A New Horizon

GiGi Lucas is on a mission to change surfing culture.

p. 32

“Native science can help provide a holistic path toward a sustainable planet.” p. 7
Fragile Figurines
In January the Wirtz Center for the Performing Arts presented a re-imagining of Tennessee Williams’ 1937 play The Glass Menagerie, told through the lens of a Chinese American family in St. Louis. Alvin Chan, a student in the Master of Fine Arts in Directing program, directed the production, which was originally created for the stage but was adapted into an audio drama because of the COVID-19 pandemic. The recorded production featured images of the set and costumes that were designed and constructed by MFA design students.
“I took a surf lesson, and the minute I stepped on the board, I thought, ‘This is it. This is what I’ve been missing.’ I knew it instinctively.”

— Gigi Lucas ’01, founder and executive director of SurfearNEGRA, a nonprofit whose mission is to bring cultural and gender diversity to surfing.
FREE TO PLAY

Awesome article about Kathryn Hahn “Free to Play,” winter 2021! I knew Kathryn in high school and am not at all surprised at her success. She was as amazing back then as she is today!

Michelle Luna Javitch
Westerville, Ohio

I had no idea Kathryn Hahn went to Northwestern! My husband and I — both alums — adore her work and are huge fans. She is genius in WandaVision/She’s dumb in The Morning Show.

Kelly Zimmerman
Roman Catholic University

What a delightful read! I felt as if I was back on campus myself through Kathryn’s recollections of that time. Thank you!

Leila Malekzadeh
Waxman Creek, Calif.

STRETCHING THE IMAGINATION

Before reading this article, I didn’t know anything about John Rogers’ incredible career ["Stretching the Imagination,” winter 2021]. I’m heartened to know there are people like Dr. Rogers who are committed to using their brilliance to help our world.

Elise Clerkin ‘03
Oxford, Ohio

What a tremendous presentation about a really amazing and inspirational person. It is great to know that there are awesome pioneers among us.

Greg Messina ’76
DIDS
Rockford, IL

THE RECKONING

Timely, relevant, readable — the mag held my interest from cover to cover: The Other Cover. As an immigrant, I was especially delighted by the Adrienne Samses Gibbs article on teaching the full complexity of African American history [“The Reckoning Is Here,” winter 2021]. As I was sorting out the events of the attempted purge in January, I kept thinking back on the unpleasant parts of U.S. history, self-taught in my case, because they had been omitted or skimmed over when I was a student.

George A. Baum ’55
Naples, Fla.

It’s also about time high school and college English and American literature classes desegregated their reading lists. I remember one of my African American students saying, “I felt that the segregated school system was that its students knew the names of African American leaders and writers. It is time that students know these men and women and their contributions to history, literature, science and the arts.”

Patricia Endress ’54, ’60
Chicago

Thank you for the article about the important topic of African American history at Northwestern. I was able to bring attention to Northwestern’s long history of teaching and research on Africa, as Northwestern instituted one of the first programs of African American studies in 1948. A deeper knowledge of Africa can only improve one’s understanding of Black history in our country and the world.

Kathleen Sheldon ’74
Santa Monica, Calif.

“IT’S ABOUT TIME HIGH SCHOOL AND COLLEGE ENGLISH AND AMERICAN LITERATURE CLASSES DESSEGREGATED THEIR READING LISTS.” — Patricia Endress

Former President Trump’s “2776 Commission Report” calls for a return to teaching “patrician education,” which apparently has been written by one of the largest right-wing think tanks. As you note, the report excludes most events that occurred from 1619 to the present that provide context for those words.

One response to this trending erasure, I suggest, is community-based learning for younger students. For example, help students discover who or what their county, town, school or street was named after, and when. Then, what they learn can be engaging enough to encourage more interest in local history, which can lead to broader and deeper historical awareness.

Patrick Story ’63, ’68
Portland, Ore.

SCIENCE AND FAITH IN STRANGE TIMES

What a breath of fresh air to read the article “Science and Faith in Strange Times” [voices, winter 2021]. In today’s world, the news media tends to only run negative press on people of faith.

Gerald Gabrielse clearly is extremely intelligent and asks many great questions of fellow Christians (I ask many of the same questions). Thank you, Dr. Gabrielse, for being engaged in our world and holding to your Christian worldview.

Marie A. Limjoco ’06
Skokie, Ill.

Personal faith is personal, not public. Faith is a part of one’s family and personal religious rituals; that is where it should remain.

The Northwestern alumni magazine is not a Christian publication and does not solicit personal religious testimonies. It is offensive to be involuntarily and unwieldy subjected to someone else’s religious proselytizing when interleaved among an alumni magazine.

Gabrielse could have made his point of publicly denouncing right-wing lies without interrogating his personal beliefs. I, too, denounce the disgusting falsehoods, propaganda and conspiracy theories perpetuated by Republican congressional leaders, right-wing cable networks and delusional social media forums.

Suah Maxwell ’91
Archbold, Ohio

From the Editor: Thank you for your feedback. In the “Voices” section of the magazine we invite people from across the Northwestern community to share their perspectives. We welcome opinions of all kinds.

Kudos to you for publishing the recent article by Gerald Gabrielse. You deserve the gratitude of many of us for continuing to represent Christian faith as a part of the diversity of Northwestern University. It was a strong, timely and courageous article.

John C. Wakefield ’72
Miramar, Fla.

I applaud what Professor Gabrielse wrote about the universe of “truth” in 2020–21. I retired as a professor of physics in 2015 — the world was quite different then — but I regret that I did not then make more effort to clearly state that physics and my Christian faith were allies.

I applaud his courage to claim, again, that truth and faith, and hope and love, matter more than anything. The same pursuit of truth in both physics and in the pursuit of God is central to understanding and doing right — “To know Him better.”

Tom Nordlund
Birmingham, Ala.

UNDERSTANDING INCIVILITY

The current polarization ["Understanding Incivility,” Sound Off, Voices, winter 2021] has twin causes. The ideologies of the right and the left became more extreme, enabled by filter bubbles and the abolishing of the fairness doctrine.

Often news sources — social media, conventional sources, communities — do not understand their role to be constrained by facts and evidence. If you cannot agree on the facts, it is very difficult to resolve conflicts. At the same time, political leaders resort to oversimplification or pandering to their supporters because of the public attention deficit, the common lack of interdisciplinary thinking and a celebrity-obsessed culture’s desire to be entertained.

R. D. Bay
Bridgeport, Conn.

BIG CITIES STILL MATTER

I believe that propertech will ensure that big cities are efficient conduits for talent [“Big Cities Still Matter,” Discover, Winter 2021]. Having options around Northwestern University
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Jeri Ward ’01 MEM, MBA
Assistant Vice President, Chief Creative Officer
Andy Macovsky ’86 MS
Editor in Chief
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Art Director
Christina Sannau
Assistant Alumnus News Editor
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Northwestern Magazine is published at 444, winter and annually. All Rights Reserved. Produced by the Office of Global Marketing and Communications, 6030orraine Ave., Suite 200, Evanston, IL 60201. Telephone 847-491-0600. Website: alumnimagazine.northwesternu.edu
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Change-your-address
KICKIN’ IT
Kayla Sharples [Class Notes, page 65, winter 2021] is an outstanding example of a Northwestern student-athlete — high achieving on the field as well as in the classroom. More important, she is a strong individual who incorporates her values into her life, a distinctive trait of so many Wildcat athletes. With a little more experience at the professional level, this young athlete will be a top-notch professional. NU is proud of you, Kayla. David McCrerry ’74 Prospect Heights, Ill.

ROBOT QB

The Seeker is fantastic [“Five Questions with Igor Karlicic and Bhargav Maganti.”] Creation, winter 2023] Every team needs one. As a former college football player, I think this would also work for defensive back training, kick returners and kick coverage. More catches equals better performance. Great workout as well.

Dave Lumbly ’77 MS, ’95 MBA Santa Barbara, Calif.

CORRECTIONS

In our obit on James Thompson ’59 JD, ’79 H [Memoriam, winter 2021], we incorrectly stated that he won the governorship in a special election. The 1976 election was a regularly scheduled election. The term, per the 1970 state constitution, was for two years, a one-time event to separate statewide office elections from the presidential cycle. In a Class Note on Medill Hall of Achievement inductee Helene Elliott ’77 [Class Notes, page 52], we misspelled her last name. In addition, the induction ceremony was postponed because of COVID concerns. We regret the errors.

ALUMNI LEADER

Thank you, MaryAnn Batista Marsh ’80 Alumni Leader. “Q&A with MaryAnn Marsh,” [Class Notes, winter 2021], for all you do for the Northwestern University Black Alumni Association and the Northwestern University Leadership Circle and for sharing your inspiring success story of faith, resilience and hard work.

Professor Peter Dietz’s exemplary demonstration of goodwill is what makes the world a better place. I experienced the Biafran-Nigerian War as a toddler and experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler and the world a better place. I experienced the Biafran-Nigerian War as a toddler.

J. Brown Photography

HAHN COVER PHOTO: MICHAEL FRIBERG; MARYANN MARSH: JASON SMITH

J. Brown Photography

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

Free to Play
One day I will get this cover. One day.
— (atchkarrett)

There isn’t another actor working today who fits into any setting, any era, any genre as seamlessly as Kathryn Hahn. It’s not just that she’s an incredibly versatile performer, it’s that she totally gets the frequency and the vibe of every movie/show she’s in. One of our best.

— joddie_mursadin

I worked with her briefly but she made a definite impression because she’s just an incredible human being on top of being a fantastic actress. Love genuinely being able to speak highly of someone in this town.

