

SPRING 2021

ILLINOIS TECH

Magazine

River of Hope Inside the New LA River Master Plan

Ad Astra, President Cramb

Diversity by Design

COVID-19 Transmission Aboard
the *Diamond Princess*

Letter from the President

“Sic Itur Ad Astra”

(“Thus One Journeys to the Stars”)

—Virgil, from the *Aeneid*, Book IX

I WANT TO TELL YOU that dreams really do come true.

When I first entered into academic administration at Carnegie Mellon University in the 1980s, I told my wife, Anna, that I aspired to one day become a university president. Even with that goal in mind, I could never have imagined that I would succeed one of my great mentors, John L. Anderson, whom I met at Carnegie Mellon, when he and I would serve as president and provost, respectively, at Illinois Institute of Technology. When President Anderson retired as Illinois Tech’s eighth president in 2015, the members of the university’s Board of Trustees placed their confidence in me by naming me as the ninth president of this great institution.

These past nearly six years in which I’ve been honored to serve as your president, working together with our trustees and the entire Illinois Tech community, have indeed fulfilled my dream on so many levels. In my first letter as president, I stated that my vision for Illinois Tech includes that our university becomes a place where there is a strong focus on education and the development of new knowledge; that values creativity, innovation, and entrepreneurial activities; and whose culture is inclusive, its people diverse, and its accomplishments more than the sum of its parts. We have done much to further growth in each of these areas.

While reflecting on everything that I’ve been through, I have to once again recognize the recent remarkable efforts of our staff and faculty during the 2019 polar vortex and one of the greatest operational challenges in the history of our university—the COVID-19 pandemic. Their continual commitment and devotion to our students and community members is commendable and characterizes Illinois Tech’s hallmark traits of creativity, persistence, and care. I extend my sincere gratitude and appreciation for their resilience and dedication.



PHOTO: DAVID ETTINGER

While I will remain at Illinois Tech as a faculty member, I will always recall special moments from my time as president: working with chairmen Bud Wendorf and Mike Galvin; addressing students and their families at Commencement; traveling to visit our alumni in the United States and around the world; celebrating with members of our community who were dressed in Scarlet Hawk red as we broke ground for the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship; connecting with alumni at Illinois Tech’s first-ever virtual global gathering event; and recognizing the donors who helped us renovate the Robert A. Pritzker Science Center, the John T. Rettaliata Engineering Center, Cunningham Hall, and George J. Kacek Hall.

As I look at the faces of our students and faculty, I will also remember the important research that resulted from the Nayar Prize I, and all of those individuals who worked to open the College of Computing and Lewis College of Science and Letters. My successor will now have the opportunity to continue the work begun on the *Power the Difference: Our Campaign for Illinois Tech* fundraising effort, which will support student success and advance our standing as the leading tech-focused university in Chicago.

One of my most important goals as incoming president was to ensure that Illinois Tech valued all of its people—from the faculty to the staff to the students. Above all else, I hope that I have accomplished that. Thank you for your support, your partnership, and your belief in our university and its students. Never doubt that you each have the ability to make your own dreams a reality.

Sincerely,

A handwritten signature in dark ink that reads "Alan W. Cramb". The signature is fluid and cursive, with a large initial 'A'.

Alan W. Cramb

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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 21 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
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COVER STORY

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2020 Professional Achievement Award winner USMC Brigadier General Len Anderson (STC '93) combats violent extremism on the web.

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Industrial designer Stephen Burks (DSGN '92) discusses his Chicago influences, the importance of craft, and his efforts to make the design world more inclusive.

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His findings on COVID-19 transmission in projects such as the *Diamond Princess* cruise ship are propelling Parham Azimi (Ph.D. ENVE '16) into the stratosphere of expert air-quality researchers.

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Chi Hwan Lee (ME '07), head of Purdue University's Stickronics Laboratory, would like to get personal with your health care needs through his peel-and-stick biomedical devices.

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Letters

Forum '76 Draws Black-Tie Celebs

"I took note in your article 'Twentieth-Century Celebrities Come to Campus' that your reference was Irene Macauley's book *The Heritage of Illinois Institute of Technology*, published in 1975.

"You may be interested to know that in 1976, I and a small group of alums created Forum '76, a black-tie dinner held at Bob Pritzker's downtown Chicago Hyatt Hotel. In honor of the United States bicentennial and with the help of Maynard P. "Pete" Venema, the chairman of [the Illinois Institute of Technology] Board of Trustees and his friend Don Rumsfeld, the U.S. Secretary of Defense, we invited President Gerald Ford to give a major policy speech on technology. (It was the pre-internet days, when we thought you could get to anyone with three phone calls. My call to Venema and his to Rumsfeld somewhat confirmed that simple networking adage of the day.)

"For the occasion, my committee and I designed and created the Henry Heald Award, which I understand to this day remains the university's highest award.

"Unfortunately, in May 1976, President Ford was busy preparing for his upcoming election. He accommodated our event by sending an official from NASA to be our featured speaker.

"In 1977 I once again chaired the Forum Dinner, at which we presented the first Heald Award to R. Buckminster Fuller, the inventor of the geodesic dome. Our principal speaker that evening was Jonas Salk, creator of the Salk polio vaccine. My fellow alums who were instrumental in cultivating my Forum Dinner idea were **Fred Robertson (DSGN '51)**, **Bruno Conterato (ARCH '48)**, **Hal Bergen (EE '50)**, and **Joe Fern (FPE '43)**."

