiative!
Ana Santos
São Paulo, Brazil

CAMPUS NEWS

It is so wonderful that Professor Irv Rein ["Rein's Reign," News, page 16] is still contributing to the communications department at Northwestern. He was my inspiration and a significant contributor to my ability to have a successful career in the technology industry. Professor Rein made us think and communicate in an effective manner. He got us out into the world and out of the library to experience and not just read —though he encouraged us to read too.

Fifty years of teaching, 81 years young — he continues to be a role model.
Stephanie Carmel '78
South Orange, N.J.

Favorite campus speaker ["Heard on Campus," Voices, page 12]? Jimmy Carter ranks near the top of the list. It must have been during the 1975–76 school year, my first as a Northwestern undergraduate. The then-unknown candidate spoke to a small audience about his seemingly quixotic quest for the presidency. I had family ties to Georgia, so I attended. None of us dreamed that within months he would be nationally famous and then not much longer after that be sworn in as president.
Jonathan Addleton '79
Macon, Ga.

HOLDING POWER TO ACCOUNT

I'm not an ideologue, but how does a journalist such as Mr. Barstow ["Holding Power to Account," Online Exclusive, bit.ly/NU_Mag_DavidBarstow] objectively determine what is a "dubious tax scheme" unless he has a reasonable background in tax accounting and is privy to the IRS code? If there really was something nefarious going on in the president's tax reporting, wouldn't the IRS already know this?
Mike Davis '14 MA
San Francisco

Thank you for the sunshine. Truth to power is a noble pursuit.
Fatima Marashi-Hassan '79
Wauwatosa, Wis.

I would very much appreciate knowing if Mr. Barstow has written and had published any reports of dubious affairs of powerful liberal Democrats, because I have the impression that they would not be allowed by those in control at the *New York Times*.
Marg Cooke '80
Charlotte, N.C.

ALUMNI NEWS

I saw the small blurb on Kuldip Nayar [In Memoriam, page 70] and was interested to know more about this Indian man who studied journalism, graduated from Northwestern with a master's degree in 1952 and then went back to India and served the country as a political activist and leading journalist. I asked my sister-in-law, who grew up in India, if she'd heard of him. She responded immediately, "Of course! He's an icon!"
Kali Sabnis Plomin '91
Chicago

I guess you are really old when *Northwestern* comes and the Class Notes [page 50] begin with the '50s ... and you graduated in 1948.
Diana Gould Penney
Coleman '48
Longwood, Fla.

"The story 'Wildcat Style — No Filter' by Marla Paul was quite touching. Would love to see more stories like this."
— Becca Donaldson

CORRECTION

In the spring 2019 issue, Bienen School of Music alumnus Jacob Nissly '05 was incorrectly listed as principal trombonist for the San Francisco Symphony. He is principal percussionist.

WE'D LIKE TO HEAR FROM YOU

We'd like to get your feedback. Take our brief survey, and you'll be entered in a drawing to win one of five $25 Amazon gift cards. Visit magazine.northwestern.edu/survey.

Voices

CONVERSATIONS WITH ELIE WIESEL

Shared Histories of the Holocaust Bring Hope

By Howard Reich

When you're the child of two Holocaust survivors, as I am, the enormity of that event stays with you forever.

And yet, because it's your own parents who suffered so greatly, you find it difficult — if not impossible — to talk to them about it. How do you ask your mother and father about enduring such cruelties, losing everything but their lives and somehow summoning the courage to start over again?

I certainly never knew how. Which is why I was fortunate to have become friends with Nobel Peace Prize laureate Elie Wiesel during the last four years of his life. I met him in 2012, when the *Chicago Tribune* — where I have worked my entire career — assigned me to interview him, because the newspaper was awarding him its Literary Prize.

Within minutes of meeting in his New York office, we communicated as if we'd known each other for years. Our shared histories connected us, not least because Wiesel and my father, Robert Reich, both were liberated from the Buchenwald death camp on April 11, 1945. Wiesel and I soon decided that our ongoing dialogue should be captured in a book, and the recent release of *The Art of Inventing Hope: Intimate Conversations with Elie Wiesel* comes three years after his death.

To say that I learned a great deal about the Holocaust, genocide, intolerance, faith and aspiration from Wiesel would be an understatement. For he not only answered questions that had haunted me for decades but addressed some I didn't even realize I'd been harboring.

It literally has taken a book to articulate what I absorbed from this great thinker and humanitarian, but some lessons stand out.

Above all, I was struck by his optimism, though he certainly didn't call it that. In fact, he said that after all that had happened to his family and millions more, and with all the genocides that had occurred after the Holocaust, he was pessimistic. But he hastened to note it was "an active pessimism."

What did he mean?

"Not to give up," he said. "Because of genocide, you must work harder, rather than say, 'Since it hasn't helped, forget it.'"

Rather than give in to despair, in other words, Wiesel and survivors like my parents chose hope.

"If despair is the answer, where do we go?" Wiesel said to me. "What can we build on? What can we begin? If I know from the beginning that it all leads to despair, how can we go on?"

Wiesel and the other survivors did go on, building new lives in foreign countries, learning languages that were strange to them, having children and grandchildren, rebuilding life.

If that's not the definition of optimism, what is?

Wiesel also explained to me why he, like my parents, clung to faith, despite the knowledge that God had abandoned Jews amid their persecution. Wiesel said he could struggle with that bitter truth inside religion or outside. He chose inside. Moreover, faith to him was not an end in itself, but a process: a tireless asking of questions and seeking answers that may elude us. To Wiesel, faith was not a noun but a verb.

Yet in Wiesel's conversations with me and in his copious writings, he repeatedly expressed respect for survivors who later rejected the very faith he clung to.

In so doing, he offered one more precious lesson: the meaning of tolerance.

Howard Reich '77 is the Chicago Tribune's *classical and jazz critic and an author. For more on Reich, see his class note on page 54.*


2012/NANCY STONE/CHICAGO TRIBUNE/TNS

↑ Elie Wiesel at Symphony Center in Chicago in November 2012

SOUND OFF

Artificial Intelligence

Should we consider AI as full of promise or peril?

Brian Uzzi, Richard L. Thomas Professor of Leadership and Organizational Change

As AI gets better at human decision-making, it could potentially take jobs away from human beings. It's not just the worry about losing your job, it's the worry about losing your status and self-esteem. AI has the potential to make human beings feel like the machine is actually better than we are as an entity, because it does the things that make us human better than we do.

It may be that our response is to begin rejecting technology and embracing religion or to put value on the human spirit. It could also lead to tremendous stratification, where you have a caste system of elite human beings who run the machines, then you have the machines, then you have all the other human beings. Or maybe we redefine what it means to be human. We have a new outlook with the premise that all human beings are created equal. It's a big planet. Maybe all three happen simultaneously and separately.

Mark Knickrehm '84, group chief executive for Accenture Strategy

AI will have a more significant impact on how work is done rather than on jobs, with a positive influence on labor productivity that will continue to expand over time. And while some jobs will indeed go away, vast amounts of existing jobs will be augmented by AI, allowing people to do more, faster. But looking further out, many completely new jobs will also be created in the process. The fascinating thing is that AI is happening in a very condensed timeframe, bringing attention to its risk alongside the opportunity.

Accenture Strategy has started to work with Northwestern to enable our people with the right skills needed to manage the things that AI can do for clients. Northwestern, through McCormick School of Engineering dean Julio Ottino and Sally Blount, former dean of the Kellogg School of Management, helped us craft a specialized program for our strategists and data scientists, taught by gifted professors who are bringing great substance and teaching approaches. In the last two years, we've trained many of our people on how best to up-skill their data-driven capabilities.

Adam Waytz, associate professor of management and organizations

Humans and machines can partner effectively in several ways. One way is to divide up moral decision-making. Machines are good at being objective decision-makers. It's optimal for us to rely on machines to make pure utility-maximizing decisions and then for humans to make corrections if they feel any moral rules were violated.

A second framework involves letting machines do the computational work of sifting through gobs and gobs of data, where humans can provide a check on that work and feed their input back to the machine, augmenting the heavy-duty, robotic work with the human expertise.

The third framework is letting robots handle some emotional labor. For example, customer service involves managing others' emotions. We typically dislike talking to a robot when we need to reach customer service, but some robotic systems can authenticate you based on your voice. If you have the robot manage that experience, then the customer service rep can handle more specific inquiries and not deal with a frustrated consumer.

SOCIAL FEEDS

Who was your favorite Northwestern Commencement or Convocation speaker?

"African American studies professor and future Chicago Public Schools CEO Charles Payne. It was meaningful to hear from someone who shaped so much of the way I learned to think."

@makegood

"I enjoyed my commencement speaker in 1998: Ruth Bader Ginsburg. #NotoriousRBG."

@ML_Schneider

"Senator Charles Percy, in 1967. I believe it may have been his first speech after the still-unsolved murder of his daughter near the start of that school year."

Joan Ehrlich

COLBERT PHOTO: JIM PRISCHING

MY NORTHWESTERN DIRECTION

On Board with STEM

By Nichole Pinkard '98 PhD

Associate professor, School of Education and Social Policy

Would you be on this bus if this was your reality?

That was the question asked of me and about 25 other minority high school seniors in 1987 as members of the Kellogg School of Management's Leadership, Education and Development (LEAD) summer program. We were the best and the brightest, embarking on a journey, unbeknownst to us, to make visible our support structures and learning resources that seamlessly combined to create the opportunity paths that resulted in each of us having a seat on the bus.

We arrived at our destination for the day, an aging Chicago Housing Authority complex with a high school nearby. We were to spend the school day paired with students. Their stories of life in urban Chicago were as strange to me as my stories of suburban life in Kansas City, Kan., were to them. On our journey back to Evanston, we were asked to quietly reflect on the question, "Would you be on this bus if Chicago's West Side was your lived reality?"

My first interaction with Northwestern made visible the role of support structures in my life. This awakening followed me to Stanford, where, as an undergrad, I was a reading tutor for youth in East Palo Alto, the community a biking distance from Stanford but a world apart in terms of the inequities in opportunities.

When tutoring, I realized that the students and I lived different lives. They did not have access to a resourced, tight-knit suburban community as I did, one whose caring adults used city parks and classrooms to provide the extracurricular opportunities that kept my friends and me busy while strengthening our ability to lead, persist, collaborate, problem solve and celebrate others' successes. All these skills, in addition to my academic knowledge, have been critical tools on my journey. The inequity in our out-of-school opportunities gnawed at me.

"On our journey back to Evanston, we were asked to quietly reflect on the question, 'Would you be on this bus if Chicago's West Side was your lived reality?' "

It was a bevy of opportunities, people and experiences that made being a computer scientist possible for me. Now it's my responsibility to ensure that the next young girl has access to the resources to create her own path.

When I returned to the University in 1992 as a student in the first cohort of the learning sciences doctoral program, I was awakened to the transformative power of well-designed learning technologies. I've spent the last 20 years working to create the infrastructure needed to support kids in developing their digital literacy. I'm excited about bringing the Digital Youth Divas program to the Evanston community.

Studies show that if a girl has not engaged in out-of-school STEM learning opportunities during the middle grades, regardless of how well she does academically, she will not major in a STEM field in college. The Digital Youth Divas program is designed to create an environment where girls can be girls and also explore ways in which technology is relevant for them.

When I returned to the University in 2018 as a professor, I was reminded of being a student on the bus answering a life-altering question. Now I am the professor asking questions and seeking to stimulate my students' lifelong exploration of answers sparked through our interactions. Hopefully, I can have the same impact that my Northwestern professors had on me.

Check out Nichole Pinkard's "My Northwestern Direction" video at magazine.northwestern.edu/my-northwestern-direction.

Illustration by Bruce Morser

WHAT INSPIRES ME

Swim. Bike. Run. Heal.

Champion triathlete and medical researcher is helping develop and improve stem cell treatments.

Jacquie Godbe '12, '12 MS, doctoral student in the Medical Scientist Training Program (MSTP)

"As an athlete, you're always asking, 'What's the next level? Can I do better?' A lot of that relates to the field of medicine, to physical therapy. If I hurt myself training or I wonder why a muscle works the way it does, I break out my medical textbooks and look it up. At the same time, with triathlon training, I get hands-on experience that I can use to educate patients about their own wellness programs, their own nutrition, and how to do physical therapy and rehab for everything from plantar fasciitis to a sprained ankle. It's a two-way street.

Scientists and triathletes are interesting, passionate people. The fact that I get to interact with both on a daily basis keeps me coming back."

Jacquie Godbe is a doctoral candidate in the lab of professor Samuel Stupp '77 PhD at the Simpson Querrey Institute. She is helping to develop novel delivery materials for stem cell therapies. Godbe also works with patients at the Feinberg School of Medicine's Education-Centered Medical Home and has mentored high school students as part of MSTP's PRISM Outreach Program. Godbe, who was on the Northwestern swimming and diving team as an undergrad, was an age group national champion triathlete in 2016 and 2017 and an age group world champion in 2017. She competed professionally in 2018 and 2019.

↑ Jacquie Godbe crosses the finish line at the 2015 Chicago Triathlon.

SPRING SPEAKERS

Heard on Campus

Last spring Northwestern hosted a bevy of speakers on campus, spanning numerous subjects and issues. Here's a sample of what they had to say.

