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*"Hope is subversive right now.
Go spread it anyway. People will follow
you. People will join you."* p. 14

Northwestern

FALL 2018

Laser Focused

Vadim Backman explores
the color spectrum's outer
edges to uncover hidden
signs of cancer. p. 38



Last April the School of Communication assembled a star-studded cast for *A Starry Night*. The evening performance brought together some of Northwestern's most famous entertainment alumni, including **Ana Gasteyer '89**, **Heather Headley '97**, **Brian d'Arcy James '90**, **Richard Kind '78**, **Harry Lennix '86**, **Tony Roberts '61** and, of course, **Stephen Colbert '86**, '11 H, who hosted the night of merriment. The show was part of CommFest, a weekend of reunions, master classes, workshops, exhibits and demonstrations. The festival weekend helped support new graduate programs, including a master of fine arts program in acting, and a downtown Chicago performing and media arts center. Relive the experience at commfest.northwestern.edu.



Students, from left, **Michael Smith** '70, '72 MA, **Steve Colson** '71, **Dan Davis** '69, '78 MA/MS and **William Eric Perkins** '70 appear onscreen during the premiere of the Northwestern University Black Alumni Association-commissioned documentary *The Takeover: The Revolution of the Black Experience at Northwestern University*. The film, which was screened at the NUBAA Summit and Salute to Excellence Gala in May at Chicago's Swissôtel, examined the May 1968 Bursar's Office takeover by more than 100 African American students protesting inequitable campus policies and attempting to improve awareness of African American students' experiences. Northwestern honored the 50th anniversary of that protest with a week of commemorative events and an exhibition at Deering Library.



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Roots: Northwestern's Oaks

It was the majestic oak trees near the shore of Lake Michigan that caught the eye of Orrington Lunt, one of the University's founders, on his first visit to the land that today is Northwestern's Evanston campus. Many stately bur and swamp white oaks, some well over 200 years old, still stand in splendor on the campus.

By Stephanie Russell

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Season of Success

The softball team posted its best win total since 2008. The team's run to the NCAA regional championship round highlighted an outstanding spring for Northwestern's men's and women's sports.



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← “Programs that are based on cognitive behavioral therapy help people recognize situations when it’s useful to stop and think before they act.”

—Jonathan Guryan, professor of human development and social policy, on the *Becoming a Man* program

OAK ILLUSTRATION: ATCH; SOFTBALL: TOM LYNN; BECOMING A MAN: NICOLE WONG; EXHIBIT: FOLDHAUS; SHRUMEN LUMEN, 2016. PHOTO BY RON BLUNT; VADIM BACKMAN: KYLE MONK



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The Far Side of Violet

Vadim Backman has developed an innovative strategy for detecting cancer.



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'Shroom Art

The San Francisco-based art collective FoldHaus enlisted tech help from then-undergrad Bomani McClendon '17 when it was building *Shrumen Lumen* for Burning Man 2016.

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Northwestern Pushes Toward New Frontiers

I love fall at Northwestern. A new academic year kicks off, and it's about a lot more than parking lots getting more crowded or the lines getting longer at our campus eateries: It's about that renewed burst of energy that the whole Northwestern community gets, from Evanston to Chicago to Doha, Qatar. It's also about recognizing how that energy is driving a great university forward in an incredibly wide-ranging mission — to build up some of the world's most promising young talent, to push forward frontiers in every academic field and to provide the best health care, culture and community service to the larger world. And, of course, it's also time for another season of Northwestern athletics and that give-it-your-all Wildcat spirit.

That same spirit, in our alumni and the broader University community, has helped support initiatives to expand opportunities for our students, build on our areas of excellence and transform our campuses. As you'll see inside this issue of the beautifully redesigned *Northwestern Magazine*, we have surpassed our original, joint goals for **We Will. The Campaign for Northwestern** of raising \$3.75 billion from 141,000 individual donors. We are truly grateful to those of you who have made gifts throughout the Campaign and who continue to give each and every year. To build on the Campaign's rapid success and to pursue emerging academic priorities, we have set new goals to raise \$5 billion from 170,000 donors by the end of 2020. (See "Northwestern Increases Campaign Goal to \$5 Billion," *We Will Update*, page 26.)

Among the exciting projects advanced by the "We Will" Campaign

currently underway is the cutting-edge Simpson Querrey Biomedical Research Center, which will open in early 2019 on our Chicago campus. It will house more than 800 Northwestern researchers, along with an additional 640 researchers from Lurie Children's Hospital. Together they will investigate the causes — and, we hope, develop the cures — for diseases such as Alzheimer's, Lou Gehrig's, cancer and others that affect so many people and their families.

The Simpson Querrey building symbolizes our distinct identity at Northwestern. One of the things that sets Northwestern apart is that it isn't just a premier university — it's a premier *research* university, proud of its ability to solve the world's

most pressing problems. We've risen dramatically in research productivity compared with our peers in recent years, and we now receive more than \$700 million in research funding annually, placing us among the top 25 universities nationally. Thanks to the addition of the Simpson Querrey building and renovations to key science and engineering buildings on the Evanston campus, Northwestern can attract even more of the best scientific researchers.

Of course, student life is the beating heart of the Northwestern experience, and that heart is beating ever stronger. The class of 2022 that just recently participated in March Through the Arch is a remarkable group chosen from more than 40,000 applicants, of whom only 8 percent were accepted. The ACT middle-range score for the class is 32–35 on a 36-point scale. The students come from 49 states — I'm determined that we'll get a great one from North Dakota next year! — and 54 different countries. They're incomparably bright, and they bring an especially broad range of interests and skills.

We've been building even greater diversity and quality into the Northwestern student body: For the past several years, we've enabled more high-achieving students from

"We've been building even greater diversity and quality into the Northwestern student body: For the past several years, we've enabled more high-achieving students from any financial background to attend Northwestern by increasing our financial aid and by eliminating loans for undergraduate students. This fall, 20 percent of the entering class is eligible for Pell Grants, which help lower-income students to attend college."

JIM PRISCHING

any financial background to attend Northwestern by increasing our financial aid and by eliminating loans for undergraduate students. Here's another milestone: This fall, 20 percent of the entering class is eligible for Pell Grants, which help lower-income students to attend college. This means that Northwestern is now near the top of all private research universities in

terms of the economic diversity of its undergraduate students. We've also made strides in expanding support for our graduate students and in increasing financial aid for law, business and medical school students, in order to reduce their loan burdens and give them stronger starts in their careers.


I'm pleased to report the appointment of some talented

new academic leaders, including Kimberly Yuracko, the new dean of the Northwestern Pritzker School of Law, and Annelise Riles, executive director of the Buffett Institute for Global Studies. They bring outstanding academic credentials and deep experience to their posts. Working with Provost Jonathan Holloway, who's moving into his second year at Northwestern, they will provide strong leadership to these key academic areas. We also have begun the search for a new dean for the Medill School of Journalism, Media, Integrated Marketing Communications.

If you haven't been to our Evanston campus lately, there's so much new to see. The heightened energy at Northwestern that I mentioned at the beginning is magnified by the world-class expansion of facilities that our alumni and friends have made possible. Walk through the astonishing Ryan Fieldhouse and Walter Athletic Center, the Ryan Center for the Musical Arts, Kresge Hall, the Kellogg Global Hub and the newly renovated Welsh-Ryan Arena, and you'll get the sense that something historic is happening. Your generosity makes dreams come true.

And so allow me to cordially invite you to return to Northwestern this year — for Homecoming, class reunions and other events on our campuses. If you can't be here, Mimi and I hope to see you at one of the many alumni events that we'll host around the globe this academic year. We'll be there to say thank you — and to talk about what comes next for our Northwestern family.

Best wishes,



Morton Schapiro
President and Professor



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and took a position at Cornell University. There he founded what is now the very active department of Africana studies. Both he and his wife also have been strong voices for racial and economic justice in Ithaca’s public schools. Although he is now officially retired, Professor Turner continues to be an important figure in the Cornell community.

Gregory S. Alexander '73 JD
Healdsburg, Calif.

As an alum from the class of 1970 I lived through the tumultuous events on campus in the late '60s more as an observer than a participant. Eva Jefferson Paterson’s reflection gives me a new appreciation for the movement and those who made a significant difference in a troubled time. Thanks, Eva.

Dan L. Miller '70
Roselle, Ill.

THEN: THE WAY THEY WERE

I could not believe my eyes when I saw the article on *The Way They Were* [“Entertainment

“Eva Jefferson Paterson’s reflection gives me a new appreciation for the movement and those who made a significant difference in a troubled time. Thanks, Eva.”

Icons Gathered for Grand Gala,” Then, spring 2018, page 2] detailing an event about which I have told people for decades. [Editor’s note: In October 1980 some of Northwestern’s most prominent alumni working in Hollywood and on Broadway assembled in Evanston to celebrate the completion of the Theatre and Interpretation Center. The event, recorded and edited as a television special, aired three times in prime time to a national audience.]

I was an elementary schooler in Berkeley, Calif., who had just discovered my singing voice when I watched that television special and decided that night I absolutely wanted to go to Northwestern. There were so many famous alumni whom I had heard of (even at such a young age) that I figured it had to be an excellent school!

Back in those days, 2,000 miles away from campus, Northwestern might not otherwise have been on my radar. I’m so thankful for that wonderful show that changed my life and appreciate the great memory! Sarah Lundquist '91 Oakton, Va.



THE ALL-OR-NOTHING MARRIAGE

Although I agree with much of what Eli Finkel [“The All-or-Nothing Marriage,” spring 2018] has to say regarding what makes for a fulfilling and lasting marriage, for him to say that “We no longer need a spouse to help us get food, clothing and shelter” is just reflective of present

public discourse, in which poor people, including many of those employed in the services industries/businesses, do not exist.

In the Chicago college where I taught, I encountered numerous students who exist in families that depend on not just a spouse but on other family members who need to work to meet basic family needs. Such a reality places a great deal of stress on family dynamics, in which economic survival, not boredom, was the major impediment to a successful marriage. This is not to say that those of lesser means do not want their partners to foster self-expression and personal growth, but it is much more difficult to do so when your mind is on how are you going to pay the rent.

Louis Silverstein '70 PhD
Evanston

CORRECTION:

The close-up on Alexander Pancoe “Climbing for a Cause,” [Alumni Life, spring 2018, page 57] incorrectly states that Mount Aconcagua is in South Africa. It is located in the Andes Mountains in Argentina.

CONGRATS TO OUR IPAD WINNER, JESSICA SMASAL

Congratulations to Jessica Smasal '14, who won a brand-new iPad thanks to her participation in our readership survey last winter. All survey participants were given the opportunity to enter the random drawing.

Smasal, who studied history at Northwestern, is manager of individual giving and special events at Openlands, a Chicago-based conservation nonprofit.

Thanks to everyone who participated in the survey.

Voices

JOURNALISTS UNDER FIRE

Threats Against a Free Press Harm Us All

By Tim Franklin

Medill alumna Susan Page, the Washington, D.C., bureau chief for *USA Today*, remembers well the first time she interviewed candidate Donald Trump during the 2016 presidential election.

“He said, ‘Susan, I so admire your work,’” Page '73 recounted in a panel discussion at Medill late last year. “And I thought, ‘Really?’”



↑ Journalism professor Tim Franklin, senior associate dean at Medill

This was, after all, a man whose news diet consists of more cable TV than print and a politician who has called journalists sleazes, “the enemy of the American people” and “third rate.”

Trump’s compliment of Page juxtaposed with his criticism of the news media illustrate a great irony known by Washington insiders: The president privately covets the approval of journalists even as he publicly berates them.

Elisabeth Bumiller, another Medill grad and the Washington bureau chief for the *New York Times*, said at the same campus event that the president’s constant broadsides about “fake news” amount to “politics that plays to the base nicely” and added that “none of us take it seriously.”

But Bumiller '77 also noted a consequence of the pervasive, hostile rhetoric. “I do have concerns about threats against journalists,” she said. “That is very worrying.”

Indeed, Bumiller is correct. Threats against journalists are on the rise both in

the United States and around the world, an alarming trend.

There are even bigger systemic effects from the vitriolic attacks. They’re contributing to an erosion of trust in a free press that is the oxygen of any self-governed democracy. And they’re exacerbating a partisan divide that already has many Americans nestled inside their own filter bubbles, putting “red” and “blue” allegiances ahead of actual facts.

The ripple effects are being felt beyond the Capital Beltway. While surveys show people trust local news outlets more than national ones, there are troubling signs. A Pew Research Center study last year showed a mere 24 percent of Republicans said they have a lot of trust in information they get from *local* news organizations. That shows this problem is deeply rooted.

Eighty percent of journalists work outside the media centers of Washington, New York and Los Angeles. They’re not players in the D.C. food fight. They cover city councils, community schools, local colleges, crime, neighborhood organizations, small businesses, high school sports and entertainment.

They mostly do it for modest pay, and they toil against the backdrop of increasing financial pressures spawned by the digital disruption that has shattered their business models. They do it because they believe in the essential missions of connecting citizens in their communities, helping them live their everyday lives and holding institutions accountable. There’s nothing fake about that news.

Their jobs can be dangerous. One local journalist — a cherished former colleague of mine — was murdered in June along with four co-workers in the newsroom of the Annapolis *Capital Gazette* by a gunman allegedly aggrieved over unflattering coverage in the paper.

Have presidents of both parties attacked the press? Of course. Do journalists share responsibility for the trust problem in news? Of course. Are they “the enemy of the American people”? Far from it.

Tim Franklin is senior associate dean and a professor at Northwestern’s Medill School of Journalism, Media, Integrated Marketing Communications. Before joining Medill in June 2017, Franklin was president of the Poynter Institute, a leading international school for journalists and a media think tank.

SOUND OFF

Telling Truths

Why have alternative facts and recent misinformation campaigns been so successful, and how dangerous is their impact on American democracy?



Pablo Boczkowski, professor of communication studies and co-editor of *Trump and the Media* (2018)

The cultural authority of science, journalism, medicine, law and other knowledge-making institutions has been increasingly in question. If it continues, this trend could potentially undermine the foundations of the project of enlightenment — evidence-based government, public policy, education, health and so on.

David Rapp, professor of psychology and of learning sciences

People don't necessarily have the resources or awareness to know how to check information that they're reading. Or sometimes they don't have the energy or time or motivation. So people aren't sure or aren't well-



practiced in how to check whether the sources they're hearing from have vested interests. And listeners sometimes have particular views that they want to be true. So if something they're reading aligns with what they believe to be true, they're more likely to accept it.