— @thecalebowski

I was at Northwestern U Class of ’95 when she performed a monologue from Out of Africa. ... Amazing! We all knew she was going to do great things.

— @reneewlox

The Beckoning Is Here Northwestern was way ahead of its time in this regard. Back in the late ’70s I took American History (required at Northwestern), which taught entirely from the viewpoints of Black Americans, Native Americans and immigrants. So we read all original texts from those sources and none from a white perspective.

— Barbara Mahon

My Northwestern Direction Loved this story of a woman pursuing her passions for podcasting, pagentry & science during the pandemic in my @NorthwesternU alumni mag @WomenInScience.

@social_melanie

@Olivia Purna’s toughness will carry her through the doctorate, and her empathy will affect the world. We wish her well.

Jeffrey Tumin

Five Questions A robot quarterback that fires footballs at you. I wish I had this when I was a kid.

Dave Lumbly ’77 MS, ’95 MBA Santa Barbara, Calif.

In our obit on James Thompson ’59 JD, ’79 H [Memoriam, winter 2021], we incorrectly stated that he won the governorship in a special election. The 1976 election was a regularly scheduled election. The term, per the 1970 state constitution, was for two years, a one-time event to separate statewide office elections from the presidential cycle. In a Class Note on Medill Hall of Achievement inductee Helene Elliott ’77 [Class Notes, page 52], we misspelled her last name. In addition, the induction ceremony was postponed because of COVID concerns. We regret the errors.

Overall, Indigenous people in science, technology, engineering and mathematics are scarce. When I graduated with my PhD from Clemson University in 2017, I was one of only two Indigenous people out of 1,634 computer science doctoral degree recipients in the U.S. that year.

From pre-K through college, U.S. classrooms and curricula fail to include or celebrate Native people and Native science. As a result, an incredible wealth of knowledge is going untapped. Especially now, as human-caused climate change ravages our planet, the world urgently needs Indigenous scientists who can draw on the sustainability practices and knowledge of their ancestors. The world needs Native science to become the coequal partner of Western methods. Combined with modern instrumentation and data analyses, Native science can help provide a holistic path toward a sustainable planet.

Indigenous people’s representation in STEM fields must grow by leaps and bounds. Greater representation starts with recognition and respect for Indigenous history, including many painful episodes that are rarely, if ever, taught in schools. For example, the U.S.-supported overthrow of the Hawaiian Kingdom in 1893 caused a wound that has yet to heal. When a mentor of mine at Clemson sat and listened to me talk about this little-known history, she asked me why I cared. That act of listening kept me working toward my PhD when all signs said I did not belong.

Reciprocity between Indigenous and non-Indigenous people – the two-way exchange of knowledge, data and methods – is also essential. Isabella Abbott’s life story offers a model. She grew up collecting limu (edible seaweed) on the shores of Maui with her mother, who taught her how to speak Hawaiian and cook traditional Native Hawaiian seaweed dishes. Years later, Professor Abbott would share her deep expertise in the Hawaiian names for seaweeds and their uses with her Stanford colleagues and students, diversifying the department’s teaching of marine botany.

Finally, the issues Indigenous people care deeply about – such as environmental and climate change – must be seen as relevant to everyone. The Anishinaabe people of the Great Lakes region have seen their wild rice harvests reduced year after year, due to climate change and industrialization. Likewise, Hawaiians are confronting the devastating effects of ocean warming on reef ecosystems and fish populations.

The need to solve these challenges is why I became a scientist. Applied to practical aims, STEM can be a powerful complement to the Native science toolkit and vice versa. I am using computer engineering to preserve and protect the ‘ulu (land) and the people it sustains. It is time to value the unique way Indigenous people experience the world. It is time to acknowledge how that experience yields many pathways to scientific knowledge. It is time for Indigenous representation in STEM to grow – not for its own sake, but to increase humanity’s chance at saving the planet that sustains us all.

Josiah Hester, assistant professor of computer engineering, is director of Ka Moana, a Northwestern research lab that builds tiny sustainable computing devices.

Voices

The World Needs Native Scientists Now

By Josiah Hester

I

sabella Aiona Abbott (1919–2010) was the first Native Hawaiian woman to earn a PhD in science. A preeminent marine botanist, she was the first woman to become a full professor in Stanford University’s biology department. I owe much to Abbott and other Indigenous trailblazers in science. Unfortunately, she and I are rare. I am one of the few Native Hawaiians in my field (computer engineering) on the faculty of a top U.S. research institution.

On the way to her PhD, Professor Peter Dietz’s Beckoning Is Here

Northwestern was way ahead of its time in this regard. Back in the late ’70s I took American History (required at Northwestern), which taught entirely from the viewpoints of Black Americans, Native Americans and immigrants. So we read all original texts from those sources and none from a white perspective.

— Barbara Mahon

My Northwestern Direction

Loved this story of a woman pursuing her passions for podcasting, pagentry & science during the pandemic in my @NorthwesternU alumni mag @WomenInScience.

@social_melanie

@Olivia Purna’s toughness will carry her through the doctorate, and her empathy will affect the world. We wish her well.

Jeffrey Tumin

Five Questions

A robot quarterback that fires footballs at you. I wish I had this when I was a kid.

Dave Lumbly ’77 MS, ’95 MBA Santa Barbara, Calif.
COVID-19 Vaccine Mandate

Should people be required to receive a COVID-19 vaccine?

Tina Tan, professor of pediatrics at the Feinberg School of Medicine

“Our goal right now is to get as many people vaccinated as possible so that we can control this pandemic. But if you try to mandate vaccines everywhere, you’re going to have a backlash because you infringe on people’s autonomy. Of course, everyone who wants the vaccine should be able to get it.”

Mercedes Carnethon, Mary Harris Thompson Professor of medicine and preventive medicine, and vice chair of preventive medicine, Northwestern University Feinberg School of Medicine

“A national vaccine mandate should be in place, but it will never work, in part because we don’t have a national healthcare system to track who has been vaccinated. But from the scientific and public health perspectives, it would be the right thing to do to mandate things that keep the entire society safe. We have people who are dying as a result of contracting COVID and people who have long-term complications that are interfering with their quality of life. We could stop that if we present a unified front.”

Juliet Sorensen, clinical professor of law and director and founder of the Northwestern Access to Health Project at the Pritzker School of Law

“It does appear that state and localjurisdictions have a constitutional basis to mandate vaccines. “But there’s a distinction between ‘can’ and ‘should.’ And as a general matter, Americans — who are fond of individual liberties — are resistant to the notion that collective behavior should be ordered by a government authority. “I think there’s a broad consensus among public health officials and policymakers that persuasion, public health messaging and, ultimately, having people voluntarily seeking the vaccine is a far better approach than ordering them to get it.”

Kelly Michelson ’04 GME, Julia and David Uihlein Professor of Bioethics and Medical Humanities, professor of pediatrics and director of the Center for Bioethics and Medical Humanities at the Feinberg School of Medicine

“I don’t think there’s any value in pushing it down people’s throats right now; that runs the risk of creating a backlash. If we can’t even get people to wear a mask, which carries exactly zero risk, I think we have to tread lightly. The message has to emphasize the value of vaccines — and their safety. “I think there has to be a push to mandate vaccines. “Chapin was one of a kind, full of brilliant, unique people. Best part of my Northwestern years.”

Nora McCord

“I lived in Chapin for three years. That’s me in the front row, fifth from right. Chapin was absolute magic. My fellow Chapinos were among the most inspiring people I’ve ever met.”

Mark Ficken

“Chapin became my home away from home. Whether I was studying in the war room or taking seminars with the fellows, my Northwestern experience was shaped by the RC system. For Chapin Glory!”

MY NORTHWESTERN DIRECTION

Physics Education Fuels Passion to Help and Teach

Vicky Kalogera, director of Northwestern’s Center for Interdisciplinary Exploration and Research in Astrophysics (CIERA), to bring science, technology, engineering and math education to schools in the Chicago area. Shortly after her team contributed to the discovery of gravitational waves in 2016, we organized a presentation on the topic to students at Wilmette’s Honeoye Middle School. We also collaborated on curriculum development for Science Olympiad classes in Wilmette School District 39. The educational path I took at Northwestern also provided me with resources to teach physics concepts to the interns, residents and patients with whom I interact on a daily basis. In April 2020 I installed a negative airflow system in my clinic after learning that the novel coronavirus can stay airborne for many hours as aerosolized particles. I used this as an opportunity to educate every patient in our office about how a negative airflow system works. We ran a computer simulation in the waiting room so patients could visualize how aerosolized particles, without any propulsion system of their own, move by simply obeying laws of physics. Patients found it easy to understand the importance of directional airflow.

I also used my understanding of quantitative principles to teach patients about the efficacy of personal protective equipment. During the early days of the pandemic, when some people wanted to better protect themselves by wearing an N95 mask, I pointed out that they could achieve even better protection through a series of independent activities: wearing a regular face mask, washing hands frequently, physical distancing and avoiding large gatherings. Although each activity on its own carries a much lower rate of protection than the 95% achieved with an N95 mask, combining all the activities results in higher protection.

My training at Northwestern and my ongoing relationships with faculty and staff have provided me with tools not only to practice medicine but also to continue to educate the public on wondering space. Looking back, Northwestern encouraged me to examine and develop all my interests, and that has led me to these opportunities.

By K. Chris Oh ’83, ’00 MD, ’04 GME

An internist at Advocate Health Care and Northwestern University HealthSystem, who lives in Wilmette, Ill., with his wife and two children.

Recent VOICES articles

By Nora McCord

“Chapin was absolute magic. My fellow Chapinos were among the most inspiring people I’ve ever met.”