"National news can't fill the void of local reporting. We're not in these communities. We're not covering statehouses. This is how corruption thrives, when people are not covering it. In an ideal world it would make national news more focused on local coverage, but we're still figuring that out."
Maggie Haberman, *New York Times* White House correspondent, at a discussion sponsored by Northwestern Hillel

"By my logic, if practice is what makes you a good cook, then aren't the grandmothers who have been cooking for 65 years just as practiced or much more than some of the greatest chefs who have hourlong episodes about them?"
Samin Nosrat, author of *Salt, Fat, Acid, Heat: Mastering the Elements of Good Cooking*, as part of the Contemporary Thought Speaker Series

"It's very hard now to write a speculative dystopia that doesn't feel like you're reporting from this world in some ways. It is such a surreal moment. I brace myself when I turn my phone on after a flight, because it just feels like nothing is out of bounds. Maybe half the country caught fire."
Karen Russell '03, award-winning author, at the Moore Lecture in Creative Writing

"My harshest, toughest critics are my own family and my own community, because they can just smell baloney right away. So I work really hard to write in a way that I feel is true to myself and that my friends, community and family can look at and go through all the checks and balances."
Layli Long Soldier, a National Book Award finalist and citizen of the Oglala Lakota Nation, at the annual Spring Writers' Festival

News

HEALTH

Cutting the Cord

Skin-like sensors monitor babies in the NICU without wires.

An interdisciplinary Northwestern team has developed a pair of soft, flexible wireless sensors to replace the tangle of wire-based sensors that currently monitor babies in hospitals' neonatal intensive care units (NICU) and pose a barrier to parent-baby cuddling and physical bonding.

The team completed a first series of studies on premature babies at Prentice Women's Hospital and the Ann & Robert H. Lurie Children's Hospital of Chicago. The researchers concluded that the wireless sensors provided data as precise and accurate as the data from traditional monitoring systems. The wireless patches also are gentler on a newborn's fragile skin and allow for more skin-to-skin contact with the parent.

"We wanted to eliminate the rat's nest of wires and aggressive adhesives associated with existing hardware systems and

Northwestern professor Amy Paller with Taschana Taylor, mother of a baby in the NICU

replace them with something safer, more patient-centric and more compatible with parent-child interaction," says John A. Rogers, a bio-electronics pioneer, who led the technology development. "Our wireless, battery-free, skin-like devices give up nothing in terms of range of measurement, accuracy and precision — and they even provide advanced measurements that are clinically important but not commonly collected."

Typically, five or six wires connect electrodes on each baby to monitors for breathing, blood pressure, blood oxygen, heartbeat and more. Although these sensors ensure health and safety, the wires constrain the baby's movements and pose a major barrier to physical bonding.

"We know that skin-to-skin contact is so important for newborns — especially those who are sick or premature," says Amy Paller '88 GME, dermatology department chair and Walter J. Hamlin Professor of Dermatology. "Yet when you have wires everywhere and the baby is tethered to a bed, it's really hard to make skin-to-skin contact."

The benefits of the Northwestern team's new technology reach beyond its lack of wires. The dual wireless sensors monitor babies' vital signs — heart rate, respiration rate and body temperature — from opposite ends of the body. One sensor lies across the baby's chest or back, while the other sensor wraps around a foot. This strategy allows physicians to gather an infant's core temperature as well as body temperature from a peripheral region.

"Differences in temperature between the foot and the chest have great clinical importance in determining blood flow and cardiac function. That's something that's not commonly done today," says Rogers, the Louis Simpson and Kimberly Querrey Professor of Materials Science and Engineering and Biomedical Engineering and a professor of neurological surgery.

Many premature babies also suffer skin injuries from the sticky tape that adheres the wires to the body. Tape can cause skin irritation, blisters and, ultimately, infections. The sensors' skin-saving secret lies in their lightweight nature (each sensor weighs about the same as a raindrop), thin geometry and soft mechanics.

Rogers estimates that the wireless sensors will appear in U.S. hospitals within the next three years. With support from two major nonprofits, Rogers' team expects to send sensors to tens of thousands of families in developing countries over the next year as part of an international effort.

Wearables on Display

The new NICU sensors and other wearable devices developed by John Rogers are on display in the *Wired to Wear* exhibition at the Museum of Science and Industry in Chicago. Devices from Rogers' laboratory include variations of his sweat analysis patch, skin pH sensor and UV sensor. The exhibition runs through May 2020.

GLOBAL REACH

Northwestern's Fulbrights Around the World

A GLOBAL CITIZEN
Colombia

Jeromy Gotschall '18 says his Fulbright at the Universidad Cooperativa de Colombia has offered him a tremendous opportunity to grow as an educator, improve his Spanish and model global citizenship. "It will be hard to leave Colombia," he says, "but I hope to return to Latin America soon to pursue global health research."

FISH FINDER
United Kingdom

Jessie Moravek '16 is completing a master's degree in biodiversity and conservation at Lancaster University in northwest England. Her current focus is on river restoration and its impact on local fish populations. Although it rains often, Moravek has enjoyed hiking with friends in the English Lake District.

THE ROCK RECORD
Poland

Jordan Todes '18 is researching inoceramid bivalves, an extinct family of giant clams. His research suggests that major evolutionary advances in this group seem to occur during periods of climate instability. "Understanding how life persisted and adapted ... is a crucial endeavor that may guide us in mitigating the effects of the current crisis," Todes says.

RITES OF PASSAGE
Ethiopia

A doctoral candidate in archaeology, Dil Singh Basanti is studying death and burial in Aksum, the capital of the ancient Aksumite Empire. He is reconstructing the burial practices of the ancient Aksumites, who built giant obelisks, conducted elaborate ceremonies and even began retrieving the bones of their dead family members as they sought to maintain connections with their loved ones.

DRUGS AND MASCULINITY
South Africa

Henry Chen '18 is investigating drug use and masculinity in an industrial township outside of Durban. He's also worked on studies related to gender violence in schools and teenage fatherhood. The Fulbright grew out of a study abroad trip and research he conducted in the same community through a Northwestern Undergraduate Research Grant.

The Ticker

● Everette E. Dennis, the **Northwestern University in Qatar** dean, will complete his service in 2020 and join the journalism faculty in Evanston.

● The family of the late professor Dale T. Mortensen donated his **Nobel Prize** medal to the University. He and two colleagues, Peter Diamond of MIT and Christopher Pissarides of the London School of Economics and Political Science, were awarded the Nobel Prize in Economics in 2010. It is displayed in the economics department.

● **Lonnie Bunch** '19 H, secretary of the Smithsonian Institution, delivered the Northwestern commencement address in June.

● *Hidden Figures*, Margot Lee Shetterly's book about the pathbreaking African American women scientists whose work enabled NASA's first manned mission to orbit the Earth, is the **One Book One Northwestern** selection for 2019–20. Shetterly will give keynote addresses on the Evanston and Chicago campuses on Oct. 17.

● During the course of just over a week in January, three clients represented by the Bluhm Legal Clinic's **Center on Wrongful Convictions** — Eric Blackmon, Patrick Pursley and Huwe Burton — were exonerated or acquitted. The Bluhm Legal Clinic is celebrating its 50th anniversary in 2019.

Illustrations by Beady Eyes

CAMPUS LIFE

Northwestern's Animal Kingdom

From tweeting foxes to elephant skeletons, the University has a history of life on the wild side.

Last winter two beavers were spotted on the Evanston campus. University archivist Kevin Leonard '77, '82 MA says the Evanston campus has long been home to more than Wildcats, with bats, raccoons, skunks, "semi-domesticated" squirrels, foxes and coyotes living on or near campus. Here are a few Northwestern connections to the animal kingdom.

Furpaw One of the University's early mascots was a caged bear cub from the Lincoln Park Zoo named "Furpaw," who made an appearance before each football game in 1923.

Albert Wolfson's Birds Acclaimed biologist and ornithologist Albert Wolfson, a professor of biological sciences, did much of his research on the migratory and mating habits of birds on the Northwestern campus.

Wildcat on Campus Many Northwestern tour guides tell the tale that a wildcat was once spotted dashing across Deering Meadow. "It's a complete myth, of course," Leonard scoffs. However, anyone who visits University Archives will find a preserved wildcat, donated by the Gates family in 1966.

Northwestern's Museum of Natural History In 1870 Oliver Marcy, professor of natural history and physics, founded a museum of natural history in University Hall that showcased a wide variety of fossils, minerals and shells and even included skeletons of a whale and an elephant.

@NorthwesternFox In May 2012, @NorthwesternFox, a parody Twitter account, documented fox sightings on the Evanston campus.

Legend of the Deer Deer are a rare sight on the Evanston campus, but legend has it that if you spot one before a midterm or final, you will ace your test!

HOPE CARPINELLO/NORTHWESTERN ATHLETICS

SPORTS

Five first-year starters, including All-American pitcher Danielle Williams, helped lead Northwestern softball to the NCAA Super Regionals, where the Wildcats lost to the eventual national runner-up, Oklahoma. Northwestern finished the season with a 47-13 record, the third-most wins in program history, and most conference wins (21) in program history.

'CAT TALES

The Father of the Yield Sign

Oklahoma highway patrolman Clinton Riggs was a student at the Northwestern Traffic Institute, now the Center for Public Safety, in 1939 when he created the yield sign as a class assignment. His goal was to improve public safety and determine liability in an accident.

In 1950, as a member of the Tulsa Police Department, Riggs placed the first yield sign at the most dangerous intersection in the city. Within a year, the number of accidents fell to zero, and yield signs soon appeared at intersections across the country.

Riggs, who retired as the administrative assistant chief of the department in 1970, was also credited with the integration of the department, developing the Tulsa Police Academy and authoring several laws, including one that prohibits convicted felons from carrying firearms.

→ BrewBike founder Lucas Philips

GRADS TO WATCH

BrewBike Rides the Buzz

Lucas Philips' cold-brew coffee startup is poised to expand nationally.

Lucas Philips '19 came to Northwestern with the goal of starting his own business. When he graduated in June, Philips stepped full time into his work as chief growth officer for BrewBike, the startup he co-founded as a first-year student in fall 2015.

Philips admits there were times when the coffee retailer nearly folded, due to credit and cash-flow issues — plus Chicago's brutal winter weather made it a challenge to sell cold brew from a custom-built bike.

Now, with two permanent locations and a mobile shop, as well as a subscription service for on-campus organizations, BrewBike has sold more than 50,000 cups of coffee — for under $4 a cup — and employs more than 40 people. Philips is leading an expansion of the service to other campuses in warmer climates, including the University of Texas at Austin.

Read more about the Class of 2019 in our "Grads Go Forward" roundup at bit.ly/NU_2019Grads.

Discovery

WELLNESS

South Asians' Heart Health Risks

Namratha Kandula is co-leading a study to understand high rates of heart disease among South Asian immigrants.

Namratha Kandula distinctly remembers the phone call from India that brought the news of her 56-year-old grandfather's sudden death.

"It was pretty shocking," she recalls, "because he didn't necessarily fit the profile [of a heart attack victim]. He didn't smoke. He was relatively active and was someone who you wouldn't think had an unhealthy diet. Many of us in the South Asian community have family members who have died at a young age from a heart attack."

South Asians account for 60% of the world's heart disease patients. And that trend continues for the 5.4 million South Asian immigrants in the U.S. Their risk for heart disease is 2 ½ times that of the general U.S. population. South Asians — the second–fastest growing minority group in the U.S. — have the highest death rate from heart disease compared with other ethnic groups.

Kandula, associate professor of medicine and preventive medicine at the Feinberg School of Medicine, is working to identify the factors that lead to heart disease in this community. As a principal investigator for the Mediators of Atherosclerosis in South Asians Living in America (MASALA) study, Kandula is partnering with researchers at the University of California, San Francisco, to understand the risk factors faced by South Asians and improve heart disease prevention and treatment. The study, now in its ninth year, has followed more than 1,100 South Asians in Chicago and the Bay Area.

"There are some unique things about this group that don't fit with the patterns that we understand about heart disease and stroke," Kandula says. For example, South Asian immigrants in the U.S. tend to be more highly educated. Despite that, they have low levels of physical activity that partly contribute to their higher risk of stroke and death from heart attack. And they develop high blood pressure, diabetes and heart disease at younger ages — five to 10 years earlier than other ethnic groups — even though they don't fit the classic risk patterns.

One of the most notable differences is that South Asian Americans develop risk factors at a lower body mass index (BMI), Kandula explains, and they are not as overweight as other populations. "But even though they're not overweight, they tend to have a lot of fat around their internal organs. And we think those hidden fat stores inside the body contribute to higher risk."

Kandula, whose parents came to the U.S. from India for their medical residencies, is focusing on second-generation South Asians, both in terms of their risk factors and their role as conduits of health information to their immigrant parents. She is planning a study to understand whether the high risk for heart disease and stroke is similar in second-generation South Asian Americans and how changing cultural and behavioral patterns influence their health.

Progress is already being made. In 2015 the American Diabetes Association changed its guidelines to recommend screening Asian Americans for diabetes at a lower BMI, and the American Heart Association now recognizes South Asians as a high-risk group for cardiovascular disease. "As a researcher, you feel lucky if you see your research actually have a community or policy impact in your lifetime," Kandula says. "We've seen that with MASALA."

"Many of us in the South Asian community have family members who have died at a young age from a heart attack."

On Capitol Hill

In 2019 U.S. Rep. Pramila Jayapal '90 MBA, the first Indian American woman to serve in the House of Representatives, introduced legislation to increase awareness of South Asian heart risk and provide more funding for treatment strategies.

RESEARCH

Bad News for Egg Lovers, Diagnosing 'Art Acne'

1

CUT YOUR EGG INTAKE

A Feinberg School of Medicine study found that adults who consumed more eggs and dietary cholesterol had a significantly higher risk of cardiovascular disease and death from any cause. The large study, which looked at pooled data collected in six different studies totaling nearly 30,000 adults, found that eating 300 milligrams of dietary cholesterol per day correlated to a 17% higher risk of cardiovascular disease. A single large egg contains of 186 milligrams of cholesterol.