Ellen Shearer, professor of journalism and co-author of *Truth Counts: A Practical Guide for News Consumers* (2018)



We cannot agree on basic facts because of the cacophony of misinformation and disinformation from so many different sources. Societies need methods of settling on facts. We need to be able to say, "We can make a decision based on these facts we all agree on. We may disagree on what to do about these facts, but we can agree on the facts." If we get to a point where people think facts are fungible, it will be very hard for communities and countries to function.

Alvin Tillery, associate professor of political science



There used to be a time in politics when Americans waited for information to come from the Bureau of Labor Statistics or the Congressional Budget Office before they decided if a proposed policy was good or bad. Now the partisan environment has completely destabilized those institutions. Not only do people no longer wait for these institutions to have their say, but if politicians don't like what they're getting from them, they just tell people that it's fake news. Once we leave this hyperpartisan cycle, we're going to be left in a position where we no longer have institutions that can vet credible information for the American electorate. The next set of people to control our institutions will have a much more enfeebled set of mechanisms for telling Americans that these are the facts. That's what's really dangerous.

Make your voice heard. Submit a question or share your reaction with #VoicesNU on Twitter or email us at letters@northwestern.edu.

SOCIAL FEEDS

Fall Faves

What was your favorite thing about #NUFall?

"What's not to love about NU in the fall?! I love the changing leaves and the crisp air, bundling up in a Northwestern hoodie and watching the homecoming parade with a cup of apple cider. For this South Texas native, it was almost like being an extra on a cute TV show BUT REAL!"

@CLRosales



"Lying on the ground looking up through maple leaves exactly that color, with an intensely blue sky in the background."

Laurel Haropulos Bailey

"Having grown up in S Florida, fall was new to me my freshman year. I loved the sound of walking and kicking through fallen leaves and watching them flutter to the ground."

Anita Chan Marcantel

Next question: Did you live in #WooShack? What's your story about the origins of the name? Share with #NUstalgic.

DAVID RAPP: JIM PRISCHING



MY NORTHWESTERN DIRECTION

Medill Professor Was My Guiding Light

One day during my freshman year, I was sitting in the McCormick Foundation Center during an introductory journalism course where different professors would come in and give us a cursory overview of different sectors in the industry: digital, broadcast television and magazines. But the lecture that day was the one I had been waiting weeks for: radio.

As a teenager I would lounge around my room and listen to the long personal narratives and scientific musings of *This American Life* and *Radiolab*. I was podcast-obsessed from the age of 14, and finally I was going to get an inside look into this world that felt so familiar but mysterious. Professor Cecilia Vaisman stood at the podium and began to talk

about herself, and with each detail she disclosed, my jaw dropped lower and lower. Her parents were Argentine Jews; my parents are Argentine Jews. She wanted to work in radio while she was a college student, and I was already dreaming of it then.

It felt like I was looking at an older version of myself. After class I went up to her and practically shouted, "I am you!" in her face. Thankfully she was not weirded out, and while I never ended up in Professor Vaisman's class, she ended up being the most influential professor I knew during my time at Northwestern.

When it was time to decide where I wanted to go for my Journalism Residency, I went to her office and told her that I really wanted to do something in public radio. She asked me what programs I was interested in, and right after

Antonia Cereijido '14

Producer, *Latino USA*, NPR

my first suggestion, *Latino USA*, she told me to stop. The host of *Latino USA*, Maria Hinojosa, happened to be her dear friend. Suddenly I was off to New York City to work for one of my favorite shows.

It was thrilling. I was cutting together short stories that were actually making it onto national radio. The office was fun and bubbly, with Spanish and English floating around everywhere as people hustled hard on their scripts and edits. I went back for my final quarter at Northwestern, wishing I would find a job that felt so comfortable and vibrant. And then I got a call toward the end of the quarter with an offer to be an associate producer on the show. I was in shock. I had landed my dream job right out of college.

When I told Professor Vaisman, she gave me a big hug. At this point she was wearing head wraps. She had been diagnosed with breast cancer. I knew she was ill, but I did not know the extent to which she was suffering. In my eyes, she was made of steel. Not only did she hide her pain, but she was also ruthless when it came to feedback. She would send me detailed notes on why my stories weren't working. And frankly, she was always right.

“While I never ended up in Professor Vaisman's class, she ended up being the most influential professor I knew during my time at Northwestern.”

—Antonia Cereijido '14

A year and three months after I graduated, Professor Vaisman passed away. Maria Hinojosa and I cried in each other's arms. I was devastated and somewhat confused. I was also awestruck by how someone who was that sick could still go to such great lengths to help me.

There are many times I wish I could email or call her for advice. I have been working at *Latino USA* for four years. I get to do what I dreamed of doing as a freshman. I am grateful for Northwestern and how it allowed me to meet someone who, while our time together was brief, ended up guiding my whole career.

Check out Antonia Cereijido's "My Northwestern Direction" video at magazine.northwestern.edu/voices.

WHAT INSPIRES ME

Seeking Solutions

Climate scientist finds hope in her problem-solving students.

Yarrow Axford, associate professor of Earth and planetary sciences

“Teaching is a really remarkable source of inspiration. I teach classes not just for Earth scientists but also for students in McCormick and Medill, even the law school. And I draw a lot of inspiration from the students in those classes, because it gives me a chance to interact with young people who are oriented toward solving problems. Whether they’re doing graduate research on solar fuels or improving industrial processes to make them more energy efficient, they want to find solutions to the problems — including climate change. Working with the next

generation of scientists and engineers and journalists and politicians and economists and entrepreneurs keeps me hopeful.”

Axford grew up in rural Maine, where she was fascinated by the glacially sculpted landscapes and how they came to be. At Northwestern she studies climate and environmental change, primarily through the lens of paleolimnology — the study of lake sediments and past lake environments. Her work is aimed at understanding climate change and glacier fluctuations in Arctic and alpine environments, including around the margins of the Greenland ice sheet. Her most recent research explored lake mud



↑ Yarrow Axford, right, and doctoral students prepare to sample a lake in Greenland.

that provided a record of two interglacial periods in northwest Greenland — information that could help researchers better gauge Greenland’s sensitivity to warming.

COMMENCEMENT 2018

Words of Wisdom

Former White House speechwriter Cody Keenan and opera star Renée Fleming headlined the list of speakers who came to campus to address graduates during Commencement ceremonies in May and June. Here are a few of their nuggets of inspiration.

“Because of the educational foundation you have received here, you will excel. But I also hope that you will every day broaden your horizons, learn new things — and learn them in new ways — and explore the full spectrum of what it means to be human.”

David Skorton ’70, ’74 MD, secretary of the Smithsonian Institution, at the Feinberg School of Medicine

“When I entered law school, female faces were fewer, black women faces even rarer, but I grew to know my power. Once you recognize your power, you get to decide how to use it and chart your own path.”

Sharon Y. Bowen ’82 JD, MBA, the first African American commissioner of the U.S. Commodity Futures Trading Commission, at the Pritzker School of Law

“Today it’s easy to feel that our voices don’t matter. We’re faced with a barrage, a cacophony of sound 24/7. It’s like everybody is singing a different song at the same time, but ever louder, trying to be the only voice that’s heard. ... So ask yourself: Who can hear me?”

Renée Fleming ’18 H at the University Commencement

“Hope is subversive right now. Go spread it anyway. People will follow you. People will join you.”

Cody Keenan ’02, longtime speechwriter for President Barack Obama ’06 H and current visiting professor of political science, at the Weinberg College of Arts and Sciences

Share words of wisdom for recent grads and new students with #VoicesNU.

AXFORD PHOTO: ALEX P. TAYLOR



News

Warmer temps threaten some bee species p. 20



Purple Pantry helps feed hungry students p. 19

A functional, fashionable bag from Cariset p. 25

THERAPY

The Power of Slow Thinking

Cognitive behavioral therapy programs help reduce violent crime, increase graduation rates.

A typical Becoming a Man session includes a simple game: One young man tucks a small ball into his palm, while his partner has one minute to do whatever it takes to get it away from him.

Often the young men start wrestling, trying to pry open their partner’s hand by force. Afterward, when the counselor suggests simply asking for the ball, the boys look skeptical — and then surprised — when their partners confirm that a simple request would have worked. The exercise demonstrates how easy it is to act on impulse and make assumptions about what others are thinking — and the value of pausing to consider other solutions.

“Kids learn to stop and think,” says economist Jonathan Guryan, who has studied



SPOT ILLUSTRATION: BEN WEEKS

Illustration by Paul Blow



A Becoming a Man session

the effects of Becoming a Man and other cognitive behavioral therapy programs for nearly a decade. CBT-based programs address impulsive, automatic responses that can potentially lead to violence.

People often act without thinking, a trait psychologists call automaticity. It's a helpful function to address problems and make decisions, but for youth growing up in Chicago's most distressed neighborhoods, where high-stakes situations occur frequently, being aware of the dangers of automatic thinking can mean the difference between life and death.

"Programs that are based on cognitive behavioral therapy help people to recognize situations when it's useful to stop and think before they act," says Guryan, a professor of human development and social policy. "And just doing that can

Being aware of the dangers of automatic thinking can mean the difference between life and death.

help people to avoid making automatic decisions that would have led to outcomes they want to avoid."

BAM, developed and run by the nonprofit Youth Guidance, serves an estimated 6,000 young men in seventh through 12th grades in more than 100 Chicago Public Schools, and a similar program is offered in the Cook County Juvenile Temporary Detention Center.

Rather than focusing on education or punitive measures to deter crime, CBT-based programs like BAM offer behavioral strategies that teach youth to slow down and think. The programs also employ mentorship and role-playing lessons in a group setting. Participants pick up meditation techniques and learn to express themselves, connect with others and cope with loss.

Guryan has found that BAM reduces arrests for violent crimes by half and increases high school graduation rates by almost 20 percent for CPS students who participate in the program.

Guryan's research on BAM and other programs takes place at the University of Chicago Education Lab. Co-founded by Guryan in 2012, the Education Lab is a close affiliate of the University of Chicago Crime Lab. Both partner with civic and community leaders to identify, evaluate and learn how to scale promising programs that reduce crime and improve education in urban areas.

In part due to findings from Guryan and his colleagues, Chicago Mayor Rahm Emanuel '85 MA launched the Mayor's Mentoring Initiative, a \$36 million public-private partnership to expand BAM and similar programs. While Guryan and his team continue evaluating BAM, they are also assessing the Working on Womanhood mentoring program and other initiatives.



STUDYING EL SISTEMA

Nairobi, Kenya

Senior Hannah Whitehouse visited Ghetto Classics and El Sistema Kenya, above, in Nairobi as part of her Circumnavigators Travel-Study Grant. Whitehouse, a violist studying music education and social policy, also visited England, Greece, India, the Philippines and New Zealand to study El Sistema, a philosophy that promotes child development through the rigors and rewards of orchestral music instruction.

ON THE FRINGE

Edinburgh, Scotland

Students from Northwestern's American Music Theatre Project performed in two shows at the Edinburgh Festival Fringe in August. The plays, *Legacy: A Mother's Song* and *Legacy: The Book of Names*, are a collaboration between Northwestern and the Royal Conservatoire of Scotland. Together, they illuminate the nature of motherhood, the immigrant experience and how cultural heritage evolves across time and space.

BECOMING A MAN: NICOLE WONG

GLOBAL REACH

Wildcats Around the World



THE FOURTH PLINTH

London

Northwestern artist Michael Rakowitz unveiled a 14-foot statue of the Lamassu, a winged Assyrian deity with the body of a bull and the head of a human, at the Fourth Plinth in London last March. Created from 9,000 steel cans of Iraqi date syrup, the piece is part of Rakowitz's larger project *The Invisible Enemy Should Not Exist*, which uses ephemera to represent and commemorate lost Iraqi artifacts.

ON TOUR IN ASIA

Beijing

Ninety students from the Northwestern University Symphony Orchestra performed at the Forbidden City Concert Hall in Beijing as part of a three-city, weeklong Asia tour last March. Led by conductor Victor Yampolsky, the orchestra played works by Gustav Mahler and Leonard Bernstein '57 H in Beijing, Shanghai and Hong Kong.



ORDER OF THE RISING SUN

Tokyo

Northwestern professor emerita Phyllis Lyons was awarded the Japanese Order of the Rising Sun for her role in promoting Japanese culture, language education and cultural exchange. Lyons, who lived in Japan from ages 9 to 15, taught Japanese language and literature at Northwestern for nearly four decades and was crucial to the founding of the Department of Asian Languages and Cultures.

FROM THE FLIGHT DECK

Pacific Ocean, Baja Peninsula, Mexico

In April three journalism graduate students reported from the USS *John C. Stennis*, a naval aircraft carrier roughly 100 miles off the coast of the Baja Peninsula, as part of an in-depth reporting project associated with Medill's Politics and National Security specialization. The Medill crew got to experience a "trap landing" on the carrier and observed flight operations from the flight deck.



The Ticker

● Northwestern-based Design for America received a **National Design Award** for corporate and institutional achievement from Cooper Hewitt, Smithsonian Design Museum. Founded by professor Liz Gerber in 2009, DFA now includes 36 universities and more than 1,200 members.



● **Kimberly Yuracko** succeeded Daniel Rodriguez as dean of the Northwestern Pritzker School of Law in September. Yuracko, who joined the law faculty in 2002, has gained national attention for her scholarship in employment law, antidiscrimination law and gender equity.

● In July a Northwestern team launched an **X-ray imaging rocket** that can capture high-resolution images of astronomical objects. Led by physics and astronomy associate professor Enectali Figueroa-Feliciano, the team hopes to explore "how 'star stuff' is made, because it is what allows life to exist."



● Northwestern received the **ENERGY STAR Partner of the Year Award** for its efforts to reduce energy consumption and educate the University community about energy efficiency.

● **20,000** — The number of rain ponchos distributed to grads, families and guests on June 22, a soggy Commencement day when Chicago received more than an inch of rain.



SPORTS

Season of Success

Recent highlights from Northwestern’s men’s and women’s sports.

Rising senior Olivia Rosendahl of **women’s swimming and diving** captured her second-consecutive platform national title. The Big Ten Diver of the Year also earned All-America honors in the 1-meter.

Women’s golf ended its season in the NCAA Championships quarterfinal, becoming one of just three teams to finish in the top 10 at each of the last four NCAA Championships. Hannah Kim ’18 and Sarah Cho ’18 concluded their careers having played in all four of the program’s top national championship performances.

Women’s tennis finished its season at the NCAA Women’s Tennis Championships, where the team fell in the round of 16. Erin Larner ’18 reached the second round of the NCAA Singles Championship, and Larner and Maddie Lipp ’17,

’18 MS, both All-Americans, fell in the first round of the NCAA Doubles Championship.