By Mark Ficken

“Chapin became my home away from home. Whether I was studying in the war room or taking seminars with the fellows, my Northwestern experience was shaped by the RC system. For Chapin Glory!”

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“I think there has to be a push to mandate vaccines. “Chapin was one of a kind, full of brilliant, unique people. Best part of my Northwestern years.”

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Illustration by Bruce Morser
The Book Nook
From memoir to history to cultural critique, here are a few selected new books from Northwestern faculty.

**Golem Girl: A Memoir**

*Riva Lehrer*

Born with spina bifida in the 1950s, when most children with the condition were not expected to survive, Lehrer endured surgery after surgery and grew up to be a visual artist, writer, activist and teacher. The first part of her intricate memoir is about enduring numerous surgeries while helping her mother deal with her own disabilities; the second focuses on how Lehrer’s view of herself and others evolved as she began creating portraits of other artists with disabilities. The book includes images from her work, which explores themes of gender, sexuality and disability.

Named by Kirkus Reviews as one of the best books of 2020, Golem Girl was also a finalist for the National Book Critics Circle Award for autobiography. Lehrer teaches drawing in Northwestern’s medical humanities program.

**Memorial Drive: A Daughter’s Memoir**

*Natasha Trethewey*

Board of Trustees Professor of English Natasha Trethewey explores grief, memory and identity in the wake of her former stepfather’s murder of her mother. In this deeply personal narrative, Trethewey traces her mother’s life in the segregated South, her own childhood in Mississippi, and their experiences with domestic abuse and racism.

**Veblen: The Making of an Economist Who Unmade Economics**

*Charles Camic*

Charles Camic, the Lorraine H. Morton Professor of Sociology, explores the formation of capitalism critic Thorstein Veblen’s ideas about the social institutions that enable wealthy Americans to amass vast fortunes.

**The Hispanic Republican: The Shaping of an American Political Identity, from Nixon to Trump**

*Geraldo Cadava*

Associate professor of history Geraldo Cadava examines the roles Hispanic Republicans have played in U.S. elections. Though Hispanic Americans tend to vote for Democrats, Cadava shows how the post–World War II Republican Party has had a long-standing relationship with Hispanic voters, especially during times of political conflict.

**Having and Being Had**

*Eula Biss*

In her latest book, English department artist-in-residence Eula Biss sheds light on the ways in which capitalism is entrenched in our lives. The book grew out of a diary she kept after buying a home in 2014.

**Nicky: A Memoir**

*Dominic Missimi*

This collection of essays and autobiographical scenes by theater professor emeritus Dominic Missimi recounts his journey from 1950s boyhood to his career as a professor and director. During his 32 years at Northwestern, Missimi founded and directed the University’s music theater program and directed 17 Waa-Mu Shows.

**Stranger in the Shogun’s City: A Japanese Woman and Her World**

*Amy Stanley*

Associate professor of history Amy Stanley pulled from a trove of family letters and records for her biography of an intrepid 19th-century Japanese woman. The book has been shortlisted for the National Book Critics Circle Award and the PEN Biography Prize.
in aquatic environments. Researchers imagine customizing the robot’s movements and locomotion to precisely deliver biotherapeutics or catalyze chemical reactions to yield products. It also could be designed to recognize and remove unwanted products. It also could be designed to recognize and remove unwanted microplastics from the environment or blood clots from delicate tissues.

“Conventional robots are typically heavy machines with lots of hardware and electronics that are unable to interact safely with delicate tissues,” says Stupp, the Board of Trustees Professor of Materials Science and Engineering, Chemistry and Biomedical Engineering. “We have designed soft materials with molecular intelligence to enable them to behave like robots of any size and perform useful functions in tiny spaces, underwater or underground.” Nearly 90% water by weight, the aquatic robot is made from a first-of-its-kind, soft, lifelike material, invented in Stupp’s lab. Its size, shape and movements come from complex hardware, hydraulics or electricity. It is activated by light and water in the direction of an external rotating magnetic field.

Within its water-filled structure is an embedded skeleton made of aligned, ferromagnetic nickel filaments. The resulting robot is a molecularly designed network, with parts that allow it to respond to light, hold or expel water and have just the right stiffness to respond rapidly to magnetic fields.

“By combining walking and steering motions together, we can program specific sequences of magnetic fields, which remotely operate the robot and direct it to follow paths on flat or inclined surfaces,” says Olvera de la Cruz, the Lawer Taylor Professor of Materials Science and Engineering, Chemistry and Chemical and Biological Engineering. “This feature allows us to direct the robot through narrow passages with complex routes.” The Northwestern team used chemical synthesis to program the molecules within the hydrogel to respond to light. When exposed to light, the robot’s molecules become hydrophobic (repelling water), causing the water molecules to escape. This conversion causes the robot to “come alive” by bending from a flat position to “standing.” The researchers discovered that this bending enables the material to respond rapidly to rotating magnetic fields, activating its ability to walk fast. Eventually, we’d like to make armies of microrobots that could perform a complicated task in a coordinated way,” Stupp says. “We can tweak them molecularly to interact with one another to imitate the swimming of birds and bacteria in nature or schools of fish in the ocean. The molecular versatility of the platform could lead to applications that have not been conceived at this point.”
Defensive standout and star guard continues the Burton legacy at Northwestern.

Veronica Burton ranks second in career steals at Northwestern.
Developing Shelf-Stable Vaccines

New manufacturing platform could help avoid waste and expand access.

More than 50% of all vaccines are wasted due to errors in transportation or storage, according to the World Health Organization. A research team led by Northwestern and Cornell universities has developed a new manufacturing platform that can quickly produce vaccines at the point of care, ensuring they will not go to waste and expanding access to potentially lifesaving medications.

The new method uses cell-free components that are freeze-dried, remaining shelf-stable for six months or longer. Once the cell-free systems reach their destination and are ready for use, health care workers can rehydrate them with a single drop of water to make the vaccine on demand.

The researchers used the platform to make conjugate vaccines that protect against bacterial infections. They were able to produce a single dose in one hour, costing about $5 per dose. The team immunized mice and exposed them to Francisella tularensis, a pathogenic bacteria that is deadly without treatment. All vaccinated mice survived.

“We could extend the platform to other medicines, including viral vaccines or insulin,” says Northwestern’s Michael Jewett, who co-led the study. “Our cell-free approach, which alleviates cold-chain requirements, will provide a way to rapidly respond to pathogen outbreaks and emerging threats in the future.”

By eliminating the need for complicated supply chains and extreme refrigeration, the platform also will be powerful for low-resource settings, which often do not have access to expensive facilities and refrigerated storage. “These issues limit the overall access to medicines,” Jewett says.

The secret behind the new manufacturing platform — called in vitro conjugate vaccine expression (iVAX) — is cell-free synthetic biology. To make a cell-free system, researchers remove a cell wall and collect the cell’s molecular machinery. They then put this machinery into a test tube and freeze-dry it. Adding water sets off a chemical reaction that activates the cell-free system, turning it into a catalyst for making a usable medicine.

“It’s like taking an engine out of a car and repurposing that engine,” Jewett says. “Or adding water to activate dried yeast when making bread.”

Conjugate vaccines attach a sugar — that is unique to a pathogen — to a carrier protein that stimulates the immune system. The sugar is like a fingerprint of the pathogen. By learning to recognize that protein as a foreign substance, your body knows how to mount an immune response to attack it when encountered again.

Unfortunately, conjugate vaccines are difficult and expensive to manufacture. “The technology we created sidesteps a lot of these issues,” DeLisa says. “We’re taking a multistep process and compressing it down into a single reaction step.”

Although viruses are top of mind, Jewett and his team are focused on conjugate vaccines as a response to the emerging threat of antibiotic-resistant bacteria.

“The rise of antibiotic-resistant microbes is something that the entire planet will need to address in the coming years,” he says. “Antibiotic resistance is a slow-moving pandemic.”

Scientists concluded that OAE1a was directly triggered by the eruption of a large igneous province that released tons of carbon dioxide into the atmosphere. “We go back in time to study greenhouse periods because Earth is headed toward another greenhouse period now,” says doctoral student Jiuxuan Wang.
Innovation

Building a Fan Base

Northwestern arts entrepreneurship team helps musician Ben Rector adapt to pandemic.

Ivive music performances might not be possible because of the COVID-19 pandemic, but for Kellogg School of Management adjunct lecturer Gregg Latterman ’96 MBA and School of Education and Social Policy senior Olivia Hernandez, the show must go on. The two are part of singer-songwriter Ben Rector’s management team. Together, they’re finding innovative ways to adapt to a virtual entertainment industry. Latterman, who plans to pursue a career in arts and entrepreneurship from there, “says Hernandez, who my customer is and go from there.”

In response, the team focused on Rector’s design and branding, especially on social media. Hernandez pitched a Thanksgiving e-card to promote holiday music and helped create visuals for songs on Rector’s holiday album. Rector has played music for fans via livestream on Instagram Live and other platforms.

Latterman, who is Rector’s manager, sees this time as an opportunity to learn how to use digital platforms to connect with fans and continue building on those connections, even when in-person concerts return. For Hernandez, her experiences at Northwestern have given her the training she needs to enter the music industry, even amid the changing landscape brought on by the pandemic. “I’ve been taught to read my environment, understand who my customer is and go from there,” says Hernandez, who plans to pursue a career in arts and entrepreneurship in Nashville. “[My professors] really helped me build that skill set and helped me understand that everything I do is leading to the next thing.”