2

TWO OF A KIND

Northwestern and the University of Illinois Urbana-Champaign have partnered to launch the Illinois Twins Project (ITP), the first-ever such database in the state. It will include twins and other multiples in Illinois between newborn and 17 years of age. Jennifer Tackett, director of clinical psychology at Northwestern, is the project's co-principal investigator.

3

BLISTERS ON O'KEEFFE ART

Pimple-like protrusions on many of Georgia O'Keeffe's paintings had long concerned art conservationists. A multidisciplinary team led by researchers at Northwestern and the Georgia O'Keeffe Museum in Santa Fe,

N.M., found that the protrusions are metal soaps resulting from a chemical reaction between the metal ions in lead and zinc pigments and the fatty acids within the paint's binding media. As a result of the discovery, the Northwestern team, led by professors Marc Walton and Oliver Cossairt, developed a handheld tool to map and monitor artworks.

Innovation

STUDENT ENTREPRENEUR

Avoiding a Meltdown

Brent Chase is creating wearable smart technology that can help people with autism spectrum disorder detect and mitigate uncontrollable emotional outbursts.

Brent Chase, right, is developing smart apparel to mitigate the effects of meltdowns experienced by people with autism spectrum disorder, like his brother, Alec.

Brent Chase knows the pain and helplessness of watching a loved one go through a physically and emotionally damaging autistic meltdown.

Chase, a master's student in biomedical engineering, describes a meltdown as "an intense response to an overwhelming situation. It's like an extreme anxiety attack — times a million. It's a hurricane, tornado, blizzard, end-of-the-world situation where everyone can be a victim. You want to help them, but you can only do so much."

Chase's younger brother, Alec, was diagnosed with autism spectrum disorder (ASD) when he was 3 years old. Alec's meltdowns, Chase says, have kept him from achieving professional and social independence.

Alec is the inspiration for Chase's Products for Autism Lifestyle (PAL), maker of smart apparel for people with autism spectrum disorder. He and a team of colleagues at Northwestern and the Rochester Institute of Technology, his undergrad alma mater, are working to develop a shirt that collects biometric data to help warn loved ones about an imminent meltdown.

The shirt includes biosensors — about half the size of a deck of cards — to measure stress levels through physiological data such as heart rate. When certain signals are detected, the sensors send information to a mobile app that alerts the person and their parents or caretakers of the possibility of a meltdown. Caregivers can then try to mitigate the effects — remind the person to breathe and remove him or her from the situation. People who are affected by autism and their caregivers can, over time, begin to understand what triggers a meltdown and proactively avoid such situations.

For people affected by autism, Chase hopes his wearables will help decrease the number of meltdowns, promote self-regulation and, in the long term, increase opportunities to secure employment and become more independent.

The PAL team is continuing to develop hardware for the biometric sensors. PAL, a subsidiary of Gaia Wearables, is a resident team at The Garage, Northwestern's student startup incubator. Chase, CEO of Gaia Wearables, hopes to release the biometric shirt by early 2020.

"We hope that our product has a big impact, but this is also a call to arms for other people and organizations to innovate and design with purpose," Chase says.

STARTUP SUCCESS

Medical device company Rhaeos placed fourth in the 2019 Rice Business Plan Competition, the world's largest student startup competition, in April. Rhaeos, founded through a collaboration between professor John A. Rogers and the Department of Neurological Surgery, is working on getting FDA approval for a device that would help detect shunt failures in patients with hydrocephalus.

PINEAPPLE ON TOP

One of the primary materials used in Scoots is Piñatex, a natural textile made from pineapple leaves that can be dyed a variety of colors. Scoots will launch with four color options — paprika, charcoal, chocolate and oatmeal. Scoots are also made from corn-based PLA, a type of biodegradable plastic that helps maintain the shoe's stability.

THE INSOLE STORY

The removable insole consists of three layers — a natural cotton canvas, a natural latex foam and a thin layer of cork. The cotton lining lets air circulate, keeping feet cool and dry. The latex provides cushion and support for the foot and improves the flexibility of the cork midsole.

STYLISH THREADS

The stitching serves both a functional and stylistic purpose. The customizable color thread adds contrast to the sole and bonds the shoe together.

CORKED

The Scoots sole is made from Portuguese cork, which is harvested every summer by hand. The natural latex-coated cork sole molds to the foot, making the shoe more comfortable over time. Scoots are manufactured in the north of Portugal.

LAUREL CHAMBERLAIN

INVENTION

Scoots Footwear

Americans throw away about 300 million pairs of shoes each year. Almost all of them end up in landfills, where they can take centuries to break down. That waste inspired David Costello, a Zell Fellow at the Kellogg School of Management, to launch a new plant-based footwear brand called Scoots as part of Kellogg's New Venture curriculum. After 15 months of interviewing and planning — and taking classes at the Chicago School of Shoemaking — Costello and his seven-member team launched a Kickstarter campaign in June. Costello plans for a full launch in 2020. Here's what goes into making Scoots' first product, the PA1 (PineApple 1).

← Clara Bien Peek, left, assistant professor of biochemistry and molecular genetics and medicine (endocrinology), and Rubye Peyser, a research technician, in the Shilatifard Laboratory at Northwestern Medicine

JIM PRISCHING

RESEARCH

Understanding the Impact of Environment on Genes

The Simpson Querrey Center for Epigenetics investigates how environmental factors can modify genes and affect human health.

Genetic mutations — inherited from our parents and carried from birth — can increase our risk of developing diseases from schizophrenia to cancer. But environmental factors also play a critical role in determining who develops certain maladies and who doesn't. Identical twins, for example, start with the same DNA, but as they age, variables such as diet, exercise, emotional experiences and chemical exposure can contribute to very different health outcomes.

The growing field of epigenetics studies the effects of environment on gene activation and expression. Created in 2017, Northwestern's Simpson Querrey Center for Epigenetics (SQE) encourages collaborations to illuminate how environmental factors affect the human genome, impacting individuals and their health.

Bringing together experts in biochemistry, molecular genetics, computational biology, clinical medicine and other fields, the center is advancing epigenetic research to better understand, diagnose and treat disease. A $10 million gift from University trustees and generous supporters Louis A. Simpson '58 and Kimberly K. Querrey fuels the work of the center. Housed in Northwestern University Feinberg School of Medicine, SQE recently moved to the new Louis A. Simpson and Kimberly K. Querrey Biomedical Research Center on Northwestern's Chicago campus.

"Understanding epigenetics is at the central core of understanding many human diseases," says SQE Director Ali Shilatifard, who also is the Robert Francis Furchgott Professor of Biochemistry and Pediatrics and chairman of biochemistry and molecular genetics at Feinberg. Already, SQE has attracted nearly 200 faculty affiliates from across Northwestern's Evanston and Chicago campuses. Students and faculty are seizing opportunities for collaborative research and taking advantage of weekly seminars, annual symposia and training made possible by the gift from Simpson and Querrey.

Shilatifard's own investigations focus on epigenetic modifications of human chromatin — the basic unit of our chromosomes — which regulate gene expression. He and his collaborators have performed groundbreaking studies on epigenetic-targeted therapeutics for childhood leukemia, childhood brain cancer and adult triple-negative breast cancer.

Such research, which links basic science to potential medical advances, has widespread implications. For example, understanding how and why gene expression may cause cellular dysfunction in the initial stages of breast cancer could improve early detection of the disease.

In 2018 the journal *Nature Medicine* published a study by Shilatifard and his colleagues that identified a mechanism to slow the growth of cancerous tumors caused by an epigenetic imbalance. Northwestern investigators have since launched a clinical trial that could lead to better survival rates among patients with late-stage bladder cancer.

In the coming decade, Shilatifard says, "My hope is that from the discoveries made at Northwestern Medicine and SQE, we can develop a series of epigenetic-targeted therapeutics for the treatment of a variety of human diseases, including cancer."

SCHOLARSHIPS

Donor Challenge Supports Law School

Benefactors are creating new opportunities for students as part of the Scholarship Challenge for Today and Tomorrow.

"My family taught me that the purpose of life is service to others," says Emelia Carroll '19 JD, who recently graduated from Northwestern Pritzker School of Law and will soon start her career at the Office of the Colorado State Public Defender. Carroll chose Northwestern Law for its outstanding reputation, journals and clinics, and a scholarship endowed by Kathy and Jon Newcomb '79, '82 JD helped make it possible for her to attend.

The Kathy and Jon Newcomb Scholarship was established through the Scholarship Challenge for Today and Tomorrow, part of Northwestern Law's Motion to Lead campaign. The challenge, supported by the Pritzker Family Foundation, offers a one-to-two match to inspire benefactors to create scholarship funds. The campaign has funded nearly 40 scholarships so far.

Grateful for the support that previous generations of alumni provided for his undergraduate education at the Weinberg College of Arts and Sciences and at the Law School, Jon Newcomb made his first gift of $5 to Northwestern in 1979. He now volunteers for both schools and serves on the Law Board. Currently he is a member of his 40th undergraduate reunion committee as well. Jon Newcomb is vice president, deputy general counsel and chief information counsel in the law department at Comcast Cable Communications. He and his wife are the parents of Jonathan Brooks Newcomb '15, who graduated from the McCormick School of Engineering, and Ann Newcomb Covey.

The Newcombs first met Carroll, who received their scholarship in each of her three years as a student, at Northwestern Law's inaugural Celebration of Scholarships in 2017. This year's event took place in the school's Lanny and Sharon Martin Atrium. Nnenna Onyema '20 JD, president of the Black Law Students Association and recipient of the Kruse Family Scholarship, addressed donors, thanking them for using their resources to make Northwestern Law even better for current students. "Your contributions allow students to come here and truly thrive at this institution," Onyema said. "They are grateful for that. And I am grateful for that."

Like Onyema, Carroll is thankful for her scholarship. She has also appreciated the chance to get to know her benefactors. Carroll attended the Newcombs' tailgate before a Northwestern football game, and when she won an award for best speaker at a moot court competition, Jon Newcomb wrote her a congratulatory note. "The Newcombs gave this money on faith, and I want them to be proud of me," Carroll says.

For Newcomb, creating a scholarship has been an incredible experience. "If you're thinking about endowing a fund," he says, "I can tell you that the emotional reward has far exceeded what we could have imagined when we made the gift."

↑ Scholarship recipient Nnenna Onyema spoke at Northwestern Law's 2019 Celebration of Scholarships.

← Emelia Carroll, center, is the recipient of a scholarship created by Jon and Kathy Newcomb.

"Before the campaign, we were thinking about what we could do beyond our annual contribution. The challenge made the scholarship attractive because our family could leave a legacy, and I could also honor my yearly philanthropic commitments to the Law Board and the Law School Fund."

— Jon Newcomb

PLANNED GIFTS

Planned Gifts Create Legacy of Support

Forward-thinking donors seek to sustain Northwestern in the future through their estate plans.

Many donors wish to make an impact on Northwestern not just during their lifetimes but after they have passed, leaving a lasting legacy of support for the University and helping to transform the lives of future generations of students. An impressive number of benefactors have chosen to make this generous commitment: As of May 31, planned gifts made during **We Will. The Campaign for Northwestern** totaled $631 million, or 14% of Campaign giving.

The Henry and Emma Rogers Society recognizes alumni and friends who have included Northwestern in their estate plans — for example, naming Northwestern as a beneficiary in a will or living trust. (See “A History of Generosity,” page 25.)

Rogers Society members Sharon Bowen ’82 JD, MBA and her husband, Larry Morse, made a planned gift commitment to Northwestern that will support a first-of-its-kind scholarship at Northwestern Pritzker School of Law. The African American History and Culture Endowed Scholarship will be awarded annually to outstanding students who demonstrate interest in, or commitment to, African American history and culture.

“I was the beneficiary of a full scholarship that enabled me to earn my JD-MBA degrees at Northwestern,” says Bowen, who was an active member of the Black Law Students Association during her time on campus. “This opened the door to opportunities for me to have a meaningful career. It is my hope that this gesture of my appreciation will also open the door for future law students.”

Like Bowen, Teresa Norton ’67 decided to give thanks to Northwestern through planned gifts that will aid students in her field of study. Specifically, she has chosen to support the Medill School of Journalism, Media, Integrated Marketing Communications and its master’s program in reporting on religion, spirituality and ethics.

“I wanted to show my gratitude for the superior education I received,” Norton says of her decision to make the gift. “I can honestly say that every class at Medill had a bearing on the rest of my life.”

Trustee T. Bondurant “Bon” French ’75, ’76 MBA and his wife, Hollis “Holly” S. French, have not forgotten the important role Northwestern has played in their family’s life — Bon French’s parents and brother both graduated from Northwestern, and the Frenches’ daughter is an alumna. As longtime supporters of the University they love, they made a transformational bequest commitment that will support the Kellogg School of Management as well as Northwestern.

“We care deeply for Northwestern and Kellogg and are proud to give back to the university that has meant so much to our family over the last seven decades,” says Bon French, co-chair of **We Will. The Campaign for Northwestern**. “Our bequest will help ensure that Northwestern continues to thrive for years to come.”

Longtime faculty members often choose to leave their mark on the University through planned gifts too. The late Laurence Davis was a pianist and professor at the Henry and Leigh Bienen School of Music for 34 years. His influence now extends beyond his lifetime through the numerous gifts he generously designated for Northwestern’s Music Library and the Bienen School. A portion of Davis’ planned gifts created the Laurence Davis Scholarship Fund, an endowment that will benefit students in perpetuity.