Clar Krusinski (ARCH '63)

Looking at Machine-Learning Internet Tests

After reading "Breaking the Cycle" in the fall 2020 issue of *Illinois Tech Magazine*, **Robert John Zagar (M.S. PSYC '75)**, a Chicago-based psychologist, shared his views and referred to a paper he co-authored titled "Implications of Machine-Learning Internet Tests to Save Lives and Money: 7-Point Violence Profile" published in the *Review of European Studies* (Vol. 11, No. 1, 2019). The authors conclude that "there is hope for a safer world and a peaceful next generation, because with probability models, namely actuarial assessments, there is the potential for violence prediction or forecasting because one collects the full information in a MLIT [machine-learning internet test]."

In his letter to *Illinois Tech Magazine*, Zagar adds that "147,023+ high-risk youth got a job mentor and anger management in a program started under Mayor [Richard M.] Daley [Culture of Calm] and continued by Mayor [Rahm] Emanuel [One Summer Chicago], saving 620 lives.

"Your article does not highlight how the Second Chance Act actually gives many former offenders an opportunity to start a new life," says Zagar. "I don't think releasing violent offenders is the answer as so many have advocated. Given machine-learning internet tests we can determine who can be released and who might just have to serve out their sentences."

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A Circuitous Journey

As a kid, Andy de Fonseca (AE 3rd Year) brought her telescope to school as a prop for picture day. But without high marks in her high school science classes, de Fonseca felt like space could only ever be a hobby for her.

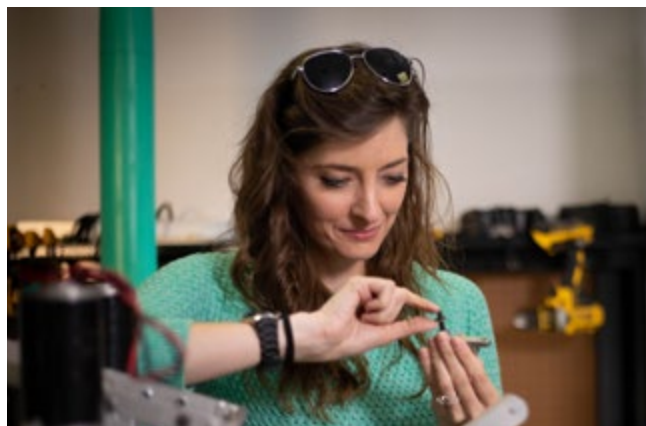


PHOTO: OLIVIA DIMMER

Instead, she pursued other interests, getting degrees in theater, cinematography, and history. De Fonseca worked in marketing and as a photographer, and she even published a science fiction novel with real scientific theories woven into a fantastical world.

Then, de Fonseca started volunteering at Chicago's Adler Planetarium.

"The scientists were all incredibly supportive and encouraging," she says. "They helped me feel that I actually could do something in science."

First, de Fonseca founded the Chicago branch of The Planetary Society, growing it into the second-largest branch in the world. Then, in 2016, while on maternity leave, de Fonseca watched SpaceX's Falcon 9 land on the *Of Course I Still Love You* drone ship. "It was the coolest flippin' thing I had ever seen," she says. "I had to be part of that world."

She started with some community college courses. When they went well, she enrolled at Illinois Institute of Technology. Beyond overcoming her fear of math, the past couple of years haven't been easy. Last year de Fonseca was diagnosed with thyroid cancer. Now, with the COVID-19 pandemic, de Fonseca has been working from home with her 4-year-old daughter and ended up spending her winter break finishing an incomplete fall course. But, she says, "even at my lowest, darkest point, quitting is worse than failure."

De Fonseca is pursuing her degree through the Accelerated Master's Program and has earned several competitive awards including the Brooke Owens Fellowship, which she received in January. As she did with her childhood telescope, de Fonseca has her sights set beyond Earth.

"I want to help get humankind to a point where people can say, 'I don't want to live on this planet anymore,' and then be able to help them go live on another planet."

—Simon Morrow



The Rice Stuff

Yuta Katsuyama (M.Des.+M.B.A. Candidate) saw a problem—the lack of the Japanese staple snack food *onigiri*, rice balls filled with meat and vegetables, in Chicago—that he thought he could solve with design. Through trial and error, and using the knowledge he gained in Institute of Design courses, Katsuyama found a solution: creating his own business, Onigiri Shuttle Kororin, which launched in July 2020.—**Andrew Connor**

Onigiri 101

Shape: Mountain (triangle)



Ingredients: Various rices (usually white) and fillings (cheese, salmon, mushrooms, and more)

Occasion: Day to day, handheld eating, from breakfast to dinner

A.K.A.: Omusubi

Pair with miso soup or daikon radish pickles and unsweetened green tea or a Ramune lemon-lime beverage for a complete meal.
Courtesy of Onigiri Shuttle Kororin

