

ILLINOIS TECH MAGAZINE

Fall 2024

Raising Their Voices

Sherizaan Minwalla
(LAW '02) helps
women brave the
Middle Eastern
legal system



Google's AI Humanist
State Building Steward
Lightning Fast Electric Charging



A Letter from Raj Echambadi

AS ANOTHER YEAR at Illinois Tech nears its close, I am grateful for the opportunity to look back upon our most recent accomplishments.

Through the extraordinary efforts of our faculty and staff, we are experiencing a new era of enrollment growth. Fundamentally, I believe this increase is due to our efforts to make an Illinois Tech education synonymous with career-readiness and to make our offerings accessible to everyone, everywhere.

Illinois Tech's expansion of access in recent years is both local and global. In addition to advancing partnerships with highly regarded educational institutions across the world—such as our recent exchange partnership with National Institute of Technology, Tiruchirappalli (NIT Trichy) in India—in the Chicago area, our new Runway 606 initiative encourages the city's public high school students to embrace higher education by reducing their path to a master's degree by up to two years.

When it comes to the spectrum of experience, we've built educational access both for learners who are already engaged in their careers, as well as those who have yet to begin them. We are continuously rethinking how to do so, including the ongoing use of innovative digital platforms for online learning, flexible course hours, short-term certificates, and broad access to interdisciplinary, industry-aligned programs such as our highly successful Interprofessional Projects (IPRO) Program and Elevate.

But make no mistake: We are not done. Illinois Tech will continue to search for ways to allow students clear paths to the education they want, in fields that capture their imagination, no matter where they are in life.

In this issue of *Illinois Tech Magazine*, I would like you to take note of the many colleges that are represented. The reason for that is simple: While Illinois Tech is perhaps best known as Chicago's leading tech-focused university,

our graduates explore, excel, and achieve recognition within a wide range of disciplines.

As a clinical mental health worker, Esther Sciammarella (M.S. PSYC '80) has been a powerful force in Chicago's Hispanic community for decades—and is now a valuable voice on the Illinois State Board of Health. David McGaw (M.Des. '07) is proving the inherent value of design thinking as a strategist on DeepMind, Google's artificial intelligence apparatus. Sherizaan Minwalla (LAW '02) has been on the ground fighting for the rights of survivors of abuse—particularly of gender-based violence and human trafficking—in countries such as Iraq, Lebanon, and Jordan. Omer Onar (Ph.D. EE '10) just broke a record, again, for the fastest wireless charge of an electric light-passenger vehicle. And Tamakia "T.J." Edwards (AE '08) is now in charge of the design, construction, and ongoing care of every state-owned building in Illinois.

This broad variance of amazing expertise displays the many varied careers that Illinois Tech empowers its alumni to pursue. I am once again humbled and honored to lead an institution that prepares its graduates to achieve ambitions of this caliber.

Thank you for your continued support, and for all of your achievements to come.

Sincerely,
Raj Echambadi
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Illinois Institute of Technology, also known as Illinois Tech, is
a private, technology-focused research university. Based in the
global metropolis of Chicago, Illinois Tech is the only university of
its kind in the city. It offers undergraduate and graduate degrees
in engineering, science, architecture, business, design, human
sciences, applied technology, and law.

One of 22 institutions that comprise the Association of Independent
Technological Universities (AITU), Illinois Tech provides an
exceptional education centered on active learning, and its graduates
lead the state and much of the nation in economic prosperity. At
Illinois Tech students are empowered to discover, create, and solve,
and thus uniquely prepared to succeed in professions that require
technological sophistication, an innovative mindset, and an
entrepreneurial spirit.

Mission Statement

To provide distinctive and relevant education in an environment
of scientific, technological, and professional knowledge creation
and innovation

Armour College of Engineering
Chicago-Kent College of Law
College of Architecture
College of Computing
Institute of Design
Lewis College of Science and Letters
Stuart School of Business

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or service director. For further information about Illinois Tech's
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Sherizaan Minwalla (LAW '02) started
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ENROLLMENT

Rising Tides

Despite a challenging higher-education landscape, Illinois Tech is outpacing national, state, and regional enrollment averages—and the university continues to build off its highest fall enrollment in more than three decades that was achieved in fall 2023. Here's a quick look at Illinois Tech's enrollment successes, including a continued focus on ensuring access for all students:

27%

Overall increase in student enrollment over the past three years

40%

First-generation students among the new fall 2024 undergraduate degree-seeking students

2X

Applications have doubled since fall 2021

73%

Enrollment increase in Stuart School of Business since fall 2023

27.3%

Of full-time undergraduate students are now Hispanic or Latino

COMMUNITY

Racial Healing 101

An assembly of high school students gathered at Illinois Institute of Technology during summer 2024 to flex their creativity and bring history to new audiences while examining the “Red Summer” of 1919.

These students, called justice ambassadors, joined the summer program titled Healing 1919 to explore the race riots that took place across the country in summer 1919, to consider the repercussions of the riots, and to create inventive channels to raise awareness of this uncomfortable era.

Daniel Chichester, adjunct professor of design at Illinois Tech's Institute of Design, says the goal of Healing 1919 was to give students an opportunity to express their thoughts on race relations generally, the Red Summer specifically, and to promote discussions on these topics.

Soldiers returning from World War I during the summer of 1919 found the adjustment to civilian life difficult as they competed for opportunities and jobs. The war exacerbated the Great Migration, with more than 500,000 African Americans moving from the

South to cities in the North and Midwest. This confluence of migration and competition led to heated race relations and directly to the Red Summer, which saw race riots in 28 cities across the United States, including Chicago.

Yvonne DuBose, a justice, equity, diversity, and inclusion (JEDI) educator

and coach hired to lead Healing 1919, says that by studying this period in history, the justice ambassadors were both able to process it, as well as express their feelings and make others aware of this history through individual projects in the hope of promoting racial healing.
—Casey Moffitt

PHOTO: TERENCE CRAYTON



The justice ambassadors (kneeling, in red T-shirts) pose for a photo with Chicago Mayor Brandon Johnson outside the Green Line “L” elevated train stop where artwork was installed as a commemoration to Eugene Williams, whose death sparked the violence in the summer of 1919 in Chicago.

Applying AI to Health Care

When you hear of staffing shortages in the medical field, they often involve nurses or home care workers. But in the age of artificial intelligence and analytics, another profession is already prompting health care institutions to cry out for more applicants.

Digital health informatics—or the use of AI and computational tools to collect and utilize data to help everyone from doctors in the emergency room to patients at home and students and researchers in the field—is a profession experiencing burgeoning demand.

And through a partnership with Illinois Tech alumnus Frank Nayemi-Rad (Ph.D. CS '90), a trailblazer in health analytics who has created multiple quintessential companies and technologies in the field, Illinois Tech has launched an internship program that allows graduate students to assist in developing cutting-edge tools, apps, and other products alongside industry leaders who mentor them.

The Health Tech Talent Institute was created via a unique partnership between Illinois Tech and Nayemi-Rad's current company, Leap of Faith, a digital health informatics company that both licenses and provides venture capital for new innovations in the field, including grant money for the projects that the institute's 26 interns are currently conducting.

"The Health Tech Talent Institute allows Illinois Tech to take the lead in the development of both innovative technologies, as well as the highly specialized workforce required to use them, in the growing field of digital health informatics," says Illinois Tech President Raj Echambadi. "What better place for this to happen than at Chicago's leading tech university?"

The health informatics field involves not just utilizing documented health records, but also exploring demographic data—and potentially ambient voice data—that is collected in real time during doctors' visits to immediately help with diagnoses.

Such innovations are well represented by the four projects currently in progress at the Health Tech Talent Institute, whose industry partners include not only Leap of Faith, but also major health care institutions such as Weill Cornell Medicine at Cornell University, OSF Healthcare, Northwestern University Feinberg School of Medicine, and Rosalind Franklin University of Medicine and Science. —*Tad Vezner*

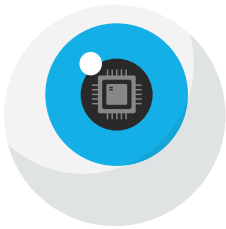
ILLUSTRATION: ADOBE FIREFLY AND SCOTT BENBROOK



Frank Nayemi-Rad, second from left, confers with Health Tech Talent Institute interns.



“Headliners



“This is not about getting biological vision back. This is about exploring what artificial vision could be.”

—Robert A. Pritzker Endowed Chair in Engineering **Philip R. Troyk**, in [WIRED](#), about new devices, like his, that could provide people who are visually impaired with a sense of sight



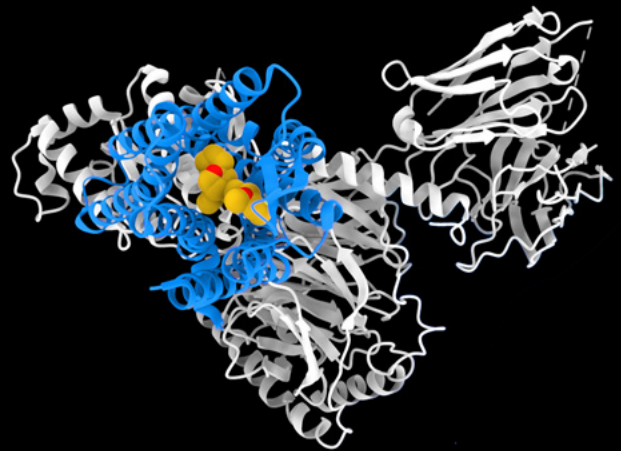
“Our food is coming from all over the country and really all over the world, and contamination can happen at any point in that journey. And so there’s a real awareness about those contamination possibilities along the supply chain, and it is increasing people’s interest and awareness in more local sourcing.”