↑ **Planned gifts made by late Professor Emeritus Laurence Davis helped fund Northwestern’s Music Library, pictured, and the Henry and Leigh Bienen School of Music.**

For more information about planned gifts, visit ***giftplanning.northwestern.edu****.*

A History of **Generosity**

↑ **Henry and Emma Rogers**

The Henry and Emma Rogers Society was founded in summer 1987 to honor and recognize alumni and friends who have included Northwestern in their estate plans.

Henry Wade Rogers was dean of the University of Michigan Law School when Board of Trustees Chair Charles Deering recruited him to become the 10th president of Northwestern. During Rogers’ tenure, from 1890 to 1900, he expanded academic offerings, hired new faculty and led the construction of new buildings and facilities, including Annie May Swift Hall, Orrington Lunt Library and Fisk Hall. He is also credited with transforming the University from a cluster of colleges and professional schools into a nationally recognized university. His leadership led to a dramatic increase in enrollment and positioned Northwestern among the country’s most prestigious universities.

A champion of social reform and leader in the suffrage movement, Emma Winner Rogers co-founded the University Guild, through which she worked to promote higher learning and the arts within the Northwestern and Evanston communities, and the Northwestern University Settlement Association (now called the Northwestern Settlement), which at the time provided social services and support for immigrants on Chicago’s near West Side.

The Rogers Society was originally named for Henry alone. Emma’s name was added in 2007. This change recognized each spouse’s contributions to advancing educational excellence, equality and social justice.

The University has welcomed 657 donors to the Rogers Society throughout **We Will. The Campaign for Northwestern**. Today nearly 2,000 Rogers Society members have included Northwestern in their estate plans through charitable bequests, gift annuities, charitable remainder trusts and other forms of planned gifts, creating a lasting legacy at Northwestern.

For more information or to join, visit ***giftplanning.northwestern.edu/rogers-society****.*

Solutions for Troubled Waters

Northwestern researchers, students and alumni are discovering solutions for water quality issues and climate change challenges in the Great Lakes region.

BY EMILY AYSHFORD

Photograph by Michael Goss

Lake Michigan, whose shimmering beauty convinced Northwestern's founders that this was the place to build the University, has been under threat since the early 20th century.

Lake Michigan is often thought of as the crown jewel of Northwestern. As large as an inland sea, its waters are ever-shifting: They can sit as still as glass on a calm spring day, or crash onto the painted rocks during summer thunderstorms, or collect into ice sculptures along the Clark Street Beach in subzero winters.

The lake is a draw for students and professors alike, whether for exercise — professor Will Dichtel is known to swim in the cool waters — or just for daily contemplation.

But this immense body of fresh water, whose shimmering beauty convinced Northwestern's founders that this was the place to build the University, has been under threat since the early 20th century.

The Great Lakes, the second-largest source of surface fresh water in the world and the source of drinking water for more than 48 million people in the U.S. and Canada, have undergone substantial changes over the past 200 years of human activity. Development, agriculture, infrastructure and industry have left the lake bottoms laced with legacy contaminants and toxins. More recent threats include invasive species such as zebra and quagga mussels, microplastic pollution and algae blooms.

Now the Great Lakes region faces another imminent challenge: climate change. A new report by Midwestern and Canadian scientists and experts details how climate change could affect the Great Lakes and threaten public health, fish and wildlife, water quality, and the regional economy.

"We are already seeing the effects of climate change on Great Lakes cities," says Northwestern civil and environmental engineering professor Aaron Packman, an expert in water scarcity, water management and urban flooding who helped write the report. "One example is the recent severe flooding in the Midwest, which is associated with changing weather patterns in the winter and early spring. These events discharge sewage and fertilizer into the Great Lakes. Flooding is very damaging to vulnerable communities in cities like Chicago."

Will Dichtel

Robert L. Letsinger Professor of Chemistry

Develops organic materials for water purification, energy storage and explosive detection.

Aaron Packman

Professor of civil and environmental engineering and director of the Northwestern Center for Water Research

Changing sediment and the rise and fall of the water level led to his research in water transport processes.

Katie Kollhoff

CEO, NUMiX Materials

Her water treatment startup removes metals from water.

The report highlights the impact of climate change on the 34 million people who live in the Great Lakes area and lays out several problems, including lower quality of drinking water, extreme weather and decreased crop yields.

While it can be easy to be pessimistic, Northwestern researchers say these challenges can be solved. Through partnerships, new technologies, startup businesses, public policy roles, and as legal advocates, Northwestern faculty, students and alumni are keeping water resources like the Great Lakes clean and sustainable.

Packman is one of several Northwestern professors looking for innovative, cost-effective ways to tackle water issues. Chemistry professor Will Dichtel has created a polymer that, when placed in water, binds and eliminates PFOA, a human-made chemical that was used to manufacture Teflon and Scotchgard. Kimberly Gray '78, a civil and environmental engineering professor, is helping develop a new membrane covered with a thin polyelectrolyte film that could be used in drinking water treatment. Water security, both in Chicago and worldwide, is the focus of anthropology assistant professor Sera Young's research. And Julius Lucks, a chemical and biological engineer (and Young's husband), is creating a new class of smart diagnostics to cheaply and quickly assess water quality.

"Water is life," Packman says. "We all need water to live. So if you drink water, you should probably care about what exactly is in your water, make sure that you have enough water, and make sure that we have a sustainable supply of water."

Packman has cared about water since he was a kid growing up in St. Louis, on the bluffs of the Missouri River. Today, as head of Northwestern's Center for Water Research, he leads or is part of several initiatives aimed at providing solutions to water issues in the Chicago area. By partnering with other universities, as well as with institutions like Argonne National Laboratory, the Metropolitan Water Reclamation District of Greater Chicago and the Nature Conservancy, he's now able to turn research into implementable solutions.

One initiative is SAVEUR (Systems Approaches for Vulnerable Evaluation and Urban Resilience). The multidisciplinary project involves using data from the Array of Things sensor network throughout the Chicago area, which measures air quality, water levels and other environmental conditions to determine how extreme weather events (like heat waves and storms) impact the city. The sensors — currently 100, eventually more than 500 — will support high-quality data models that can reveal the city's vulnerabilities as climate change makes these events more common.

According to the new climate change report drafted by Packman and others for the Environmental Law and Policy Center, the forecast is grim. By the end of the 21st century, temperatures in the area are expected to rise 2 to 7 degrees Fahrenheit, creating an additional 30 to 60 days of extremely warm temperatures each year. A warmer atmosphere will mean more extreme rainfall events, which is especially bad for Chicago, where the infrastructure leaves little permeability for rainfall to be absorbed back into the ground. Instead, localized flooding can stir up industrial contaminants, like metals and chemicals that are left in the soil, and introduce them into waterways. The city's sewers carry both rainwater and sewage, and when too much rain falls, the city is forced to discharge the mix of stormwater and wastewater into Lake Michigan.

Packman and his collaborators ultimately hope to use the data to make recommendations on introducing green infrastructure that can reduce vulnerability to extreme weather.

"I'm excited to be able to do fieldwork here, where we engage the community and government agencies to work together to solve this problem," he says. "It has been very positive to see many more people understand what it takes to deliver clean and safe water to meet our needs while avoiding degradation of natural resources and ecosystems."

Finding ways to deliver clean and safe water sometimes has origins in unlikely places.

Chemist Will Dichtel is an open-water swimmer who isn't afraid to traverse Lake Michigan's summer waves, but he wasn't focused on the extent of industrial pollutants circulating in the Great Lakes until he began to think about making new materials from sustainable sources. In his lab at Northwestern, Dichtel develops specially designed polymers that can do everything from store electricity to clean up water by taking advantage of the open space these materials have at the molecular level.

A few years ago, he and his research group began to study cyclodextrin, a sugar derived from corn, which is made from molecules shaped like tiny cups. It turns out those cups are the right size to bind and trap many pollutants found in water, including bisphenol-A (BPA) and pesticides. "It's a lock-and-key fit," says Dichtel, the Robert L. Letsinger Professor of Chemistry.

The first material he created from cyclodextrin in 2015 trapped hundreds of these pollutants found in water, but it did not trap pollutants that represent a growing concern: perfluorinated alkyl substances (PFASs), including eight-carbon derivatives known as PFOA and PFOS. These human-made chemicals have been used in industrial processes for the past 70 years. (See "What Are PFOAs?" page 30.)

Even small amounts of PFASs and related chemicals are highly toxic and do not break down naturally, meaning every bit that found its way into the environment remains there. The Environmental Protection Agency's advisory limit for these chemicals in drinking water is 70 parts per trillion, which is equal to one teaspoon in 14 Olympic-size swimming pools. Many experts think even this level is too high, and more stringent limits are being implemented by individual states.

Dichtel and his group modified their cyclodextrin polymer to bind PFOAs and other related chemicals. Now, when placed in water, the material binds the pollutant and eliminates it to below 10 parts per trillion, which is in line with the lower advisory limits introduced by Michigan, California and other affected states.

Using machine-learning algorithms, the group is fine-tuning the material for other pollutants and

Julius Lucks

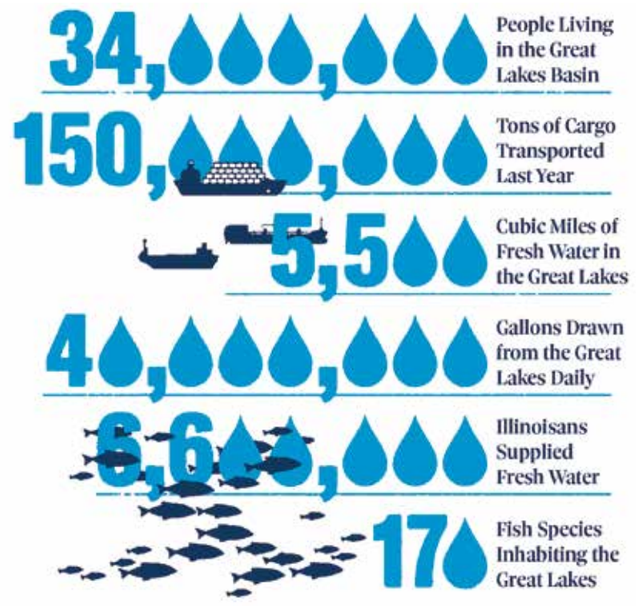
Associate professor of chemical and biological engineering

Lucks, a synthetic biologist, recently developed a quick and easy water contamination test.

Sera Young

Assistant professor of anthropology

Young's work on measuring water insecurity around the world has garnered attention and accolades.



KOLLHOFF PHOTO: EILEEN MOLONY; INFOGRAPHIC: HEADS OF STATE

will continue to tweak them as new chemical pollutants are discovered.

Dichtel and his group are also beginning to develop next-generation membranes that could potentially remove dissolved salt from seawater in a much more efficient manner. "Our ultimate goal is to make materials that can make water cleaner and safer and ensure our water security long-term," he says.

In 2016 Dichtel co-founded the materials startup CycloPure to bring his PFOA-binding materials to market. The company's research and development lab in Skokie, Ill., is working to scale up production while reducing costs. The company hopes to launch its first PFOA-binding product later this year.

Dichtel says the company has been making great strides in developing products for both municipal water treatment facilities and household consumers.

"We want consumers to have peace of mind, a line of defense between the water coming into their homes and the water they put into their bodies," he says.

The legacy of how companies and humans have treated the Great Lakes drives the work of Kimberly Gray '78, chair of civil and environmental engineering. For her, each problem — like contamination and flooding — exists as part of a network of actions and interactions that disrupted ecological processes.

Gray uses her background in environmental chemistry to examine everything from how contaminants like mercury and polychlorinated biphenyls (PCBs) move up the food web in the Great Lakes to how to better develop and invest in green infrastructure in low-income areas of Chicago that are prone to flooding.

Most recently, she is working with Ken Shull, professor of materials science and engineering, to develop a new membrane that is covered with a thin film of polyelectrolyte complexes (PECs), a charged polymer material. As membranes filter water, they can become easily clogged with bacteria and other materials. PEC films can be easily dissolved and reformed, meaning they can be placed over membranes, collect potential clogging material, then be dissolved to take that material away. They can then be reformed over the membrane.

The researchers have published a paper showing how the concept works and are now tweaking the film to make it kill bacteria. Such membranes could be used in drinking water treatment facilities and at point of use. That's important in areas like Chicago, where drinking water is safe but can be contaminated by lead pipes on its way to consumers.

"Clean water, clean air and being able to live someplace that is safe and not prone to flooding or being able to eat food that's not filled with contaminants — too often we don't think of those as universal rights," Gray says. "I think they are. Environmental and ecological quality is something that we need to work to preserve and protect."

Ensuring long-term water security is going to take several approaches, especially in the Great Lakes, where industrial processes have brought another class of pollutants: metals. Steel production and energy generation have historically drawn water from the lakes for cooling, only to send it back tainted with dissolved metals, like mercury or chromium.

What are PFOAs?

Per- and polyfluorinated alkyl substances (PFASs), including the most notable example, perfluorooctanoic acid, or PFOA, are human-made chemicals that have been used since the 1940s in many industrial processes and in the creation of materials such as nonstick cookware, textiles and firefighting foams.

PFASs do not break down and are now found in soil and drinking water sources. Because PFOAs bioaccumulate and are not easily metabolized by the body, 98% of people in the U.S. have detectable amounts of PFOA in their blood.

Data shows that exposure to these chemicals can cause cancer and developmental delays, even at low levels. Many communities near industrial sites have declared states of emergency because of high levels of PFOA in their drinking water.