The **softball** team posted its best win total since 2008, ultimately losing to No. 7 seed Georgia in the NCAA Athens Regional championship round.

The **women’s lacrosse** team fell to No. 2 seed North Carolina in the NCAA Tournament, finishing the year 15-6. Selena Lasota ’18, a redshirt senior in 2018–19, scored 75 goals this season, leaving her just 52 shy of the program record (254) held by Shannon Smith ’12.

Men’s golf made its first appearance in the NCAA Championships Finals since 2011.

The **women’s fencing** team won its fifth Midwest Fencing Conference Championship and first overall title since 2016. Northwestern finished eighth at the NCAA Fencing Championships.

ARENA UPDATE

The **complete renovation of Welsh-Ryan Arena** will transform the student-athlete and fan experience in Northwestern’s most-used and most-versatile venue. Highlights include locker rooms for men’s and women’s basketball and volleyball; new seating throughout the arena; wider, more accessible concourses with improved lighting; new concession areas; and state-of-the-art audiovisual capabilities. The dedication will be held Nov. 2, when men’s basketball hosts its exhibition opener. Northwestern football hosts Notre Dame the following day.



←
NCAA champion diver Olivia Rosendahl

'CAT TALES

1988: The Bridge Project

In the summer of 1988, Robert Kath '88 and Paolo Mazzucato '88 traveled to Moscow to initiate the first cinematic co-production between students in the United States and students in the Soviet Union.

Envisioned as an opportunity for cultural exchange, “The Bridge Project” evolved from discussions between Kath, Mazzucato and students at Moscow’s All-Union State Institute of Cinematography. The eventual collaboration was a music video for the song “Bridges of Trust.”

“We ended up working on a story that was about trying to connect,” says Mazzucato, who co-directed the video with his Soviet counterpart. “And that was what we were doing too — connecting with film students who were, for all intents and purposes, just like us.”

Shot over several weeks in Moscow, St. Petersburg and Chicago, the video earned a College Emmy. A short documentary about the project, narrated by Casey Kasem, was released the following year and screened at American embassies during the 1990 summit between President George H.W. Bush and Mikhail Gorbachev.



OPPOSITE: MICHAEL RINGOR; BELOW: MISHA SYCHEV



STUDENT LIFE

Food for Thought

Purple Pantry provides groceries to students who don’t have enough to eat.

When Mary Deeley ’89 PhD, pastoral associate at Sheil Catholic Center, read a spring 2016 *Daily Northwestern* story about students battling food insecurity, she was shocked. “Why are there students who are hungry on this campus, where food is seemingly everywhere?” Deeley asks.

She quickly set up meetings with the student group Points for a Purpose (now Swipe Out Hunger), another campus minister and the head of Student Enrichment Services. Over the next year, Deeley worked with SES, student-led anti-hunger organizations and other campus ministries to create a pop-up food pantry during holiday breaks. Those partners eventually

established the Purple Pantry, where students can pick up nonperishables and fresh fruits and vegetables donated by the University community. The pantry, which is open one day a week or by appointment, is staffed by Northwestern volunteers and housed at Sheil Catholic Center.

Food insecurity continues to be a prominent issue nationally. A 2018 survey of 66 colleges and universities by researchers at Temple University and the Wisconsin HOPE Lab found that more than a third of all college students experience food insecurity in a given month.

According to anonymous intake surveys, nearly nine out of 10 Purple Pantry clients said they had skipped a meal at least one day in a two-week

period because they lacked adequate access to food; 12 percent skipped meals on four or more days. The most common barriers to food accessibility were inconvenient dining hall hours for those on campus and lack of money for those off campus. More than half of the pantry users reported that they share food with family or friends.

“Often we don’t know what our students’ lives are like,” Deeley says. “We are beginning to see students for whom money is really tight. They’re counting every penny. It is important for people to know this resource exists.”

For more information on how to volunteer or donate to the Purple Pantry, email m-deeley@u.northwestern.edu.

WARMING WORLD

Climate Change Poses Serious Risk for Some Bees

Warmer temperatures push bees to their physiological limits, may drive local extinction.

You can add climate change to the list of threats that might harm certain species of bees.

A study done by Northwestern and the Chicago Botanic Garden found that warmer temperatures may drive local extinction of mason bees in naturally warm climates.

In a two-year field experiment that altered the temperature of the bees' nests to simulate a warmer future climate, 30 percent of bees died in the first year, and 73 percent died in the second year. The control group had a mortality rate of less than 5 percent.

"The projected temperatures appear to be pushing this species up

against its physiological limits," says Paul CaraDonna, who led the research. "This is evidence that we might see local extinction in the warmer parts of this species' range, which is pretty sobering."

To study how climate change affects mason bees, CaraDonna's team set up three types of artificial nesting environments in Arizona's Santa Catalina Mountains, north of Tucson, where the bees thrive. This species of mason bee (*Osmia ribifloris*), native to the western United States and northern Mexico, builds nests inside holes and cracks in dead tree stumps.

The team manipulated the temperatures of the nests by painting them to simulate past, present and future

climates. The team painted a third of the nests black to absorb more radiant heat, thus simulating a warmer climate predicted for the second half of the 21st century. By painting another third with a white, reflective, cooling treatment, the team sent those nests back in time to a cooler climate similar to that of the 1950s. As a control, the team painted the final third of nests with a transparent paint, leaving their natural wood color.

"It's pretty low-tech, but it works," says CaraDonna, an assistant professor of instruction in the Program in Plant Biology and Conservation and a research scientist at the Chicago Botanic Garden.

CaraDonna notes that the bees in nests simulating past

and current climates woke up from diapause, or insect hibernation, and emerged in February over the course of 10 to 15 days, which is normal. The bees nesting in the warmer boxes, however, emerged from diapause over the course of 50 days.

This unusual pattern, CaraDonna says, suggests what can happen under more stressful temperature conditions. He also notes that the bees in the warmer nests emerged with smaller bodies and lower body fat.

"For insects, size is a big deal," he says. "Bigger is usually better. It means you have greater energy stores. As a bee, that means you are likely able to reproduce more, which has implications for the stability of the population."

ABOVE: JANE OGILVIE



Pollination ecology expert Paul CaraDonna

Native Pollinators
Paul CaraDonna's study focused on the "blueberry mason bee," a species that is the primary pollinator of manzanita shrubs in the wild. "Native pollinators are a really important part of what makes nature run smoothly," says CaraDonna, an expert on pollination ecology. "It's estimated that close to 90 percent of all flowering plants benefit from animal pollination. That ends up at around more than 300,000 plant species worldwide."



RIGHT: JACK DYKINGA; REGENERATIVE BANDAGE: AMEER RESEARCH LAB

This study looked at just one species, CaraDonna notes, but it gives researchers some clues about what to look for in terms of the consequences of temperature increases and climate change more generally, especially when temperatures get more extreme.

"There'll be winners and losers," says CaraDonna, whose research looks at plant-pollinator interactions. "Some species will be OK, but as our study shows, there are likely to be some species that just can't hack it when you ramp up temperatures. If we start to lose pollinators and the plants that rely on them become compromised under climate change, what does that do to the whole web of interactions these species are embedded within?"

RESEARCH

Four Scientific Breakthroughs



REGENERATIVE BANDAGE

Simple scrapes or sores could be dangerous for diabetic patients. Guillermo Ameer, director of the Center for Advanced Regenerative Engineering, developed a regenerative bandage that quickly heals painful, hard-to-treat sores without the use of drugs. The new bandage outperformed one of the most popular bandages on the market. It uses a segment of a protein produced by skin cells to promote wound healing in an antioxidant hydrogel bandage.



GRAPHENE HAIR DYE

A team of Northwestern scientists found another use for graphene, a carbon structure found in everything from semiconductors

to pencils. They've created brown to black hair dyes without using harmful molecules. Researchers, led by materials science and engineering professor Jiaxing Huang, say the new dyes also render hair new functions such as antistatic properties — and could one day electrically connect hair to wearable devices.

SMELL-O-VISION

Researchers know that odors can guide animal behaviors, but scientists struggle to study the phenomenon because of diffusion. But a new olfactory-based virtual reality system created by neurobiology professor Daniel Dombeck can control and maintain odor concentrations. The researchers demonstrated, for the first time, that the mammalian brain can map its surroundings based solely on smells.

CHAMELEON-INSPIRED NANOLASER

A Northwestern team developed a novel nanolaser that changes colors using the same mechanism that chameleons use. The work, led in part by chemistry professor Teri Odom, could open the door for advances in flexible optical displays in a variety of products.

EATING RIGHT

A Nutritionist in Your Pocket

Feinberg professor helped launch FoodSwitch, an app that promotes healthy eating.

Before you buy that bag of chips to satisfy your craving for a salty snack, check FoodSwitch. The free mobile app, developed in part by researchers at the Feinberg School of Medicine, might recommend a healthier, lower sodium option.

FoodSwitch users can scan a packaged food's barcode to see its nutritional rating and healthier options. The app, which launched in the United States in June, scores each item on a five-star scale and provides a breakdown of the food's fat, saturated fat, sugars and salt, giving a percentage of an adult's daily intake for each. The app also includes a SaltSwitch

filter, and FoodSwitch collaborator Mark Huffman says future releases will include filters for sugar and gluten.

The app's novelty comes from its crowdsourcing features. When users come across a food that's not in the 268,000-product database, the app prompts them to photograph the packaging, its nutrition panel and the ingredient list so the app's team can add it.

With some 400,000 packaged foods available in the United States, FoodSwitch will allow researchers to better track changes in the U.S. food supply. Huffman '11 GME, associate professor of

medicine and preventive medicine at Feinberg, says the app could transform the way researchers and policymakers think about global food systems.

"Until now, it hasn't been possible to imagine having a database of the whole food supply," Huffman says. He hopes FoodSwitch will both improve American's knowledge of available food options and press manufacturers to create healthier food for people around the globe.

"For example, breads in America contain 12 percent more sodium than breads in the U.K.," Huffman says. "By influencing the amount of sodium in the bread supply, we could improve people's health outcomes."

Huffman and his colleagues partnered on the project with the George Institute for Global Health in Australia and Label Insight, a Chicago-based data company that tracks packaged foods for the U.S. Department of Agriculture and other food organizations.



ALLERGIES

Food Allergy Myths

Ruchi Gupta, a professor of pediatrics, helps families cope with childhood food allergies. Here are four myths Gupta and her colleagues are working to debunk:

1 Myth: Food allergies are rare — and rarely serious.

Facts: A 2011 study led by Gupta found that 8 percent of children in the United States — about two children in every classroom — must avoid certain foods.

2 Myth: Food labels make it easy to avoid contact with deadly food.

Facts: While food manufacturers must identify top allergens, their warnings are hardly comprehensive. Precautionary labeling is voluntary and unregulated.

3 Myth: Eating a little bit of a reaction-inducing food won't hurt.

Facts: Exposure to even a small amount of food can be dangerous for food-allergic children.

4 Myth: Food allergies mostly affect high-income white families.

Facts: Gupta found that African American and Asian American children have higher rates of food allergies but lower rates of diagnosis.

GUT CHECK

Antimicrobial Raises Risk of Cancer

Triclosan, an antimicrobial found in more than 2,000 consumer products, may increase the risk of gut inflammation and colorectal cancer. Guang-Yu Yang, professor of pathology at the Feinberg School of Medicine, found that constant exposure to even low levels of triclosan altered the gut microbiome in mice to cause inflammation and related complications. The mice were administered triclosan for three weeks at relatively low concentrations, comparable to levels found in human blood. Centers for Disease Control and Prevention research found triclosan in about 75 percent of U.S. urine samples. While Yang's findings are preliminary and do not necessarily translate to humans, he and his co-authors suggest further research into the safety of triclosan.



Katherine Langford, right, and Kate Walsh in *13 Reasons Why*

MENTAL HEALTH

13 Reasons Why Prompts Tough Talks

A multinational survey of young adults and parents found that watching the Netflix series *13 Reasons Why* prompted conversations between teens and parents about bullying, suicide and mental health. Nearly 60 percent of teen

viewers reported that they talked with their parents about the show and the sensitive topics it covers. The fictional series is about a high school student named Hannah Baker, who leaves behind audio cassette recordings documenting the 13 reasons

why she decided to take her own life. Ellen Wartella, chair of the department of communications studies, co-led the survey of more than 5,000 parents, teens and young adults in the United States, United Kingdom, Brazil, Australia and New Zealand. In the U.S. findings, a majority of adolescent and young adult viewers said that watching the series helped them better understand depression, suicide, bullying and sexual assault, and more than half of teen viewers reached out to apologize to someone for how they had treated them.

SLEEP

"Morning larks" live longer. "Night owls," people who tend to stay up late, have a 10 percent higher risk of dying sooner than "morning larks," their earlier-rising counterparts, according to a recent study from Northwestern Medicine and the University of Surrey. The study found that even after controlling for age, gender, ethnicity and prior health problems, self-reported "definite evening types" had a higher risk of death than "definite morning types." The study's co-lead author Kristen Knutson, associate professor of neurology, suggests that there could be health consequences — higher rates of diabetes, psychological disorders and neurological disorders — for night owls trying to live in a morning lark world.



TOP: BETH DUBBER; RIGHT: EASTERN MEADOWLARK, FROM JOHN J. AUDUBON'S BIRDS OF AMERICA, PLATE 136; CHARLES DEERING MCCORMICK LIBRARY OF SPECIAL COLLECTIONS, NORTHWESTERN

Innovation

CLEAN WATER

Startup's Material Removes Metals

Prize-winning NUMiX uses professor's patented technology to solve water treatment challenges.

A Northwestern student-led startup is commercializing a material that can treat contaminated wastewater from industrial processes more efficiently and effectively than market competitors.

NUMiX Materials will provide industrial users with a platform of water treatment sorbent powders to remove toxic materials from their wastewater streams.

Working with a patented ion exchange technology from the lab of Northwestern chemistry professor Mercouri Kanatzidis, the student startup is bringing to market a material that can capture an array of heavy metals from contaminated water. The material, a layered

metal ion exchange sorbent, is a powder that locks in a range of toxic and precious heavy metals, present in minute concentrations, from industrial wastewater.

The powder compounds are formed by layers of inorganic material with a potassium interior that acts as a placeholder for the toxic and precious metals. Once the material is placed in the contaminated water, the powder releases the potassium to make room for the metal that's attracted to the inter-layer surface.

The material allows for the removal and filtration of metals faster and with fewer steps than current technology, thereby reducing the amount of waste going to landfills

from the treatment process.