—Institute of Design’s Food Systems Action Lab Co-Director **Weslyne Ashton** on [WTTW’s Chicago Tonight: Latino Voices](#), about the need for local food sourcing



“Human beings have their weaknesses, and our institutions have their weaknesses, but a jury trial is as good as we can do.”

—Chicago-Kent College of Law Professor **Nancy Marder** in the [Washington Post](#), about the jury trial of then former-President Donald Trump



Biagon is researching molecular activation of G protein-coupled receptors, pictured above.

BIOLOGY

Federal Award Funds Breakthrough Startup

When Illinois Institute of Technology recently received federal funding to help researchers move their research from the lab to the marketplace, they wanted undergraduates to get involved in a big way. But they didn’t expect a student to co-develop patent-pending technology that could safely speed up drug research, co-found and serve as CEO of a company to sell it, and start pitching dozens of clients across the country.

The United States National Science Foundation’s newly formed Accelerating Research Translation (ART) award helps researchers at institutes of higher education significantly elevate the level of research translation for economic and society impacts by providing funding for “seed translational research projects.”

One of the first seeded projects at Illinois Tech is led by David Cooper (MEDC ’24) and Robert E. Frey Jr. Endowed Chair in Chemistry [David Minh](#). Their company, [Bia gon](#), uses a machine learning algorithm, whose patent by Cooper and Minh is pending, to potentially help pharmaceutical and biotech companies develop safer drugs faster, with fewer side effects and shorter research runways. In essence, the algorithm can identify safer, effective drug compounds much faster than current drug research processes allow.

“To know if a compound will have activity at the cellular level, you have to make the compound and test it in living cells,” says Cooper. “Our technology predicts what the activity at the cellular level will be. That saves researchers time and money.”

Cooper started working on the research after joining Minh’s [Computational Chemistry Lab](#) as a research assistant, and the breakthrough happened about half a year later. Maryam Saleh, executive director of the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship and principal investigator for Illinois Tech’s ART initiative, urged them to take the institute’s Startup Accelerator program, [Startup Studio](#), and apply for funding through the ART initiative.

The studio required them to develop a business plan and venture capital pitch, as well as create a board for their company, which the two did with surprising speed, both through networking and by attending numerous conferences.

—*Tad Vezner*



New Head Coaches Take the Field

EMILY WESOKY became the third head coach in Illinois Tech women's lacrosse program history in July 2024 after contributing to the Israel National Team's impressive record in recent years.

Wesoky joined Illinois Tech after playing five years of NCAA Division I lacrosse, four years at Wagner College and one year at Rider University, where she earned her master's degree in athletic leadership and sports psychology.

During her senior year at Wagner, Wesoky was second in points on the team, first on the team with assists, and in the top 10 in the Northeast Conference in assists. At Rider, Wesoky was a captain of the inaugural Division I women's lacrosse program, where she helped build the culture from the ground up—on and off the field.

She also plays for the Israel National Team, where she competed in the 2022 World Championships and 2024 European Championships. She helped the Israeli team finish sixth in the world and second in Europe.

Wesoky has also coached with nationally known clubs, including True Lacrosse, 3D Lacrosse, and Ultimate Lacrosse.

MARLON MCKENZIE joined Illinois Tech as the head men's soccer coach in June 2024.

McKenzie is familiar with Chicago sports; he spent the previous decade as a member of the University of Chicago soccer coaching staff, starting as a volunteer assistant coach and volunteer goalkeeping coach and later being promoted to assistant women's soccer coach, goalkeeping coach, and recruitment coordinator in 2018.

He's also involved in local youth soccer leagues, including 13 years with Chicago's Southside Fire Soccer Club, as both head coach and special programs coordinator.

Originally from Jamaica, McKenzie graduated with a secondary education degree from the Moneague College in St. Ann, Jamaica, in 2005. He received his Bachelor of Arts from Northeastern Illinois University in 2009. As a player, McKenzie played on several amateur and semi-professional clubs, as well as leading his team at Moneague College as a captain. McKenzie was also short-listed for the Jamaican Under-21 National Men's Soccer Team. —*Tad Vezner*





Students and Professor Matthew Spenko from Illinois Tech's XPRIZE Rainforest competition team, Welcome to the Jungle, work at a camp in the Amazon during the final in July 2024.

PHOTO: KHANG PHAM

ENGINEERING

Back from the Jungle

A team led by Illinois Institute of Technology Professor of Mechanical and Aerospace Engineering Matthew Spenko has returned from the Amazon after competing in the finals of the prestigious XPRIZE Rainforest competition.

The team, Welcome to the Jungle, also included members from Purdue University, Natural State, the Morton Arboretum, the Xishuangbanna Tropical Botanical Garden-Chinese Academy of Sciences, and local Indigenous communities.

[XPRIZE Rainforest](#) is a global five-year, \$10 million competition that challenges teams to innovate rapid and autonomous technology to expedite the monitoring of biodiversity and

data collection. Six teams advanced to the finals in the Amazon in July 2024. The teams are judged on who surveyed the most biodiversity in 24 hours and produced the most impactful real-time insights within 48 hours.

"This experience has been transformative for all of us involved," says Spenko. "The interdisciplinary nature of our team has allowed us to leverage expertise from various fields, leading to innovative solutions and a deeper understanding of the rainforest ecosystem."

To identify key species in the rainforest landscape, Welcome to the Jungle relied on local and Indigenous knowledge experts, remote sensing from

automated drone flights and satellite data for tree canopy and landscape assessment, and drone-deployed sensor packages placed in the tree canopy to capture acoustic data, imagery, and environmental DNA sequencing for biodiversity identification and classification. Other partners conducted aerial surveying to measure vegetation, to quantify tree species' diversity, and to determine potential sensor deployment locations.

Illinois Tech alumnus Jim Albrecht (FE '53, M.S. '55) contributed to Welcome to the Jungle's travel costs. The winner of the XPRIZE Rainforest competition will be announced in late 2024. —Kevin Dollear



DESIGN

Health Care by Design

As someone who has spent the last decade of her academic career focusing on the role of human-centered design in health care systems and delivery, [Kim Erwin](#) (M.Des. '94), director of the Institute of Design's [Equitable Healthcare Action Lab](#), noticed a glaring problem: there was practically no communication happening among the growing number of designers working in the health care industry today.

"It became clear to me that the number of designers in U.S. health systems was growing, but none of us were talking to one another," says Erwin.

Erwin realized that it had been nearly 20 years since designers had been first hired in health care institutions, yet there was little to no documentation or list of the health systems in the U.S. that were employing designers. Assistant Director of the Equitable Healthcare Lab [Meghna Prakash](#) (M.Des. '23), who joined the lab in August 2023, also saw this knowledge gap as an obstacle—and an opportunity.

"There lacks a holistic, industry-wide analysis of these efforts, making it difficult to understand what design brings to health care," Prakash says.

After nine months of interviewing designers, collecting data, analyzing findings, and putting their findings through the intricate approval/review process, Erwin and her team of faculty and graduate students officially published the Action Lab's first-of-its-kind report: [The Role of Design in U.S. Health Systems](#).

"I feel like I finally put a bow on something that I've been exploring for 10 years," Erwin says.

—Casey Halas

PHOTO: DANIEL CHICHESTER

SURVIVORS' ADVOCATE

BY KAYLA MOLANDER

From Illinois to Iraq, Sherizaan Minwalla (LAW '02) has helped victims of domestic violence, gender-based violence, and human trafficking by challenging legal systems that aren't always equitable.





PHOTO BY HALO LANO

Shortly after moving to Iraq in 2007, Minwalla collaborated with an Iraqi lawyer, guiding the lawyer as they worked together to identify and represent a woman who was detained and facing charges connected to gender-based violence.

“This woman had been forced to be complicit in a crime by her abusive husband,” says Minwalla. “He had raped a neighbor’s daughter and forced his wife to give the girl medication. He threatened to send the wife back to her family where she would be killed if she didn’t do what he wanted.”

Minwalla worked with the lawyer to build a legal defense, connecting the facts to the law—which was a novel approach in Iraq at the time—and it worked. The wife was released while her husband was sentenced to 15 years in prison.

She found herself teaming up with that Iraqi lawyer because of the course that she charted after graduating from Chicago-Kent College Law. Minwalla initially joined the Midwest Immigrant Human Rights Center, a program of Heartland Alliance and a Chicago-based immigration and asylum nonprofit. There, she ran a statewide program representing noncitizen survivors of domestic violence and sexual assault to legalize their status under the Violence Against Women Act.

Heartland began its work in Iraq in 2004, focusing on mental health support for torture survivors. Minwalla relocated to Iraq in 2007 to take a position for Heartland as its country director, where she oversaw the organization’s human rights portfolio in Iraq. She started the Access to Justice program, which trained lawyers on legal skills to advocate within the Iraqi justice system. The program provided legal representation and social services for survivors of gender-based violence and human trafficking.

Minwalla and her team documented how violence against women was institutionalized within the legal system. The program’s lawyers, many of whom were women, courageously made novel legal arguments in court, challenging the system on issues such as domestic violence. While some judges accepted these arguments, others reacted harshly, sometimes questioning the lawyers’ morals and even imputing the charges against their clients onto them.