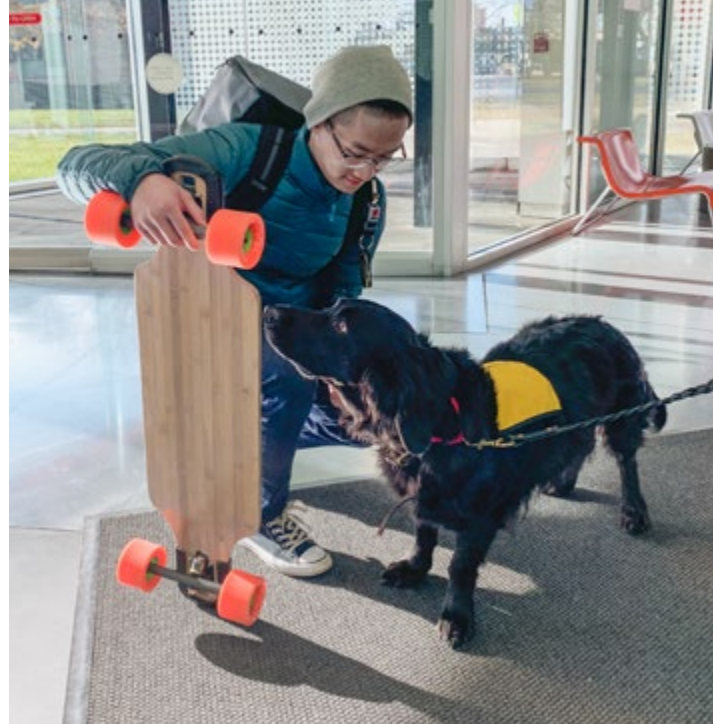


PHOTO: ANNA OLSZTYNSKA

Will Work for Tail Scratches

MOST DAYS of the year, Grover, a 7-year-old black bassador (Labrador retriever-basset hound mix), spends his time romping around on a 10-acre farm in Peotone, Illinois, with his extended family of horses, donkeys, cows, goats, laying chickens, a turkey, a pony, and five other dogs. As Illinois Institute of Technology's therapy dog, Grover began his position in 2019 and is certified by the national nonprofit animal-assisted intervention organization Pet Partners. He also earned the Canine Good Citizen designation from the American Kennel Club. As such, Grover visits with students, faculty, and staff as a doggy-do-gooder through the Office of Student Life and the Student Health and Wellness Center. For example, Grover helped an Illinois Tech student who was terrified of dogs.

"By the end of the session, she was really petting him and giving him treats," says Cindy Chaffee, Illinois Tech's director of environmental health and safety, and Grover's owner. "He even laid on his side, keeping his head down, to show her a submissive position. Later, when we saw the student on campus, she would come by to say hi to him. That was a big turnaround for her."

Before the pandemic altered life on Mies Campus, Chaffee brought Grover to Illinois Tech twice per week and more often during finals. Students were not his only fans.

"I started bringing in Grover for the students, but what I noticed is that the staff and faculty really appreciate it," says Chaffee, noting that she hopes that Grover will have regular "office hours" in the fall. "They ask for him as much as the students do." —**Marcia Faye**

Illinois Tech Headliners



“It was an ideal tool for women because the pots symbolized their femininity. But it also was a statement about the lack of food.”

Professor of History **Margaret Power**, in an article in the *Washington Post* (originally in *Vox*) about the use of pots and pans as a traditional form of protest for women from Latin American to Asian countries.



“With cut fruits and vegetables, you may only have one piece that actually has, say, salmonella or listeria on it. But, when you cut it up and start mixing it, it now cross-contaminates the entire contents of your mixing bowl.”

Professor **Robert E. Brackett**, director of the Institute for Food Safety and Health, in *HuffPost*, on why consumers should be cautious regarding the purchase of pre-cut vegetables and fruit.

“This isn’t just a Detroit problem; this is a national problem that is contributing to the racial wealth gap.”

Professor of Law **Bernadette Atuahene** on the WDET 101.9 FM radio show “Detroit Today,” discussing a #BlackHomesMatter event in Detroit and the city’s continued housing crisis.



“If they’re able to get some significant victories and negotiate some good contracts they can build momentum, [and] they can point to those as they organize workers at other facilities.”

Professor **Martin H. Malin**, co-director of the Institute for Law and the Workplace at Chicago-Kent College of Law, in an article in the *Chicago Tribune* on potential unionization within the Illinois cannabis industry.

Making Waste Useful



PHOTOS: DAVID ETTINGER

FINDING WAYS to utilize fly ash is of interest to a variety of stakeholders in the United States, both from an environmental standpoint and as an attractive alternative for the concrete industry. Assistant Professor of Civil Engineering Matt Gombeda received a nearly \$1 million grant in October to examine methods to incorporate fly ash in high volumes as a supplementary cementitious material (SCM) for precast concrete applications. Here’s a look at the reasons why:



Why Precast Concrete: Precast concrete products, which are generally used in buildings and other structures in the form of prefabricated products such as concrete beams, slabs, and columns, offer high quality control and rapid fabrication and installation.



Why Fly Ash: As of 2017, power plants in the United States produced more than 38 million tons of fly ash, a fine powder coal byproduct, according to the American Coal Ash Association. The U.S. Department of Energy is interested in its potential uses for two main reasons—economic opportunities and environmental benefits.



How Does It Work: Incorporating fly ash, which is already done at lower levels, into concrete can make creating precast concrete products more difficult, so Gombeda and his collaborators are working to develop novel concrete mix designs consisting of next-generation high-volume fly ash binders. This effort will be done by first re-engineering the binders’ hydration mechanisms, then scaling up the most effective binders to feasible concrete mix designs, and, lastly, demonstrating proof of concept via full-scale experimental testing of precast components.

—**Andrew Wyder**

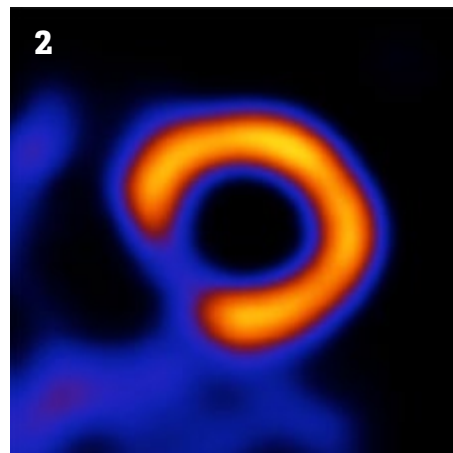
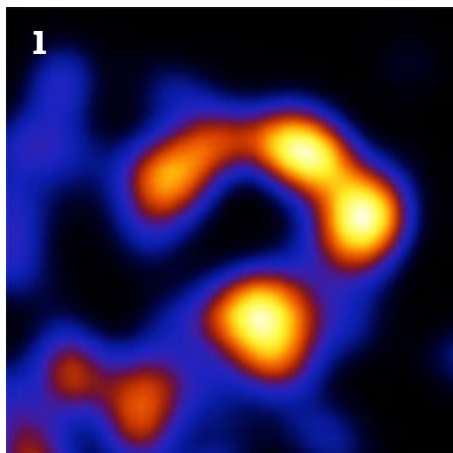
Acknowledgment: “This material is based upon work supported by the Department of Energy under Award Number(s) DE-EE0031931.”