Alva

A few years ago, Kinsey Hart received a promotion and wanted to mark the milestone with a new piece of jewelry. She had a simple design in mind — a necklace with emeralds to mark her Irish heritage — but could not find her dream piece. That’s when she hatched the idea for Alva, an online personal jeweler that allows buyers to customize a base design or create their own unique piece from scratch.

“In talking with women about this concept, I found that a significant number had a strong vision of what they wanted in a piece of jewelry and wanted to be able to create it,” says Hart, a second-year student in the dual-degree MMM program, which combines an MBA from the Kellogg School of Management and a master’s degree in design innovation from the Segal Design Institute at the McCormick School of Engineering. Hart and colleagues tested the idea in Rick Desai’s New Venture Development course in winter 2020, and then the Alva team — including Northwestern junior Riva Akoklawala — participated last summer in The Garage’s 10-week accelerator, now called Jumpstart.

PODCAST

Connor Regan ’16 pursued 11 internships during his time at Northwestern. Those experiences gave him the knowledge, skills and relationships to land in Google’s rotational program after graduation. His story is part of How I Got Here, a new podcast from The Garage that traces the journeys of young professionals, including the lessons they learned and how entrepreneurship helped them land their dream jobs.

INVENTION

Alva

Customers can craft a piece to match their vision. Alva’s website features base designs for earrings, rings and necklaces, which customers can personalize by selecting the type and color of the metal and adding gemstones — lab grown or mined. They can also see how those options affect the price.

In the future, customers will be able to customize the number and size of the gemstones.

MADE FOR YOU

If Alva does not have a specific design, Kinsey Hart and her team offer an interactive customization process that allows buyers to collaborate on creating the exact piece. Alva offers “the ability to personalize online in a way that is not mainstream,” says Hart.

LOCALLY CRAFTED

Alva’s pieces are made by a local Chicago jeweler. To bring the designs to life, Alva and partners digitize the designs into a 3D computer-aided design file, create the molds, cast the pieces and set the stones by hand.

SLEEK, SIMPLE INTERFACE

Alva’s website is driven by logic mapping on the back end that combines pricing matrices and hundreds of different image combinations to show customers the right stone and the right price.
Computer Science Enhances Interdisciplinary Learning

Northwestern’s CS Transformation Initiative is preparing faculty and students to lead in a data-driven world.

The number of undergraduate computer science majors has tripled, and course enrollments have doubled—even non-majors are taking advanced classes. The University has long had an outstanding reputation for discovery in areas such as engineering, materials and process science, and international affairs, while potentially creating new branches of learning. Leading the initiative and the computer science department is Samir Khuller, the Peter and Adrienne Barris Chair of Computer Science, who joined the Northwestern Engineering faculty in 2019 from the University of Maryland, where he helped build one of the top computer science departments in the nation.

Interest in computer science has skyrocketed over the past few years, fueled by a surge of available data, enhanced computing power and advances in artificial intelligence and machine learning. At Northwestern the number of undergraduate students majoring in the field has tripled, and course enrollments have doubled—even non-majors are taking advanced classes.

With an eye on the future, the McCormick School of Engineering launched the Computer Science Transformation Initiative in 2016 and announced plans to hire 20 new faculty members: 10 in computer science and 10 with joint appointments across the University (referred to as CS+X). To date, 11 new faculty have been hired, plus a department chair. And with the support of visionary philanthropists, the program is revolutionizing learning across disciplines at Northwestern.

The University has long had an outstanding reputation among its peers for interdisciplinary collaboration. Computer science faculty have held joint appointments in journalism, music and education—fields in which the University is a global leader. CS+X builds on this tradition by using computer science and computational thinking to push the boundaries of discovery in areas such as medicine, economics, law and international affairs, while potentially creating new branches of learning.

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Northwestern Engineering embarked on a project to re-imagine the third floor of Seeley G. Mudd Hall. Opened in 2018, the 22,600-square-foot facility unites Northwestern Engineering’s computer science faculty all in one place and is located on Evanston’s North Campus. The space promotes purposeful and spontaneous collaborations between engineers, entrepreneurs, management experts and computer scientists in one innovation ecosystem.

Data is everywhere, and it is being created at a scale beyond the capacity of human understanding. Researchers are pushing the boundaries of artificial intelligence to help harness and use this data to help solve the world’s most pressing problems. At Northwestern, where interdisciplinary collaboration is a goal, faculty are exploring the use of AI in fields such as drug discovery, equality and social justice, material and process design, social media analysis and astronomy.

One of the University’s leading AI scholars is Kristian Hammond, who is working on the cutting edge of language and narrative generation, among other specialties within the field. Hammond, along with fellow professor of computer science Larry Birnbaum, founded Narrative Science, a company that converts raw data into stories that feature natural language. Companies and organizations use Narrative Science to quickly create customer communications, reports and other content. Narrative Science grew out of a collaboration between Hammond, Birnbaum and students from the Medill School of Journalism, Media, Integrated Marketing Communications.

In recognition of his scholarship and teaching, Hammond was named the inaugural Bill and Cathy Osborn Professor of Computer Science in 2018. The endowed professorship is one of two established by the Northwestern University Board of Trustees to honor the service and generosity of William A. Osborn ’69, ’73 MBA, ’88 H and Cathleen Osborn ’72 on the occasion of Bill’s retirement as board chair.

“We are delighted that our family will be associated with Northwestern’s quest to transform the next generation of computer scientists,” Bill Osborn said. As AI and computer science evolve together, they are expected to play an even greater role in our lives—the Osborn Chair helps ensure that the University’s prominence in these fields will continue well into the future.

“There is no better time than today to be in computer science,” Hammond says.

Northwestern: Actively Engaged in AI

8 schools
200+ faculty
11 educational programs

We Will Update
Grant Supports Landmark Parkinson’s Study

Northwestern Medicine’s partnership with The Michael J. Fox Foundation is advancing critical research on the disease.

More than 6 million people worldwide are affected by Parkinson’s disease — a lifelong movement disorder with symptoms that slowly worsen over time. Thanks to a new multimillion-dollar, multiyear grant from The Michael J. Fox Foundation for Parkinson’s Research, Northwestern Medicine will continue to participate in the MPP: a global observational study that assesses the progression of Parkinson’s disease and identifies biomarkers for the disease. Northwestern is one of 50 international sites participating in the observational study.

Over the last decade, the Parkinson’s Progression Markers Initiative (PPMI) has created a longitudinal clinical and biomarker dataset involving more than 1,400 participants worldwide. The project also has compiled standardized protocols for acquisition, transfer and analysis of clinical, imaging, genetic and biospecimen data that is available for use by the Parkinson’s disease research community.

Northwestern Medicine’s Tanya Simuni, the Arthur C. Nielsen Jr. Research Professor of Parkinson’s Disease and Movement Disorders and director of the Parkinson’s Disease and Movement Disorders Center at Feinberg School of Medicine, received the award to continue her PPMI work in August 2020. The latest grant from The Michael J. Fox Foundation will support Simuni and her team’s efforts in recruiting and following study volunteers from diverse cohorts to gather valuable clinical and imaging data and biological samples.

More than 6 million people worldwide are affected by Parkinson’s disease.

“In 2020 the PPMI Foundation made a commitment to establish the Dr. Robert L. Murphy Professorship in Emerging Infectious Diseases, in honor of the current executive director of the Institute for Global Health at Feinberg School of Medicine — a longtime friend of Flanagan’s. This position will fund the research priorities of a faculty member in the institute’s Center for Global Communicable and Emerging Infectious Diseases,” says John J. Stone, MD, Professor of Emerging Infectious Diseases.

“PPMI data are essential to advance and accelerate novel therapies. Northwestern Medicine is privileged to make this commitment,” says Tanya Simuni, right, director of the Parkinson’s Disease and Movement Disorders Center at Northwestern University Feinberg School of Medicine, with colleagues Danielle Larson and Neil Shetty.

Northwestern’s global health outreach programs aid underserved populations.

GLOBAL HEALTH

Preventing the Next Pandemic

The Flanagan Foundation’s recent philanthropy focuses on critical infectious disease research.

For more than 40 years, the late John R. Flanagan ’56 MBA generously supported Northwestern through major gifts for medical research at the University. A recent gift from the John R. Flanagan Charitable Foundation seeks to prevent the spread of infectious diseases, like COVID-19, around the world.

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“The John R. Flanagan Charitable Foundation is privileged to make this gift in celebration of John’s life, his personal relationship with Dr. Murphy,” says John Boyle ’11 MD, a member of the foundation’s board.

Prior to the creation of the foundation following his death, Flanagan himself made a gift in 2018 to establish the Neel J. Stone, MD, Professorship — named in honor of Neel J. Stone ’66, ’68 MD, ’75 GME, ’75 GME and currently held by Sanjiv J. Shah — in the cardiology division at Feinberg.

The professorship was supported in part by the Ryan Family Chair Challenge. The Flanagan Foundation also supports future generations of Northwestern-educated leaders in medicine. The recently established John R. Flanagan Charitable Foundation Medical Scholarship will go to a fourth-year medical student who has matched to a residency program. The Flanagan Foundation also contributes to the Ryan Family Chair Challenge. The Flanagan Fellowship Fund in the department of physiology at Feinberg helps advance educational programs for trainees focused on the foundation’s core missions of global health and its support of Northwestern’s global health outreach programs.”

“One of the Institute for Global Health’s core missions is to prevent the next pandemic. That’s why we are very fortunate and so grateful to receive funding from the Flanagan Foundation for a full-time position in molecular epidemiology. The person ultimately filling this role will help us study how viruses like COVID-19 transmit and how to stop them.”

Robert L. Murphy
How Do People Make Change?

Social movements mean street protests — and so much more. Northwestern experts share the keys to an effective movement.