Since 2000, many companies have phased out the use of PFOA itself, but many PFASs, including those used as direct replacements for PFOA, are still found throughout the environment and are part of a larger family of hundreds of chemicals that may also have broad health effects.

Metals are difficult to remove from water. Current treatments involve complicated physical chemistry, are expensive to operate and maintain, and generate a lot of extraneous waste.

Katie Kollhoff saw that firsthand during her years working in process analysis and risk management with chemical manufacturers. Years later, while working in research safety, she came across a 5-gallon bucket of water with trace amounts of mercury. The cost to treat it? $1,300.

"I understood the pain of the problem," she says. "Finding a solution for it has become my passion."

Now a student in Northwestern's Master of Engineering Management Program, Kollhoff got her chance to take on the problem when she enrolled in the NUvention: Energy course, in which interdisciplinary groups of students commercialize technology developed by Northwestern researchers.

She connected with other students who were also passionate about the problem, and a team soon coalesced. They came across the patented ion exchange technology from Mercouri Kanatzidis, Charles E. and Emma H. Morrison Professor of Chemistry.

"We stood around for three hours on a Friday afternoon talking about our passion for water and solid waste — all of these weird things that no one else is interested in," she says.

The result was the startup NUMiX Materials, which manufactures adsorbent powders that can remove toxic metal ions from wastewater streams. The materials have a potassium interior that is released when placed in water. The empty space in the powder then attracts target metal ions, which bind to the inside. Once the powder is filtered from the water, the toxic metals are gone and the water is clean again. The process is much more efficient than current processes, Kollhoff says.

Now the company, with Kollhoff as its CEO, is working to develop technology solutions across the metal supply chain — from extraction to use and disposal — while working to scale up production of its adsorbents as part of Argonne National Laboratory's Chain Reaction Innovations lab-embedded entrepreneurship program. NUMiX Materials is also working toward bringing its products to market soon.

"We're excited about developing a better tool so companies can treat water better," Kollhoff says.

Nancy Loeb champions clean water as a universal right. For her, protecting Chicago residents from the city's legacy of lead pipes is the area's No. 1 environmental concern.

That's a strong statement, considering Loeb, clinical associate professor of law and the director of the Environmental Advocacy Center at the Northwestern Pritzker School of Law's Bluhm Legal Clinic, works with students on environmental justice projects around the globe. In recent years, her students have studied how to develop rules for defining underwater pollution in a warming Arctic Ocean and how to develop legal mechanisms for protecting habitats in the Amazon rainforest.

But Loeb aims to protect not only environmental spaces but also the most vulnerable populations affected by environmental threats. In Chicago, that includes low-income and minority populations, who are often most affected by lead in water, which is correlated with learning disabilities and growth and hearing impairment.

Though the use of lead pipes has been banned in the city since 1986, many homes still use older pipes, and tests have found that when the city disturbs lead service lines through street work or plumbing repairs, high levels of lead are released in nearby homes' drinking water.

"We are continuing to devalue and harm huge populations of our city again, simply because they are poor communities of color where these issues haven't been dealt with," she says. Loeb sat on Chicago Mayor Lori Lightfoot's Health and Human Services Committee transition team and laid out a proposal for dealing with the crisis: Provide free filters to residents in high-risk communities, develop and roll out an education plan, and ultimately replace all the city's lead service lines.

"Our children in the city shouldn't be doomed to failure before they even grow up," she says.

Nancy Loeb
Clinical associate professor of law and director of the Environmental Advocacy Center
Loeb is an advocate for environmental rights.

Kimberly Gray
Chair of civil and environmental engineering
Gray aims to develop sustainable cities that work with nature rather than against it.

Marcelino Garcia
Commissioner, Metropolitan Water Reclamation District of Greater Chicago
He promotes green infrastructure to reduce flooding.

"**Water is life.** We all need water to live. So if you drink water, you should probably care about what exactly is in your water, make sure that you have enough water, and make sure that we have a sustainable supply of water."
— Aaron Packman

Protecting the Chicago region's water is also the goal of Marcelino Garcia '97 JD. As a boy growing up in Puerto Rico, he spent his days swimming in the Atlantic Ocean. When he came to Chicago to attend law school at Northwestern in 1994, Garcia looked out the window of the library and saw an expanse of water that reminded him of home.

"It was like a sea," he says. "But one of the best things about Lake Michigan is that when you're finished swimming, you don't have to scrape the salt off your body."

Garcia has pursued a career in government and public service. Last year he was elected to the board of commissioners for the Metropolitan Water Reclamation District of Greater Chicago, which oversees 560 miles of intercepting sewers and seven water reclamation plants that treat more than 1 billion gallons of wastewater each day. The district often receives attention when heavy rains cause the mixed rainfall and sewage system to overflow and be discharged into Lake Michigan, causing high bacteria levels in the water and forcing beaches to close.

Those discharges irk Garcia, who has always lived within an eight-block radius of the law school and had a view of the lake.

As a commissioner, he is working to develop a strategic plan that will help guide the district for the next five years. He wants the district to become more sustainable through resource recovery from wastewater and by promoting green infrastructure (like permeable alleys) within the city that will help reduce flooding and prevent sewage discharges. He also wants to develop better public awareness campaigns to educate residents to flush their toilets less often during high rainfall events, and he wants to make it easier for residents to drop off expired prescription medications so they don't flush them down the toilet and into the water system.

"We need to do everything we can at the local level to help preserve the environment," he says.

Clearly, when it comes to clean and safe water, there is a space for students, faculty and alumni to all play their parts, whether in research, policy or business. The growing interest gives Aaron Packman hope.

"In the summer, the sky is a gorgeous, clear blue, Lake Michigan is shining, there's a cool lake breeze, and you can look south and see the Chicago skyline," he says. "Here, more people are focusing on conservation, on making investments for the future. It makes me more optimistic."

Emily Ayshford '12 MFA is a freelance writer in Chicago.

How to Get to

Sesame Street

In its 50th season, the colorful world of *Sesame Street* is still teaching and entertaining children, thanks in part to a purple pipeline of talent. BY JOSH ROSENBLAT

Sometimes Stephanie D'Abruzzo '93 acts her age.

But only sometimes, because every so often she's transformed back into a 4-year-old.

All it takes are simple things: getting a hug and hearing her name.

And when you work on *Sesame Street*, as D'Abruzzo has since 1993, your hugs happen to come from Mr. Snuffleupagus, and Big Bird says your name.

"I still remember singing along to *Sesame* records in my bedroom at the top of my little lungs, wishing I could go to Sesame Street on vacation. And the fact that this 'street' is where I work with so many friends and idols, and idols who became friends, still boggles my mind," she says.

D'Abruzzo is part of a long line of puppeteers who have been instrumental in putting together 50 seasons of *Sesame Street*, which started in 1969. She's also one of many Northwestern alumni who have been involved in the show and in the larger *Sesame* universe, from writing and puppet creation to social impact and fundraising. And there's been a parade of Northwestern alumni celebrity actors who've rubbed elbows with Big Bird and other beloved characters over the years, including Seth Meyers '96, '16 H, Zach Braff '97, Stephen Colbert '86, '11 H, Megan Mullally '81 and Julia Louis-Dreyfus '83, '07 H, who famously swore in front of Elmo in an outtake from a 1994 episode.

In its half-century, *Sesame Street* has become an integral part of early childhood education. What started as a mission to teach children basic reading and math skills has developed to explore socioeconomic issues, medical and health lessons, differences and disabilities, food insecurity and homelessness.

Take Karli, a new character on *Sesame Street*, for example. She is a young Muppet in foster care, with her "for-now" parents, Dalia and Clem. Karli will help teach children (and their parents) about foster homes and families and show that those who may be facing similar challenges are not alone.

Those are the things that Ellen Wartella, a leading expert in childhood media consumption, thinks distinguish *Sesame Street* as a children's TV show.

Wartella, chair of communication studies and the Sheikh Hamad bin Khalifa Al-Thani Professor of Communication, heads Northwestern's Center on Media and Human Development. Her research focuses on public policy, specifically on the roles technology and media play in children's health, learning and development. Wartella, who is also a professor of psychology, of human development and social policy, and of medical social sciences, sat on the board of trustees for Sesame Workshop, the nonprofit educational arm of *Sesame Street*, for a decade. Before joining the board, she did policy-oriented research on the show.

Puppeteer Stephanie D'Abruzzo '93 with Prairie Dawn

One of the things that makes *Sesame Street* so remarkable, Wartella observes, is its respect for its core audience: children. That respect has allowed the show to explore complex and deep themes because "we learned that young kids are much more capable" of interacting with and understanding them than previously thought, she says.

In the United States, the show examines themes unique to American children. But as of its 50th season, an estimated 190 million children view *Sesame Street* in 70 languages and 150 countries, making it "the single largest informal educator of young children in the world," according to former Sesame Workshop vice president Charlotte Cole.

Different countries have different versions of the show, which are co-productions between local crews and Sesame Workshop.

"When you go to India, people sing the theme song for *Galli Galli Sim Sim*," the Hindi language adaptation of *Sesame Street*, says Chava Kallberg '97, vice president of development for Sesame Workshop. No matter where in the world you are, "people view *Sesame Street* as their first educational organization."

The international shows tackle topics specific to the children in those countries, from the language and math skills that provided the basis for the show in the U.S., to lessons about trauma, drugs and gun issues — all geared toward an audience of 3-year-olds.

"*Sesame* recognizes that the world is changing," Wartella says. "And anywhere you go in the world, it is known as quality children's television."

For 50 years, children and adults alike have wondered, "Where *is* Sesame Street? And how do I get there?" As part of the show's 50th anniversary celebration, New York City named the intersection of West 63rd Street and Broadway "Sesame Street." Now everyone can find their way to Big Bird's and his puppet pals' home.

Writer Ron Holsey '03 with Ernie, left, and Bert

But others have found their own paths to *Sesame Street*. Stephanie D'Abruzzo did.

She built her first puppets at Northwestern for a comedy production called "Freeform." Shot in Kresge Centennial Hall's Studio 22 and filmed on ¾-inch tapes, it earned a national College Television Award.

A brief in the *Chicago Tribune* helped set up D'Abruzzo's first audition for the Jim Henson Company in 1993.

"Remembering the very first day I set foot on the set still feels like someone else's dream," D'Abruzzo says.

Starting in *Sesame*'s 25th season, D'Abruzzo has played a redhead named Elizabeth; a monster named Lulu; Baby Bear's little sister, Curly; and, since 2015, Prairie Dawn.

To make the magic of puppetry happen, she rolls around on dollies with her fellow puppeteers, hunched over to keep their heads out of the shot. With arms outstretched, they play out scenes while voicing their characters through microphones attached to hats or headbands.

"There's a lot going on below that TV frame, and it's our job to make sure the viewer is completely unaware of it," she explains.

Each of those puppets embodies different traits and personalities and imparts lessons to viewers.

Zach Braff '97 explains the word "anxious."

Before Sesame Street existed, "people didn't really believe in TV" as a way to help children learn, says Wartella. Now, it has become indispensable as an educational tool.

"You have to have that balance of education and making it snappy, fun and funny," says Ron Holsey '03, who has written for *Sesame Street* since 2016.

Holsey is joined on the team of writers by Jessica Carleton '05. She started writing for the show in Season 48.

"It's a dream come true," Carleton says. "There's a connection people feel to the shows that we grew up watching, especially a show as iconic as *Sesame Street*. Getting to write for the characters that I idolized as a child feels like a tremendous gift and a great responsibility."

Seth Meyers '96, '16 H with Count von Count

It's the writers' job to come up with storylines and sketches that illustrate a given season's curricular goals. Carleton gets a lot of inspiration from the curriculum seminar that writers attend.

The theme for Season 50, set to air this fall, is "how you can turn an *oops* into an *aha*," Holsey says.

In one sketch, a young character named Abby spills honeysuckle petunia juice. Her mother, Maggie, helps Abby realize that the spill wasn't a big deal. They work together to solve the problem and use a sponge to clean up the mess.

The writers have to balance a number of concerns and issues. Take a Fourth of July episode, for example. There's the current political climate to take into account, as well as having decades of past Independence Day episodes with content that Holsey and his colleagues try not to repeat.

"It was an interesting creative challenge to find a new angle," he says.

The team ended up writing an episode centered on a streetwide cleanup. The characters ultimately come to the conclusion that the best way to celebrate the holiday is "to do something nice for your community and nice for your neighbors," Holsey says.

The writers take great care to stay true to the show's educational mission, while remembering their primary audience: children.

But Wartella says the show also targets parents and adult caregivers.

"It's always better to have young children watch with an adult," she says. "There's a double code. That's why there are celebrities on the show. It's done on purpose."

A number of Northwestern alumni have starred in the guest spots. Zach Braff helped explain what "anxious" means. Nicole Sullivan '91 played the letter A and Stephen Colbert played the letter Z in *Sesame Street*'s 2005 "All-Star Alphabet" video. Richard Kind '78 appeared as the Fairy Balloon Person in a 2005 episode. Julia Louis-Dreyfus appeared on *Sesame Street*'s 25th anniversary special.

Because the show provides a little something for everyone, *Sesame Street* can offer an emotional connection for families.

"As a first-generation Indian American, I watched Sesame Street every day because it was one of the only shows my parents approved. To them, it was both entertaining and educational," says Nayna Agrawal '15 MFA, who in 2018 won a Sesame Street Writers' Room fellowship, a nearly two-month program for talent from underrepresented backgrounds. She was awarded a creative development deal by Sesame Workshop.

"Sometimes my mom would join my siblings and me, and we would watch it together. In a way, watching *Sesame Street* was a bonding experience for my family."