She also focused extensively on training lawyers in essential legal skills, such as trauma-informed interviewing, client-centered advocacy, developing case theories, and presenting persuasive cases before judges. Her legal skills trainings are centered on complex issues such as gender-based violence, human trafficking, and access to reparations for survivors of sexual violence. She works with lawyers to take a client- and survivor-centered approach to working with individuals, empowering clients to have meaningful roles in their cases regardless of their level of education.

Minwalla was eventually promoted to Heartland’s Middle East regional director when the organization expanded human rights programming to refugees in Lebanon and Jordan.

After four years abroad, Minwalla returned to the United States in 2011—and remained deeply engaged in human rights and justice work. She worked with the

Sherizaan Minwalla (LAW ’02) [second from right] speaks at a PSVI panel in London on the importance of ethical media reporting in cases of sexual violence during conflict.



VIDEO STILL IMAGE FROM PSVI CONFERENCE LONDON: COURTESY OF SHERIZAAN MINWALLA

Tahirih Justice Center in the Washington, D.C., area, and taught in the International Human Rights Law Clinic at American University’s Washington College of Law. Back in Iraq, beginning in 2019, she led a \$6.2 million program that was funded by the United States Agency for International Development to address gender-based violence in minority communities targeted by the Islamic State group.

Juggling these roles, Minwalla has spent the last 15 years living between Iraq and the U.S., and is currently based in Sulaimaniya in the Kurdistan Region of Iraq.

Much of Minwalla’s work over the past decade has been with survivors of the Islamic State group’s 2014 genocide against the Yazidi people, during which time thousands of women and girls were abducted and trafficked into sexual slavery. The horrific events brought international attention, including local and international journalists from major news outlets across the globe.

Minwalla saw journalists engaging in practices that she believed to be unethical, such as interviewing the same survivors over and over and asking them for details about rape and the other atrocities that they faced in captivity. She was concerned about the safety and well-being of survivors who had experienced unimaginable trauma.

“The Yazidi community realized that there was a strong interest by the media in the sexual violence narrative, and they often pressured survivors to talk because they were desperate for international support,” Minwalla says.

Minwalla contacted her longtime friend Johanna



“THEY ARE THE ONES DOING THE HARDEST WORK TO OVERCOME ABUSE AND ACHIEVE FREEDOM IN THEIR LIVES. I’M JUST AN ADVOCATE AND PARTNER IN THOSE JOURNEYS.”

— Sherizaan Minwalla

Center for Journalism and Trauma’s Reporting on Sexual Violence in Conflict and the Murad Code, which is named after survivor and advocate Nadia Murad and developed by the International Institute for Criminal Investigations.

“Taboo reflects the silence and stigma surrounding abuse that often silences victims and survivors,” Minwalla says. “By challenging these taboos and removing the shame placed on victims, my work helps create a path for survivors to pursue justice.

“Globally, we are witnessing a significant and concerning backlash against the rights of women, girls, and the LGBT community, making human rights and justice work more crucial but also increasingly difficult. While decades of progress have been made, that progress is now under threat.”

But Minwalla continues to be motivated by her fundamental belief that everyone should have the right to decide their own future and live free from abuse and control. Along the way, she has witnessed the incredible strength and resilience of those facing adversity and injustice.

“They are the ones doing the hardest work to overcome abuse and achieve freedom in their lives,” she says. “I’m just an advocate and partner in those journeys.” ●

Foster, associate professor and Helen Bennett McMurray Endowed Chair in Social Ethics at Monmouth University, about a research collaboration.

Together, Minwalla and Foster asked the question, “What do the women themselves think about the way their stories were gathered and told?” Their research led to the publication of a paper titled “Voice of Yazidi Women: Perceptions of Journalistic Practices in the Reporting on ISIS Sexual Violence,” which was the first time that the subjects of media reports in a conflict were asked how they felt about the coverage.

“I was really honored to be able to partner with Sherizaan in this way,” Foster says. “She has taught me so much about the intersections of law and global feminist practice. Her level of dedication, her relentless drive for accountability over three decades, and her laser-focused advocacy for survivor-centered approaches to justice and reparations have been a true inspiration to me.”

In 2021 Minwalla launched a consulting firm, Taboo LLC, to focus on access to justice, human rights, and the ethical documentation of sexual violence in conflict. Consulting with the International Organization for Migration, Minwalla endeavored to implement a do-no-harm approach to reparations under the Yazidi (Female) Survivors Law, which was adopted by Iraq in 2021. It also promotes ethical engagement with survivors of conflict-related sexual violence through contributions to newly emerged ethical guidelines such as the Dart



Sherizaan Minwalla (LAW ’02) at the Iraq-Syria border in 2014, preparing to cross into Syria to visit Nawroze Camp after a corridor opened for Yazidis fleeing ISIS.

PHOTO: COURTESY OF SHERIZAAN MINWALLA

A Humanist Explores



By Tad Vezner

HOW DO YOU KNOW THINGS?

How do you make sense of the world?

Or, to be more precise, how do you comfortably inquire about information, and what's your source of choice? Those were a couple of seemingly simple yet incredibly complex questions that David McGaw (M.Des. '07) asked when he started working as a designer for Google.

He was fascinated enough to write an internal paper for the ubiquitous tech company after joining its user experience research team nearly a decade ago. He'd initially been working on Google Assistant, a virtual assistant software app able to engage in two-way conversations, trying to figure out how users would use it—or would want to.

The notion of a query is, after all, a very modern one. The way you used to learn things, McGaw notes, was by reading a book or by talking to wiser, more informed people than you.

McGaw wrote his paper, which referenced the philosopher Plato, to help others explore the question of epistemology, the philosophical study of knowledge.

"Do people approach knowledge as a series of questions that they want answers to? Or is there a longer, deeper process, in the context of a question, as part of a community? In the modern era, we've turned this into typing words into a screen. But maybe human brains have historically operated in a different way," McGaw says. "Do you type, or do you ask?"

When trying to learn about the world via computers, yes, people had trained themselves to type things in. McGaw's team was trying to introduce a new way of interacting, a more natural one.

"It turns out it works better if people just talk. At length," he says. "You're trying to get people to unlearn their 'use a computer' skill [and] just talk to it like a person."

"The role of design in a tech-forward innovation world is more about, 'How do we connect what you're building with how people behave?'" McGaw adds. "But there's a larger humanist question of, how do you find meaning? Is it less about mastering a tool and making it jump through hoops, or more about working in a partnership, with technology and humans?"

Which brings McGaw to his newest gig at Google: working as a design strategist on DeepMind, Google's artificial intelligence apparatus.

Back when McGaw studied ancient history at Yale University in the 1980s, he ran a letterpress print shop, working on a 100-year-old press. Though he wouldn't formally study design for decades, he considers the work a crucial part of his design development.

"The intersection of design with the mechanical process to execute it was a fascinating junction," he says. "How do you make information clear and interesting?"

LAST FALL, Google conducted a global study on how people expect to interact with AI, and how they're comfortable interacting in the future. It found that people's "mental models" were struggling to catch up with how rapidly the streams and formats of information dissemination were developing, McGaw says. It came down, again, to how people

would end up viewing this highly complex, interactive informational source.

What is an AI—is it a tool? A collaborative partner? An apprentice that one mentors? A relationship one develops?

In order for AI to be used to its maximum potential, McGaw says that it needs to be more akin to a bond that is developed.

"You shouldn't have to master skills or have to prompt an AI, you should train an AI to be a good partner to you," McGaw says.

That broad idea seems simple, but the implications relating to products can be profound.

"We're used to using technology in a push-button way. But if AI can help you in more abstract ways, it requires working with it in a more abstract way. So you have to have a better expectation of the rhythms of the interaction," he says.

"You'll find a lot of folks who come to the role of [user experience] researcher through the science of human research, the study of human thought or behavior. But you're not going to find a lot of Davids," says Julie Anne Seguin, a fellow user experience researcher at Google who works with McGaw. "David comes from a design strategy background, even leaning on the business strategy side of things. He's kind of the big picture guy; he's always looking toward the future."

"David is really good at uncovering, what are people's natural expectations? What are people's pain points and needs?" Seguin adds.

One big challenge for AI developers in every company right now, McGaw says, is figuring out how much an AI should explore the context of questions before arriving at its conclusions. AIs that answer questions with questions for additional information will hone in on better answers, but perhaps be more annoying for users.

"It's still about these large systems and how technology and culture and people interact," McGaw says. "We get to decide, but I think it helps to have people who understand the cultural aspects as well as the technological aspects, and the implications of how they come together."

McGaw became a designer in a roundabout way. Long after receiving his history degree at Yale, he became a campus minister with the interdenominational Campus Crusade for Christ at Harvard University.

He chose to study design at Illinois Institute of Technology because he thought it would help him with his intermittent graphic work, but discovered the discipline's larger context of problem solving and fell in love with it.

He worked at McKinsey & Company for years, as well as several smaller design firms in the San Francisco area before being approached to work at Google.

Throughout it all, his faith and humanist beliefs have grounded him.

"AIs are an interesting part of the tech landscape, and something will come after that," McGaw says. "I like having the tool set to address those problems, and design is an interesting space between pure art and pure problem solving. How do you bring your whole self to what you do? Find places where you can really be you. Design is another way of thinking about patterns that humans make and [the] ways we work together to create something." ●



PUTTING COMMUNITY FIRST

BY TAD VEZNER



A **CROSS NEARLY TWO** decades of family clinical work in Chicago's Pilsen neighborhood, Esther Sciammarella (M.S. PSYC '80) has garnered a mixed appreciation for partnerships.