BY CLARE MILLIKEN
Beyond the pandemic, social unrest defined 2020. It started on the very first day of the year in Hong Kong, where protesters filled the streets to call for racial justice, challenge Big Tech, oppose COVID-19 lockdowns and fight for democracy. But to consider protests the whole story would be missing the point. “It’s easy to focus on the sudden, dramatic moments of activism,” says anthropologist associate professor Ana Aparicio. “However, sometimes activism isn’t overt or in big public spaces.”

From boycotts and marches to teaching and community building, social movements are multifaceted, organized activities that can bring people together to change the world. Aparicio and her Northwestern colleagues have studied social movements past and present, across contexts and continents, and their work shows what makes a movement powerful and effective.

“The regular people are really the engine,” says sociology professor Aldon Morris. “Ordinary people can do extraordinary things in the context of social movements.”

Organizing for Change

Morris has dedicated his life and career to social movements. The Leon Forrest Professor of Sociology and African American Studies at Northwestern has been arrested while protesting South African apartheid, risked his academic career by opposing segregation in higher education and helped labor unions organize across the United States.

“Movements do not arise spontaneously,” he explains. “The oppressed must organize the movement, must provide it with leadership, must provide it with resources. That’s what gives power to a movement.”

“This was true of the U.S. civil rights movement of the 1950s and ’60s, which was ‘funded largely by the Black community. The leadership, the strategy and the genius of the movement came from the Black community,’” says Morris, author of the 1994 book The Origins of the Civil Rights Movement: Black Communities Organizing for Change.

A clear infrastructure is also key to sustaining any movement beyond its genesis, says Kellogg School of Management professor Brayden King, who studies how social movements influence corporations and legislative policymaking. He says infrastructure enables a movement to “ride waves of relevance in the media and in broader public culture. And there’s always a core group of people working to seize upon the next opportunity.”

A sustained movement may depend on what Morris calls “indigenous resources.” In the civil rights era, he explains, Black churches and already-established Black-led organizations were willing to invest in and support the activists.

“That was extremely sustainable because churches aren’t going anywhere,” says King, the Max McGraw Chair of Management and the Environment and a professor of management and organizations. “I’m not saying that all activists need churches to sustain them, but you need some kind of infrastructure that is enduring to ensure the movement doesn’t wither away as soon as it faces a challenge.”

Even with a sound infrastructure, a movement can lose momentum due to the limits of public attention. King cites the recent protests in Hong Kong as an example.

“The protesters were trying to create enough of a scene to get the international community to put pressure on China to change its relationship with Hong Kong,” King says. “And in some ways it was working. The protests were creating negative media attention for China and causing China’s allies to distance themselves from the country. But then COVID happened.”

The issues in Hong Kong were eclipsed — but far from eliminated — when the public’s attention shifted to the pandemic. King’s research shows that concurrent movements can compete with each other, diluting their potential impact. “Well-meaning and in many ways ideologically aligned social movements can cancel each other out,” he says, “because they’re all fighting for a very limited amount of attention.”

From Protest to Policy

A movement, King says, should be multifaceted. Ideally it would be “a broad, diverse coalition of people and organizations promoting change” whose strategies are similarly varied. Movements must put pressure on as many institutional levers as possible.

For example, so that users are spared the work of researching Amazon’s vast network of subsidiary companies and brands, Hecht’s tools would warn consumers before they click on any Amazon-affiliated links — or hide the links altogether. Because tech companies’ algorithms depend on consumer data, when large numbers of people stop sharing their info through clicks and searches, the algorithms become less accurate and targeted. Ultimately, they don’t work as well.

Hecht says his work, and data leverage itself, can be a boon to consumers and tech firms alike.

“The goal is to allow more democratic input into the decisions that are made about technology,” Hecht says. “The tech companies can then focus on what they’re good at, which is building technology, and the public can contribute to decisions about how that technology impacts society.” — C.M.

People Power Online

Online action can be used to affect change in powerful ways, says computer science associate professor Brent Hecht. Hecht researches “data leverage,” a new way for people to take collective action against tech giants like Amazon, Facebook and Google to force them to change their practices regarding privacy, misinformation and other issues.

Data poisoning is a form of data leverage whereby online users intentionally provide false data by posting fake reviews, clicking links unrelated to a search term or tagging people in photos incorrectly. Another form is a data strike, in which people stop contributing to an online platform altogether. For instance, users could, on mass, stop searching for and reviewing products on Amazon, thereby starving the company of critical data on consumer browsing and buying habits.

Hecht and his team are now building tools to make it easier to pull off a data strike.

Chloe Thurston studies how social movements influence corporations.

Ana Aparicio studies how Latinx communities develop local politics.

Brayden King explores how social movements influence corporations.

Aldon Morris examines social movements, civil rights and social inequality.

Aldon Morris examines social movements, civil rights and social inequality.
as possible, including the legal system, corporate practices, policymaking and public consciousness. Political science assistant professor Chloe Thurston, who studies the role of social movements and organizations in shaping policy, says movements can spotlight individual grievances, increase their visibility and then connect them to a broader context.

Thurston says that the case of credit discrimination illustrates this tactic. Until the 1970s it was standard practice in the U.S. to deny women access to various forms of credit. But then groups like the National Organization for Women and the Women’s Equity Action League began to connect women’s individual experiences of being denied credit to show a broader pattern. They also upended the assumptions about why women couldn’t get loans or bank cards, making clear that the restrictions were baseless, discriminatory and unfair.

“NOW and other groups raised the issue to national public consciousness, and it was legislated on as a result,” Thurston says, referring to the Equal Credit Opportunity Act of 1974, which prohibited lending discrimination based on sex, race, religion and other factors. She adds that racial and social equality movements — Black Lives Matter and #MeToo included — commonly connect experience to policy.

Raising public awareness alone is likely not enough to effect change, Thurston says, “but it’s certainly part of keeping these issues on the agenda.”

According to Morris, disruption is a key strategy for advancing a cause. “Social movements are not successful because they are polite,” he says. “They are successful because they shake up the status quo.”

Black leaders and organizers in Birmingham, Ala., had long fought to change the system of Jim Crow in the city, Morris says, “and each time they made very little progress. And so the civil rights movement said, ‘OK, we’re going to have to disrupt paired processes that could lead to meaningful change. Activists need organization insiders on their side, King says, “to open the door for further engagement and deeper conversations about how to implement processes that could lead to meaningful change. Activists need those insiders to help adapt and translate their ideals within an organization.”

PROGRESS AND PARTNERSHIP

Boycotts are a proven tactic of social movements. King says roughly 25% of boycotts that receive national media attention lead to some form of concession. “Boycotts create buzz for the movement and pose a reputational threat to the targeted company or group,” says King, who co-edited Protectors and Their Targets. Buzz increases the chances that a targeted entity will engage with activists and subsequently change their practices, he adds; that engagement can help enlist “movement allies” who work inside the targeted entity. Allies could be police officers who support Black Lives Matter or ExxonMobil scientists who support legislation to combat climate change.

Thurston points out that, in the 1970s, a group of more than 100 economists, including some from the U.S. Council of Economic Advisers, signed a statement disavowing the use of sex or race in lending decisions. She says their statement “helped lend credibility to the claims of the women’s organizations and also helped bolster the argument for concrete regulatory change.”

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When it comes to motivating people to support a cause, aesthetic choices — the type of language that is spoken, the style of dress that is worn, the symbols that are used and the overall vibe surrounding the cause — play a big role. They help define a movement’s identity for its members, who in turn can use aesthetics against the opposition. Anthropology professor Jessica Winegar was in Egypt’s Tahrir Square in February 2011 when citizens took to the streets to demand the ouster of the country’s authoritarian president, Hosni Mubarak. Winegar observed how aesthetics were deployed to further the movement. “The revolutionaries used vulgar insults against the military and state security officials,” she says. “They portrayed them as people who had no morals, who were greedy and corrupt.”

Secular-oriented revolutionaries also leveled insults against the Muslim Brotherhood, criticizing its adherents as dirty, vulgar, unhallowed and uncivilized. At the same time, state forces portrayed all revolutionaries as immoral, bad Muslims, uncouth, dirty and uncivilized. “Aesthetics play a role in galvanizing people to join a social movement as well as creating the movement’s opponent,” Winegar says. “In a way, what people can see, hear, smell, taste and feel at a very deep level can be much more powerful than a political platform.” — C.M.
Those potential allies, however, tend to reject a movement that is expressing hostility. King cites research showing that many finance industry workers supported the goals of the Occupy Wall Street movement (begun in September 2011) but were unwilling to become real allies. “They felt it was an angry movement and bringing that anger into the workplace would make them a target among their co-workers and the people they depended on for career advancement,” King says. “That anger turned them off from becoming real allies.”

THE PERSONAL IS POLITICAL
When it comes to social movements, community-building activities can help create a foundation for engagement around particular issues. Ana Aparicio studies how Latinx communities develop local activism over the years. Here’s a look at a few examples of campus activism at Northwestern.

 Movements at Northwestern
Northwestern students have often made their voices heard in support of causes they care about. Here’s a look at a few examples of campus activism over the years.

1924 ↓
POSTWAR PACIFISM
Following World War I, a group of 38 students gathered at a student conference and voted against U.S. participation in another war. The students were mocked by the alumni association president as “spineless, pusillanimous pacifists” at a campus patriotism rally and denounced in a Daily Northwestern editorial.

1968 ↓
BURSAR’S OFFICE TAKEOVER
More than 100 students peacefully occupied the Bursar’s Office for 38 hours to protest the Black student experience at Northwestern. The takeover ended with the May 4th Agreement, a resolution in which the administration agreed to respond to a list of student demands.