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Using Artificial Intelligence to Reduce Medical Radiation

ELECTRICAL AND COMPUTER engineering professors Miles Wernick and Yongyi Yang landed \$6 million in National Institutes of Health grants for their research using artificial intelligence to find health abnormalities in medical imaging scans taken with lower radiation doses, which will allow patients to get life-saving care through safer procedures. —**Simon Morrow**

1 A scan of the cross section of a heart ventricle. A healthy heart would show a nice, complete ring. This scan looks blobby mostly because of “noise”—an outcome of the physics of the imaging process—which is present because the image was taken using a radiation dose that is reduced eight times compared to what would typically be used.



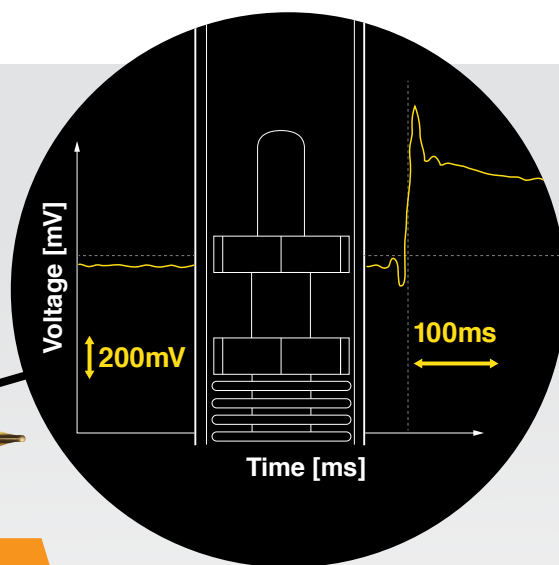
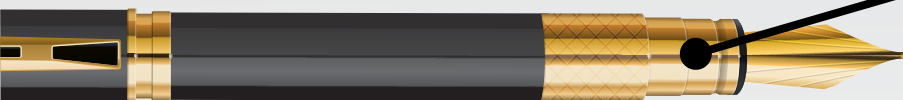
IMAGES: MILES WERNICK AND YONGYI YANG

2 The same scan after image processing using Wernick and Yang’s artificial intelligence method. The processing has identified and removed the noise, revealing a ventricle with coronary artery disease, as shown by the incomplete ring.

Fountain Sleuths

“I love writing with fountain pens because they are a unique combination of beauty, tradition, and dexterity. In addition, they are ‘green,’ unlike ballpoints, where the refill must be discarded. A bottle of ink lasts for years!”

—Professor Sohail Murad, Chair of the CHBE Department



Q. Why does my fountain pen leak?

Since the first mass-produced fountain pens appeared in the 1880s, the instruments have suffered from leakage issues. A paper co-authored by Illinois Tech professors Alex Nikolov, Sohail Murad, and Darsh Wasan, and Pingkeng Wu (Ph.D. CHE '19) in the *Journal of Colloid and Interface Science* (October 15, 2020) looked inside the cartridge apparatus for a solution to the problem.

A.

A poorly designed ink and air flow mechanism from the ink reservoir in the pen to its nib contributes to an ink/air capillary flow imbalance, thereby causing an erratic flow of ink to the pen nib. —**Marcia Faye**