NUMiX Materials, which is supported by a Resnick Family Social Impact Program grant, developed its commercialization strategy last winter during NUvention: Energy, a course offered by Northwestern's Farley Center for Entrepreneurship and Innovation and the Institute for Sustainability and Energy. In April the team reached the semifinal round of the Rice Business Plan Competition and received the U.S. Department of Energy's regional \$50,000 Cleantech University Prize.

The next month NUMiX won first place and \$35,000 at Northwestern's VentureCat student startup competition. The team finished second and won \$30,000 at the DOE's national, invite-only Cleantech University Prize competition in June. NUMiX won a VentureWell E-Team grant, for which they traveled to the Massachusetts Institute of Technology in early July.

NUMiX, which operates out of a shared lab space in the Technological Institute, continues to develop and test its product while designing its production processes.



The NUMiX Materials team

TOP: SLYWORKS PHOTOGRAPHY; OPPOSITE PAGE: MARIA RUIZ OF GAVILAN PHOTOGRAPHY

ENTREPRENEURSHIP

The **Little Joe Ventures Fellowship Program in Entrepreneurship**, made possible by Tony Owen '97, '03 MBA and his wife, Monique, supports entrepreneurial ventures at the undergraduate level through a combination of workshops, internship opportunities, networking and mentoring. The inspiration for the program's name comes from Owen's mother's stories about her award-winning 4-H Club cow, Little Joe, a source of pride during her teenage years. To Owen, Little Joe represents the value of pursuing unconventional paths and the importance of getting to know people at a meaningful level.



INVENTION

It's in the Bag

Recent Kellogg School of Management grads Allison Brown '18 MBA, Cara Maresca '18 MBA and Kristina Moore '18 MBA teamed up to launch Cariset, a startup that makes a high-fashion, high-function leather backpack for women. It's big enough to carry a laptop, workout wear and lunch but won't look out of place at an important business meeting or an evening happy hour. Cariset earned \$5,000 and first place in the business-to-consumer category at VentureCat 2018.

SHAPING UP

The team worked on numerous versions of the bag's design. "We spent a lot of time getting the shape right," says Allison Brown. A padded sleeve on the interior can securely hold a 14-inch laptop.

LOTS OF POCKETS

The interior zippered pocket is ideal for holding business cards, pens and a smartphone.

QUALITY MATERIALS

Pebbled leather and brushed gold hardware.

SPILL-PROOF & SWEAT-PROOF

The bottom compartment is "a great place for your gym clothes or lunch," says Cara Maresca. It fits up to size 11 shoes.

BACK TO BASICS

The Everyday backpack — Cariset's first product — has lightly padded and adjustable straps to provide a comfortable fit. The bag sells for \$375.





REACHING HIGHER

Northwestern Increases Campaign Goal to \$5 Billion

After surpassing its initial Campaign goal in record time, Northwestern is expanding its target — and its impact.

A major new commitment from Northwestern University Trustee T. Bondurant “Bon” French ’75, ’76 MBA and his wife, Hollis “Holly” S. French, has pushed fundraising for **We Will. The Campaign for Northwestern** well beyond its original goal, more than two years ahead of schedule.

The “We Will” Campaign was launched publicly in March 2014 with the joint goals of raising \$3.75 billion from at least 141,000 supporters. Campaign fundraising now stands

at more than \$4 billion, thanks to more than 150,000 Northwestern alumni, parents, faculty, staff and friends. The University is increasing its goals to raise \$5 billion from 170,000 supporters, including 55,000 members of NU Loyal — the society that recognizes continuous annual giving to Northwestern — by the end of 2020.

“We are calling on the Northwestern community to continue supporting critically important initiatives that will help the University achieve new levels of excellence,”

Provost Jonathan Holloway says. “Among those strategic priorities are endowing financial aid support for undergraduate, graduate and professional school students; expanding our expertise and curricular offerings in global studies and the humanities; broadening and deepening our interdisciplinary research and innovation in computer science; updating the University Libraries facilities; and ensuring that our unprecedented rise in biomedical research funding can continue.”

↑ Fundraising events at venues such as the Metropolitan Museum of Art in New York have helped raise gifts for the Campaign.

The “We Will” Campaign has had far-reaching impact. Since it began, Northwestern has significantly increased financial aid for its students, including eliminating loans for incoming undergraduates. Support from the Campaign has dramatically increased funding for summer internships, undergraduate research and other programs to help students thrive. Funding for graduate fellowships has risen substantially as well.

“An important aspect of the ‘We Will’ Campaign is how broadly it is engaging the Northwestern community,” says University Trustee Paula B. Pretlow ’77, ’78 MBA, Campaign co-chair for participation. “Together, we will help Northwestern continue to make a meaningful difference in the world.”

JASON SMITH

Dedicated Donors

Northwestern benefactors Bon and Holly French have seen the “We Will” Campaign’s impact firsthand and hope to inspire additional giving through their support.

“Holly and I care deeply for Northwestern and the Kellogg School of Management and are proud to give back to the university that has meant so much to our family over the last seven decades,” says Bon French, a lifelong leader in the field of private equity. “Northwestern has the potential to make a significant and lasting impact on the world through strategic investments in education and discovery, and now is our moment.”

The Frenches’ latest gift — a transformational estate commitment that pushed Campaign fundraising over \$4 billion — will benefit Kellogg and University programs.

“Bon and I have been thrilled to be a part of the impact the Campaign has had across Kellogg and the University, and we

look forward to growing that impact,” Holly French says. “We hope others will join us in ensuring a better future for Northwestern and its students.”

With 37 years of giving to the University, the Frenches are “platinum” members of NU Loyal. They also belong to the Henry and Emma Rogers Society, honoring those who have included the University in their estate plans.

Bon French earned a bachelor’s degree in economics from the Weinberg College of Arts and Sciences and an MBA from Kellogg. He is chairman of Adams Street Partners. A Northwestern trustee since 2004, he is a member of the “We Will” Campaign Steering Committee and will serve as Campaign co-chair in 2019. He is also a member of the Kellogg Global Advisory Board and the Kellogg Finance Network.

Holly French volunteers for the Junior League, Northwestern Medicine’s Marianjoy Rehabilitation Hospital and the Northwestern Women’s Board.

Read more at magazine.northwestern.edu/we-will-update/dedicated-donors.

↓ Holly and Bon French



JIM PRISCHING

Three, Two, One ... IMPACT

Northwestern’s new Campaign goals:

Dollars **\$4B**
\$5B Goal

Donors **150,000**
170,000 Goal

Support for the “We Will” Campaign has fueled:

378
new endowed scholarships and fellowships

67 new endowed professorships | **34** new research institutes and centers

Since the Campaign began, Northwestern has completed **23 new and 26 renovated facilities** in Evanston, Chicago and San Francisco.



← The Ryan, Wilson and Slotnick families look on as signage is unveiled at Ryan Fieldhouse.

Bridging the entryway to Wilson Field, with sweeping views of Lake Michigan, the Mitchell and Valerie Slotnick Family Atrium serves as a reception space for events.

On Aug. 1 the dedication of the new Walter Athletics Center and its Querrey Simpson Wing marked the completion of the lakefront athletics facilities.

Named for University Trustee Mark R. Walter '85 JD and Kimbra D. Walter '85, the Walter Athletics Center is the new home for Northwestern Athletics and Recreation and will serve as the day-to-day hub for more than 500 student-athletes across all 19 varsity programs.

The Querrey Simpson Wing — named for University trustees Kimberly K. Querrey and Louis A. Simpson '58 — includes Northwestern Athletics' academic services, compliance and NU for Life programs, as well as Nona Jo's Dining Center — a world-class nutritional hub featuring indoor and outdoor seating and panoramic views of Lake Michigan and the Chicago skyline.

Northwestern Athletics has more to unveil this year. In November the Welsh-Ryan Arena renovations will be complete; next spring the Trienens Performance Center will open.

ATHLETICS AND RECREATION

Elevating the Student-Athlete Experience

New facilities are transforming life for student-athletes.

New and renovated facilities on the Evanston campus are changing the way students in varsity, club and intramural sports practice, study and perform, thanks to the generosity of Northwestern Athletics and Recreation supporters.

On April 5 an on-field celebration was held to honor key benefactors who made Ryan Fieldhouse and Wilson Field a reality.

There, President Morton Schapiro thanked University Trustee Patrick G. Ryan '59, '09 H and Shirley W. Ryan '61; Trustee Stephen R. Wilson '70, '74 MBA and Susan K. Wilson '70; Valerie M. Slotnick and the late Mitchell L. Slotnick '63, '64 MBA, '68 PhD; and their families for their “transformative, visionary philanthropy.”

Ryan Fieldhouse serves as one of the most versatile indoor practice, competition and recreation venues in the nation. Maximizing its location on the shores of Lake Michigan, it features a 44-foot tall glass façade with views to the north and east and is flanked by spaces for football and Olympic sports.

Pat Ryan said of Northwestern, “We strive for excellence in everything that we do. When we have the quality of student-athletes that we have, they deserve to be in a state-of-the-art facility.”

Within Ryan Fieldhouse, Wilson Field is striped for NCAA regulation football, soccer and lacrosse, with movable bleacher seating for up to 900 spectators and an automated netting system to subdivide the space.

Speaking to student-athletes, Steve Wilson said, “This is a magnificent building, which will house state-of-the-art equipment, but that equipment and the building are only tools. They're here to provide you with the opportunity to work even harder to achieve your personal dreams.”



↑ From left, Lou Simpson, Kimberly Querrey, Mark Walter, Pat Hackett and Kimbra Walter cut the ribbon at the Walter Athletics Center opening.

ALL PHOTOS: JIM PRISCHING

ENTREPRENEURSHIP

Pledging to Make a Difference

Alumni entrepreneurs such as Adam Hughes are paying it forward by signing Northwestern's new Founders' Pledge.

When Adam Hughes '03 first left Buffalo for Northwestern, “entrepreneur” was neither a common career choice nor one he had in mind for himself.

After taking a variety of courses his first year, the aspiring lawyer ended up majoring in the subject he enjoyed most: history. “I really enjoyed the discipline of the reading and the writing of papers, and the teachers were incredible,” Hughes says. By his junior year — after gaining some exposure to other fields and recognizing that the economy had become less stable — he decided to take a business path.

His first position after graduation was as a traveling tech consultant for Accenture.

“Over those two years I really got hungry to have more of an impact earlier on,” he says, “and you get to do

that with a smaller company or a startup.” So in 2005 he took the opportunity to join an early-stage venture called Enova, a technology- and data analytics-driven online lending company that then employed just 40 people; the publicly traded company now boasts a market cap of more than \$1 billion. There, Hughes held several senior strategy, operations and marketing positions over six-plus years.

“In 2012 I took on a new challenge and helped start Avant,” he says. As president of Avant — a startup that provides digital technology to banks as well as an online direct lending platform — Hughes oversees technology, product/marketing and operations. The Chicago-based company currently has 500 employees and 750,000 customers.

Hughes and his wife, Maggie Bosevi Hughes '04 — a fellow Weinberg College of Arts and Sciences graduate who works on client data and analytics at Aon Risk Solutions — welcomed their first child in spring 2017. Shortly thereafter, Adam Hughes began exploring ways to support the institution that had helped launch his career. Inspired by the growth of programs such as The Garage, Northwestern's hub for student entrepreneurship and innovation, he was one of the first alumni to sign the Founders' Pledge when it launched in spring 2018.

The Founders' Pledge is a new opportunity for entrepreneurs to impact the future of Northwestern. Alumni who take the pledge make a personal commitment to support any area of the University they choose with

a meaningful gift when the time is right for them.

Upon taking the Founders' Pledge, individuals join an exclusive community of Northwestern entrepreneurs — known as the Founders' Society — who plan to share their wealth, usually once their companies reach a liquidity event, such as a merger, sale or initial public offering.

Hughes has encouraged other entrepreneurs to take the Founders' Pledge, including Delta Tau Delta fraternity brother Chris Erickson '04, who has achieved success in the online housing rental marketplace as co-founder of Apartmentlist.com.

Hughes also supports his alma mater through mentorship at The Garage. And in December he will host undergraduate students for a “career trek” at his company's headquarters through Weinberg College's Waldron Student-Alumni Connections program.

“Entrepreneurship wasn't nearly what it is now back in 2003,” Hughes explains. “Just look at the way Northwestern supports the startup mindset today. I'm excited to be a part of it.”

Learn more at weill.northwestern.edu/founders.

Founders' Society Members

- Deanna Khosh Charles '86, founder, Mambo LLC
- Chris Erickson '04, chief operating officer and co-founder, Apartmentlist.com
- Adam Hughes '03, president, Avant
- George Markoulakis '15, founder, Spense
- Donovan Morrison '14, CEO, Luna Lights
- Rachna Patel '04, CEO, Dr. Rachna Patel: The Medical Marijuana Expert

← Adam Hughes mentors students at The Garage.



If you want to break into the music recording business, multi-Grammy Award-winning producer and songwriter Thom Russo would like to bend your ear. BY STEPHANIE RUSSELL AND ALEX GARCIA '89

SOUND ADVICE

ALEX GARCIA '89

Music producer Thom Russo works with actress Alanna Ubach, his wife, at his WoomRoom Studio in North Hollywood, Calif.

R

ecord producer-songwriter-mixer Thom Russo knows talent when he hears it. Last spring his manager sent him two songs recorded by a 20-year-old student who's attending the Brit School, a free performing arts and technology academy in south London. The school's alumni include Adele, Amy Winehouse, Jessie J and King Krule. "When she opened her mouth, I thought, 'Oh, my — this is just a God-given talent,'" says Russo '88. "I've been in this industry for 25 years, and I still hear it. If this isn't a young artist who should be world famous, then I don't know who is." In the meantime, Russo's manager left him a voicemail that the young woman was coming to Los Angeles, and he wondered if Russo would like to collaborate with her. "Immediately I was on the phone. I mean it was a Sunday night at 10 p.m., and I was like, 'This woman is unbelievable. Sign me up!'" Since then, Russo and the singer have been writing extensively and working remotely via Skype. She's not on a label yet, so he is reluctant to mention her name. "It's very much at the nucleic stage," he says of his interaction with the

up-and-coming singer. "This is the time to build up a relationship, because it's the beginning that matters." Russo knows a lot about building relationships with singers. First, as an engineer and mixer and now as a producer and songwriter, he's spent more than two decades in Los Angeles working with major artists such as Prince, Michael Jackson, Audioslave and Jay-Z, Johnny Cash, Eric Clapton, Juanes and Maná. A sought-after sound man, the 16-time Grammy Award winner has a diverse discography that ranges from jazz, pop, rock and R&B to Latin rock, pop and alternative. What he does for musicians is bring together the technical and the creative into musical production, a role that he compares to being a movie director. "On occasion, you're dealing with someone who is incredibly gifted but has no idea where they need to go," says Russo. "I'm directing them, pushing them to a place where I think they need to be. Other times I'm working with a band so established, my job is to simply not do

anything. I need to have the self-control to know, 'This is great. Don't mess with it. Leave it alone.' Knowing that difference is where the opinion, or taste, part comes in. It truly is all about taste." To make it as a producer in the recording industry, Russo says, there are several must-haves: outstanding technical and musical capabilities, an insanely strong work ethic — and people skills to beat the band. Russo picked up his technical skills at a small recording studio in Chicago and then as a staff engineer with Larrabee Studios in Los Angeles, where he worked for more than a decade. The music skills he has in spades: A keyboard player most of his life, Russo majored in percussion and music theory at the Bienen School of Music, played in several University ensembles and was involved with various extracurricular bands while in school. As for a strong work ethic, late-night sessions go with the territory in modern music production, and early in his career Russo learned the value of putting in long hours. That's how he happened to be at the right place at the right time — when major artists strolled into the recording studio in the middle of the night and he was one of the few "studio rats" still awake. And last but not least, "You've got to have mad people skills," Russo says, "when you're dealing with musicians and

Michael Jackson recorded most of the vocals for his 1991 album *Dangerous* with Thom Russo.