There was a lot of talk among nonprofits for "joint ventures," or relying on other nonprofits to collaborate and split services proportional to where the needs are. But there was also an equal amount of competition.

And so, in the 1990s, she took a job as the primary community liaison for the

PHOTOS BY VINCENT ALBAN

Chicago Department of Public Health's Commissioner for Hispanic Affairs, doling out funding to educate, train, and pay community health workers who were employed by neighborhood nonprofits. And, in some cases, getting those nonprofits to work together.

While she still speaks with some skepticism about cooperation in the coordination of services, those who know her well say Sciammarella has worked wonders.

"One of her strengths is to build a Hispanic coalition, an effort to put together what was thought impossible with very little data. Her significance in that has been tremendously important," says former Illinois State Board of Health member Patricia Canessa, who is now a consultant with the Latino Health Initiative in Maryland.

Perhaps that's why Sciammarella was appointed in 2022 to [sit on the State Board of Health herself](#).

For more than six decades across two continents, Sciammarella has tried to understand, teach, and treat people in the Hispanic community for a variety of mental and social ills—particularly clients who are coping with cultural change in an unfamiliar country.

"I'm concerned that people [in the United States] focus on behavioral actions, and not enough on what happens subconsciously [without action]," she says. "I work with immigrants and refugees who have different experiences. You need to understand how people were raised in their culture to reach and help them."

According to the United States Census Bureau, Illinois's Hispanic population in 2023 reached nearly 2.4 million people, a roughly 60 percent increase from the 1.5 million Hispanic population in 2000. According to the most recent census statistics, 14 percent of Illinois households now speak Spanish as their primary language.

Sciammarella's focus on cultural differences stretches back to her dissertation in India, where she compared children from the U.S. to those in India.

"Many problems arise from [the U.S.'s] addictive culture. There are many addictions to many things: substance abuse, work, food," she says, adding that she found that the culture tended to be individualistic and not holistic when treating and healing families.

After teaching high school psychology and philosophy in Buenos Aires, the capital of her native country of Argentina,



Esther Sciammarella (M.S. PSYC '80) [middle] confers with other members of her nonprofit, the Chicago Hispanic Health Coalition.

Sciammarella arrived in the U.S. and eventually settled in Chicago in 1972, counseling families as a clinician at what was then the Pilsen Mental Health Center.

Therapy, she says, is about simply allowing people to "ventilate." Often, when placed in an unfamiliar environment or culture, or when old identities are subverted by new ones, people tend to internalize or withhold their problems—as well as any psychological effects.

She left the Pilsen Mental Health Center (now called the Pilsen Wellness Center) and took a job at the Chicago

"The only way you learn is to listen to the community. You need to be in the trenches and put your hands in the dirt." — Esther Sciammarella

Department of Public Health under Chicago Mayor Richard M. Daley. There, she put together the Door to Door program for community health workers.

Says Sciammarella, "The community health workers are the glue for the system, between the community and health systems, integrating health and mental health. But there's a competition for funding between the institutions; it is sometimes difficult to work together. Nobody's working together, nobody talks to each other. If you don't create a model of integration for everybody, the system becomes fragmented."

In 1991 Sciammarella founded her own social service organization in

Illinois, the Chicago Hispanic Health Coalition, which is currently funded by the National Alliance for Hispanic Health. The organization offers training programs for community health workers based in the Pilsen Family Health Center Lower West, part of the University of Illinois Hospital and Health Sciences System. According to the organization's records, it now trains and informs roughly 30,000 people annually through its different programs.

She accepted a position on the State Board of Health in 2020 because she saw the need for a Hispanic voice there—especially one who has known the community for decades.

"The only way you learn is you put your hands in the dirt. The tendency for intellectual people, public health experts, is to be insular. You need to listen to people in order to create systems," Sciammarella says. "The bureaucratization of the intellectual world, the stagnation of systems...no matter from where, it fleeces things."

"The only way you learn is to listen to the community," Sciammarella adds. "You need to be in the trenches and put your hands in the dirt. The tendency in public health is to create models without taking into consideration the community's needs. You need to listen to people in order to create systems."

Adds Canessa, "She has never given up on the community health care worker. If she cannot find a door to get things done, she will find a window." ●



By Tad Vezner

CUTTING THE CORD

WHAT KINDS OF THINGS benefit from advances in high-frequency, high-power electrical systems?

“Anything and everything.”

Omer Onar (Ph.D. EE '10) says.

If that is so, Onar's at the top of a field that's helping everything in the world—at least everything that a modern consumer might desire. He's dedicated his career to making it easier for power to reach products—from vehicles to cell phones—at a high speed, efficiently, and without physical connections.

And his argument gets easier to accept when you see what he's done as the leader of the team at Oak Ridge National Laboratory that is figuring out how to power electric vehicles, wirelessly, in a way that will allow them to charge at a rate that's competitive with the minutes it takes to fill a tank of gas. That means taking a product and placing it

close to a charging transmitter, like a flat pad beneath a car.

It also means no cords or any of the modern debris that often accompanies electronic products. No expensive copper wiring that could be stolen from a remote charging station. In the case of an electric vehicle, the magnetic resonance pad, which is connected to a power grid, pairs itself wirelessly with a power receiver on the car's underbelly.

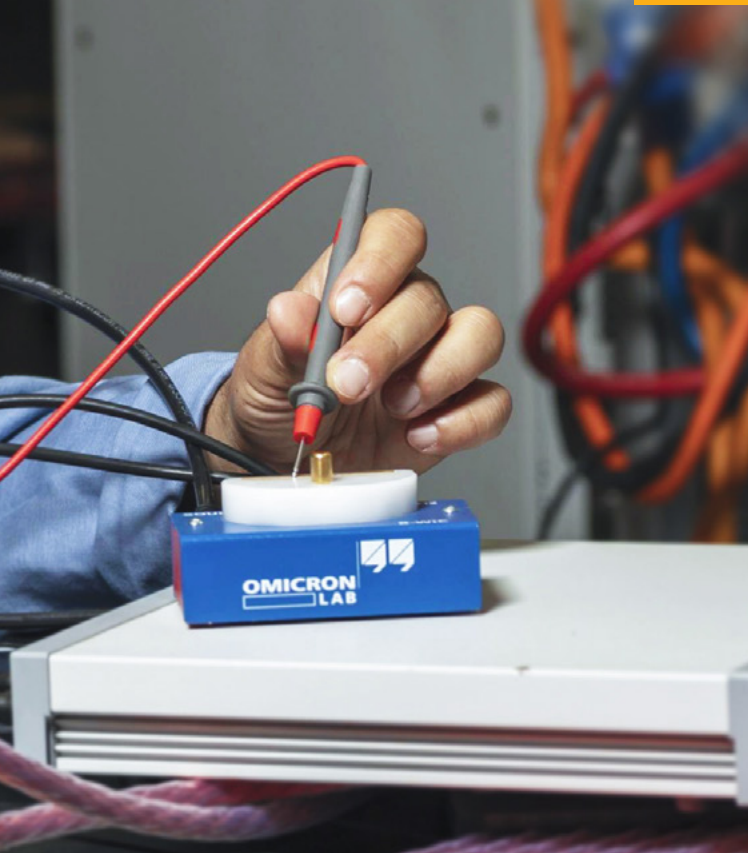
Onar's latest achievement involves a big electronic product, indeed: a wireless power transfer system that charged a Porsche Taycan EV sedan at a [record-breaking 270 kilowatts](#) in May 2024. To give you some idea of the leaps and bounds that Onar's research is advancing in a short time, that tops his [previous record of 100 kilowatts](#) in January 2024.

Early attempts, just a couple of years prior, at wireless-charging were in the single-digit range, going from one kilowatt to two, to 6.6, to 20 in the early 2020s.

“What we're trying to do is compete with somebody pulling



OMER HAS A UNIQUE ABILITY TO LOOK AT EVIDENCE OR SYMPTOMS THAT WE SEE, THE DATA THAT WE ARE GETTING, AND RECOGNIZE A SOLUTION PRETTY QUICKLY.”—Larry Seiber



up to a gas station and putting fuel in their car in less than 10 minutes,” says Larry Seiber, a technical professional on Onar’s team who has worked with him for more than a decade. “In 2016 we were working together in the lab and able to achieve 20 kilowatts, and that was a record at the time, too. We go through the years with these designs, and Omer’s leading a lot of this research. The success here has a very bright future.”

The higher the frequency, the faster a user can charge something up. And lower-frequency wireless chargers are also historically inefficient, with nearly 20 percent of the energy being lost in the transfer. Onar’s research has helped boost that efficiency to only a 5 percent loss. Other boosts include the optimal distance allowable between the charger pad and the receiver, which has crept from a potential maximum of a few inches to 10 inches, with the exact placement of those components allowed to be “misaligned,” or out of place, by up to four inches without any loss in efficiency.

But at peak power flow, that 270-kilowatt boost equates to charging a mid-sized electric sedan from 10 percent to 80 percent in 20 minutes, or adding a 50 percent charge to a largely depleted vehicle in only 10 minutes. That’s similar to some of the fastest wired DC chargers available now.

Future applications include the possibility of installing chargers in roadways to power vehicles as they pass over them.