Josh Rosenblat '17 is a senior editor at the Philadelphia Inquirer.

Megan Mullally '81 with Elmo

Stephen Colbert '86, '11 H and Oscar the Grouch sing "Things Are Going to Get Better" during an April episode of *The Late Show*.

COLBERT: COURTESY OF CBS

PUTTING PATIENTS FIRST TO STOP EBOLA

Virologist **Daniel Bausch** says the solution to containing infectious disease outbreaks is to first engage communities — and win people's trust.

BY LISA STEIN

Last summer international aid workers began descending from Soviet-era helicopters into the forests, mountains and villages in the Democratic Republic of Congo's North Kivu region, setting up treatment centers and laboratories, and donning hazmat suits as they treated people sick with the Ebola virus. The workers brought computers, lab equipment, vaccine doses and anything else that supported epidemiology, data and patient management, and infection prevention and control.

And in this particular Ebola outbreak, they also brought helmets and flak jackets, courtesy of the United Nations.

Health workers in Congo have met not only disease but also a complex and often violent sociopolitical environment in communities that have suffered unimaginably for many years, at first from Congo's civil war that killed more than 5 million people and, in recent decades, from scores of holdover armed militias, locally called Mai-Mai.

Although Daniel Bausch '83, an expert in tropical and infectious diseases, has worked in many Ebola outbreaks, this situation seems particularly dire. Mai-Mai — intent on extorting money — and victims' grief-stricken families attacked five Ebola treatment centers in February and March, burning down one and killing two people, causing the humanitarian organization Doctors Without Borders (Médecins Sans Frontières or MSF) to temporarily withdraw its staff.

Violence continued into the spring, when armed men stormed into an Ebola meeting in the town of Butembo and opened fire. They killed Richard Valery Mouzoko Kiboung, an epidemiologist for the World Health Organization (WHO), and injured two other workers.

Since January, more than 85 health workers have been killed or wounded, according to the WHO, and as of June 27 more than 1,430 people had died from Ebola. It has become the second-worst Ebola outbreak in history and the first to take place in a conflict zone. Now Congo and international health officials fear that the Ebola outbreak could spiral out of control unless the violent attacks against health facilities and workers stop.

"It's an extremely complex and volatile situation, with a fearful population sometimes violently resisting control efforts," Bausch acknowledges.

"Ebola is the canary in the coal mine signaling the world's most vulnerable populations, people whose human right to health hasn't been assured." — Daniel Bausch

↑ A sick child lies in a hospital in Kikwit, a rural village in Congo.

"We can't be too judgmental about the people because they have been in this violent, very manipulated situation for a long time. Ebola is often viewed as just another weapon or means of political manipulation."

ENGAGING COMMUNITIES

Bausch directs the United Kingdom Public Health Rapid Support Team (UK-PHRST), the UK's unit for outbreak response and research and one of the major groups contributing to the international response effort in Congo. The organization was established in 2016 as a collaboration between Public Health England and the London School of Hygiene & Tropical Medicine in the wake of the devastating 2013–16 Ebola outbreak in West Africa, which killed more than 11,000 before being contained. These days Bausch has given up his role as a primary care provider for Ebola patients to focus on the big picture, supervising UK-PHRST response efforts and organizing research programs. His full-time staff of roughly 30 public health experts, scientists, academics and clinicians is ready to respond to urgent requests from countries around the world within 48 hours to help prevent local disease outbreaks from becoming global epidemics.

After spending decades helping to contain viral outbreaks across Africa, Latin America and Asia, Bausch has become sure of one thing: The solution to containing infectious diseases lies in engaging communities and winning their trust. All the equipment, procedures and even vaccines won't stop transmission if people don't understand what the disease is and feel part of the solution.

Bausch points out that communities that experience significant Ebola outbreaks have long histories of illness, poverty and violence, and their residents have grown suspicious of international workers. In recent years, international response agencies — including the U.S. Centers for Disease Control and Prevention (CDC), the WHO and MSF — and other nongovernmental organizations (NGOs) have been changing how they approach disease-stricken places.

"Early on, international aid groups focused on the technical side of things as epidemiologists aimed to stop transmission but often overlooked the needs of the individual patient," Bausch explains. "We would come in and say, 'Ebola is a very dangerous disease, and it can kill you, so don't have contact with sick people,' and then put people in Ebola isolation units but without much explanation."

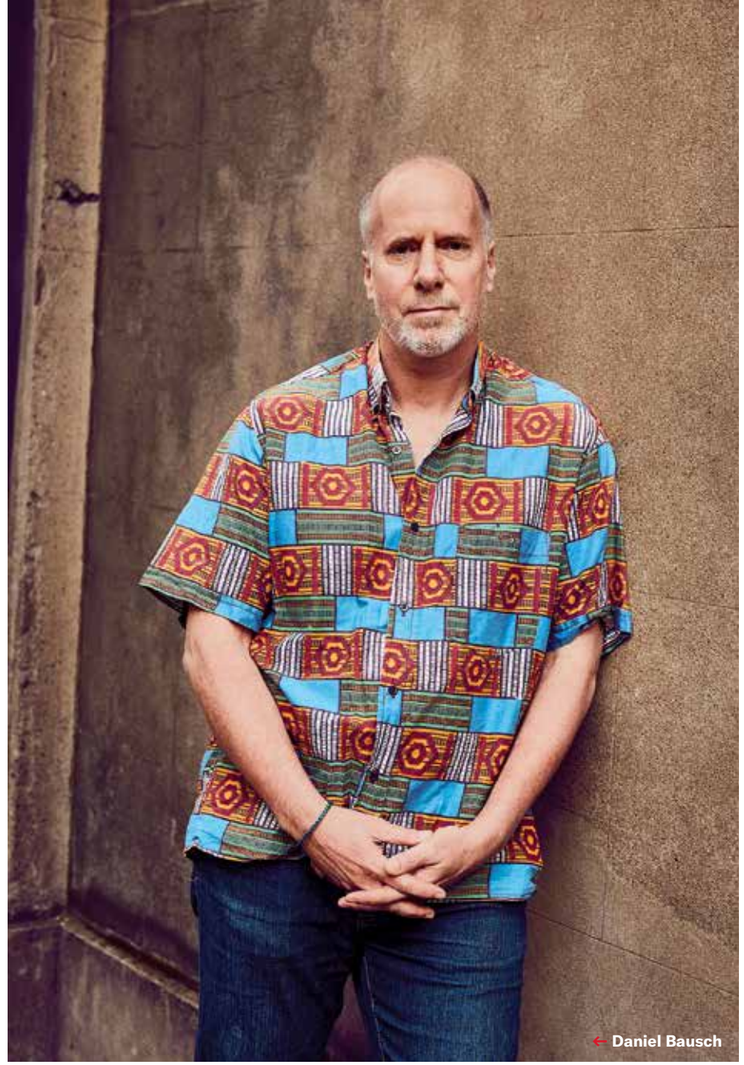
Over the years that impersonal approach made it extremely challenging to bring a person suspected of having Ebola into a treatment center, because so many residents grew wary of bringing family members to a facility into which they disappeared and didn't return.

"If people don't understand what's happening and think that they're just going to a facility to die, why would they go?" Bausch asks.

Now those same agencies have developed protocols that call for making treatment centers more welcoming and less frightening. Rather than immediately placing patients in isolation, health workers communicate with their families about avoiding transmission and allow them to see their loved ones. They listen more and view those they encounter as people first and patients second.

Health care directors also keep an eye out for locals whom they can train and mentor.

While the situation in North Kivu remains extremely challenging, there are some bright spots: In mid-April, the WHO reported that the experimental rVSV-ZEBOV-GP Ebola vaccine was 97.5% effective, meaning that it had probably saved thousands of lives. Health workers have administered the vaccine using a "ring vaccination" strategy, giving it to those determined to be at highest risk, such as contacts of people with Ebola and health workers. (See "Ebola Vaccine Brings Hope," page 41.)



← Daniel Bausch

"Dan has helped our field move beyond using medical countermeasures such as vaccines, therapeutics and diagnostics. Now we know the only way to win these battles is to work with the community and have the community be part of the response." — Lina Moses

NURTURING LOCAL PARTNERS

Bausch has continuously voiced the need to view Ebola and other diseases not only as contagions to be stomped out but also as symptoms of extreme global inequality. He views people living in affected countries as essential partners in treating their compatriots and works to help them live in vastly improved, healthier circumstances with the capacity to address outbreaks on their own.

"Ebola is a scary, fascinating, terrible thing, and I've engaged with it directly and indirectly," he says. "What I and others need to work toward is not only an on-the-ground response — which is obviously super important — but also, where does this come from? Why do we have this disease that seems to afflict only the poorest populations in the world? It's not random who gets a communicable disease. There are many social, political, environmental and economic factors. Ebola is the canary in the coal mine signaling the world's most vulnerable populations, people whose human right to health hasn't been assured."

The situation in North Kivu is especially complicated because of the region's abundance of minerals, such as

LEFT: PER-ANDERS PETTERSSON/GETTY IMAGES PGS 36-37: SUMY SADURNI/AFP/GETTY IMAGES

JON ENOCH

↑ Nurses working with the WHO prepare to administer Ebola vaccines in Mbandaka, Congo.

JUNIOR D. KANNAH/AFP/GETTY IMAGES

gold, tungsten and uranium, which are highly prized by the global technology and defense industries. Despite such riches, many towns in the area lack centralized electricity and water, internet and paved roads. Because the Congolese government is largely absent, residents rely on NGOs for basic health care and infrastructure.

When Ebola hits, responders try to stem disease transmission by sending out workers who conduct "contact tracing" — investigating suspected cases of Ebola in people's homes and then tracking down all the people they interacted with in order to get them into isolation and care if they fall sick and vaccinate them. Ideally, investigators would visit all contacts every day for 21 days to check for early symptoms, something that is virtually impossible in the chaos of northeastern Congo today. Yet, every missed diagnosis can result in dozens or hundreds of additional cases.

If the person has already died, helping the family safely prepare the body for burial is crucial. Workers must walk a fine line between respecting cultural customs while also minimizing transmission. Investigators advise family members not to touch or kiss their loved ones, because bodily fluids on dead bodies are laden with the virus. To make matters worse, teams of workers must also decontaminate dwelling places with chlorine. But some property, such as mattresses, needs to be destroyed, which can further alienate the community.

Deep suspicions on the part of the Congolese make sense to Lina Moses, an assistant professor at Tulane University's School of Public Health and Tropical Medicine, who has worked with Bausch on many outbreaks.

"People in West Africa and the Congo are dying all the time from many different things — starvation, violence, other diseases — and the international community doesn't seem to care," she explains. "But then there's one case of Ebola, and everyone descends on the village. This has bred mistrust of outsiders, even people from [Congo's capital] Kinshasa. I've never seen any response by local communities that seemed to me irrational if you understand the context."

Although Bausch says the security situation in North Kivu is the most challenging he's faced, the virologist says he and colleagues have encountered strong community resistance before. And there has also been chilling violence. He points out that in 2003, Congolese villagers beat and stoned to death four teachers who they accused of casting an evil spell to cause an Ebola outbreak.

And then there was the 2013–16 West African outbreak, where the international response was slow and lacked enough resources to battle the virus effectively. At one point in Sierra Leone, Bausch and one other colleague from the WHO, both wearing heavy protective gear in the stifling heat, did their best to manage about 60 patients. By then, all the nurses had died or fled in fear, leaving behind a facility bereft of support. It was, he says, the hardest situation he's ever been in.

One moment from that time still haunts him. He had walked into an intake room where there were three beds crowded with people who had recently staggered in with symptoms of Ebola. On one mattress, a young girl who looked about 8 years old was already dead.

The only thing that Bausch knew about the girl was that she had come to the treatment center alone, and that broke his heart. He suspected that the rest of her family had already died, and he imagined her excruciating last moments.

"She reminded me of my own daughter, who was the same age at the time," Bausch recalls. "I thought about all the horror this girl had endured, coming on her own from what must have been a terrifying situation at home to a hospital with such a strange and fearful environment, full of strange white people like myself wearing masks and gowns, and put onto a bed where other people were sick and bleeding."

Whenever possible, Bausch tries to connect with people on a personal level and is known for being open and friendly with locals and co-workers alike. Nahoko Shindo, a disease expert at the WHO, remembers the first time she worked with Bausch in Sierra Leone and Guinea during an outbreak of Lassa fever. "It was difficult at first to know what to make of him," she says, laughing. "When I first met him, he was wearing very bright African clothing made by local tailors. That impressed me. He was not your typical American."

Another colleague, Stuart Nichol, chief of the Viral Special Pathogens Branch at the CDC, recalls Bausch's remarkable work during a Lassa fever outbreak in Guinea, where he set up a field lab and collected rodents to test for infections, to better understand the transmission of Lassa virus, which is maintained in rodents and sometimes transmitted to humans through rodent consumption. (See "Breaking the Cycle of Infection," bit.ly/NU_Ebola.) "While he was managing research teams, he was also trapping, freezing and shipping these biospecimens to CDC labs in Atlanta for further analysis," Nichol says. "And he was trying to get solar panels placed on the lab's roof to generate more energy. Most clinicians wouldn't be doing that. He has always been willing to get his hands dirty and do what needed to be done."

"We can't be too judgmental about the people because they have been in this violent, very manipulated situation for a long time. Ebola is often viewed as just another weapon or means of political manipulation." — Daniel Bausch

A MARSHALL PLAN FOR WEST AFRICA?