COVID-19 Inhalant Therapies in the Pipeline

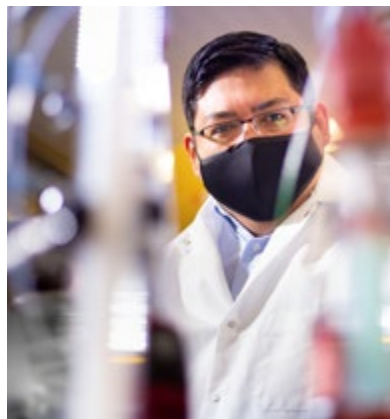


PHOTO: DAVID ETTINGER

Oscar Juarez

AN INHALANT THERAPY—

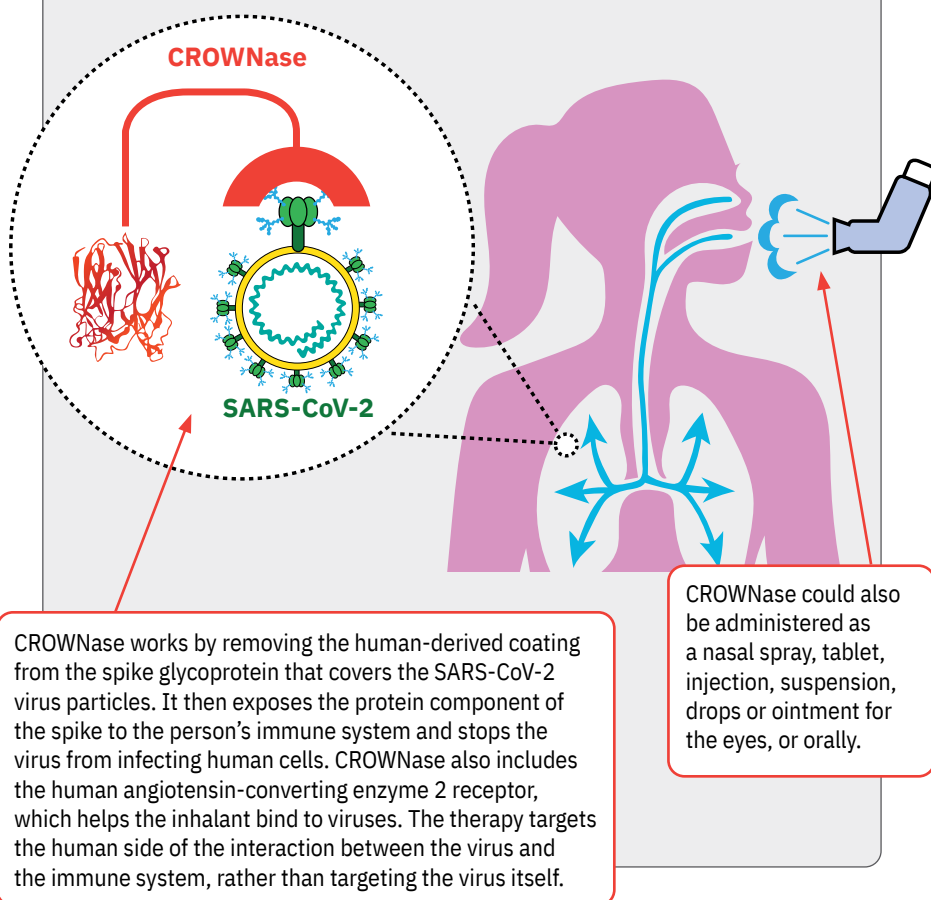
CROWNase—developed by Illinois Institute of Technology researchers shows the potential to limit COVID-19 infection and is patent pending. Associate Professor of Biology Oscar Juarez conceptualized the project, with support from faculty members David Minh and Karina Tuz.

The team is now writing a paper detailing its preliminary results as well as working to advance the project to further stages of testing and development.

PROFESSOR DAVID MCCORMICK, president and director of IIT Research Institute, is heading another inhalant therapy effort. He received \$597,893 from the National Cancer Institute to perform the research project “Inhalation Studies of Recombinant Human Angiotensin Converting Enzyme 2.” The inhaled therapy will soon advance to the United States Food and Drug Administration and, if approved, will advance to clinical trials led by the National Institutes of Health.

This inhalant therapy administers

How It Works



angiotensin-converting enzyme 2, providing non-cellular targets in the person's respiratory tract to which the virus will bind, according to McCormick. This reduction in viral binding to human cells will reduce infectivity and disease severity.

Since October 2020 IITRI has been awarded more than \$7.8 million for the development of biotherapeutic and therapeutic agents as well as the performance of studies focused on COVID-19. —**Linsey Maughan**



PHOTO: DAVID ETTINGER

Funding for the inhalation study reported in the IITRI article was supported by National Cancer Institute contract 75N91019D00013 (Task Order 75N91020F00002). The content is solely the responsibility of the authors and does not necessarily represent the official views of the NCI.



Training Tabled

Never did Chapin Wehde imagine what the next year would entail when the reality of the COVID-19 pandemic struck home in March 2020. Illinois Institute of Technology's head athletics trainer, assistant director of athletics, and senior women administrator, Wehde spent 11-plus months organizing, writing protocols, and doing all that she and her team—which includes assistant athletic trainers Sarah Wegrzyn and Evyn Nolette—could do to keep Scarlet Hawks student-athletes healthy. It was, in Wehde's words, "so unreal."

PHOTO: OLIVIA DIMMER



Here's a snapshot of what the past year looked like for Wehde and her team.

→ March 12, 2020

Illinois Tech announces that all courses will go online, followed by the announcement that it is indefinitely postponing all athletics events. One day later the Northern Athletics Collegiate Conference (NACC) postpones athletics events for the remainder of the 2019–2020 academic year. "All of a sudden I'm having to tell [students] that we're ending their season early," Wehde says. "We don't know when we're coming back."

→ Summer 2020

Wehde balances her time between understanding metrics and protocols related to COVID-19—from sources as varied as the National Collegiate Athletic Association (NCAA) to the City of Chicago to the State of Wisconsin, as well as coordinating with university administrators—while trying to keep Illinois Tech student-athletes in shape. She advises them to use what is available and to follow recommended health guidelines, be it in an open field or on couches, tables, or chairs in their homes. "[Sarah

and I] were doing physical therapy sessions via Google Meet and Zoom. We were trying to write up some workouts and protocols for student-athletes to follow to try to maintain some physical fitness, just in an effort to prevent injuries," Wehde says.

→ July 27, 2020

The NACC postpones fall conference competitions and championships through at least the end of the calendar year; a little more than a week later, the NCAA cancels all Division III fall championships. Illinois Tech student-athletes, who had returned to campus to begin training before the NACC and NCAA decisions were announced, quarantine in their apartments and dorm rooms for a month. "I was impressed with the maturity of our student-athletes when the decision was made," Wehde says. "For more of them than I thought, their response was, 'I get it. It's the right thing. I may not like it, but if this is what we need to do for now, we understand.'"

→ Fall 2020

Socially distanced workouts begin, with the hope that all of the fall semester student-athletes will have the chance to play in the spring. In December 2020 Illinois Tech announces that only teams that play in the spring would return to sports action.

→ February 20, 2021

For the first time since March 10, 2020, Illinois Tech competes in an athletics competition, a 3–0 men's volleyball loss at Benedictine University. Still, the game was a triumph after nearly a year of work recalibrating and preparing for a return to play.

"It [was] extremely exciting for all of us.... We were testing [the volleyball] team multiple times to make sure that they were safe for travel," she says. "We communicated directly with the other school for what their needs are when we're on their campus, what their rules are, as well as what ours are for our teams." —**Andrew Wyder**



Leaving His Mark as Leader, and as Friend

BY **MARCIA FAYE**

I

n his first interview for the winter 2009 issue of *Illinois Tech Magazine*, Alan W. Cramb, then the new Illinois Institute of Technology provost and senior vice president for academic affairs, shared his vision for adding to student potentiality.