But why stop at cars, Onar asks? From phones to home appliances and to drones to industrial robots, “It’s really the [advances in] high-frequency that’s enabling a lot of innovations in the technology, and we are seeing the effects in our daily lives,” Onar says. “That could also be an enabler for space applications, defense applications, computer microprocessor applications. Eliminating cables and freeing up the devices from cords and plugs can provide a lot of benefits in a number of different applications.”

“Omer has a unique ability to look at evidence or symptoms that we see, the data that we are getting, and recognize a solution pretty quickly,” Seiber says.

Born and raised in Turkey, Onar always wanted to be a scientist, a desire that came from watching space-based science fiction movies. While he was a student at Illinois Institute of Technology, he researched a broad range of projects for various governmental agencies, ranging from the United States Department of Defense to the U.S. Department of Energy. While he was attending the Applied Power Electronics Conference and Exposition in 2009, he ran into representatives from Oak Ridge, who were impressed by his prolific publishing rate: he had about 10 papers in science journals, and another dozen conference publications.

That led to a position at Oak Ridge, where he worked initially in the national laboratory’s power and energy systems group before being recruited to work in power electronics and electric machinery, where he has remained for more than a decade.

Onar doesn’t see himself branching into anything different soon. The technology, he says, can help in the advancement of countless human endeavors. In the future, he also envisions researching how to harvest energy from electromagnetic fields, even vibrations.

“Energy from a lot of different sources can be harvested,” Onar says, again repeating, “Anything and everything, they are significantly benefiting from improvements in high-frequency, high-power systems.” ●

Overseeing *Urgency*

By Tad Vezner



PHOTO BY VINCENT ALBAN

“You see frames, and then after a year, a structure...and you think of all the hands that touched it, it’s so inspiring. It really is life-changing, there’s nothing like it.”

—Tamakia Edwards

YOU CAN’T TELL BY talking to her now, but there was a time when Tamakia “T. J.” Edwards (AE ’08) might not have had the confidence to go for her current job. That’s the one where Illinois Governor J. B. Pritzker personally interviewed her, then hired her to lead the Illinois Capital Development Board, the agency tasked with the design and construction of every building owned by the state.

“We’re the ones who replace the boilers and sometimes construct the buildings,” says Eileen Rhodes, the Capital Development Board’s chair, who heavily advocated for Edwards.

“T. J. understands bureaucracy, but she’s kind of the rare bird that will blow up the system if that’s what needs to happen,” Rhodes adds. “There are a lot of things that are urgent—and she understands urgency, where a bureaucracy doesn’t. She’s brought a much higher level of accountability to the CDB, and a much higher level of cooperation among staff.”

For 12 years Edwards worked for the federal government in the same wheelhouse, though at a lower rung. As a contracting officer’s representative, a job similar to a project engineer, for the United States General Services Administration, she worked with private engineering firms to design, construct, and rehabilitate federal buildings.

She analyzed estimates, wrote scopes of work, and monitored work as it took place.

“There was me and one other Black female engineer working out of the Chicago office,” Edwards says. “In project management, there weren’t a lot of us.”

But there was something about that responsibility, the weight of expectations, that made her want to surpass it.

“I spent many years learning how to do projects. It taught me to elevate my thinking, the full collaboration, and brought me a lot of confidence,” she says. “Being a woman going into a project—a multimillion-dollar project—and you’re leading these efforts on behalf of the country, having the ability to really influence, to build something out of nothing, it’s a confidence booster.”

Seeing those projects reach completion was incredibly satisfying.

“You see frames, and then after a year, a structure with a roof and facade and carpeting and walls, and you think of all the hands that touched it, it’s so inspiring. It really is life-changing, there’s nothing like it,” Edwards says.

With the General Services Administration, she was promoted into new positions including project engineer, design coordinator, and capital construction program manager for federal buildings in the Great Lakes region. Then, during the COVID-19 pandemic, she was offered a significant promotion to serve as the chief of staff at the Capital Development Board. She took it.

“She was an extraordinary help during COVID-19 [as chief of staff], when a lot of essential things had to happen and we had to change the way we did business. She came in at a pivotal time and did extraordinary things,” says Rhodes. Edwards notes that while working for the federal government she grew familiar with how to work virtually, while state workers were not.

While working with the former executive director, Edwards learned that the role was less about managing individual projects and more about delegating. The new position required ongoing communication with the executive team, deputy governor, project teams regarding specific client needs, and other state agencies.

And, of course, troubleshooting.

“You’re troubleshooting everything,” Edwards says. “I’m used to putting on a hard hat and rolling up my sleeves, and now I’m in a completely different position.”

In 2024 the Office of the Governor reached out to inform her the current director was retiring. Interviewing with Pritzker was “probably one of the scariest experiences,” Edwards says. “I just assumed it would be someone from his team. He knew things about me, knew my resume; he took the time to study up on my work and ask direct questions, and I was so impressed with that.”

She took the job in May 2024 after taking a second to note to herself, “OK, this is going to be hard work. It did relieve a lot of pressure knowing I spent a lot of time getting to know good people. I have that to fall back on,” she says.

Rhodes notes that when it came time for the board to vote on approving Edwards for the position, “[Capital Development Board] staff came to the board meeting—which they never do. People were clapping, cheering, even crying, it was very sentimental. She can bring out the best in people. She can help them be successful and that’s clear across the board.”

The agency’s current focus is on advancing the [Rebuild Illinois program](#), a comprehensive capital-infrastructure initiative. Edwards notes that her agency is responsible for a substantial investment of \$9.6 billion aimed at revitalizing higher education institutions, mental health facilities, state parks, and various state agency buildings. She adds that Illinois faces a considerable backlog of deferred maintenance, with a significant portion of the funding dedicated to implementing environmental enhancements in line with new sustainability standards.

“I wake up and go to work and can’t believe I have this responsibility. When I think of my story of how I got here, [there were] stumbles, but I never saw myself leading an initiative like this, leading people that I must motivate and inspire, having responsibility that’s shocking,” Edwards says. “I’m thankful for it; I’m pretty spiritual, so I’m simply thankful.” ●

Class Notes

1960s

STEPHEN AUSLENDER (DSGN '62), Wilton, Conn., published a new book titled *Dick and Jane Go to War*, which is available on Amazon.

HILTON KAUFMAN (PS '62), Chicago, received an award for writing articles and publishing, editing, and preparing computer files for the freemasonry publication *The Transactions of the Illinois Lodge of Research*.

RICHARD ERTH (ME '64), San Diego, was recently elected to the boards for the Mission Valley Planning Group and the Civita Recreational Association.

JACK WEISS (DSGN '65), Evanston, Ill., was named director emeritus by Design Evanston in December 2023 and the Chicago Design Archive in January 2024 in recognition of his years of service to both organizations.

JOHN HALEY (ARCH '66), Chicago, was elected to the Board of Directors for the 900/910 Lake Shore Drive Condominium Association in November 2023. The 900/910 buildings were designed by Ludwig Mies van der Rohe.

1970s

LARRY PHELPS (ARCH '70), Bloomington, Ind., celebrated 46 years of living in his Ludwig Mies van der Rohe-inspired home.

MANU VORA (M.S. CHE '70, Ph.D. '75), Naperville, Ill., was presented with the Humanitarian Service Award by the Indian American Medical Association Charitable Foundation in March 2024.

JOSEPH SMITH (BE '71), Little Rock, Ark., has been included in [Marquis Who's Who](#). As in all *Marquis Who's*

Who biographical volumes, individuals profiled are selected on the basis of their current reference value.

PETER KENNELLY (CHEM '78), Hinckley, Ill., was conferred the title of Professor Emeritus by the Virginia Polytechnic Institute and State University Board of Visitors. He was most recently a professor of biochemistry in Virginia Tech's College of Agriculture and Life Sciences.

STEVE PERRY (MATH '78), San Marcos, Calif., published a book titled *Painless Python: Learn Python Programming Doing the Easy Stuff First, First Edition* (Cognella, Inc.) in 2024.

WILLIAM TSAI (ME '78), Shoreline, Wash., retired from Boeing Company after more than 40 years as a project manager and technical fellow for many aviation services, products, and technical projects.

1980s

NICK CRAY (ME '80, M.A.S. '88), Mequon, Wis., retired from consulting in 2023.

KENNETH BOYCE (EE '84), Park Ridge, Ill., was promoted to vice president of engineering at UL Solutions, a global safety, security, and sustainability science company based in the Chicago area for 130 years. UL Solutions has deep connections to Illinois Tech.

1990s

LEN ANDERSON (STC '93), Memphis, Tenn., has assumed command of Marine Forces Reserve and Marine Forces South, marking a significant milestone in his career.

MICHAEL FREEMAN (LAW '93), Lake Forest, Ill., was elected to the executive committee of the Board of Directors for the legal advocacy organization Lawyers for Civic Justice.

TOR HOERMAN (LAW '95), Edwardsville, Ill., and his law firm won a [\\$495 million verdict](#) in a baby formula lawsuit in St. Louis.

JONATHAN ATWOOD (CHE '96), Winn Linn, Ore., has joined SightLine Applications, a premier provider of onboard video processing technology, as chief executive officer.

CHRISTOPHER MATES (LAW '97), Santa Monica, Calif., was named one of San Francisco's People on the Move. by *San Francisco Business Times*.

ROBERT BREVELLE (CS '98, M.S. '98), Rowlett, Texas, was appointed as the chairman of the Louisiana Genealogical and Historical Society. Brevelle is a certified genealogist and tribal councilman of the Adai Caddo Indian Nation.