GARY GERSHOFF/GETTY IMAGES

singers." His people skills were put to the test early in his professional career. In the Studio with Michael Jackson Four years after graduating from Northwestern, Russo got a job as a staff engineer at Larrabee and hit the ground running. "Some weeks were 100-hour weeks, because I was the guy they could always call," says Russo. Within three months of landing at the studio, Russo was invited into a project that jump-started his career. He happened to be at Larrabee's North Hollywood studio, where Michael Jackson was working on his album *Dangerous* in 1991. "It was bananas that it happened this way — not just right place, right time," he says, "but the fact that I knew my stuff enough when Michael rented out the entire building and that I was proficient enough to be on the production team." Russo ended up on one of the sessions with Bruce Swedien, a legendary audio engineer and producer who was Quincy Jones' right hand for many years. "Bruce could tell that I was one of those young, hungry dudes who knew a lot, that he could say, 'OK, I'm going home. You can work till 2 a.m. and finish this.' " One night the megastar started talking with Russo and suggested that he join Jackson's team. Although nervous at first, Russo quickly figured out how to interact with him. "When you're working with artists of that caliber, you have to know how to be around them. That's a street smarts



↑ Four of Thom Russo's 16 Grammy Awards. He has won 13 Latin Grammys.

thing, in a way. You're polite and you're quiet and you only offer your opinion when asked. You help out and give them everything they need. But beyond that, Michael was comfortable around me. That's why that worked. "The stuff I witnessed was just magic — Michael in the back of the control room, working on some dance moves. When you work with a guy for the better part of a year, that's what happens." What also happened is that the record was up against a tight deadline, and Sony Records was upset that Jackson hadn't finished it. "Michael was still writing lyrics on at least three-quarters of the record," says Russo. So Swedien told Russo to go to another studio with Michael to record all the vocals. "And that's what I did," Russo recalls.

How to Break into Audio Production and the Recording Industry

Nowadays, there aren't as many big studios where you can go in and get your experience, says producer Thom Russo. But there are plenty of smaller studios throughout the United States. "The whole world

is done on a laptop, including big records and little records. But we still use the studios for many things, like live recordings, better sound and troubleshooting technical issues." Here's his advice on breaking into the business:

- 1 Hang out at recording studios and be a fly on the wall. Start at the bottom. Get tea, run errands — so you can see

how music is made by professionals.

- 2 Get your technical chops together. That should be your primary focus. It's something you learn and then you do by rote. As long as your technical and musical skills are together in every genre and format, you'll be ahead of the game.
- 3 Learn people skills. In addition to dealing with artists, you have to

deal with music business people. So it's a balancing act; sometimes you have to play good cop-bad cop.

- 4 Keep your eye on the finish line. You need to be able to deliver by the strict release date, no matter the obstacles or excuses.
- 5 Don't take things personally. The most important thing you have to realize is that it's not about you — it's about the music.

Russo was just 26 years old and now had a credential that would open doors for him. But he says it never would have happened if his technical skills hadn't been second nature. "I knew my way around a recording studio, backward and forward," says Russo. "You have to get your technical chops together in every genre and format," he advises people who want to break into modern music production. "Then you just forget about it. And you do it by rote." (See "How to Break into Audio Production and the Recording Industry," page 33.)

Prince Leads to Alternative Latin

Early in his career, Russo says, he was fortunate to have been taken under the wing of some of the top people in the business, including Keith Cohen, a prominent, in-demand audio engineer/producer who was working with Prince at the time.

Advice for Artists in Search of Producers

Most musicians and bands seek independent contractors today, because the large commercial studios are a thing of the past. If you're a musician or band looking for a producer/engineer or mixer, Thom Russo offers these tips:

Know what you want to be. Have an established identity and goal.

Don't be shy about playing rough demos. We're not looking for finished records.

Put your best foot forward in terms of your songwriting.

Don't be afraid to approach experienced sound engineers. Half the bands that contact me say, "We heard your music and we really want to work with you."

"What often happened is that Keith would be doing a million things at once and I would end up finishing his work for him.

"We never knew when Prince was going to show up. It'd be like 1 o'clock in the morning, and all of a sudden he'd be standing in the back of the control room. He was just like Batman. And I'd be the one sitting at the console. It was crazy."

The work that Russo put in with Prince had an impact on his career, Russo says. Getting a credit on Prince's record *Diamonds and Pearls* brought Russo attention from other bands and musicians from all over the world who liked his work, including an alternative Latin Argentinian band named Illya Kuryaki and the Valderramas. They had seen Russo's name on the liner notes and reached out by sending him some of their previous albums.

"Talk about cross-genre," Russo says. "That band was hip-hop meets jazz, meets funk, meets R&B. It was so innovative, ahead of its time and some of the coolest music I'd ever heard. It blew my mind."

Russo worked with the band on a record in LA, and then they made a second record, *Leche*, in Argentina that turned out to have a multi-international hit on it. The record caught the attention of noted Latin record producer Gustavo Santaolalla, who had just signed a young Colombian artist to his label on Universal.

"Wow, your sound is insane," Santaolalla told Russo. "I want you to hear this young artist I just signed, and maybe we can work on [the record]"



Juanes won two Latin Grammy Awards for his solo debut, *Fijate Bien* (2000), which he recorded with Thom Russo.



Thom Russo spent late nights in the studio while working with Prince on *Diamonds and Pearls* (1991), the artist's 13th album.

together, although at this stage it's low budget."

The young man was Juanes, a musician who had been in a rock/metal band back home in Colombia called Ekhyosis but who had moved to Los Angeles to break out on his own. He was in his mid-20s and living out of his car at the time, Russo remembers.

"When I heard the demos from Juanes, I told Gustavo, 'I'll even do this for nothing. He's amazing,'" says Russo. "Juanes wanted to do a solo act, more pop/rock folkloric ... but he wanted me to bring a toughness, a rawness to his sound. He knew exactly what he wanted."

Their resulting album, *Fijate Bien*, made Juanes an international sensation and won a Latin Grammy for best rock solo vocal album (Russo's first Latin Grammy). The platinum album and several Latin Grammy Awards from subsequent albums springboarded Russo into collaborations with both established and aspiring Latin music talents, including Maná, Aterciopelados, Kinky, Huecco and Jesse & Joy, and ultimately led to 12 more Latin Grammys for Russo.

Niteskool Changed His Life

A music major at Northwestern, Russo realized by his junior year that he wasn't going to be a performer. "To be honest, I didn't have that kind of talent," he says. "But I didn't know exactly what I wanted to do in the music business."

JUANES: STEVEN FERDMAN/GETTY IMAGES; PRINCE: THE LIFE PICTURE COLLECTION/GETTY IMAGES

ALEX GARCIA '89

It was what Russo did outside his major that helped him figure that out. He wrote music for the Waa-Mu Show, played in several bands (including the house band for the Mee-Ow Show) and hung out with a lot of musicians from many genres. He also got involved with the newly formed Niteskool Project, a student-run record label and music video production company that began in 1983.

"I started taking a computer music class, computer programming, and then an analog synthesis class, and that started to ignite some things in me," he recalls. "Then I got into Benj Kanter's recording class — and that was exactly when my brain went 'Kaboom!'" (See "Course Correction," magazine.northwestern.edu/features/sound-advice.)

"I went over to Benj's Evanston studio, Studiomedica Recording Co., on a Niteskool project," Russo recalls. "Walking into that recording studio, it all suddenly made sense. These records that I loved but never really understood how they were made, it all came to me in a way — through Benj's class and working on the Niteskool projects. I was like, 'Oh, my God. This is it. This is what Steely Dan and Pink Floyd and all those bands are about.'"

"Niteskool was the springboard for me." Russo immediately realized he wanted to be in the music production/recording business and lined up an internship at River North Records in Chicago. Before graduation the studio offered him a full-time job. He spent two years honing his technical chops on everything from commercial music and ad jingles to rock, jazz and R&B album projects before deciding he wanted to solely make records. So he headed to Los Angeles "to be in a place where the music industry thrived."

After a brief job search he had offers from two of the most prominent studios in the world — Larrabee Studios and Ocean Way. He ended up working on staff at both but went on to spend most of his time at Larrabee, and he has been working in the recording industry ever since.

Music production has undergone a lot of changes since Russo started his career.

Did you ever take a class at Northwestern — like Thom Russo did with Benj Kanter's '76, '02 MMus — that changed the direction of your life and career? Tell us about it at letters@northwestern.edu.

The majority of the big, high-profile studios have all closed, and while many smaller ones remain, most don't keep a large number of production people in-house. About 16 years ago Russo realized that being a house engineer was holding him back, so he became an independent contractor. Most artists seek out the independent producers when they make big records, so musicians come to Russo's studio in North Hollywood.

Today Russo produces, co-writes and mixes albums for some of the newest up-and-coming musicians: Los Hollywood, Will and the People, Félix y Gil, Charlotte Lawrence, Luis Gamarra and Barns Courtney.

One of his latest collaborations is with his wife, actress Alanna Ubach. The two are beginning work on an album of songs inspired by the Academy Award-winning movie *Coco*, in which Ubach played the role of Mamá Imelda. Of Puerto Rican and Mexican descent, Ubach is planning to record traditional songs from Mexico with some of Mexico's biggest artists, liaised through Russo's contacts.

Meanwhile, Russo continues to work with the young singer at the Brit School who shows such promise. Stay tuned!

Stephanie Russell is executive editor of Northwestern Magazine. Alex Garcia '89 is a Chicago-based photographer and photojournalist.

↓ Thom Russo on the job at Chicago's River North Records in 1989



ROOTS

Northwestern’s Oaks: The Eyebrow of Beauty

It was the majestic oak trees near the shore of Lake Michigan that caught Orrington Lunt’s eye on his first visit to the land that today is Northwestern University’s Evanston campus.

“The thought first struck me that here was where the high and dry ground began,” Lunt, one of the University’s founders, later wrote. “It continued in my dreams of that night, and I could not rid myself of the fairy visions constantly presenting themselves in fanciful beauties — of the gentle waving lake — its pebbly shore — the beautiful oak openings and bluffs beyond.”

Bedazzled by the oak savanna along the Lake Michigan shore 12 miles north of Chicago, Lunt helped convince the other founders that this was the place to set down roots for a new university in the Northwest Territory. In 1853 they purchased 379 acres of land for \$25,000.

Many stately bur and swamp white oaks, some well over 200 years old, still stand in splendor on the Evanston campus. You’ll find these hardy natives by the John Evans Alumni Center, the Weber Arch and in the wooded groves between University Hall and Deering Meadow and north of Deering Library. They are home to squirrels, cardinals, Cooper’s hawks and crows that often roost in them in late afternoon. — **Stephanie Russell**

HOW MANY OAKS GROW AT NORTHWESTERN?

4,987

Number of trees on the Evanston campus

517

Number of Oaks

\$7,887,570

Value of Oaks

The monetary value is based on an appraiser’s assessment of the tree’s size, species, condition and location.

THE OAK SAVANNA

Someone once poetically described the crescent-shaped oak savanna on campus as “the eyebrow of beauty,” but no one knows for sure who said it.

An oak savanna is a type of savanna, or lightly forested grassland, where oaks are the dominant trees. These savannas were maintained historically through wildfires set by lightning or humans, grazing, low precipitation and/or poor soil.

Oaks were often used as trail-marking trees by Native Americans. There used to be several such oaks on campus. The iconic “Old Oak” was thought to have been a trail marker tree.



↑ In this vintage postcard of University Hall circa early 1900s, the “Old Oak” with its outstretched branch can be seen on the right.

THE OLD OAK

Before there was the Rock, students gathered at the “Old Oak,” a giant white oak that grew near University Hall until 1904. The tree was estimated to be at least 500 years old at the turn of the 20th century. Students used the oak as a place for speech, song, trysts — and class photos.



↑ The Class of 1880

JOHNNY APPLESEED, GIVE WAY: MEET NORTHWESTERN’S ANNIE OAK-LEY

Northwestern University landscape architect Ann Ziegelmaier is nuts about trees. “Everyone thinks, ‘Oh she just does the flowers.’ But the trees mean everything to me,” says Ziegelmaier, who has planned, nurtured and beautified the Evanston campus since 1984.

Although the Evanston campus has lost a lot of oaks since the University’s founding, Ziegelmaier and the groundskeeping crews have planted about 375 oak trees — 70 percent of the 517 oaks on campus!

“We’ve been planting oaks like crazy,” says Ziegelmaier, “a lot of swamp white oaks and bur oaks, especially by Annie May Swift and on the way to Deering Meadow.”

The Northwestern community will enjoy the majestic tree landscape for generations to come, along with a very special hardscape landmark that Ziegelmaier created in 1993 — the Weber Arch, which welcomes all who enter the University grounds.

THE OLDEST OAK? Ziegelmaier’s favorite oak tree is a bur oak just east of 1835 Hinman, a student residence, and across Sheridan Road from Fisk Hall. This is one of the most beautiful oak trees on campus — and one of the oldest, perhaps 250 years. Because of the way its branches grow horizontally, Ziegelmaier believes that it is one of the last remaining trees of the original oak savanna at the south end of campus.