1970 ↑
RACIAL JUSTICE
Following the police killings of George Floyd and Breonna Taylor, students joined protests occurring across the country in support of Black Lives Matter and racial justice.

1995 ↓
HUNGER STRIKE
In their push for the creation of an Asian American studies program, students on the Asian American Advisory Board helped organize a hunger strike that lasted more than three weeks and garnered national attention. Asian American studies was established as a Weinberg College of Arts and Sciences minor in 1999 and a major in 2016.

2020 ↑
THE WORK CONTINUES
Just as there are many ways to define and propel a movement, there are innumerable ways to assess its role and impact. “Should success be defined as policy? Should it be defined as changing the way people talk about issues or whether certain things people used to overlook are now considered problematic?” Thurston asks.

Additionally, a movement that seems to have failed may contribute to changes that come a decade later. Occupy Wall Street, she says, “but when we look at the 2020 Democratic presidential primaries, issues of inequality were really high on the list of things that most candidates were willing to talk about.”

“For many movements, the No. 1 goal is to change the conversation — to grab the attention of the public and get them to think differently about a certain issue,” King says. “If you’re able to get politicians to talk and think differently, that’s a big change.”

Clare Milliken is senior writer and producer in the Office of Global Marketing and Communications.

A SHOW OF SOLIDARITY
After four Kent State University student protesters were killed on their campus by National Guardsmen, thousands of Northwestern students took part in a peaceful strike — the largest political gathering in University history — that included blocking Sheridan Road and causing classes to be canceled for days. Ten days after the Kent State killings, two students were killed by police at Jackson State University. All six students were eventually memorialized on Northwestern’s Deering Meadow.

CIVIL RIGHTS
After the University opened so-called international houses for minority women and men in 1947 and 1949, Northwestern’s first multiracial civil rights organization, the Quibblers, wrote in a letter to the Daily Northwestern that such a move was not a solution but “in itself an act of segregation.” Other student groups called for an end to discrimination across the University during this time as well. (Full integration of University-owned housing occurred in 1953.)

THE HISTORIC NEGLECT
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Breaking New Waves

Gwenna “GiGi” Gainer Lucas ditched the corporate rat race and took up surfing. Now she wants to make the lineup more accessible for the next generation of surfers of color.

By Elliott Smith
The crash of the waves is a clarion call. For Gwenna “GiGi” Gainer Lucas, the pull of the sea is a low-thrumming signal that reverberates through her being. The surf brings reflection and rebirth.

“I am very aware of the joy and peace that surfing brings to me,” says Lucas ’01 from her oceanside home in Jacksonville Beach, Fla.

It wasn’t always this way. For a while, she stepped away from the water that helped shape her childhood. She never even considered dipping her toes into Lake Michigan when she was a student at Northwestern. And the sea was the furthest thing from her mind when she worked in retail development for Nike and Kate Spade in New York City.

“There was a long period when I lost my identity,” Lucas says. “I was building this facade of ‘I have to have the VP title and make X amount of money to be successful.’ But I knew at my core that something needed to change.”

The epiphany occurred in 2012 at the wedding of her college roommate Crystal Clark ‘01 in Costa Rica. (Clark is now an associate professor at the Feinberg School of Medicine.)

“I took a surf lesson,” Lucas recalls, “and the minute I stepped on the board, I thought, ‘This is it. This is what I’ve been missing.’ I knew it instinctively.” She spent the next 15 months figuring out how to get back on the board. She quit her job and returned to Costa Rica, where she spent a year doing contract consulting work when not riding the tides and swells.

Eventually, she felt called to get more young girls of color into the sport — one that, in the United States at least, has been historically dominated by white men.

Lucas is the founder and executive director of SurfearNEGRA (which roughly translates to “Black female surfer” in Spanish), a nonprofit whose mission is to bring cultural and gender diversity to surfing.

The organization helps pay for girls who live near the water to attend surf camps and, for those landlocked or uncomfortable swimming, opportunities to learn the fundamentals of the sport on terra firma. It’s all part of her effort to diversify the “lineup,” the place in the water where surfers sit on their boards to ensure the best access to breaking waves.

Lucas is also a founding member of Textured Waves, a collective of Black women who want to increase the visibility of diverse surfers. In 2020 the collective created the short film Sea Us Now, which re-imagines classic surfing scenes of the 1960s with Black women surfers.

“This initiative created beautiful imagery of women of color who thrive in their aquatic lifestyle — imagery that was nonexistent in mainstream media,” says Lucas.

**OVERCOMING HISTORY**

Lucas grew up on the Gulf Coast in Tampa, Fla., where the water was a natural part of her life. Her parents, Alfred and Marion Gainer, took part in catamaran races, but they were often the only Black family at the regattas.

Lucas acknowledges that African Americans have a complicated relationship with water. According to the International Swimming Hall of Fame, before the slave trade, West Africans were known as some of the best swimmers in the world. Enslavers, however, saw swimming as a means of escape and prevented enslaved people from learning to swim. During the Jim Crow era, Black people were barred from most swimming pools and beaches, particularly in the South.

The long-term effects of those actions resulted in a cultural divide when it comes to watersports in the U.S. And statistics reveal that more than half of African American children don’t know how to swim. A 2017 study found that more than 65% of African American children couldn’t swim safely in the deep end of a pool. Only 36% of white children lacked the same skill.

“I took a surf lesson, and the minute I stepped on the board, I thought, ‘This is it. This is what I’ve been missing.’ I knew it instinctively.” — GiGi Lucas ’01
Black surfers and Black women surfers are not as rare in other parts of the world, Lucas notes. But representation of people of color in surf media and sponsorship remains a global issue. And there are no Black surfers and no Black leaders in the women’s or men’s professional rankings.

“The ocean is the largest natural resource on the planet,” Lucas says. “For a whole people in our nation to have developed a complex or fear around water is utterly unnatural. We know what has led to this point. To be able to deconstruct that narrative and be on the water helps us reconnect with who we are.”

The summer of 2020 was filled with upheaval. In the aftermath of the killings of George Floyd and Breonna Taylor, Lucas’ efforts to change her sport came into sharper focus.

“Not only are [Black people] capable of being anywhere we want to be — we don’t need permission,” she says. “Sometimes we have to build the opportunities for success ourselves.”

Lucas has formed strategic partnerships with brands to help spread her mission and raise money to send girls to surf camps. SurfearNEGRA partnered with Jacksonville, Fla.-based textile manufacturer Anact to create a Black Lives Matter tote bag, which features an image of Lucas (by photographer Malcolm Jackson) on American Beach in Amelia Island, Fla., one of the few beaches in the South where Black people could swim during Jim Crow.

Lucas’ organization also teamed up with accessory designer Raven + Lily to curate a collection of jewelry inspired by the spirit of surfing. Such collaborations with forward-thinking, women-owned businesses are intentional.

She’s received inquiries from “quite a few organizations in the surf industry who have been guilty of repeating monolithic aesthetics about the sport,” she says. But Lucas is not eager to work with them.

“What I’m conscious of is tokenism. I refuse to lend an image of the girls to a brand without a real investment in the culture.”

Lucas’ drive to grow SurfearNEGRA has impressed those around her.

“She has worked tirelessly to amplify a platform and represent what is good in this world — especially in this moment,” says SurfearNEGRA board member Ethelbert Williams ’01, director of e-commerce for the Boston Beer Company. “As someone working in the private sector, I’m inspired by her transition from being a global corporate executive to now building a cause and leading impact throughout local communities.”

During its first two years, and despite the pandemic, SurfearNEGRA’s ¡100 Girls’ program has placed 64 girls on the water by partnering with a network of 74 surf camps in 24 states. The nonprofit’s ¡Surf the Turf! program provides access to the fundamentals of surf for kids who aren’t near the water or are afraid to be in the ocean. “Many of them have never seen a surfboard before and don’t know what a tide is or how waves are created,” says Lucas. “Some have never been to the beach.”

¡Surf the Turf! breaks down the basic movements of surf into physical education activities that are familiar to them, such as standing on a balance board or paddling while laying on a skateboard. “We also replace typical PE terminology with surf phrases and storytelling that brings them into the world of surf — without the need for water,” Lucas says.

“She’s creating a model that can be replicated throughout all sports to foster inclusivity and positive outcomes with diverse youth,” Williams says.

**SHOWING GIRLS THAT THEY CAN**

Surfing is an acquired taste, and Lucas knows that not all the participants are going to be converts — but that’s not the point.

“I like to keep it real,” she says. “There have been mixed responses from the girls, from ‘I’m not getting in past my knees’ to ‘I’m not getting my hair wet’ to ‘I’ve been to experience I ever had.’ But what makes me happiest is that they tried it. In life, so many times we have in our head what we can and can’t do. We’re showing girls that they can.”

Deyona Burton attended surf camp at the urging of her mother. After her initial hesitation, the 17-year-old from Jacksonville, Fla., found herself starting to enjoy it.

“At first, I didn’t like it,” Burton says. “But seeing Gigi surf gave me the confidence to keep trying. The next time, I was able to stand up on my board. Gigi was excited for me, and I saw Black women around me, cheering me on. It was really cool.”

For Burton, going to surf camp with Lucas went beyond trying a new sport. “Gigi continues to stay in touch,” she says. “She’s like a mentor and a big sister.”

Lucas sees the camps as an opportunity for girls to escape the pressures of society and be themselves.

“The girls who took to surfing felt a freedom to be exactly who they are, with their hair, their body, their ability,” Lucas says. “For this age range, 7 to 17, that’s extremely important. In everyday life, they often feel awkward. But in the water they are completely themselves. And for many, it’s the first time in a while that they have been able to disconnect from the pressures of the world and just be present.”