TORRENCE HINTON (ME '98), Chicago, has joined the FirstEnergy team to assist with its transformation into a premier utility for approximately 2.2 million customers in Ohio.

2000s

JASON FRIEDL (LAW '00), Chicago, was named partner at the national personal injury firm Romanucci & Blandin, LLC.

CLAUDETTE SOTO (ARCH '02, M.A.S. STE '05), Evergreen Park, Ill., won first place in the Founders First 2024 Chicago FastPath Pitch Competition. She is the founder of baso, Ltd.

CANDACE STOAKLEY (C.E.R. TCOM '05, M.S. TCID '07), Chicago, started in a new position in the Office of the Vice Chancellor for Advancement as a development associate for the Health Science Colleges at the University of Illinois Chicago.

KRISTEN PRINZ (LAW '07), Chicago, was named a Notable Woman in Law for 2024 by *Crain's Chicago Business*.

SHAILVI WAKHLU (CPE '07), San Francisco, published a book, *Self-Advocacy: Your Guide to Getting What You Deserve at Work*, that became the sixth-ranked best seller in the business and negotiation category.

Food Fundamentalist

RIGHT AROUND THE TIME that Harry Hou (M.S. FST '08) arrived in Chicago to study food science and safety, he got some real-world reinforcement as to why he'd chosen an important career.

There was a large outbreak of *E. coli* in spinach in the United States. At the same time, in his home country of China, there was a huge scandal involving adulteration—or making a product worse by adding a substance of inferior quality—in infant milk formula that led to kidney damage. The same type of chemicals involved in the infant milk formula scandal were found, in the same timeframe, in adulterated pet food from China, leading to a recall.

“That hit me hard. It was part of my pride and where I came from. I was very embarrassed,” Hou says. But those outbreaks only motivated him to improve global food safety even more.

“What I’m doing is to protect U.S. consumers, which I’m actually pretty proud of, and promoting more people eating healthier foods.”

After Hou graduated from Illinois Institute of Technology and went on to get a Ph.D. in the same field from the University of Minnesota, he started working at Kraft Foods. There, he traveled across the world doing quality assurance for the company’s food producers and packagers.

“In our field, you have to be hands-on. You have to physically go there. In general, each country is a little different in terms of regulations,” Hou says. “The regular population, they don’t realize food is a very complicated commodity to manage. There are broad instructions for food standards.

“The most common issue is related to people. We say, ‘people, program,



Harry Hou (M.S. FST '08)

process,’ and all are important. But you can have the best program, and it’s a piece of paper. You have to engage people to make it happen,” he adds.

Beyond improving processes, a quality assurance officer also needs to be on the lookout for rare instances of “food fraud.”

“Sometimes you get into a situation where, for example, you want a strawberry to be more sweet. In some parts of the world, people actually inject sugar to make it more sweet. It’s a problem,” Hou says.

After traveling the globe for Kraft, and later Mars Wrigley Confectionery, Hou took a job as director of food safety for a smaller Chicago-area startup, Farmer’s Fridge, which produced fresh salads to sell in vending machines.

Then, in 2022, he was offered a job at his current company, Fresh Express, which also manufactures packaged salads for retail locations such as supermarkets.

The job came with a major perk: as

director of food safety and innovation, not only is he in charge of making improvements in food safety programs, but he has also been given lab facilities to study new food safety technologies to apply to the industry. Right now, he’s developing more advanced sanitizing methods for produce packaging facilities, a fast-detection method for food-borne pathogens, and is utilizing artificial intelligence and machine learning to leverage historical data to figure out where potential risks are introduced in the company’s packaging processes.

“It’s stressful, but fun,” Hou says.

“I was always passionate about food. Sharing meals is a big thing in China, and sometimes a big cultural event. It’s a memory of family and friends. I would enjoy that.

“Now, my kids actually eat the salads for my company I work at. It boosts my energy to keep working hard.” —Tad Vezner

2010S

ROBERT WHITE (LAW '10), Detroit, was confirmed by the United States Senate to serve on the U.S. District Court for the Eastern District of Michigan.

PRICE VETTER (ME '11), Pallatine, Ill., recently traveled to Vienna; Kobariid, Slovenia; and Venice, Italy. Vetter and his partner were lucky enough to get to eat at Hisa Franko in Slovenia.

STEPHEN PEPPER (BA '15), Chicago, and **RAMZI RIADI** (EMGT '15), Chicago, have been involved in every Bank of America Distance Series Race since joining the Triangle Fraternity in 2010, including 14 Chicago Marathons. Pepper and Riadi have worn many hats over the years, but currently play a critical role in deploying and supporting technology in the park and along the course.

GLENDIA "SUSIE" MORRISSEY (Ph.D. MED '17), Hinsdale, Ill., was recently granted tenure and a promotion at Mercer University, in addition to being awarded the Scarborough Endowed Chair in recognition of outstanding scholarship, teaching, and service.

2020S

WILLIAM DANIELS (EE '20), Rosemont, Ill., a financial adviser with Northwestern Mutual, has been authorized by the Certified Financial Planner Board of Standards, Inc. to use the CFP certification marks in accordance with its requirements, the highest standard to achieve in financial planning.

MILES THOMPSON (BA '20), Holland, Mich., was promoted to senior procurement specialist at Exelon Corporation.

AUTUMN BARDWELL-BAEZ (M.A.S. ITM '23), St. Charles, Ill., has assumed the

role of director of human resources technology and data at PerkinElmer, a prominent biotechnology company in Shelton, Connecticut.

MARILYN FLOWERS (ITM '23), Chicago, became the first associate site reliability engineer hired through the CDW Associate Consulting Engineer Program.

MITCHELL PARKER (LAW '23), Chicago, joined Schaumburg-based Lavelle Law firm as an associate.

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In Service of Design

AS AN OFFICER IN THE UNITED STATES

Marines charged with building a water storage system for locals in one of the poorest countries in Africa, Douglas Jefferson Hsu (M.Des. '12) first discovered his passion for design thinking.

After two combat missions in Iraq, he was placed in charge of a humanitarian aid mission in Djibouti in 2007 as the forward operations officer for the 22nd Marine Expeditionary Unit. Leading 200 Marines and engineers, he was tasked with building a water storage facility to Marine Corps standards for a mid-sized village.

But from what he would later recognize as examining it from a design standpoint, such an undertaking would have been a big mistake. The locals would likely not have been able to maintain the facility if it broke, and it called for materials, such as valuable metal, that could be broken down for scrap.

Instead, rather than have the Marines build the facility on their own, Hsu consulted with the local villagers to build the system together, largely out of wood, giving the villagers both confidence and ownership.

"That was where I realized good design thinking," says Hsu, who had quit a Wall Street job in finance to join the military, as many in his family had. "My time in the Marines, dealing with people and chaos and the complexity of war and seeing a whole different side of the world, I realized there's a lot more to life and business than just the numbers and profit margins and shareholder value.

"Design thinking is about solving complex problems. A Marine's job is to solve complex problems in dangerous situations. So it kind of goes hand in hand."

When he left active duty as a captain in 2008, Hsu went to business school, earning an M.B.A. from the University of Notre Dame. But he wasn't interested in finance or accounting or marketing. "I fell in love with innovation and the design



Jeff Hsu (M.Des. '12)

process," he says. So he pursued a degree from the Institute of Design.

After graduating, he worked for two years as a consultant before working for his family's company, Far Eastern Group (FEG), one of the largest conglomerates in Taiwan, spanning more than 10 major industries and encompassing nine publicly listed companies. There, he started the conglomerate's first internal design team and innovation center, called DRIVE.

But there were cultural opinions about design that had to be overcome.

"In Taiwan, they see design as a way to make things look good. They don't see that it's both form and function and actually solving complex problems," Hsu says. "I needed a team that had both spent time abroad and understood design and design thinking as it is understood in the West."

With ID's help, he did just that. One of those endeavors includes ID's Taiwan Immersion Program. "It keeps me abreast

of what's going on with design and how to use its capabilities to push design forward," Hsu says.

DRIVE was given the task of helping to plan the company's A13 retail project, which aimed to design a new department store in a district of Taipei that already had four others.

The team had to figure out a way to make it stand out. To do so, they were able to recruit Apple to build its global flagship store within its complex, and then design the space around it. Despite being smaller in size, the store is now Far Eastern Group's third-highest revenue earner out of 24 department stores.

After completing the project, Hsu says the company hierarchy began viewing design as more than just "making things look good." Hsu's DRIVE team now includes 16 designers, and is looking for its next big challenge within the company.

—Tad Vezner

Hawks Who Found a Home

For more than a century, generations of visionary leaders at Illinois Institute of Technology have brought representation to technology and strengthened how we innovate together. As a university, Illinois Tech knows how to tap into everyone's best thinking and doing to shape the future. Every contribution, on every scale and from every corner of this institution, has led it to where it is today.

To recognize this powerful impact, Illinois Tech launched the Adopted Hawks program, which honors select non-alumni individuals who have become essential members of the community through their actions in support of the university. Since the first Adopted Hawk was named in spring 2021, six individuals have received this honor.



Arlene Harris

As the inaugural Adopted Hawk, Arlene Harris—wife of “father of the cell phone” Marty Cooper (EE ’50, M.S. ’57)—has significantly contributed to the continued success of Illinois Tech. With a longstanding relationship to the university as a member of the boards of advisors for Stuart School

of Business and the Institute of Design and as a generous supporter and friend, her passion for connection drives her enthusiastic philanthropy. A successful entrepreneur and businessperson, Harris, together with Cooper, has gone above and beyond to advance tech education and open doors for the bright minds at Illinois Tech.