Two intertwined pursuits have run throughout Bausch's career. As a scientist, he is an expert in Ebola and other dangerous diseases such as Lassa fever, Marburg hemorrhagic fever and SARS (or severe acute respiratory syndrome), among many others. He took the directorship of UK-PHRST, he says, because it combines his three top interests: to help build the capacity of countries to internally address disease outbreaks, to participate in outbreak responses and to conduct research.

It's important to Bausch to be both a good scientist and an activist. He met his wife and fellow infectious disease specialist, Frederique Jacquerioz, in Chiapas, Mexico, where the two were working on health and human rights projects in 1994, with Jacquerioz providing medical care to indigenous Mayan populations and Bausch working against unfair socioeconomic conditions with a nonprofit he had co-founded, Doctors for Global Health. She later helped train aid workers during an Ebola outbreak in West Africa and now works in migrant health and tropical medicine at Geneva University Hospitals in Switzerland. (The couple and their two children are based in Geneva, and Bausch commutes regularly to London.)

Bausch was a psychology major at Northwestern, focusing on neuroscience. After graduation he spent two years doing neuroscience research before entering medical school. Although initially headed toward a career in neurosurgery, he had a growing interest in the broader issues of health and human rights that led him to pursue training in internal medicine, infectious diseases and public health.

While Bausch continues leading aid responses all over the world, he holds onto a concept that came to him in the aftermath of the West African Ebola outbreak — a sort of contemporary post–World War II Marshall Plan for disease-ravaged countries.

"If you look at Europe today, it's a pretty nice place," he observes. "But if you were there in 1945, you might have said it would be impossible to achieve that level of prosperity. The measure of calamity in West Africa was on the order of the destruction of Europe. But if we put the same effort into rebuilding West Africa and other places like the Congo, as we did in Europe, 50 years from now, they could be equally economically stable and peaceful."

Bausch and his colleagues are doing everything in their power to work toward that goal, one outbreak at a time. As Lina Moses notes, "Dan has helped our field move beyond simply using medical countermeasures such as vaccines, therapeutics and diagnostics. Now we know the only way to win these battles is to work with the community and have the community be part of the response."

Lisa Stein '94 MS is a freelance writer based in Evanston.

EBOLA VACCINE BRINGS HOPE

Although the Ebola outbreak in Congo has worsened because of regional violence and instability, an experimental vaccine is showing promise. Health workers now have access to a powerful tool: the rVSV-ZEBOV-GP Ebola vaccine, which was used near the end of the 2013–16 outbreak. Made by Merck & Co., the vaccine is 97.5% effective at preventing Ebola and now is sanctioned for use by the World Health Organization for emergency use. And a second vaccine, made by Johnson & Johnson, is on the horizon, awaiting a rollout strategy by the London School of Hygiene & Tropical Medicine and a consortium of organizations that develop vaccines against pandemic diseases, with virologist Daniel Bausch as one of the principal investigators.

The rVSV-ZEBOV-GP vaccine is used to vaccinate "rings" around cases of Ebola, given to persons who have had close contact. Front-line health workers and others deemed at high risk are also vaccinated.

More than 120,000 people have been vaccinated since the outbreak began.

The WHO is now expanding the target population for vaccination, but supply of the vaccine, which is still experimental, is limited.

In order to expand the amount of available vaccine, the WHO is considering reducing the dose given to each person, based on new evidence that even this lower dose may still be protective.

Despite the existence of two highly effective Ebola vaccines, unless the violent attacks against health care workers stop and more local people are engaged in treating the disease, it will be difficult to contain the outbreak, say doctors who've been at the forefront of every Ebola response. — *L.S.*

LEADING BY EXAMPLE

Meet the three accomplished alumnae who will receive the Northwestern Alumni Association's highest honor, the Northwestern Alumni Medal, in October. They will join a select group of 103 alumni — from innovative entrepreneurs and Supreme Court justices to award-winning writers and a Nobel Prize recipient — who have received this award since 1932.

The University will proudly celebrate the positive impact these women have made in their careers and communities. They will be recognized this fall at the start of a yearlong commemoration of the 150th anniversary of the first women students at Northwestern — the bold and brave women who led the struggle to open doors and create greater access and opportunity for those who followed.

Like the women who came before them, this year's medalists have taken risks, charted their own course and inspired change.

STEPHEN SPARTANA

←Vice Adm. Lisa Franchetti, one of the highest-ranking women in the U.S. Navy, has led several at-sea commands and missions in support of U.S. national security strategy.

In Command
Lisa M. Franchetti '85

As a coxswain on Northwestern's crew team, Lisa Franchetti steered boats and her teammates to success on the water — a role that helped her become a leader in the U.S. Navy.

"We won medals sometimes, but mostly we learned to work hard, train hard and have a goal," says Franchetti, who now, as a vice admiral, has achieved one of the Navy's highest ranks. "The teamwork that I learned at Northwestern has made me very successful in the Navy because it's the same thing — building great teams, getting a mission done and working together to make it happen."

Throughout her 34-year naval career, Franchetti has held many leadership roles, including her current assignment as commander of the U.S. 6th Fleet. Based in Naples, Italy — along with husband James Sievert and daughter Isabel — she oversees all maritime activities in the eastern half of the Atlantic Ocean and Mediterranean Sea from Europe to Africa to support the U.S. national security strategy. She also helps every person in the fleet "connect their dot" to the mission.

Franchetti is an effective leader because of her authenticity and ability to make people feel heard, says Rear Adm. Jim Kilby, a friend and former colleague.

"She establishes a personal level of loyalty that exceeds the military hierarchy, where you want to serve this person because you believe she cares about you," he says.

A Rochester, N.Y., native, Franchetti joined the Naval Reserve Officers' Training Corps program during first-year orientation at Northwestern. After graduating from the Medill School of Journalism, Media, Integrated Marketing Communications, she entered the Navy with a goal of working on a ship, despite limited opportunities for women. At the time, there was one female admiral, and fewer than 20 female officers served on vessels.

New doors opened for her in 1993 after the U.S. Congress repealed a law that barred women from serving on combat ships. Since then Franchetti has commanded a guided-missile destroyer and a destroyer squadron. She also led a carrier strike group, which includes an aircraft carrier, a carrier air wing, a destroyer squadron and associated escort ships charged with ensuring maritime security.

In 2013 she was selected as a rear admiral and became the first female commander of U.S. Navy Forces Korea. Today she is one of about 20 females among more than 220 admirals.

As she has risen in the ranks, Franchetti's goal has remained constant.

"Every day I wake up and I think about all the opportunities that we have in America, and I want to make sure that we always have those opportunities," she says. "That's the motivation to serve my country, and it's been the same from day one."

"Every day I wake up and I think about all the opportunities that we have in America, and I want to make sure that we always have those opportunities."

Change Maker
Bridgette Proctor Heller ’83, ’85 MBA

Bridgette Heller has carried her great-grandmother’s words with her throughout her life: “It’s all about your legacy.”

During a career that has spanned more than three decades, Heller led global operations for some of the world’s largest corporations, including Merck & Co., Kraft Foods Inc. and Johnson & Johnson. While Heller is known for growing consumer businesses and building highly effective teams, her measure of success goes beyond sales figures. “For me, it’s always been about, how do I leave things better than I found them?” Heller says.

An English and drama enthusiast from St. Petersburg, Fla., Heller majored in economics and computer studies at Northwestern, which opened the door to an internship at Hewlett-Packard. There, she discovered her passion for marketing.

After graduation, Heller studied consumer behavior and marketing at the Kellogg School of Management and joined General Foods, which later merged with Kraft.

“Northwestern taught me to push beyond the discomfort to get my questions answered,” Heller says. “When I got to General Foods, that quality made me stand out. I would always want to know, ‘Why are we doing it that way?’”

She took over the company’s billion-dollar coffee portfolio in 2000. After 18 years at Kraft, Heller took the helm of Johnson & Johnson’s $2.5 billion global baby care division and later served as president of consumer care at Merck.

ALEX MCKNIGHT

← After more than three decades of driving growth for global corporations, Bridgette Heller is transforming education for underserved children in South St. Petersburg, Fla.

“For me, it’s always been about, how do I leave things better than I found them?”

In 2016 Heller joined the executive team at Danone, an international food company, to lead the early life nutrition division. A year later she assumed broader responsibility as executive vice president of specialized nutrition. For three years Heller led the business to industry-leading revenue growth and profitability.

As Heller climbed the corporate ladder, her principles kept her grounded. Kenneth Frazier, chairman and CEO of Merck, says his former colleague has a gift for making people feel valued, included and respected.

“Bridgette is the rare human being who is strong enough to be gentle, even in the toughest and most competitive business environments,” Frazier says.

Heller continues to build upon her legacy alongside her husband, Eliot Heller ’84, whom she met through the Northwestern jiujitsu club, and their daughters, Mariah and Sara. In 2014 she joined Northwestern’s Kellogg Global Advisory Board and started an educational foundation in South St. Petersburg, Fla., in honor of her mother, Shirley Proctor Puller, a lifelong educator. The following year Heller launched a summer program for underserved children in the community to improve their reading, math and science literacy.

Her great-grandmother’s words continue to inspire Heller: “She used to say to me that you are only as good as what you leave behind.”

BOB HANDELMAN

→ During her tenure, New York Life Investment Management CEO Yie-Hsin Hung has tripled the company’s business and led its international expansion.

Growth Mindset
Yie-Hsin Hung ’84

Yie-Hsin Hung has always enjoyed solving problems, a quality that helped her grow New York Life Investment Management, a subsidiary of the insurance company New York Life.

Since she joined the company in 2010, rising first to co-president and then CEO in 2015, the $325 billion business has tripled assets under management and become one of the world’s largest money managers. Hung has led the strategy to broaden the company’s products and expand internationally through the acquisition of specialized investment firms in Europe and Australia and offices in Asia. Today she oversees a network of eight independent boutiques that are subsidiaries of NYLIM.

Hung — who is New York Life’s highest-ranking female operating executive — has earned industrywide recognition for her achievements, including a spot on *American Banker*’s 2017 and 2018 Most Powerful Women in Finance lists.

Ted Mathas, New York Life’s chairman and CEO, says Hung is able to strategically focus an organization for long-term success while delivering superior results year after year despite challenging market environments.

“Her disciplined, analytical mindset is balanced by a deep understanding of the work we do helping people secure what matters most to them,” says Mathas, who named Hung to New York Life’s executive management committee in 2017.

A Pittsburgh native, Hung says she developed analytical skills as a mechanical engineering major at Northwestern, where she met husband, Stephen Farinelli ’84, during freshman year. Every summer for three years, she held a product-development internship with IBM, where she became interested in business strategy.

After graduating from Northwestern, Hung earned an MBA from Harvard University and embarked on a 30-year career in investment banking and asset management. She held positions at Morgan Stanley Investment Management and Bridgewater Associates before joining New York Life, where she focuses on strategy and talent management to meet the needs of clients.

“What motivates me is making a positive difference in the world, whether it’s for our investing clients who are trying to secure their financial future or plan for retirement, or for my colleagues in our business,” Hung says.

She champions other important causes in her life too. As a board member for both the New England Center for Children and Next for Autism, Hung helps people with autism — including her son, Cole — lead meaningful and happy lives. Hung is also a member of the McCormick Advisory Council, where she helps shape strategy for Northwestern’s engineering school.

Says Hung, “It’s my way of trying to give back to an institution that has made a big difference in my life.”

Learn more at alumni.northwestern.edu/medal.

“I want my colleagues to be able to achieve their best, to be a part of something much larger than themselves and to be appreciated for their contributions.”

Alumni

STEVE BECKER

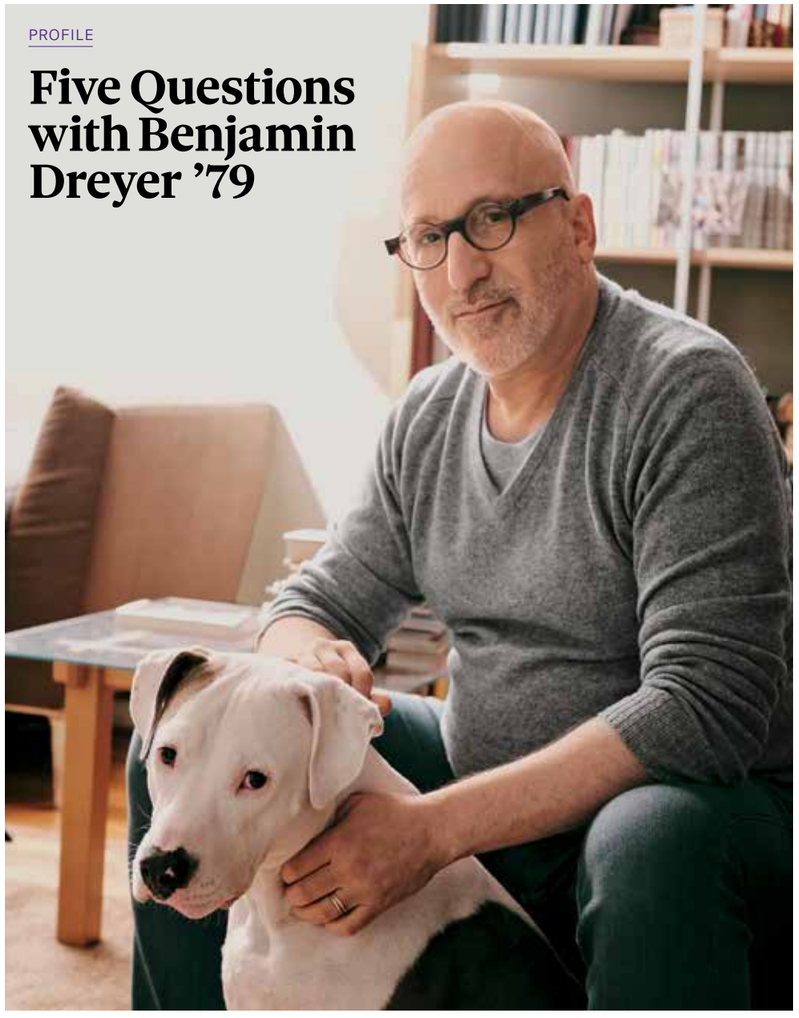
PURPLE IN THE PARK

Lucy Godínez '18 does a mic check before singing the national anthem at Wrigley Field. On May 6 more than 3,000 Northwestern alumni, students and friends turned the park purple to watch the Chicago Cubs play the Miami Marlins at the Northwestern Alumni Association's annual NU Day @ Wrigley. See photos at alum.nu/wrigley2019.