“A combination of undergraduate depth with professional-level sophistication can result in a new type of graduate—one that is a technical leader who is culturally and globally sophisticated, and a great communicator with a significant knowledge of a broad spectrum of issues, from law to design,” he said.

Alan would go on to succeed John L. Anderson as Illinois Tech’s ninth president, and this summer, he will retire from his position as the university’s top academic administrator. Even as he remains on the faculty of Armour College of Engineering, Alan will continue to provide students with opportunities to grow and to excel within Chicago’s only tech-focused university.

University Regent Bud Wendorf (ME ’71), chairman of the Illinois Tech Board of Trustees from 2013 to 2018, led the assessment team that considered Alan’s advancement to the role of president in 2015. Bud says that “there was such a groundswell of support for him moving into that slot from his successes as provost”—successes that included Alan’s constant emphasis on the student body.

“What struck me was that a president of a university has a lot of constituencies to deal with. But I was awestruck that no matter what the issues, Alan always had a global view of what had to be done—and he was always focused on students,” says Bud. “Alan always remained true to being an educator and what had to be done to make the students successful.”

While Bud stresses that Alan is “all business” when it comes to university matters, he has also been a fun and personable pal. In a phone call from his home in Arizona, Bud recalls the time that Alan visited him there for a golf charity fundraiser. As they approached the 15th green, a bobcat appeared, stalking some rabbits.

“It was kind of funny because neither Alan nor I are really great golfers, so that was a big story for us to talk about—instead of discussing our birdies, we were discussing the bobcat!” says Bud, who also shares a passion for Formula One racing with Alan. Bud says that his own personal allegiance to the university runs deep. But Alan, who emigrated from Scotland to enter into the Ph.D. in materials science program at the University of Pennsylvania, follows suit.

“The university is my alma mater, but, for him, well, he adopted us. He really thinks the world of Illinois Tech; he lives and breathes it,” says Bud. “It was such a pleasure working with him because he takes the university seriously, and he did so many great things to try to make it better. From the perspective of the trustees, he is, and always has been, highly respected for the effort he has put forth. He is truly a quality person.”



PHOTO: MICHAEL GOSS

[Left to right] Illinois Tech President Emeritus John L. Anderson joins Alan W. Cramb and then Illinois Tech Board of Trustees Chairman Bud Wendorf (ME '71) at Alan's inauguration as ninth Illinois Tech president.

"Alan further demonstrated his leadership agility and vision during the surprising and confounding COVID-19 pandemic shutdown/slowdown. On the one hand, Alan was able to inspire the faculty, staff, and students to convert overnight and safely to a new, more online approach to advancing together so that all students were able to be moved along and graduate without compromising Illinois Tech's distinct quality standards. On the other hand, while Alan had to cultivate further consensus for the tough, sophisticated adjustments to right-size the institution's budget during this crisis, he had the vision to know that the university had to continue making select investments even in such a challenging budgetary environment, including making investments in student community life and hiring top-notch talent.

"We were all lucky to have been able to serve with and support Alan in his prodigious accomplishments as provost and then, as president. Alan is a gifted leader and an even better friend."

—**Michael P. Galvin (LAW '78)**, Current Chairman of the Board of Trustees



PHOTO: BONNIE ROBINSON



PHOTO: DAVID ETINGER

[Above] [Left to right] Alan W. Cramb with former Illinois Tech Board of Trustees Chairman Bud Wendorf (ME '71) and Michael P. Galvin (LAW '78), current chairman of the board. [Below] Mr. President, the DJ, spinning vinyl at the A. Sidney Katz Radio Studio of WIIT 88.9 FM, Illinois Tech's student radio station

"It's rare in tertiary institutions for the provost to be appointed as president from the same institution. In Alan's case at Illinois Tech, it was the easy decision for the board. Alan's performance as provost validates his ability to make difficult and much-needed decisions in a cordial, appropriate, and collegial manner. The trustees knew he earned the respect of faculty, staff, and the student body. His ability to work closely with all stakeholders, including President Anderson and the trustees, was equally well received by alumni, donors, and community leaders. When you marry this mutual trust and respect to his proactive/visionary strategy and proven ability to successfully implement, it's easy to understand why his tenure as president has been so successful."

—**Craig J. Duchossois**, University Regent



PHOTO: MICHAEL GOSS

"How does one describe Alan? An engineer, and a very good one. A Scotsman with more than the usual pipe music. An experienced university administrator with the courage to face hard problems. A somewhat old-fashioned male with the wit to marry a woman with more pizzazz. A good leader and a good friend.

"Jeanne and I have enjoyed many evenings with Alan and [his wife], Anna, both in Chicago and in Naples [Florida]. He is always open, realistic, and optimistic at the same time. He represents perfectly what is called the Stockdale paradox: the courage to face grim realities and the optimism to be sure of surviving them. That spirit has brought Illinois Tech through COVID-19. His leadership has been one of the largest factors in the contributions that Jeanne and I have made to Illinois Tech. We only hope his successor has such virtues."