Rosemarie Mitchell

In recognition of her invaluable contributions to the university, Rosemarie Mitchell was named the second Adopted Hawk. A champion for higher education, Mitchell's service

and leadership since 1995—on the Illinois Tech Board of Trustees and as the former chair of the Stuart School of Business Board of Advisors—has been transformational. She and her husband, Tom, have been generous philanthropists at Illinois Tech, supporting scholarships and initiatives that inspire student success.



Erica Giannini/Matthew Olin

Erica Giannini and Matthew Olin, children of Life Trustee John Olin (ME '61) and his wife, Jane, were recognized as the third and fourth Adopted

Hawks. Their leadership is demonstrated by their ongoing support and mentorship of aspiring engineers and entrepreneurs at Illinois Tech. Matthew Olin and Giannini's passion for empowering today's students has continued to build upon the Olin family's powerful legacy.



Jeanne Rowe

Jeanne Rowe, together with her husband, the late John Rowe—former University Regent and former chair of the Illinois Tech Board of Trustees—has been integral in supporting Illinois Tech over the years. As the fifth Adopted Hawk, Rowe is deeply committed to educating and empowering

the next generation of leaders in STEM fields. As the namesake for Jeanne and John Rowe Village on Mies Campus, she and her husband established several student scholarships, three endowed chair positions, and a faculty endowment.



Lorna Nemcek

A philanthropic inspiration to our students and the beloved wife of Illinois Tech Life Trustee Adrian Nemcek (EE '70), Lorna Nemcek received Adopted Hawk recognition

posthumously. As the namesake of Armour College of Engineering's Adrian and Lorna Nemcek Lab and a generous supporter of numerous scholarships, Lorna Nemcek played a transformative role at the university. She sadly passed away in January 2024, but her legacy continues on at Illinois Tech.

These individuals, among many others, have shown a deep commitment to the university's mission through philanthropy, making a meaningful impact by taking bold action to drive world-changing innovation. —*Brianne Meyer*



FALL 2024

Letter from the Alumni Board Chair

Bob Hoel (BE '70)

There is always a palpable energy that comes with a new academic year. This time around, though, it feels *momentous*.

Coming off of an [impressive 2023–24](#) academic year, it is evident that Illinois Institute of Technology students, faculty, staff, alumni, and friends remain committed to our founding purpose: **to harness the power of collective difference to advance technology and innovation for all**. The most innovative solutions of tomorrow are taking shape, and the catalyst for that is starting right here at our university!

It is no secret that the work at this great institution has defined—and redefined—entire categories and industries. The idea that the possibilities born at Illinois Tech can have a lasting effect on the world is one that our alumni live and breathe every day. We're not waiting around for a brighter future, we're all here creating it—*together*. That is both our legacy and our future.

This past spring we celebrated more than 2,500 graduates at [Illinois Tech's 155th Commencement ceremony](#)—a perfect representation of Illinois Tech's "why." We give our students more than a degree—we give them experience and practical knowledge that they can put into action! And, in turn, they have the resources to kickstart their next chapter, using their degree(s) as the ultimate tool to inspire ingenuity. Illinois Tech is devoted to amplifying the most inventive minds and ingenious spirits of our time to represent and advance humanity around the world.

I am amazed at how our community continues to empower the next generation of thinkers, doers, and innovators. Alumni play an important role in the success of our students, specifically through our [mentorship program](#). Mentorship provides

students with a professional resource who can help them navigate their academic and career paths, and is a way to refine students' professional skills while obtaining guidance for their academic, professional, and personal development. We are always looking for [alumni volunteers](#) to participate and lend their expertise to students. This is a wonderful opportunity to give back to Illinois Tech and get some face-time with today's students. You might be surprised: these bright, inventive minds may inspire you, too.

Another incredible way to recognize the impact of our community is at alumni events such as Illinois Tech's [Homecoming Weekend](#)! From honoring our most notable alumni at the Alumni Awards ceremony, inducting the newest members of the Athletics Hall of Fame, and reconnecting with classmates at the reunion tent, Homecoming is an important time for Scarlet Hawks to celebrate our shared achievements together. You can learn more about all upcoming events and opportunities at [iit.edu/alumni](#).

I thank you, fellow alumni, for staying connected to Illinois Tech. Within each of us is the power to make a meaningful difference with measurable impact. Whether you choose to give back in time, talent, or treasure, I am confident that your generosity is transforming the students at Illinois Tech and beyond. I look forward to seeing all that we continue to accomplish together.

Bob Hoel (BE '70)

Trustee, Board of Trustees

Chair, Alumni Association Board of Directors

rhoel@iit.edu

Obituaries

Belle Kerman (ARCH '50)

One of the earliest women to graduate from Illinois Institute of Technology's College of Architecture, Belle Kerman died on March 20, 2024. In 1950, at the age of 25, Kerman studied under Ludwig Mies van der Rohe and other members of the Bauhaus, masters of twentieth century architecture who escaped Nazi Germany. With her late husband, Harold "Hal" Kerman—a master builder and expert in urban renewal—Belle Kerman shared a dedication to the revitalization of Chicago from within, as well as the upliftment of humanity through culture and the arts.

Mark Finfer (ARCH '49)

Mark Isaac Finfer of [San Diego](#) passed away on April 27, 2024, at the age of 99. His career included designing multiple projects in Chicago, highlighted by his development of Four Lakes Village in [Lisle, Illinois](#). Finfer created the Brothers Finfer Scholarship for Students of Architecture at Illinois Institute of Technology and the Sydel Silverman Fund for the Advancement of Anthropology at The Graduate School and University Center of The City University of New York.

Burton A. Lewis (CE '48)

Burton Lewis, an accomplished engineer who managed numerous major highway projects across the world, died on October 13, 2024, at the age of 99. As a civil and structural engineer, he spent the majority of his career at Parsons Corporation, from where he retired in 1987 as vice president and manager of the company's Phoenix office. His many projects included the 55-mile Phoenix Outer Loop Project, the Los Angeles Airport's Second Level Roadway, the Port Access Highway in Anchorage, Alaska, freeways in Sydney, Australia, and Las Vegas, and dozens of railroad-grade separation projects. While residing in Kuwait, he was project manager for a planning study to complete the Kuwait urban highway system. In 2013 he received the Palmer Award from the Structural Engineers Association of Illinois in honor of his distinguished career. Lewis was a longtime advisory board member for Illinois Tech's Department of Civil, Architectural, and Environmental Engineering. His numerous donations led to the establishment of the Burton and Erma Lewis Endowed Scholarship, the creation of the Burton & Erma Lewis Construction Management Laboratory, the Burton and Erma Lewis Endowed Fund for Construction Laboratory Maintenance, and the Burton and Erma Lewis Career Development Assistant Professor in Engineering. He received the 1992 Award of Merit, the 2013 Collens Merit Award, and the 2023 Alumni Medal from the Illinois Tech Alumni Association.

In Memoriam

Alumni

Alton E. Sept (EE '44)
Bob V. DeBoo (ME '45, M.S. IE '61)
Ted Major (EE '45)
Sheldon L. Levy (EE '45, M.S. MATH '48)
John "Nick" N. Basic Sr. (ME '47)
Louis Sopkin (EE '47)
Jack F. Suriano (CHE '47)
Burton A. Lewis (CE '48)
Paul A. Roys (PHYS '48, M.S. '50, Ph.D. '58)
Celia L. Barteau (CHEM '49)
Mark I. Finfer (ARCH '49)
Roger B. Orensteen (IE '49, Business and Engineering Administration '50, Ph.D. BE '56)
Norri Sirri (EE '49, M.S. '50)
Belle Kerman (ARCH '50)
Ralph A. Staschke (EE '50)
Phyllis T. Cowan (Home Economics '51)
Charles J. Dellutri (CE '51)
Charles J. Muto (CHE '51)
Arch A. Pounian (M.S. PSYC '51, Ph.D. '60)
Boris J. Speroff (M.S. PSYC '51)
Marion W. Mayo (CHEM '52)
Marvin D. Michaels (LAW '52)
Otto W. Vosahlik (ME '52)
Robert J. McWhorter (PHYS '53)
Robert Sverak (BE '53)
John G. Yarosh (ME '53)
Lon R. Danek (CHE '54)
Thomas J. Karacic (LAW '54)
James J. Lepore (DSGN '54)
Robert A. Wegforth (BE '54)
Thomas E. Klippert (PHYS '55, M.S. '64)
Robert S. Cramb (M.S. BE '56)
George I. Kolosov (CE '56)
John J. Purcell (ME '56)
Folden B. Stumpf (Ph.D. PHYS '56)
Peter Dowbor (MET '57)
Robert L. Moran (ME '57)
John F. Berninger (ME '58, M.S. MAE '66)
Si-Chang "Bernard" Kim (CHE '58)
David A. McCannon (EE '58)
Thomas L. Nielsen (ME '58)
Bob A. Pownall (CHE '58)
Joseph A. Appel (IE '59)
Robert Beckwith (EE '59)
Peter J. Chiodras (EE '59)
Larry M. Clemens (CHEM '59)
Jack R. Costello (BE '59, M.S. '66)
Robert J. Mullin (CHE '59)
Louis H. Glantz (EE '60)
Donald J. Hoffmann (ME '60)
Jim H. Peppiatt-Combes (IE '60)
Carl J. Poch (BE '60, M.A.S. BA '71)
Edward J. Fandel (ME '61)
Alan L. Goodman (PHYS '61)
Ronald E. Noton (ME '61)
Lawrence G. Smith (BE '61)
Carmen G. Tumino (ME '61)