Creation

PROFILE

Five Questions with Benjamin Dreyer ’79



In his best-selling book, *Dreyer’s English*, the Random House copy chief says it’s OK to bend the rules of grammar.

1

You have more than 50,000 Twitter followers. How did social media influence this book?
I was having great difficulty figuring out what voice I wanted to use in the book, and I wrote tens of thousands of words and threw them out because they were stodgy and I was boring myself to death. My “aha” moment was realizing that I needed to take the voice I was cultivating on Twitter — trying to be succinct, trying to be funny, trying to be engaging — and expand it to fit onto the page properly, and that was how I was meant to write the book.

2

How do you deal with writers who are protective of their words?
Happily, I have found that all of the best writers love to be copy edited. Excuse me, they love to be copy edited *well*. They recognize that nobody is ever going to read them quite as carefully as their copy editor is going to. If the copy editor approaches the work in a supportive fashion, to help the author make their book into the best version of itself that it can be, well, authors really like that.

3

What are a few of your writing pet peeves?
Novelists will sometimes fill out their pages with characters nodding and shrugging and all the things that we do in real life that are not all that interesting on the page. I try to inspire them to cut back on that sort of thing. Also, though I’m not opposed to adjectives and certainly not, as some people are, to adverbs, I do keep an eye on the pointless ones. I’ve made a public enemy of the word “very” because I think it’s essentially a waste of time.

VINCENT TULLO

4

How did your time at Northwestern influence the trajectory of your career?
I arrived as a theater major and fairly early on recognized that I was in classes with a lot of actors who were vastly more talented than I was. But what happened that was great for me was that I was the assistant director of a production of Edward Albee’s *A Delicate Balance.* The director was David Downs, who was a professor of theater then. In working on the script, David was all about investigating every single line to figure out why the line was there, why Albee put it there, why he put a pause here instead of there. And this process was important in my learning how to read and how prose works, not just in a storytelling way, but sentences and commas and the arrangement of words.

5

What’s one lesson you learned at Northwestern?
One simple lesson is that if you’re trying to write a line that you want to get a laugh on, you need to put the word that’s going to inspire the laugh at the end of the line, because if it’s in the middle, the audience is going to laugh over the rest of the line and not hear it. And that technique, of taking a strong word in a sentence that is sitting in the middle and moving it to the end for maximum impact, is something I find myself doing as a copy editor. That is definitely something I learned from working on scripts.

PIRATES’ TREASURE

Lee Overtree presides over one of the best improv talent incubators around — just ask any savvy kid under 12. “We’re a group of people who are truly inspired by kids’ writing,” says Overtree ’02, co-founder and artistic director of *Story Pirates*, a popular podcast and live show catering to the pre-tween set. “Our secret is that we don’t think of it as making comedy for kids; we think of it as making comedy for each other.” The formula works. Since its 2004 founding, *Story Pirates* has dazzled more than 1 million audience members with its performances of stories written and submitted by children; each podcast boasts more than 100,000 downloads. The idea for *Story Pirates* evolved from Overtree’s involvement in the student group Griffin’s Tale. Peter McNerney ’05 and Joanna Simmons ’05, above, are among the Northwestern alumni involved with the show.

NOVELTY ITEM

Nod of Approval

It all started with Rocko, a yellow-beaked bird with a wobbly head. Phil Sklar’s lifelong friend Brad Novak was working with the Rockford RiverHawks when the minor league baseball team released its first bobblehead, a replica of its Rocko the RiverHawk mascot. Soon Sklar ’14 MBA and Novak were traveling across the country, attending sporting events that offered the beloved collectibles. While some might see bobbleheads as a novelty, Sklar envisioned something more. He and Novak co-founded the National Bobblehead Hall of Fame and Museum, which opened its doors near Milwaukee’s Historic Third Ward in February. More than 6,500 bobbleheads are featured on location, a display so massive that this summer Guinness World Records may name it the largest collection in the world. The collection includes bobbleheads of Prince Harry and Meghan Markle ’03, sports journalist Michael Wilbon ’80, Green Bay Packers defensive end Dean Lowry ’16, Northwestern football coach Pat Fitzgerald ’97 and Willie the Wildcat.

WATER SAFETY

A Mermaid's Guide to Water Awareness

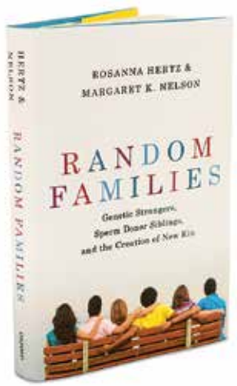
Drowning is the leading cause of accidental death for kids between the ages of 1 and 4, with more than 3,000 children drowning every year. One in 10 of those deaths occur in the bathtub. Shocked by these tragic statistics, mother and swimming coach Michelle Lang '04 penned *A Mermaid's Guide: Empower Your Child in Water and in Life* to help teach parents simple techniques to keep their children safe in the water.

1 Breath Control — Breath control is the most important skill children should learn prior to beginning swim lessons, Lang says, and it can be taught when children are just a few months old, starting in the bathtub. Prepare your baby for his first underwater experience by teaching him to hold his breath as you gently trickle or pour water over his head.
2 No Mouth Bubbles — The mouth bubbles your child blows while underwater are composed of the air inside her body — air that is actually keeping her afloat. Tell your child that her body is like a balloon. Lang suggests having your child take a deep breath, close her mouth and go underwater — eyes open, but mouth closed.
3 Gentle Submersions — Start by teaching proper breath control in the bathtub and then, once in the pool, teach your child to hold his breath and go underwater for one second. Slowly build his breath control to five seconds. It's vital that your child understands how to hold his breath properly to avoid drinking or inhaling the water.
4 Floaties Are Not Lifesaving Devices — Infants can drown in just an inch of water in less than 30 seconds. Never leave your child alone in the bathtub or the swimming pool. Drowning happens silently. Keep your eyes on your child at all times when she is around water.
5 Increase Exposure — Teaching your child to be comfortable in water could one day save his life. With regular practice and routines, even the most resistant children will eventually overcome their initial fear and learn to love the water.

NONFICTION

Random Families, by Rosanna Hertz and Margaret K. Nelson

"We all have families that we are born (or adopted) into, and often we also have families that we choose. Another new kind of kinship is emerging based upon sharing the same gamete donor," says Rosanna Hertz '77 MA, '83 PhD, co-author of *Random Families: Genetic Strangers, Sperm Donor Siblings and the Creation of New Kin* (2019). With new reproductive technologies set to upend the concept of family, Hertz, a professor at Wellesley College, interviewed more than 350 children (ages 10–28), their parents and donors to explore how they used cultural narratives about genes and genetics to understand their relationship to their immediate families and donor networks. She says her research spoke to an "opening up of ideas about family." Ultimately, Hertz presents an investigation of how we create belonging and intimacy and how these new forms of family open up possibilities for greater connection and kinship.



← Sierra Tishgart, left, and Maddy Moelis

TORY WILLIAMS

ENTREPRENEURS

Now We're Cooking

When food editor Sierra Tishgart couldn't find affordable, easy-to-use cookware for her own kitchen, she created a line of pots and pans.

As a James Beard Award–winning journalist for *New York Magazine*, Sierra Tishgart '12 ate at some of New York City's finest restaurants. But she wanted to cook better meals at home and realized she needed different pots and pans. Frustrated by the potential expense and unsure about what cookware she needed and why, Tishgart set out to create her own line of kitchenware to make cooking more accessible for young adults.

With the help of her childhood friend Maddy Moelis, Tishgart created Great Jones, a name inspired by the cookbook author and editor Judith Jones. Tishgart and Moelis surveyed chefs to inform the design of the custom-built cookware, with handles created to be comfortable and ergonomic.

Tishgart, who was named with Moelis to *Forbes*' "30 Under 30" in the 2019 food and drink category, hopes to bring joy — and color — to the cooking process through Great Jones' sleek and minimalist products. The Dutchess, an enameled cast-iron Dutch oven, comes in five food-themed colors, from broccoli green to mustard yellow and a limited edition macaron pink.

"We think the products really marry substance with style," says Tishgart, who works on product design, branding and marketing. "They are durable and high-functioning — and look beautiful sitting on your stovetop."

By selling only online, Great Jones is able to offer its products at a lower price than its competitors. A five-piece Great Jones set is $395.

The company's website also features recipes that best suit the functions of each piece of cookware, blog posts written by chefs, and recycling locations for old pots and pans.

As part of a generation that is getting married later, Tishgart says many young adults still depend on wedding registries to get their kitchenware. Great Jones, Tishgart says, helps young adults get cooking sooner. "We see so many people who are happy that they can upgrade and get something high-quality sooner than they expected," she says.

STARTUP SCENE

TRAILFORK Lillian Hoodes '13 MA is co-founder and CEO of TrailFork, a company dedicated to providing outdoor adventurers with sustainably packaged and healthy dehydrated food. The Colorado Institute for Social Impact named her its 2019 Social Impact Entrepreneur of the Year of Northern Colorado. Working out of a shared kitchen space in Broomfield, Colo., Hoodes and her staff create vegan and vegetarian offerings. The first in her family to go to college, Hoodes says her graduate degree in history has helped her succeed as an entrepreneur.

"Northwestern set me up with cognitive skills to do something as simultaneously creative and analytical as running a startup," she says. "In particular, the way history is taught at Northwestern allows students to look at a level of fine detail and then zoom out to draw conclusions about the wider world. I have to do that multiple times a day."

Startup Singer

Dom Collins applies lessons he learned in his Northwestern legal and business training to his career as an entertainment entrepreneur.

↑ Dom Collins talks with news anchor Paul Robins before a performance at the Fox 40 TV studios in Sacramento.

Dom Collins '16 JD, MBA had been working as a media and entertainment banker on Wall Street for a year when he got the itch to leave his day job and pursue his passion. He had started writing songs while in school at Northwestern. Now, out in the corporate world, he could not shake the desire to perform and record his own music. Drawing on his legal and business background, Collins formed Domarco7 Entertainment and launched an R&B career in New York City under the stage name Dom Marcell. Collins, who was born in Puerto Rico and raised in New Orleans, recently released his debut album, *U-Nique Destiny*, which features a mix of pop, R&B, hip-hop, dance and hints of gospel. His music focuses, in part, on overcoming tragedy — in recent years he lost his mother to breast cancer and his sister to sickle cell anemia — and following your dreams. Thanks to the lessons he learned while splitting time between the Kellogg School of Management and Pritzker Northwestern School of Law in the three-year JD-MBA Program, Collins is on his way.

↑ The cover for Dom Collins' single "Church Night"

I like to create and be autonomous. I enjoy the freedom of doing what I love. I knew entrepreneurship was going to allow me to do that long term. My goal was to leverage what I learned in the corporate world and apply it to my music startup.

I decided to go to graduate school at Northwestern because I wanted to take my finance career to the next level. I had worked at a boutique investment bank, a commercial real estate investment firm and a financial services firm in New York. I wanted to develop both my business and leadership skills while also building my network.

Law school essentially teaches the student how to be an effective communicator. I pull from this whenever I pitch a new idea to my marketing and creative teams, the press or a business partner. Similarly, I learned the importance of leading by doing in business school. It's important to roll up my sleeves and help out in any way I can, regardless of function. We're all a team.

While some artists outsource the business aspects to a manager, I have self-managed thus far and used LinkedIn to build a following. Some artists may not know how to leverage LinkedIn as a useful platform — in addition to Instagram, Facebook and Twitter — to promote their work. I've been able to use this approach to market my music and gain supporters.

It's important to tell my story in a way that will both inspire and galvanize others to follow their passion. I hope to continue to use my art as a conduit to accomplish this.

While it is not necessary to get an MBA, I would encourage all artists to be well-versed in business by reading books on entrepreneurship and the music business. This has definitely helped me in my pursuit.

Music is so powerful, because it brings people of all different backgrounds together. I've had difficult times in my life where a certain song uplifted me.

When I am performing on stage, it's euphoria. That's how I know this is what I'm supposed to be doing.

You only live once, so if you have a passion that's dormant, try to explore it in your free time. You don't have to go all-in. Even though I was in corporate America, I still was singing in my church choir. And your passion can change over time, so be open to allowing that to happen, because you never know if it will come full-circle.

Interview by Jacob Munoz, a sophomore from Ingleside, Ill., who is studying journalism and psychology.

DEREK GIOVANNI PHOTOGRAPHY

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YEARS

Ernie and Bert appeared in the first scene of the first episode of *Sesame Street*, which aired Nov. 10, 1969. Fifty years later, the best friends and their Muppet pals help educate children in more than 70 languages and 150 countries. Read about the purple pipeline to *Sesame Street* on page 32.