**THE NEXT SET**

Lucas recently completed the short film The Secret of Right with surfwear maker Seea, and she participated in a civil rights-focused exhibit that runs through May at the Museum of Contemporary Art Jacksonville.

She’s also reconnecting with her Northwestern roots, realizing that her experiences on campus have played a role in her current success.

“Northwestern taught me how to consistently navigate unfamiliar spaces,” Lucas says, “I developed a ‘drive in head first’ mentality.”

Lucas says that her Northwestern experience was not always easy, but she’s grateful for the challenges.

“Northwestern was the first time that I got any grade below a B,” she says. “I was actually on academic probation at one point because I didn’t know how to apply myself. Once the sting of sitting in the dean’s office wore off, I got laser-focused on learning as much as I could. That clearly has translated many times over throughout my life.”

Lucas has recently started to explore the heritage and legacy of Black students at Northwestern. “It’s great seeing places like the Black House finally get the awareness they deserve,” she says, “but being a part of the collective evolution of Black Wildcats.”

“It’s really cool reconnecting with the Northwestern community at my age,” she adds. “When I was younger, I didn’t feel like I could meaningfully engage unless I had something to show that would impress people. Now I’ve entered into a season of my life where purpose is pinnacle. And if anyone is blessed to be able to live with purpose and offer that gift to the world, it should absolutely be celebrated.”

The roar of the ocean now defines Lucas’ perception of success, both personally and professionally, and she couldn’t be happier. She reflects on the diverse lineup she’s seen abroad and hopes that one day it won’t be a big deal for women of color in this country to be part of the sport she loves.

“Ten years from now, I hope we are able to drop the adjectives ‘Black’ and ‘girl,’” she says. “They can be just as known as surfers.”

“I don’t know if I will be able to change everything. But this is not about being accepted. It’s about empowering women of color to do whatever the heck they want.”

Eliot Smith ’97, a proud alumnus of the Daily Northwestern, is a freelance writer and children’s book author. He lives in Falls Church, Va., with his wife and two children.
Northwestern alumni and faculty from across the University seek to understand the deadly consequences of outdoor air pollution.

BY AMANDA MORRIS

Franz Geiger stood in the middle of Mexico City’s Plaza de la Constitución in June 1990, watching the traffic chug around the city’s epicenter. It was the first day of the rainy season, but cloud cover was sparse. Then suddenly the skies opened and rain deluged the plaza. The abrupt downpour soaked through Geiger’s clothes and turned his crisp, white T-shirt a grimy, streaky black.

“During that time, Mexico City was experiencing the worst air pollution in its history,” says Geiger, a Northwestern chemistry professor. “It was amazing. I remember the rain feeling sticky on my skin. It was a mixture of rain, road dust, combustion engine exhaust and rubber from tires, all stuck together.”
Vehicles’ high-temperature engines burn fossil fuels, generating nitrogen oxides, which are harmful to human health. Nitrogen oxides also mix with other gases in the atmosphere and — when exposed to sunlight — form ozone. Nitrogen oxides are among “good” ozone in the stratosphere — the kind that protects us from the sun’s ultraviolet rays — whereas, when a poisonous haze blanketed Beijing for nearly a week in 2013, hospital admissions surged by 30% during the city’s so-called “airpocalypse.”

But how does inhaling polluted air affect the heart? Budinger, who studied chemical engineering as an undergrad at Northwestern and is now the chief of pulmonary and critical care at Northwestern Medicine, set out to determine the pathways that particulate matter travels to affect heart health. His team discovered the cascade begins with the alveolar macrophage, or “dust cell,” in the lungs. Responsible for cleaning up particles that enter the lungs, these cells activate when they encounter soot. This induces a cascade of signaling that ultimately releases a group of proteins and small molecules that cause clotting.

“They come together,” Budinger says. “So we think inflammation in the lungs increases the risk of blood clots forming in heart arteries, causing heart attack and strokes.”

By understanding this cascade, Budinger and his team were able to pinpoint already-approved medications that could decrease premature deaths.

Pollution in Our Backyard

These health issues typically strike disadvantaged populations more severely, as their neighborhoods are often disproportionately overburdened with pollutants. “Housing is much cheaper in areas where the land and air are contaminated,” says Nancy Loeb, who directs the Environmental Advocacy Center at the Pritzker School of Law’s Bluhm Legal Clinic. Because the hazards of air pollution exposure are tangled with the other issues that face low-income populations — including reduced access to affordable health care and higher levels of stress — it becomes difficult to tease apart how air pollution specifically affects the human body.

“Lower-income communities do experience more health issues and higher instances of certain illnesses,” says Loeb, a clinical professor of law. “It’s hard to say there’s a single contributing factor, but there’s a good indication that air pollution contributes.”

Human behavior provides another tricky variable. “If you live next to a highway, you might try to keep your windows closed or avoid sitting outside,” Schwandt says. “It’s difficult to measure how pollution affects people because we might underestimate how much people shield themselves from pollution sources.”

To help unravel these complex relationships, researchers look for “natural experiments.” For Schwandt, Volkswagen’s emissions scandal presented a perfect opportunity. In 2015 Volkswagen sold cars that could detect when their emissions were being tested. When sensing a test scenario, the car automatically switched on a set of devices to lower its emissions. Once the car was on the road again, the devices switched off, enabling the vehicle to emit nitrogen oxide pollution 40 times higher than the U.S. Environmental Protection Agency’s limit.

“Suddenly, pollution increased among economically advantaged population groups in areas with many cheating cars,” Schwandt says. “We had this once-in-a-lifetime setting to study the effects of air pollution on more advantaged populations that didn’t live near highways or power plants.”

In areas with more of these particular Volkswagen models, Schwandt’s team found lower infant birth weights. Wealthier and healthier groups, such as married white mothers with college degrees, particularly felt these effects because “clean diesel” Volkswagen cars were marketed to those groups.

“Just informing people about these risks could have a really big impact,” he says. “It’s the consumers themselves who produce this pollution on a daily basis.”

Air pollution is everywhere. According to a recent study led by Harvard University, 8 million people died in 2018 from fossil fuel air pollution. Other recent studies have found air pollution is also linked to lost pregnancies and mental health crises, as well as increased risk for dementia and sight loss. According to the American Lung Association, nearly half of all Americans live in counties with unhealthy levels of air pollution.

Northwestern researchers and alumni in various fields are working to better understand how air pollution travels from smokestacks and tailpipes into the atmosphere, how it affects our health and why it impacts some populations more than others. Their ultimate goal is to find solutions that could protect our health and the environment.

What Is Air Pollution?

Air pollution is primarily made up of three substances: ozone, fine particulate matter (soot, dust and smoke) and nitrogen oxides. All three are byproducts of mining operations, electricity generation and agricultural activities, but vehicles with combustion engines are among the worst culprits. In the U.S., the transportation sector is the No. 1 source of air pollution and greenhouse gas emissions,” says Scott Budinger ’85, the Ernest S. Bazley Professor of Airway Diseases at the Feinberg School of Medicine.

Clotting Consequences

Perhaps surprisingly, air pollution—related deaths aren’t caused by lung damage or respiratory failure alone. Since the 1930s, researchers have linked air pollution to an increased risk of heart attack and stroke. This was most famously demonstrated during the London smog events in the 1950s. Whenever levels of smoke — generated from coal-burning power plants and coal furnaces in homes — increased, mortalities spiked two days later. Subsequent studies found all air pollution—related deaths after a smog event were from heart attacks and strokes. Similarly, when a poisonous haze blanketed Beijing for nearly a week in 2013, hospital admissions surged by 30% during the city’s so-called “airpocalypse.”

By and large, that will be particulate matter air pollution, which comes from burning fossil fuels,” says Scott Budinger ’85, the Ernest S. Bazley Professor of Airway Diseases at the Feinberg School of Medicine.

Environmental Evolution

Although our lungs struggle to clear particulate matter, or soot, from our bodies, they are much more adept at dispelling dust. So while inhaling smoke from a wildfire or bonfire isn’t healthy, it’s not nearly as dangerous as breathing in car exhaust.

“Humans evolved in dusty environments,” Scott Budinger explains. “Our bodies, they are much more adept at dispelling dust. So while inhaling smoke from a wildfire or bonfire isn’t healthy, it’s not nearly as dangerous as breathing in car exhaust.”

“Just informing people about these risks could have a really big impact. It’s the consumers themselves who produce this pollution on a daily basis.” — Hannes Schwandt

By the Numbers:

Air Pollution in Chicago

While overall air quality in the Chicago area has improved, there is still progress to be made, according to the 2020 “Air Quality and Health Report.”

15
Yearly average of “unhealthy ozone days” from 2016 to 2018, making Chicago the 16th most polluted city in the U.S. for ozone

40%
Reduction since 2000 in fine particulate matter pollution in Chicago, yet concentrations are still among the highest in the nation

9
Life expectancy gap in years between Chicago’s Black and white residents due to chronic disease

5%
Percentage of premature deaths in Chicago each year that can be attributed to exposure to fine particulate matter

After gathering and reviewing air quality data, the duo was shocked to find ethanol, which is for a “green fuel,” increased ground-level ozone.

The team dug into air chemistry to tease apart how this pollution — as well as nitrogen oxides — formed. They found nitrate and nitric acid, which together form nitrogen oxides actually curb ozone concentrations. When vehicles use ethanol, nitrogen oxide concentrations decrease, leaving ozone unchecked.

“The benefit is reduced nitrogen oxide and ultralite particulate matter, but that comes at the price of increased ozone,” Geiger says. “Ethanol also carries heavy metals because it comes from the alveolar macrophages and does not get distributed. We do not get this increase in ozone.”