Barbara A. Vollmer (MATH '62)
 Alan L. Winiecki (EE '62, M.S. '67)
 George L. Lazik (EE '63)
 Ronald F. Peterson (ME '63)
 Paul E. Swanson (CE '63)
 Stuart L. Brodsky (MATH '64)
 Paul R. Lagerlof (M.A.S. BA '64)
 John E. Kaindl (CE '65)
 Alan G. Kepka (PHYS '65, M.S. '68, Ph.D. '70)
 Frank J. Passen (CHE '65)
 S. R. Cho (M.A.S. CHE '66)
 Rabon L. Hollingsworth (CHEM '66)
 Bernard A. Netzer Sr. (EE '66)
 Bohdan J. Bodnaruk (CHE '67, M.S. ENVE '74)
 Robert F. Drake Jr. (EE '67)
 Linda J. Hedden (M.S. SOC '67)
 Tony M. Knapp (EE '67, M.S. IE '71)
 Victor E. Terrana (MATH '67, Ph.D. '79)
 Donald C. Alexander (M.S. SOC '68)
 Robert K. Allen (DSGN '68)
 William W. Blaisdell (ARCH '68, M.S. CRP '69)
 Gerald G. Page (ME '68)
 Ralston W. Reid (BCHM '68)
 David B. Ripley (BE '68)
 Terrence J. Brennan (CE '69)
 Peter S. Goltra (EE '69)
 Elmer P. Tepper (EE '69)
 Joseph H. Mayne (Ph.D. MATH '70)
 John J. Sowchin Jr. (DSGN '70)
 David R. Stern (EE '70)
 Ted M. Drogosz (IE '71)
 Predrag Stojkovich (ME '71)
 Jack D. Berner (EE '72)
 Roger M. Levy (LAW '72)
 Paul J. Dacko (CHEM '73)
 Stanley J. Povilaitis (CHE '73)
 William D. De Long (M.S. CS '74)
 Emil S. Golen Jr. (EE '74)
 Robert K. Higginson (LAW '74)
 Steve H. Jesser (LAW '74)
 Murty S. Kuntamukkula (M.S. CHE '74)
 Thomas J. Rebb (LAW '74)
 David M. Foley (Ph.D. MATH '75)
 Norman M. Gassman (M.S. REHC '75)
 Rajinder S. Gill (M.S. IE '75)
 Robert A. Krohn (ECON '75)
 Robert E. Russell (M.A.S. BA '75)
 Samuel D. Johnson (LAW '76)
 David M. Ihnat (CS '77)
 Parthasarathy Rajagopalan (M.A.S. BA '77)
 Patrick C. Doody (LAW '78)
 Dick Shreve (Ph.D. BE '78)
 Patrick J. Gamboney (LAW '79)
 Melvin D. Long (Ph.D. BIOL '79)
 Kenneth S. Borcia (LAW '80)
 William E. Barton (MGT '81)
 Carmela Crotolo (PSYC '82)
 Vince L. DiTommaso (LAW '82)
 Maggie R. Kohls (CE '82, M.A.S. MAE '02, LAW '07)

Kevin R. McKenna (LAW '82)
 Richard Montemurro (EE '82)
 Jerry C. Olsen III (CS '82, M.S. '87)
 Dan C. Daley (EE '84)
 Theodore S. Hendzel Jr. (EMGT '84)
 Bill J. Payne (LAW '84)
 Gary L. Cantrell (Ph.D. CHEM '85)
 John R. Clark (M.A.S. BA '87)
 Rich Danstrom (M.S. EE '88)
 Jamie Zheng (M.S. CS '92)
 Alice M. McCart (LAW '93)
 Don E. Wilkinson III (M.A.S. CHE '95)
 John W. Krummick (FMT '97)
 James R. Fisher (LAW '98)
 Mark A. Katz (M.S. CS '98)
 Andy Zloza (CHE '00)
 Joe P. Tylutki (LAW '01)

Faculty and Staff

Rodney J. Benson (Ph.D. PSYC '01)
 Anselmo G. Canfora
 Parviz Payvar

Friends

Jean Best
 Dennis S. Bookshester
 Donald D. Boroian
 Elaine M. Bryant
 James Byrne
 Pasqualina Crotolo
 Jeanne Garofalo
 Robin Goldsmith
 Louise J. Harding
 Mary Hart
 John T. Honore
 Jo Ann P. Joost
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 Rose V. Kapranos
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 Gloria Pappageorge
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 Herbert Schinderman
 Bobbie L. Selvey
 Howard E. Smith Jr.
 Mona K. Stern
 Evelyn Strottmann
 Kathleen Thomason
 Ingeborg Uhlir
 Patricia Wade

Take Five

Professor of Mechanical and Aerospace Engineering **Seebany Datta-Barua** works on global navigation satellite systems (GNSS) and the global positioning system for institutions ranging from NASA to the United States Antarctic Program. Her most [recent research with the Antarctic Program](#), titled “Mapping Melting Glacial Surfaces with GNSS Reflectometry,” explores how reflectometry (GNSS-R) can potentially be used to reliably map snow cover, ice, and surface water in a harsh glaciated environment at high spatio-temporal resolution.

Q: What is the Global Positioning System, and how does it work?

It’s a constellation of satellites that continuously sends signals down to Earth. A user’s device, such as a cell phone or car dashboard [navigation], picks up signals and calculates how far it is to each satellite. It measures the distance by determining transit time for that signal at the speed of light. GPS is the United States version of a global navigation satellite system, and is operated by the U.S. Space Force.

Q: What is an example of a lesser-known use for GPS/GNSS?

I think what’s been amazing in the past 20 to 30 years is how many different creative ways there are to use navigation satellites. I saw a biologist who used it to track migrating dolphin populations. Or with plate tectonics, you can actually see plate tectonic motion with a set of receivers set up on the plate. Farmers use GPS on tractors to get very exact positioning for pesticides and spraying. You can use signal reflection to monitor changing tides on coastlines, and researchers are working on determining soil moisture with GPS reflections.

Q: What was your Antarctic work about?

We used signal reflection, or reflecting a signal off a surface that would then be detected by our receiver system. We’re trying to improve the resolution of signal reflection to determine not how high up the surface of a polar ice sheet is, but what the surface is. Is it snow, or melted? With reflection, when a signal is sent and it bounces off a surface, it goes in another direction. People often use signals in this way to detect the properties of this surface.

Q: What are some ways GPS/GNSS is vulnerable?

Solar storms. The sun becomes more active every 11 years and starts belching out more particles toward Earth and flashes out ultraviolet and X-rays from sunspot regions, which changes the structure of our ionosphere. That can change how much positioning error can go into your device. There’s also the bigger issue of illegal GPS/GNSS jamming, or blasting out a lot of power at the GNSS frequencies that people are trying to receive. Or spoofing, when a bad actor mimics a GPS satellite and makes a receiver lock onto [the fake signal] instead of a satellite.

Q: What are some potential future uses for this technology?

I’m interested in using GPS not for positioning, but for remote sensing—or trying to use GPS like a free radar, where a satellite would produce the wave. And people are always looking into new ways of applying navigation services. NASA’s Artemis program, to send people to the moon, will need lunar navigation. We’d need to add satellites somewhere between Earth and the moon for better positioning accuracy.

Seebany Datta-Barua

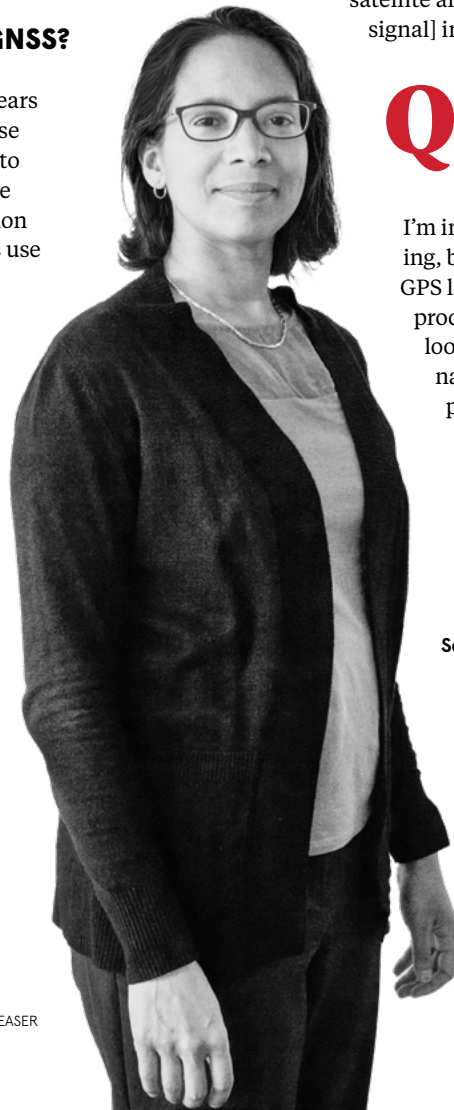


PHOTO: JAMIE CEASER



Before You Go

First-year Illinois Tech students mingled with dogs during the Bark Bash on August 13, 2024. The event was part of the week-long Welcome Week ahead of the start of the fall 2024 semester.

Photo by Vincent Alban

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