TYPES OF OAKS AT NORTHWESTERN

MOST COMMON

Quercus bicolor — Swamp White Oak — Has bicolored green and silver-gray leaves; thrives in sandy soil at south end of campus

Quercus macrocarpa — Bur Oak — Primary canopy tree of an oak savanna; look for them by the Weber Arch and University Hall



Quercus alba — White Oak — Has rounded leaves with deep lobes and silvery-gray striped bark; grows in a wide range of soils



NOT AS COMMON

Quercus rubra — Red Oak — Prefers a more acidic soil, so fewer are planted on campus



POSTCARD AND PHOTO: COURTESY OF UNIVERSITY ARCHIVES

Lurks

Biomedical engineering professor Vadim Backman has developed a stunning and effective new strategy for detecting cancer in its earliest stage — essentially a Pap smear for most cancers. BY AMANDA MORRIS '14 MA

The Far Side of Violet: Where Cancer Lurks

39



Vadim Backman in his
lab in Silverman Hall

Photograph by Kyle Monk

FALL 2018 NORTHWESTERN

On the outer edge of the color spectrum of visible light lies a mysterious place on the far side of violet. As red morphs to orange and then fades to yellow and so on, the wavelengths become shorter and shorter. Until finally — concealed by the diffraction limit — there is a wavelength so short that it cannot be viewed by common optical microscopes. But this is exactly the hidden place where Vadim Backman believed he might find the secrets of life.

“The theory of the diffraction limit goes back almost 200 years,” says Backman’s longtime collaborator Allen Taflove ’71, ’72 MS, ’75 PhD. “It says that with normal microscopy, you cannot detect structural changes within cells much smaller than about 200 nanometers or so. But Vadim posited that the key to cancer detection lay at much smaller length scales — 20 to 50 nanometers. The skepticism he met was profound. People thought he was violating 200 years of theory. It seemed like absolute science fiction.”

In the face of great doubt, Backman teamed with Taflove to develop partial wave spectroscopy (PWS) nanocytology, a new technology that not only views cells at these elusive length scales but also uncovers the shrouded malignancies that Backman hypothesized.

“Cancer is a terrible way to die, and it is a traumatic experience for the patient’s family,” says Backman, the Walter Dill Scott Professor of Biomedical Engineering in Northwestern’s McCormick School of Engineering. “I knew that I had to at least try to address this question, because it could end up saving a life.”

There is a vast treatment gulf between stage 4 cancer, which is almost untreatable, and stage 1, where the rate of survival is close to 100 percent. The problem is that very early-stage cancers rarely exhibit symptoms and are difficult to detect, so physicians have no indication to treat them. But with PWS nanocytology, diagnosticians can detect details of “pre-precancer” in cells, something that could not be done with conventional microscopes. That means that this new technology would save more lives than

the one that Backman initially aimed for. It could potentially prevent thousands of cancer-related deaths each year.

“When Vadim started this work in 2003, he was greeted with a lot of skepticism from the cancer research community,” says Hemant Roy ’89 MD, another longtime collaborator. “But Vadim was clearly ahead of his time.”

BREAKING THE DIFFRACTION LIMIT

When Backman joined Northwestern’s faculty in 2002, he and Taflove, a professor of electrical engineering in McCormick, began collaborating almost immediately. Newly graduated from the Harvard University and Massachusetts Institute of Technology combined program in medical engineering and medical physics, Backman was establishing himself as an expert in biophotonics, a field that uses light to study biological molecules, cells and

tissues. Taflove, on the other hand, is a world-renowned expert in Maxwell’s equations, which explain how electricity and magnetism interact to form electromagnetic waves.

“We are like puzzle pieces,” Taflove says of his relationship with Backman. “Our connection is simple. Vadim studies light, which is an electromagnetic wave. And in the visible spectrum, the interaction between light and materials is governed by Maxwell’s equations.”

To study the minute ways cellular nanostructures react and interact with ordinary visible light in the range of 20 to 50 nanometers, Backman needed to overcome the diffraction limit. For that, he needed Taflove to solve Maxwell’s equations to determine these interactions.

“Many people have tried to circumvent the diffraction limit,” Backman says. “But I thought, ‘Maybe we don’t have to visualize very small structures in order to measure them.’”

COMING TO AMERICA

Although his grandfather died when Vadim Backman was young, he remembers hearing stories about how his father’s father suffered under Josef Stalin’s oppressive regime and spent time in Soviet gulags.

“He always had a suitcase ready, packed with clothes, because he knew he could be arrested at any time,” Backman says of his grandfather.

Backman and his immediate family remained trapped behind the Iron Curtain until the Soviet Union began to dissolve in the early 1990s. After making it to the United States — a place Backman instinctively felt was his true home — he immediately felt an overwhelming sense of pride and patriotism.

Here Backman shares that patriotism, in his own words:

“A lot of times I hear people talk about coming to the United States in pursuit of economic

opportunities. It’s funny for me to hear that because, for my family, it was never about money or economics. It was about the United States being a beacon of freedom. When I think about the Declaration of Independence, it’s not just a piece of paper to me. It has a lot of meaning — probably more meaning than for some people who grew up here, because they have not experienced any other way of life. Thanksgiving dinner for me is not just Thanksgiving dinner. It’s celebrating the United States and freedom. When I stand up for the national anthem, I think of my grandparents and great-grandparents getting arrested by the communist government for no crimes other than ‘thought crimes.’ After you have lived in a country with no free press and no elections, it makes you appreciate democracy so much more.”



↑ Partial wave spectroscopic microscopy equipment in Vadim Backman's lab

That is exactly how he designed PWS nanocytology to work. Instead of visualizing particles smaller than the diffraction limit, it senses their presence and organization by analyzing the light they scatter. The different angles of scattered light tell a story about the health of cells, which can lead to an accurate cancer diagnosis at even the earliest stages of cancer formation. This provides information not only about individual cells but also about cells’ fundamental building blocks, such as proteins, DNA and RNA.

“We essentially don’t have a limit for how small the structures are that we can sense,” Backman says. “This can be done fairly easily in a robust, reproducible manner, so it can be translated to real health care.”

MAKING A DIFFERENCE

The impulse to improve the lives of others comes naturally for Backman. Growing up in St. Petersburg, when it was still part of the Soviet Union, he discovered an interest in mathematics. As a child, he eagerly read the textbooks from junior high, high school and even college math courses. But then his enthusiasm began to wane.

“The problem I had with math was that it’s too decoupled from the world,” Backman says. “I wanted to study something that could make more of a difference for people.”

When he entered college at the St. Petersburg Polytechnic Institute, Backman decided to study physics. He went on to earn his doctorate in health sciences and technology from Harvard and MIT.

“It was the perfect combination for me,” Backman says. “I don’t think I would be as excited to do purely theoretical work in physics, even though it’s intellectually stimulating. And I wouldn’t be fully satisfied doing translational work either, because I would miss the physical sciences.”

In the Harvard-MIT program, Backman completed rotations with other medical students and learned he enjoyed being on the hospital floor interacting with patients.

“I love working in the laboratory,” Backman says. “But seeing a patient connects my work to a real person. That gives me a sense of urgency.”

His desire to help others not only guided his career but helped attract his wife, Luisa Marcelino, who is also a close collaborator. In 2002 Marcelino was struggling with her molecular biology research at MIT and had completely hit a wall. Thinking that Backman could give some insight, a mutual friend connected the couple. Backman brainstormed an algorithm that helped Marcelino get unstuck, but that’s not what impressed her. She was spellbound by the amount of time he spent trying to help.

HOW THE SCIENCE WORKS

Partial wave spectroscopy (PWS) nanocytology combines a traditional optical microscope with a spectroscope, which looks at the various visible light wavelengths — color spectra — emitted from a cell. Although the human eye might see just one color, the combined equipment can deconstruct an image to see the specific color of each pixel. Backman hypothesized that he could analyze the color spectrum of each pixel to determine the degree of randomness of organization of the nanostructures in each cell. A surplus of red and orange pixels indicates random and disordered nanostructures — a sign of cancer.

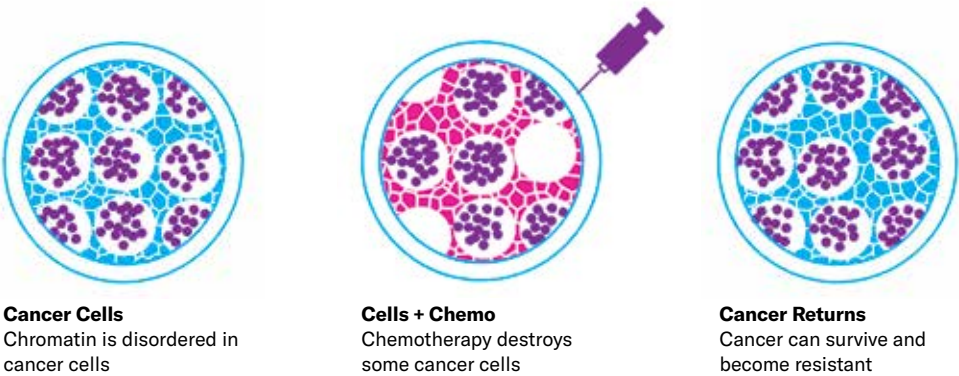
The field effect postulates that cancer can be detected merely by examining nanoscale changes in tissues outside the tumor — the cancer’s “field.” First proposed in 1953, the theory has been validated by Backman and his team. Why does this matter? Because researchers can use the field effect to assess an organ’s health through minimally invasive procedures. Currently, physicians can diagnose cancer only by taking a biopsy or image of a tumor.

Macrogenomics is a term Backman coined for his novel cancer treatment, which focuses on gene expression. By taking a macrogenomic approach, determining which genes get expressed or suppressed, Backman’s team can control an entire biological system’s overall behavior.

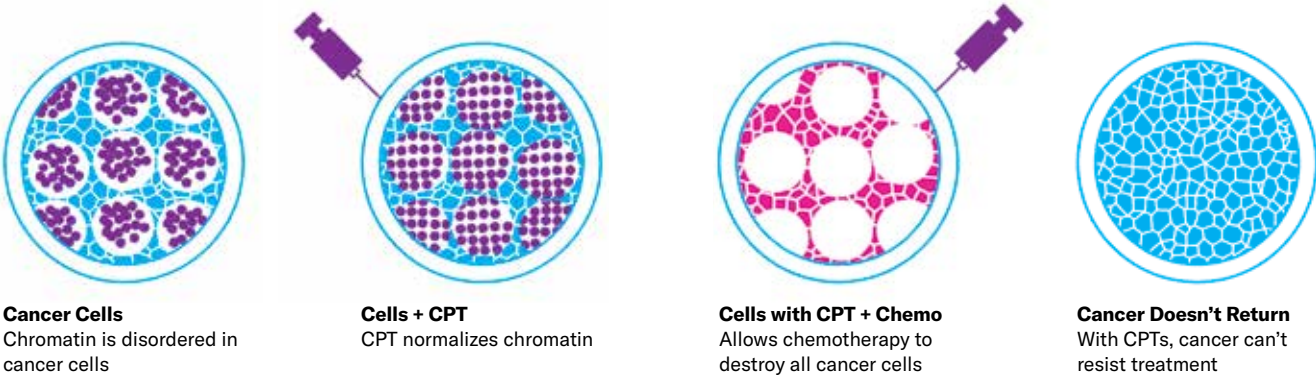
CHROMATIN AND CHEMO

When Vadim Backman paired his chromatin-protection therapeutics (CPT) with chemotherapy, nearly every cancer cell in a cellular culture died within days.

CONVENTIONAL CHEMO APPROACH



CHROMATIN-PROTECTION THERAPEUTICS + CHEMO COMBINATION



“I realized on July 4, 2005, that I was going to marry him,” she says. “He was planning to go to a barbecue, but he missed the whole party because we were on the phone for seven hours discussing my project. I was really impressed by his commitment. To me, that sealed the deal.”

A NEW PAP TEST

Backman’s PWS-based test makes use of the “field effect,” a long-debated biological

phenomenon in which seemingly normal cells located some distance from the malignant or premalignant tumor undergo molecular and other changes.

The new technology is so sensitive that it can detect cancer in one organ by using more accessible cells from a neighboring area. Backman and Hemant Roy, a physician formerly at NorthShore University HealthSystem in the Chicago area and now a professor of medicine at Boston University, tested the technology on field-effect

alterations associated with seven different cancers. Time and time again, they saw the same results.

Cells swabbed from inside a cheek, when examined with PWS nanocytology, showed signs of lung cancer. Cells from the duodenum showed pancreatic cancer. Cells from the cervix showed ovarian cancer. Cells from the rectum showed colon cancer. The list went on.

“The technology is highly innovative,” Roy says. “But the biological and clinical applications are astonishing.”

These findings translated into a minimally invasive early detection test using cells collected with a swab, exactly like a Pap smear. In 1928 Greek physician Georgios Papanikolaou discovered that if he gathered cells from an easily accessible area, he could examine them under a microscope and detect early signs of cervical cancer. Soon physicians worldwide began administering the “Pap test” during routine patient visits. Early diagnosis naturally led to early treatment, significantly reducing cervical cancer incidence and death rates.

“If we had comparable screens for other types of cancer, we could reduce cancer deaths tenfold,” Backman says. “When else have we seen such a discovery? Never.”

Until now, that is. Backman’s early detection technique could soon be available for physicians to use with their patients. Several large clinical trials are already in progress, and within three years tests for lung, colon and prostate cancer — which are among the most common types — should enter the market. Much like the Pap test, these new screens could become part of regular primary care, putting physicians one step ahead of cancer — poised to prevent it from getting out of control and untreatable.

SUSPICIOUS SIGNATURE GIVES WAY TO NEW TREATMENTS

In testing samples from seven types of cancer, Backman noticed they all exhibited the same signature. The way the chromatin — or genome

structure — was arranged seemed to determine whether or not the cancer would easily or stubbornly respond to treatment. Chromatin is a group of macromolecules — including DNA, RNA and proteins — that house genetic information within cells and determine which genes get suppressed or expressed. In the case of cancer, chromatin has the ability to regulate the capacity of cancer cells to adapt to treatment by expressing genes that allow the cancer cells to become resistant to treatment.

“If you think of genetics as hardware, then chromatin is the software,” Backman says. “Just by looking at the cell’s chromatin structure, we can predict whether or not it will survive ordinary treatments.”

Chromatin is packed together at different densities throughout a cell’s nucleus. By using PWS, Backman examined chromatin in living structures in real time. He discovered that the packing density of chromatin in cancer cells produced predictable changes in gene expression. The more heterogeneous and disordered the packing density, the more likely cancer cells were to survive — even in the face of radiation and chemotherapy. The more ordered and conservative the packing density, however, the more likely the cells would die during treatment.