—**John W. Rowe**, University Regent and Chairman of the Board of Trustees 2006–2013

Highlights

from Alan W. Cramb's Tenure as President

Successfully led the university through the pandemic, ensuring that all students could graduate on time

Construction and opening of the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship, the first academic building on campus since the 1970s

The renovation and renaming of the Robert A. Pritzker Science Center, the John T. Rettaliata Engineering Center, and George J. Kacek Hall, plus the current renovation of Cunningham Hall, significant investments in both student life and educational priorities

The purchase of both IIT Tower and Jeanne and John Rowe Village

The refinancing and reduction of university debt while increasing liquidity, leading to a very positive financial future for the university and improved ratings from Moody's

The initiation of the campaign *Power the Difference: Our Campaign for Illinois Tech* and raising more than \$350 million while president

The launch of the Ocient Computational Center

Partnership with MCM Development Group (Armour Institute, LLC) to secure the future of Main Building

The implementation and renewal of Illinois Tech's five-year strategic plan

The debut of the first undergraduate degree program in artificial intelligence in the Midwest

The launch of the College of Computing

Co-chair of the Presidents' Alliance on Higher Education and Immigration, a national organization focused on issues of our undocumented and international students

The formation of the Staff Advisory Council and the Student Advisory Council, to create a more direct connection between staff, students, and the president

The transition of university sports participation to NCAA Division III and subsequently joining the Northern Athletics Collegiate Conference

PHOTOS: BONNIE ROBINSON



[Left to right] Illinois Tech presidents emeriti Lew Collens and John L. Anderson join Alan W. Cramb and then Illinois Tech Board of Trustees Chairman Bud Wendorf (ME '71) onstage at Alan's presidential inauguration.



Students at a recent M. A. and Lila Self Leadership Academy retreat listen to a presentation by Alan W. Cramb.

"President Cramb has been so great to work with through the President's Student Advisory Council (PSAC). Through the many meetings I have had with President Cramb through PSAC, he was always very open to listening to and discussing issues, concerns, and ideas of the student body, and always had the students' best interest in mind. He always, at every single meeting, encouraged us to come up with ideas to improve the student experience at [Illinois Tech]. And the fact that he met with us and valued the importance and goal of PSAC is a testament to how much he cares."

—Natalia Gielczowski (CHE, M.S. ENVE '21), PSAC Secretary

New Illinois Tech President Alan W. Cramb [left] shares a photo with his friend, then Illinois Tech Board of Trustees Chairman Bud Wendorf (ME '71) [right], at Alan's inauguration as ninth president of Illinois Tech.



PHOTO: DAVID ETTINGER



"My 13 years in leadership at Illinois Tech, first as provost and then as president, have been the highlight of my time in academia. Working with our faculty, staff, and students has been a joy. They are unique and outstanding, allowing the university to weather some stormy times and arrive at this transition where Illinois Tech's future is very bright. We can see the end of the pandemic and a return to our strengths in experiential learning, the development of the leaders of the future, and our making a difference in the world through our graduates.

"No leader leads on their own. My accomplishments are the result of a great leadership team that toiled to make me successful—Peter Kilpatrick, Mike Horan, Anthony D'Amato, Sandra LaPorte, Bruce Watts, Jess Goode, Mike Gosz, Darsh Wasan, Nick Menhart, and Ernie Iseminger. I thank them for their efforts, teamwork, and willingness to always focus on the best interests of the university. I also would like to thank my board chairs, Bud Wendorf and Mike Galvin, for their support and aid during my time as president, and also to the university regents, four very special people without whom the university would not be where it is today.

"Finally, I'd like to recognize my wife, Anna, who allowed me to be your president through her sacrifice and willingness to share her life and my life with others. She was always there to listen, give sage advice, turn up when necessary, and share the positives and negatives of a leadership position. My successes were only possible because of her support and love.

"Ad Astra."

—Alan W. Cramb, President, Illinois Institute of Technology 2015–2021



PHOTO: BONNIE ROBINSON

Alan W. and Anna Cramb





River Renovation

BY ANDREW CONNOR

In 1993 brigades of volunteers, working alongside the United States National Guard, hastily filled sandbags to create makeshift dikes as flood water overtook the riverside town of Warsaw, Illinois—among them, then 8-year-old Jessica Henson (ARCH '08). Heavy rainfall and colder than normal temperatures had led to above-average soil moisture, causing hundreds of miles of the Mississippi River to swell and the ensuing flood to result in billions of dollars in damage. Known as the Great Flood of 1993, it remains as one of the worst floods in U.S. history.

Though Henson vividly remembers the floods destruction, she also recalls, more fondly, the land around the area teeming with wildlife, and playing with her brother along the many streams that branched from the river.

“Life centered around the river where I grew up. We lived by the heartbeat of the Mississippi River, right at what is historically known as the Des Moines Rapids and Lock and Dam 19, and, gosh, we loved it,” says Henson. “But what the river was doing at any given moment was very present. My dad worked in a corn syrup refinery along the river, and when the river was low, it had implications for their cooling processes. When the river was high, it impacted getting to my grandma’s house because the bridges would close.”

Living so close to the Mississippi River instilled in Henson a love of nature and the outdoors that stays with her today, and as she grew up, she acquired a passion for architecture as well. To test whether architecture was really the path for her daughter, Henson’s mother signed her up for Experiment in Architecture at Illinois Institute of Technology, a summer program for high school students interested in the profession.

“I think my parents sent me to that two-week program to determine that it was wrong for me,” says Henson. “But it was so perfect; I had probably the best two weeks of my life. It was all the things that I had wanted to do, bringing together art and creativity with my interest in math and engineering.”

Initially, Henson wasn’t planning to attend Illinois Tech. The Experiment in Architecture program was great, but she says the lack of nature in Chicago intimidated her. Still, she applied, and when she received the Camras Scholarship that provided a full ride, she couldn’t pass up the opportunity. Henson initially gravitated toward structural engineering, going so far as to minor in it. But in her fourth year, to fill a requirement, she took a course on the history of the Prairie School and landscape architecture, which changed everything.