Canning Combustion

Although the problems associated with air pollution feel overwhelming, solutions
The Benefits of Vehicle Electrification

According to professor Daniel Horton’s research, replacing just 25% of gas-powered vehicles with electric vehicles in the U.S. would avoid:

- $16.8 billion annually in climate and public health damages
- 252 megatons of carbon dioxide emissions annually
- 535 premature deaths annually, due to reductions in particulate matter and ozone

already exist. According to research from Daniel Horton’s group, switching to electric vehicles could massively benefit society, saving billions of dollars and thousands of lives. Horton’s group creates high-resolution air-quality simulations based on atmospheric chemistry, emissions data and meteorology.

“If you have an electric vehicle, you’re no longer emitting pollutants from the tailpipe,” he says. “However, emissions can be generated from the electricity source used to charge the battery.”

That said, electric vehicles have a net benefit in the U.S., where electricity is generated from diverse sources, including wind, solar and geothermal.

The story is more complicated in China, where electricity is predominantly generated from burning coal. When looking at the U.S., Horton and former student Daniel Peters “combined their climate model with emissions data and meteorology.

Horton believes that recent commitments by automakers to manufacture more electric models — in conjunction with a renewed push for federal and state governments to offer tax breaks, subsidies and incentives — should make widespread adoption possible. Cities also could encourage adoption by installing more vehicle charging stations and electrifying their public transport systems.

“Because they save on gas and maintenance, modern electric vehicles are simply a better value than internal combustion engine vehicles,” Horton says.

Electric vehicles also are much simpler to build, Geiger adds. “They don’t need a transmission or complicated valves. They require significantly fewer components on the assembly line.”

Air Quality in the COVID Era

The novel coronavirus pandemic has demonstrated how electric vehicles could positively affect air quality. As people drove less, U.S. greenhouse gas emissions decreased by 10% in 2020.

“The COVID emission changes are similar to replacing a large fraction of combustion vehicles with electric vehicles powered by renewable energy,” says Jordan Schnell, a former postdoctoral fellow in Horton’s laboratory.

Now a research associate at the Cooperative Institute for Research in Environmental Sciences (CIRES), Schnell works to discover how pandemic lockdowns have affected air quality, which could provide a glimpse into the future.

“It’s like a real-world experiment showing how places will respond to emissions reductions that will likely occur as we move toward cleaner technologies and introduce more regulations,” he says.

To approach the COVID emission question, the CIRES team compared two models: an emissions dataset that reflects reduced traffic during COVID lockdowns and an identical simulation that shows what 2020’s emissions would have been without lockdowns. However, the results are not straightforward. With fewer cars on the road, nitrogen oxide decreased across the board. Ground-level ozone also dropped in most parts of the country. But without nitrogen oxide to “eat up” the ozone, ground-level ozone actually increased in some urban areas.

Particulate matter also mostly decreased, depending on location and time of year.

What Can We Do?

While driving an electric vehicle can decrease one person’s greenhouse gas emissions, Geiger, Horton, Schwindt and Loeb all agree that air pollution is an enormous problem that requires local, national and global regulations.

“Government can also subsidize electric cars, public transportation and car sharing,” Schwindt says. “There are many ways to respond to this problem.”

Loeb maintains that governments should rethink local zoning laws, which often push industrial businesses into lower-income communities that “are unfairly overburdened with pollution.”

“We need systemic change,” says Horton, who felt optimistic after President Joe Biden’s inauguration. Within his first days in office, Biden signed multiple executive actions focused on climate change and air quality. Among these initiatives, Biden committed the federal government to buying only zero-emission vehicles.

“These commitments are no-brainers,” Horton says. “Study upon study has demonstrated that the switch to electric vehicles will reduce greenhouse emissions. My group’s research also has shown that the switch to electric vehicles will reduce harmful air pollutants, lowering the public health burden attributable to transportation emissions.

By embracing electric vehicle technology, the Biden administration gives us hope.”

Amanda Morris ’24 MA is senior editor of science and engineering in the Office of Global Marketing and Communications.
Five Questions with Sterling Harris ’18

The neuroscience grad and rehearsal director for Chicago Tap Theatre talks about the cultural importance of tap dance.

1. When did you discover your love for music and dance? I was born and raised on the South Side of Chicago, and as a kid I played trombone and tap danced. I would often put on concerts at holiday gatherings. I never seriously considered making a career out of performing. It was just something I loved to do.

2. How have you pursued tap at Northwestern and beyond? At Northwestern I joined Tonik Tap. Rehearsing and performing with Tonik are among my favorite memories. After graduating, I began training and performing with Chicago Tap Theatre and M.A.D.D. Rhythms. I have collaborated with former Northwestern students on their projects, including work directed by Lucky Stiff ’18 MFA that was performed at the Museum of Contemporary Art Chicago and the Prop Thre. I also debuted a piece I co-choreographed with tap dancer Case Prime in Something’s Afoot, a showcase presented by the American Tap Dance Foundation in New York City.

3. What have you recently discovered about tap? I’ve developed a desire to showcase all the possibilities that tap can be, thinking as both a dancer and a musician to fully embody a piece of music. I’m also learning about the history of the dance. Learning history through tap — the passing down of the movements — feels like its own area of study. The history of tap runs parallel to the history of jazz, and both have had a huge impact on American culture. As we’re addressing the erasure of the contributions of Black folks in America, I want my community to know that tap is our art form. Black people created tap dance.

4. What connection do you see between dance and neuroscience? When I’m dancing at my best, I’m more than just happy — I’m physically connected to the music and emotionally connected to the audience and the people I’m performing with. Studying tap through neuroscience could provide insight into what is happening in our brains when we dance and could lead to discoveries about how to share this experience with others.

5. Why should dance or tap education be considered public health? I’ve worked with Northwestern professor Billy Siegenfeld, director of the performing and teaching company Jump Rhythm. His approach resonated with me. Through training with Billy, I’ve gained the confidence to embrace how my body wants to move and make music rather than superimposing external standards or rules that determine what “looks good.” Following this approach, we work to listen to our bodies and relate the physical principles we work on to emotional concepts and behaviors. When embraced, those behaviors can lead to communal growth, a better connection with your body and those around you, and an overall improved quality of life — all cornerstones in the field of public health.

Interview by Lena Elmeligy ’18

Creation

The Carbon Pawprint

Most of the nation’s 90 million dogs are fed a diet of beef, chicken and pork. The production of those foods contributes to greenhouse gas emissions. With a desire to create a food system that works for people, pets, wildlife and the planet, Haley Russell ’12 launched a new kind of dog food company. Chippin creates dog foods made from underutilized protein sources, such as insects, overpopulated fish and algae. “There has been a massive shift toward eco- and socially conscious consumer products, but pet food — a $37 billion U.S. market — was left behind,” says Russell, who was one of Forbes’ 30 Under 30 Social Entrepreneurs for 2020. Chippin, which initially launched a line of dog treats made from crickets and spirulina, is introducing a daily dog food made from silver carp, which pose a threat to the biodiversity and water quality of the Great Lakes and its $7 billion fishing industry.
Kim Oster-Holstein ’90 MS and her husband, Scott, traditionally celebrate their May birthdays with margaritas. One year they noticed how much better their cocktails tasted with fresh-squeezed juice. The two began exploring the idea of creating a line of healthy, cold-pressed cocktails. “Our kits and virtual experiences delivered to the consumer’s door. It was fun to start with a blank page and a title and make up a story,” says Oster-Holstein.

Twisted Alchemy was born. With customers that included bartenders and mixologists, the company created home mixology sets, with kits delivered online cocktail classes and recipes. In 2017, they projected to double its revenue in 2020. “My advertising master’s program at Medill helped me harness my creativity and build ideas with strong strategic planning. A lot of my grown-up books have been about rebels, and that’s what Lola is,” Oster-Holstein says. “I try to teach my kids that you don’t have to always accept an answer. If you disagree with something, you should challenge it.”

“Twisted Alchemy kits and a virtual conversation with Keswin on entrepreneurship and leadership”

Twisted Alchemy recently partnered with the Northwestern Alumni Association for a happy hour, which featured a Purple Power cocktail and a conversation about the entrepreneurial journey. “My advertising master’s program at Medill helped me harness my creativity and build ideas with strong strategic planning.”

Purple Power

1 ½ ounces Empress 1908 Gin
1 ¼ ounce Twisted Alchemy Eureka Lemon Juice
1 ¼ ounce simple syrup
1 ¼ ounce egg white

In shaker, combine ingredients without ice and shake for 15 seconds. Add ice and shake for 20 seconds. Strain into coupe glass. Garnish with dried citrus wheel. Cheers!

ENTREPRENEUR

Building a Better Cocktail

Kim Oster-Holstein ’90 MS and her husband, Scott, traditionally celebrate their May birthdays with margaritas. One year they noticed how much better their cocktails tasted with fresh-squeezed juice. The two began exploring the idea of creating a line of healthy, cold-pressed cocktails. “Our kits and virtual experiences delivered to the consumer’s door. It was fun to start with a blank page and a title and make up a story,” says Oster-Holstein.

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Honoring the Waa-Mu star who went on to an award-winning TV and film career that spanned seven decades. See our obituary on page 68.

The Inimitable Cloris Leachman
She was brash, bold and always center stage.

Northwestern
$70,000,000,000

Reduction in the cost of climate and public health damages if the U.S. replaced 75% of gasoline-powered vehicles with electric vehicles, according to research by Daniel Horton, assistant professor of Earth and planetary sciences.

Read more on page 38.