This discovery lit a lightbulb. Backman realized that cancer might not require new treatments. Maybe it just needs to be made more vulnerable to existing treatments.

Backman developed a solution to alter chromatin’s structure in a way

that prevents cancer from evolving to withstand treatment, making it an easier target for existing drugs. He tested the strategy in cellular cultures, and it almost completely wiped out the disease.

“There is one thing that all cancers do,” Backman says. “They have a phenomenal ability to change, to adapt, to evolve in order to evade treatment. Cells with normal chromatin structures die because they cannot develop this resistance.”

Backman says the treatment has shown promising results in an animal model, and he aims to start human trials within a year.

“Whether or not this ultimately leads to a treatment, we don’t know yet,” Taflove says. “But I’ve learned to keep an open mind with Vadim. He does genius work.”

Backman believes this cancer treatment could be his most important research yet. As his diagnostics near implementation in the hospital, he has shifted his focus to pursuing chromatin-protection therapeutics. And his collaborators, including Taflove, who is nearing retirement age, are right there with him.

“I am going to ride shotgun alongside Vadim the entire time,” Taflove says. “I could retire, but I don’t want to because I want to see this through. This is the most excited I’ve been in my career, and I’m in the game to win.”

Amanda Morris ’14 MA is a science and engineering writer in the Global Marketing and Communications department at Northwestern.

CORAL — AND SPOUSAL — COLLABORATION

Vadim Backman and his wife, Luisa Marcelino, shed light on coral destruction through their joint research.

“When you snorkel, you can only see so much because you have to continually come up for air,”



says Marcelino, a research assistant professor of environmental microbiology at Northwestern. “But when you dive, you can stay underwater and see what happens. If you stay still, then creatures come out of hiding.”

Her love for the underwater world led her to study coral biology and coral’s symbiotic relationship with algae and to try to better understand why the fragile animals are vulnerable to bleaching and possible extinction.

Backman attended a 2012 coral conference with Marcelino, and afterward

the pair embarked on a new research collaboration.

In coral reef systems, algae provide nutrients to corals and receive shelter and light for photosynthesis in return. When stressed, corals can lose their algae and often die of starvation shortly afterward, exposing their white skeletons.

“A research group from Mexico discussed how light could play a factor in this,” Marcelino says. “Coral has very white skeletons. The light that is not absorbed for photosynthesis stays in their tissue. Vadim and I looked at each other and knew exactly what we could do.”

Using the technology Backman designed for early cancer detection, the duo discovered that corals scatter light in different ways to their symbiotic algae. Corals less efficient at light scattering are better at retaining their algae. Corals that scatter light most efficiently, however, tend to suffer the most damage when stressed.

Marcelino and Backman published their research a year after their serendipitous lightbulb moment and have collaborated on several coral-related projects since.

They are leaders and pioneers, deal-makers and pathbreakers. Meet the four exceptional alumni who received the 2018 Northwestern Alumni Medal.

ALUMNI TRAILBLAZERS

Investing in the Future

Louis A. Simpson '58,
Trustee

Lou Simpson's distinguished career as an investment adviser began on a golf course in Glencoe, Ill., where, in his youth, he worked as a caddy and saved enough money to buy two stocks.

He would later go on to manage a \$4 billion portfolio as president and CEO of capital operations for Geico Corp., the Berkshire Hathaway insurance subsidiary. Called "one of the investment greats" by Berkshire's legendary chairman Warren Buffett, Simpson now executes a strategy honed over several decades — take a long-term point of view, run a concentrated portfolio and buy good companies for a fair price — as chairman of SQ Advisors LLC, an investment company in Naples, Fla., that he owns with his wife, Kimberly K. Querrey.

In recent years Simpson, who studied at Northwestern and became a University trustee in 2006, has drawn on his financial

success to make an investment of a different kind — in the future of Northwestern. He and Querrey, who also is a University trustee, have given several visionary gifts to Northwestern across many areas, including athletics, regenerative medicine, epigenetics and biomedical research.

Their focus on the sciences is driven by the prospect of funding high-risk, high-reward research at Northwestern that, if successful, could be transformative to society, he says. The Louis A. Simpson and Kimberly K. Querrey Biomedical Research Center, scheduled to open in 2019 on the Chicago campus, will provide a home for groundbreaking, collaborative research on many of the world's most prevalent diseases, including cancer, heart disease and neurodegenerative disorders.

Northwestern professor Samuel Stupp '77 PhD got to know both Simpson and Querrey over the past decade. "Through their generosity, Lou and Kimberly have had an enormous impact on scientific research at Northwestern, particularly in biomedical areas that will be transformative in future medicine to benefit the

↑ **Lou Simpson, above, and his wife, Kimberly Querrey, have made gifts to Northwestern that are transforming biomedical research.**

entire world," says Stupp, the Board of Trustees Professor of Materials Science and Engineering, Chemistry, Medicine and Biomedical Engineering and director of the Simpson Querrey Institute.

Simpson has had a longtime commitment to education.

"I'm a big believer in giving people access to education," Simpson says. "I'm a big believer in having high standards and excelling in whatever you're doing, and Northwestern aims very high."

Simpson puts these beliefs into practice as a senior fellow and adjunct professor of finance at Northwestern's Kellogg School of Management, where he allows students to manage a real endowed fund.

But it's the intellectual challenge that goes into making investment decisions — analyzing a company's numbers, considering future trends and assessing how the current political situation might impact an industry — that has kept him interested in the field since those early days on the golf course.

"You're putting together a lot of different factors to come up with decisions," he says. "My approach is to read a lot, to think a lot and to do very little."

JIM PRISCHING



Standing Up for Equality

Johnnetta B. Cole
'59 MA, '67 PhD,
'92 H

Throughout a life dedicated to education and the struggle for equality, Johnnetta Cole has drawn on her training as an anthropologist to ask fundamental questions about humankind.

Questions like "What makes us similar and different?" and "Where do systems of inequality come from?" have shaped a remarkable career in education and the arts.

"Even today, when I'm not teaching cultural anthropology and doing fieldwork in some part of the world, I continue to wear what is like a pair of glasses — anthropological lenses through which I see and try to understand the world," Cole says.

Born in Jacksonville, Fla., in the segregated South, Cole knew early in life that she would be involved in the fight for civil rights and social justice. As a student at Oberlin College, she discovered anthropology and began to study the origins of the concept of race and the persistence of racism in American culture.

She also developed a deep interest in the cultures of Africa. Her professor, sociologist George Eaton Simpson, recommended that she pursue graduate work with Melville J. Herskovits, the renowned anthropologist who founded the nation's first African studies program at Northwestern.

Cole arrived at Northwestern as a graduate student in 1957. But when she proposed a master's thesis topic that would examine the influence of African traditions in an African American church on Chicago's South Side, Herskovits questioned — as many anthropologists did at the time — whether one could objectively study one's own culture. Cole stood up for her right to do so, and Herskovits finally agreed to supervise her master's thesis.

STEPHEN SPARTANA

→ **Educator and activist Johnnetta Cole made history as the first African American female president of Spelman College.**

After receiving her master's degree in anthropology, she conducted fieldwork in Liberia and earned her doctoral degree in 1967.

At Washington State University, Cole was the founding director of one of the first black studies programs in the United States. She taught anthropology, women's studies and African American studies at the University of Massachusetts Amherst, Hunter College and Emory University.

In 1987 she became the first African American woman president of Spelman College, and in 2002 she began serving as president of Bennett College. She is the only person to have served as president of both of these two historically black colleges for women.

From 2009 to 2017, Cole was director of the Smithsonian's National Museum of African Art. Currently she consults for Cook

Ross Inc. and the Andrew W. Mellon Foundation.

Celeste Watkins-Hayes, associate vice president for research at Northwestern and one of many Spelman alumnae whom Cole has mentored over the years, says Cole never hesitates to challenge inequality and uses a combination of intellectual firepower and storytelling through folk wisdom to do so.

"Dr. Cole makes calling out inequality into a teachable moment," Watkins-Hayes says. "She does it in a way that's loving, but very intellectual, and gets people to think."

Cole often draws on lessons from anthropology in these ongoing efforts.

"This struggle has got a ways to go, but a good African proverb tells us that no matter how long the night, dawn will break," she says. "So there's no choice but to continue."



Leading with Heart
Douglas R. Conant
'73, '76 MBA

Soon after Doug Conant lost his marketing job at General Mills in 1984, he made a phone call that would change his life.

The call was to an outplacement counselor named Neil MacKenna, whose simple question — “How can I help?” — inspired Conant to develop a people-first approach that would define his leadership style as the head of two Fortune 500 companies.

“I’ve been asking that question for nearly 35 years,” says Conant, who led Nabisco Foods Co. and Campbell Soup Co. “I found the more I lean into helping people, the more they lean into helping me.”

As president and CEO of Campbell’s from 2001 to 2011,

Conant reversed the iconic brand’s declining market value and boosted employee morale to new levels. He also sent more than 30,000 handwritten notes and walked the halls for a half-hour every day to ask employees how he could make their jobs better.

These short but meaningful interactions became the premise of his *New York Times* best-seller, *TouchPoints: Creating Powerful Leadership Connections in the Smallest of Moments* (2011).

Conant’s interest in leadership began at Northwestern, where the Glencoe, Ill., native arrived on a tennis scholarship in 1969. Tennis coach Clarence “Clare” Riessen ’39 MS taught him many life lessons, like how to compete at a high level and the importance of personal discipline.

As a political science major, Conant studied what made American presidents and world

↓ Kellogg professor Doug Conant, former Campbell Soup CEO, is a leadership expert and *New York Times* best-selling author.



leaders effective. It was important, he concluded, “to show up with a great authenticity and sense of purpose and to develop the skills necessary to get the job done with distinction.”

After graduating, Conant continued to learn these skills at the Kellogg School of Management with marketing professors Ram Charan and Philip Kotler. Conant also coached tennis and the Delta Gamma sorority flag football team, where he met defensive end Leigh Pierson Conant ’77. They married in 1978 and have three children.

It was Conant’s wife who rushed to his side after a car accident left him with several life-threatening injuries in 2009. When he woke up, she said two words that stuck with him and reinforced his leadership philosophy of being fully present with people: “I’m here.”

Conant’s personal approach and resilience “deeply impressed” Marilyn Carlson Nelson, CEO of Carlson Holdings Inc. In 2011 she recruited him to chair CECF — The CEO Force for Good, a group that promotes corporate sustainability.

“Doug is truly passionate that business not only can but must be a power for good,” Nelson says.

In 2011 he also launched ConantLeadership with a mission to champion leadership that works in the 21st century. Conant, who receives no salary, donates all income after costs to nonprofit organizations. Last year the company surpassed \$1 million in philanthropic giving. In 2013 Conant founded the Kellogg Executive Leadership Institute at Northwestern to help board members and executives address complex issues in their organizations.

Through both ventures, he calls on today’s leaders to be “tough minded and tender hearted.”

“If you want to succeed, you have to have high standards,” says Conant, who is writing a second book about leadership. “But if you want people to be engaged in the work in a meaningful way, they have to feel valued.”

JIM PRISCHING



Engineering Success
in Hollywood
Courtney D. Armstrong ’93,
'97 JD, MBA

In an industry where self-promotion is paramount, Hollywood executive Courtney Armstrong prefers to operate behind the scenes.

This Warner Bros. Pictures deal-maker stays out of the spotlight. He is a hardworking, humble Chicagoan who loves his family, John Coltrane and Northwestern, the place that helped him engineer his formula for success.

PHIL CHANNING

↑ Warner Bros. Pictures executive Courtney Armstrong has negotiated key deals for some of the biggest blockbusters of the last decade.

Since 1932,
103 alumni have received the
Alumni Medal — the Northwestern
Alumni Association’s
highest honor.

As a child growing up on Chicago’s South Side, Armstrong spent many Saturdays in a movie theater, watching kung fu films with his older brothers. Although he loved television and movies, he says he never imagined working in the entertainment industry.

Now, as the executive vice president of worldwide business affairs for Warner Bros. Pictures, Armstrong leads a team that negotiates key deals with directors, producers, writers and actors. He has touched some of the most lucrative, influential movies of the past decade, including *The Dark Knight*, *The Departed*, *Fantastic Beasts: The Crimes of Grindelwald* and *Man of Steel*.

While at Northwestern, however, Armstrong never took a film class. He was focused on becoming a mechanical engineer.

“The study of systems, specifically how engines work, was of great interest to me,” Armstrong says. “The way you have to problem-solve and analyze issues in engineering is something I use today.”

After graduation, Armstrong enrolled at the Northwestern Pritzker School of Law, where he had planned to study patent law but instead decided to broaden his skill set. Armstrong completed the Kellogg School of Management’s JD-MBA program and accepted a job on the entertainment litigation team at Paul Hastings LLP, an international law firm headquartered in Los Angeles.

“Northwestern is a place where I was able to dream and then build on that dream,” Armstrong says.

Over the past two decades, Armstrong has used the skills he acquired at Northwestern to build

strong connections and achieve great success in the motion picture industry. “He’s always determined to learn, always determined to grow, with a great thirst for knowledge,” says Steven Spira, president of worldwide business affairs for Warner Bros. Pictures. “He brings honor to the profession by doing his job in a highly thoughtful and intelligent manner and with impeccable integrity.”

In 2016 Armstrong was invited to become a member of the Academy of Motion Picture Arts and Sciences, the exclusive organization that selects Oscar winners and has sought to diversify its membership. “There have been a lot of changes in the academy over the last couple years,” Armstrong says. “I’m proud to be a part of the change.”

Despite his full slate, Armstrong, an executive committee member of the Pritzker Law Board, remains dedicated to the University that provided his educational foundation, and his volunteer commitments run longer than some movie credits. “The real appreciation comes once you graduate — once you look back at your experiences and at the lifelong friends you made,” Armstrong says.

While Armstrong shies away from the limelight, he continues to thrive in Hollywood by leaving his ego at the door and formulating effective negotiation strategies. “My contribution to our movie slate,” he says, “is putting the deals in place and getting out of the way.”

See *Northwestern Alumni Medal highlights* at alumni.northwestern.edu/medal.

Save the Date

January 24, 2019



Northwestern Connects

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Northwestern | **ALUMNI**

Alumni

COURTESY OF UNIVERSITY ARCHIVES

IN HIS CUPS

Clowning around in
Norris University
Center in the 1970s.

Creation



THEATER

Five Questions with Katrina Lenk

The former viola performance major turned Broadway star won the 2018 Tony Award for best performance by an actress in a musical for *The Band's Visit*.

1

What does winning a Tony for an atypical Broadway show like *The Band's Visit* mean to you? My brain is still like, "WHAT?!" Ours is a story involving people from two cultures we don't usually see portrayed in musicals, and it's told in a style with a lot of simplicity and silence — and I do wonder if perhaps our show isn't that "atypical." It would be when compared with musicals from 20 years ago, say, but the contemporary musical world is full of shows and subjects and styles that

2

You are a musician, singer, dancer and actor. How do you decide where to focus your energies? I love discovering things and creating things. When I'm doing acting work, I submerge myself entirely in that. When an accent is required, I go bananas on that. Any time learning is involved, or discovery, I'm like a raccoon for a sparkling thing. I usually don't get to focus on more than one at a time, unless I'm working on a musical, and then I'm like a raccoon rolling around in a diamond bathtub.

3

How did you make the transition from music to theater performance? I had an extraordinary viola teacher who was also a professor at Northwestern. I wanted to continue studying with him, and there was also an amazing theater school at Northwestern! I thought I could keep doing all the things — and I did for the first two years. But then a required symphony credit conflicted with my favorite dance class. I found the thought of living without that class and the joy it gave me unbearable. So I let go of the focus on the viola.

could be labeled "atypical" in their own way. Look at *Hamilton*, of course, *Once*, *Fun Home* and this season *SpongeBob* and *Mean Girls*. I think "atypical" could actually be a new, gloriously open and exciting norm, and I think we're all looking forward to it being more inclusive.

4

Do you still play viola?

I do! After not being able to play the viola out of guilt for neglecting it, I missed the sound it made under my chin, in my sternum, the way it felt under my fingers. So one day I picked it back up. I composed music with it, I played in rock, pop, country and folk bands in Chicago, LA, NYC, and I use it in my own band as well. It also came in handy when the opportunity to audition for *Once* came around.

5

What were the most valuable lessons you learned at Northwestern?

Everyone tells you, but somehow you don't believe it — practice actually does lead to improvement. Peter Slowik, my viola prof, taught me how to practice efficiently, how to break something down that seems overwhelmingly impossible into small pieces, how to investigate those pieces, how to love them, how to deal with mistakes made — and then boom! That thing isn't overwhelming at all. And I have definitely used those tools in every facet of my life.

The second is from my voice prof, Kurt Hansen '73, '83 MS, and my dance profs, Juanita Lopez and Billy Siegenfeld. They taught me that having a teacher believe in you when you feel like you're nothing can fuel a million hours of that practice.

Interview conducted by Stephanie Kulke, fine arts editor in Global Marketing and Communications at Northwestern.

KATRINA LENK: SUSAN STRIPLING; JARED KNOPMAN: WEILL CORNELL BRAIN AND SPINE CENTER; BOMANI MCCLENDON: FOLDHAUS, SHRUMEN LUMEN, 2016. PHOTO BY RENE SMITH



'SHROOM ART

The San Francisco-based art collective FoldHaus enlisted tech help from then-undergrad Bomani McClendon '17 when it was building *Shrumen Lumen* for Burning Man 2016. McClendon, now a software engineer for Facebook, worked as a programmer on the 12- to 18-foot tall mushrooms, which are now on display at the Renwick Gallery of the Smithsonian American Art Museum. With Kalan Kircher '11, the digital lead for the project, McClendon programmed the giant glowing mushrooms to move and light up when observers step on a weight-sensitive pressure pad. The origami-based interactive art installation is part of the Renwick Gallery's exhibition *No Spectators: The Art of Burning Man*, which runs until January.



MEDICINE

New Treatment for Subdural Hematoma

A common cause of death following traumatic head injury is subdural hematoma, when blood builds up between the brain and the covering over the brain beneath the skull. This condition, which is often the result of a fall and relatively common among

older adults, causes headaches, seizures or even death, and conventional treatments involve invasive surgery, such as drilling a hole in or removing a part of the skull to drain the blood. Such procedures can be risky and expensive. But a new, minimally invasive, first-line treatment may soon become available, thanks to the work of Jared Knopman '01 and his colleagues at Weill Cornell Brain and Spine Center in New York City. In a study published in the journal *Operative Neurosurgery* last year, Knopman outlined the embolization procedure, which involves inserting an extremely thin tube (microcatheter) through a tiny needle into an artery in the upper thigh, working the microcatheter up into the main arteries that supply blood to the injury, and injecting agents to shut off the blood flow. Not only has this procedure been effective for more than 90 percent of patients, but it also does not preclude other treatments in case of failure. Knopman is organizing a multicenter registry, after which will come a randomized trial.



COCKTAILS

A Home Bartender’s Three-Ingredient Guide

People often ask Robert Simonson, the *New York Times* cocktail writer for more than a decade, what drinks he makes at his home bar. His latest book, *3-Ingredient Cocktails: An Opinionated Guide to the Most Enduring Drinks in the Cocktail Canon*, helps answer that question. The book, a finalist for the 2018 James Beard Foundation Book Awards in the beverage category, includes several timeless classics, a sampling of easy-to-make modern drinks and a few of his very own recipes.

Simonson ’86, who studied English literature and covered theater — under the pseudonym Robespierre Simonson — for the *Daily Northwestern* in the 1980s, says we’re in the midst of a long-running cocktail revival, and that popularity has inspired an influx of cocktail books. “In a lot of these books the recipes are very complicated,” says Simonson. “I thought it would be a good idea to remind people that a good cocktail shouldn’t be hard for someone to make at home.”

Here are two of his favorites:

Remember the Alimony

- 1 ¼ ounces fino sherry
- 1 ¼ ounces Cynar (an artichoke liqueur from Italy)
- ¾ ounce Beefeater gin

“It’s kind of a ridiculous title, but it’s a good drink,” Simonson says of mixologist Dan Greenbaum’s creation. “It doesn’t sound like those three [ingredients] together would marry well, but it’s actually perfectly balanced.”

The Eau Claire Old Fashioned

- 2 ounces Pierre Ferrand 1840 cognac
- 1 bar spoon simple syrup
- 3 dashes Bittercube Cherry Bark Vanilla bitters

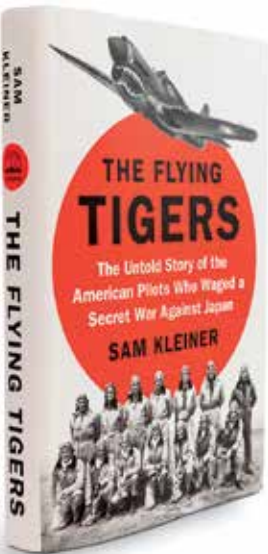
“I usually don’t print my own recipes,” says Simonson, a Wisconsinite who now lives in Brooklyn. “But every now and then I come up with one that I think is respectable enough.”

HISTORY

The Flying Tigers by Sam Kleiner

“There’s a certain symmetry between law and history,” says Sam Kleiner ’09, a New York lawyer and author of *The Flying Tigers: The Untold Story of the American Pilots Who Waged a Secret War Against Japan*. As a child, Kleiner had heard stories about World War II from his grandfather, who had been a navigator on a B-25. Kleiner developed an interest in the Flying Tigers — pilots who flew iconic shark-nosed P-40 fighters in combat after Pearl Harbor — and when he came across a series of love letters between pilot John Petach and Emma Foster, their passion revealed an intimacy and exuberance that made him eager to write a book on the now little-known group. Kleiner has no immediate plans for a future book — he says his job at Boies Schiller Flexner keeps him plenty busy — but he’s keeping an eye out for more hidden histories.

Do you have a new book? Tell us about it. Email letters@northwestern.edu or share with #NUReads.



ENTREPRENEURS

Reviving an Iconic Fragrance Brand

Law alumni couple call on family history to bring back Blocki Perfume Co.

When Tyler Kraemer ’93, ’97 JD and Tammy Henley Kraemer ’97 JD met as students at Northwestern Pritzker School of Law, fragrance wasn’t the first thing on their minds. But in 2015, after balancing legal work and a successful essential oil wholesale

operation, the couple decided to embrace their passion for perfume. Together they revived Blocki Perfume, a company started by Tyler’s great-great-grandfather, John Blocki, 150 years earlier. A chemist by trade, Blocki became an early player in America’s budding perfume

industry, and his company’s grand boutique on Michigan Avenue became a retail attraction.

While Blocki Perfume hasn’t returned to its former space, its long history continues to guide the company’s work today. For example, a family memoir published in 1872 influenced the first set of fragrances launched by the Kraemers, and a newer offering, Sanrovia, is a modern reimagining of a 1911 perfume created by Blocki after his visit to the Italian coast.

“Perfume is about *joie de vivre* and telling stories,” says Tyler, who studied chemistry, physics and materials science as an undergrad. “We are inspired by the past, not copying it.”

Blocki remains committed to its early values, including sustainable sourcing, promoting conservation and using only the highest quality natural materials, Tyler says. That means creating scents is a longer, more delicate process, but Tyler says he relishes the freedom — and the opportunity — to transport people to another place or time through fragrance.

ALUMNI

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MORE NEW VENTURES

THE CHOW BROTHERS

Mark and Chris Chowaneic ’00 want to make pierogi the next fast-casual craze. After five years as private chefs, their food brand, the Chow Brothers, has a home at the Wells Street Market, a new food hall on Chicago’s riverfront. Inspired by their Polish roots and Chicago upbringing, they hope to reimagine all manner of Central European classics for an on-the-go audience.

CUE AUDIO While working for a minor league hockey team, Jameson Rader ’15 developed an idea to create dazzling light shows crowdsourced from fans’ smartphones. His company, CUE Audio, uses sound technology to create flashy lighting displays and is backed by Glenn Picquet, owner of the Texas Rangers. In July, Rader formed a partnership with Daktronics that will bring the technology to more than 20,000 venues.

THEATER

Making a Play for Young Audiences

The 2014 water crisis in Flint, Mich., was one of several news stories that inspired Laura Schellhardt ’97 to craft a play that would transform her anger into hope and challenge young people to make a difference in their communities. The play, *Ever in the Glades*, is set in a tropical island town that is full of dark secrets. It follows a group of five teenagers who band together in a daring plan to escape the island and its dangerous adult inhabitants. Northwestern students played a key role in developing the play: They formed the core of the ensemble and participated in many of the early workshops led by Schellhardt, a senior lecturer, and her theater department colleague Rives Collins, the play’s director. After its premiere at Northwestern’s Wirtz Center for the Performing Arts in May, the play moved to the Kennedy Center for the Performing Arts in Washington, D.C.



ROBERT SIMONSON: DANIEL KRIEGER

Balancing Act

Mark Vadik went from entertainment law to moviemaking — and he couldn’t be happier.

Mark Vadik ’89, ’04 MA has proved you can balance creative talent with a practical, business-savvy approach to life. After graduating from Northwestern with a degree in performance studies, Vadik became a lawyer and started his own entertainment law firm in Chicago. Eventually he went back to Northwestern for a master’s in theater, focusing on arts marketing and management, and then spent the last 14 years adapting, directing and producing theatrical productions — and feature films. His latest endeavor: He directed and wrote the feature film adaptation of *A Chance in the World*, the true story of corporate executive Steve Pemberton, who overcame an abusive foster family to find personal and career success. The film premiered on more than 600 screens nationwide during National Foster Care Month last May, and afterward Vadik moderated a live panel discussion on the U.S. foster care system at the Paley Center for Media in New York.

My mother sort of guilty me into going to law school. She said, “You can be an actor any time you want.” I practiced entertainment law for a while — as a litigator — but at a certain point I got tired of making money.

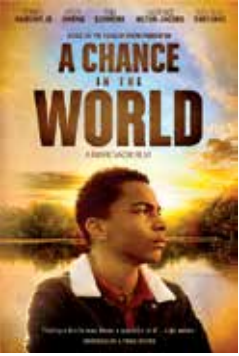
The more entertainment law I did, the more I missed the creative side of the business. I made a big decision to go

back to Northwestern to see if I could make a living doing the creative stuff.

I didn’t start with horror. I was actually directing a version of *Richard III* at the Bailiwick in Chicago, and I had never thought about doing film or TV. But a producer came and saw the show, and afterward he said to me, “That was super visual! Have you ever thought of doing a film?” So, we went out and had drinks, and that’s where it all began.

I got started in horror because it’s a pretty safe genre, financially. That’s why they like to test new people in it. Outside of classics like *The Omen* and *The Exorcist* or the standard fare *Friday the 13th* stuff I saw as a kid, I didn’t really know much about it.

For me, as a filmmaker, as long as the stories are attractive, the issue of genre is kind of secondary or tertiary. If you think about theater, you don’t go, “Oh, my God, I did an O’Casey play, so I can’t do



↑ Director Mark Vadik, right, on the set of *A Chance in the World*

a Genet or a Pinter; I can’t do an absurdist play if I do one based in realism.”

A Chance in the World was a unique experience, because as you’re putting the story together in your head, you’re realizing that Steve Pemberton is a real person, and sometimes the imaginary world you’re creating runs headfirst into reality.

One of the projects on my back burner is another adaptation, but it’s of an Ibsen play. If you want to shut down a venture capital pitch, just mention that.

I still use my legal background daily. We were at the American Film Market once and got a lot of offers for *The Thirsting*, which was my first movie and will always have a dear space in my heart, even though it was kind of a cheesy B-list horror movie. And we were talking to this woman, and she pulled out the contract and offered us a distribution deal right there.

I started to page through it, and she said, “Oh, you’ll probably want to have your lawyer read that.” I said, “Well, actually, I’m an attorney.” Without skipping a beat, she took it out of my hand and reached into her bag to give me a different contract. “Oh, I didn’t realize you were an attorney. You’ll never sign that one.”

When you talk to some of the younger directors, you see they don’t have an inkling of how the business side works. And that’s horrible, because the business is unforgiving. If you go out of the gate with a financial disaster, you’re going to have a very hard time getting a second film. My old manager, Kevin Pawley, used to say, “The two hardest parts about making a movie are getting the money [to produce it] and getting the money back [for investors].”

Interview by Stephanie Russell, executive editor of Northwestern Magazine. Text by Daniel Fernandez, a Medill senior from Saratoga, Calif.

Mark Your Calendar!
#CATSGiveBack
is Tuesday,
November 27.



#CATSGiveBack is Northwestern’s 24-hour campaign to engage in #GivingTuesday, a global day of philanthropy held on the Tuesday after Thanksgiving.

Last year, a record number of donors came together to support nearly 300 different areas across the University, from schools and student groups to scholarships and athletics. This #GivingTuesday, celebrate giving back and make an impact on today’s students.

Learn more at wewill.northwestern.edu/CATSGiveBack.

#CATSGiveBack #GIVINGTUESDAY

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4,987

Trees on campus, including this white oak,
one of 517 oaks (read about our “Roots” on page 36)