“If architecture felt perfect already because of the combination of things, landscape architecture was one step further; it brought

Photo: Damon Casarez

in my love for the environment,” says Henson. “Those landscape architects working in the Midwest, like Jens Jensen and O. C. Simonds, had all these conversations about the prairie rivers and the limestone. They were thinking about that as designers and as stewards of a larger environmental and regional context. In that, I started to think a lot about the landscape that I had grown up in.”

After graduation Henson enrolled in the Master of Landscape Architecture Program at the University of Pennsylvania and began working for OLIN, the renowned landscape architecture firm founded by Laurie Olin, whom Henson likens to “a modern-day Frederick Law Olmsted.” She began researching and teaching courses about the Mississippi River and its surrounding context at the University of Illinois at Urbana-Champaign, ultimately leading to the creation of the book on which she serves as co-editor, *Fresh Water: Design Research for Inland Water Territories*, which analyzes the implications of design interventions in Midwestern waterways, including the Upper Mississippi River.



In 2014 Olin received a call from Frank Gehry—the star architect behind such buildings as the Guggenheim Museum in Bilbao, Spain, and the Walt Disney Concert Hall in Los Angeles—whom the nonprofit organization River LA tapped to explore how the 51-mile-long Los Angeles River could be improved through architecture. Gehry and Olin assembled an interdisciplinary team composed of OLIN landscape architects and planners, Gehry Partners architects, and engineers from Geosyntec. Henson became a part of that team, serving as an associate and one of the project’s managers, contributing to her recent rise to partner at the firm.

“Continuing to teach, Jessica moved to Los Angeles to organize, manage, and coordinate our office team with the architects, engineers, other consultants, Los Angeles County public agencies, citizen forums, and participation, which she has done brilliantly,” says Olin. “Her hands-on manner—in



Master Plan Sites Map

Images: Courtesy of LA River Master Plan 2020, LA County Public Works, OLIN, Gehry Partners, Geosyntec

the field with workers, in group work sessions, and in public forums; her grasp of technical detail as well as the big picture of the environmental and social issues facing our nation and the world today; and her energy, initiative, and ability to work with a wide diversity of people and situations led to her rise within the firm.”

For the first two years the work was mostly pro bono with some grant funding, but in 2016 the County of Los Angeles voted to update the river’s master plan for the first time in 25 years.

“We were so uniquely positioned to slot into there and when we interviewed for the project with the county, they’re like, ‘Wow, you’re already two years into the data,’” says Henson. “The way we wrote the scope with the county for the LA River Master Plan is how you would approach an academic research project, multidisciplinary and based on the best data.”

Released as a public draft by LA County Public Works earlier this year, the plan is a sweeping but holistic vision for the future of the waterway,

which spans Los Angeles County and 14 surrounding cities, and varies from human-made concrete channels, levees, and dams—the product of the U.S. Army Corps of Engineers’ effort that ramped up in 1938 to control the river’s flow and reduce flooding—to natural soft-bottomed reaches.

“As Los Angeles grew, transportation corridors and rail lines continued to hem in the river, leading to greater and greater risk during floods. As floodplain development expanded and as Los Angeles became more important to the national economy, huge investments were made to improve the conveyance of flood flows away from the city and into the Pacific,” says Mark Hanna, a Geosyntec engineer and one of the leaders of the master plan. “Today, because it is a calculation of risk and competition for dollars, flood infrastructure cannot be designed to protect against all flooding, while at the same time, there are other community needs such as access to park space, community connectivity, ecosystems, and water-supply increase. The equation

just gets more complex with the real threat of climate change.”

The master plan attempts to reconcile the complex mishmash of engineering, environmental, and social factors that have caused pervasive flooding, pollution, limited access to public spaces, and disenfranchisement among surrounding communities. It aims to do so with social equity in mind and was informed by community engagement sessions. That is why the plan goes so far to include affordable housing—meant to mitigate the gentrification that often follows high-profile projects—along with proposals for flood mitigation and improved hydraulics. But environmental issues such as flooding and pollution tend to have a harsher impact on the most economically vulnerable, and they are becoming increasingly pervasive as a result of climate change, Henson says.

“The number of people near the southeast [part of the river] who live in a 500-year floodplain is remarkable—not in a good way. It also happens to be one of the most polluted, underserved, and economically depressed areas,” says Henson. “When you think about something like what happened in Houston a

couple years ago, where they had two back-to-back 500-year storms, that makes a clear argument for the need to think about community resilience.”

“We knew things would be expensive. It’s big, it’s long, and we did not want to leave anything as a ‘someone should.’ I think a lot of planning documents forgot to think about funding, leadership, governance, and implementation.”

—Jessica Henson

The river’s length, diversity of its conditions, and array of issues at play make the LA River Master Plan immensely complex, with no one-size-fits-all solution. But there are recurring themes and strategies in the plan’s aims. Side channels that relieve pressure off the main channel could reduce the risk of flooding while creat-

ing much-needed ecological and educational opportunities. Expanded trails, bridges, and pedestrian plazas would create more recreation and social spaces for local residents. Off-channel sites could host community centers and affordable housing complexes. Native plantings would create green spaces for people and wildlife alike, while remediating polluted soil.

Implementation of the plan’s components will require the partnerships of Los Angeles County, the surrounding cities, and other entities. But crucially, Henson says that every definitive action within the plan is tied to a county department and potential fundraising streams, providing a clearer path to implementation than you would typically see in a master plan.

“We knew things would be expensive. It’s big, it’s long, and we did not want to leave anything as a ‘someone should.’ I think a lot of planning documents forgot to think about funding, leadership, governance, and implementation,” says Henson. “We didn’t want that, so we made a rule in our brain trust that there would be no ‘someone should’ in the plan, because that becomes ‘no one ever will.’” ●



Compton-Paramount Connector

The Compton-Paramount Connector is an example of a potential project that could be located at one of the proposed project sites identified in the LA River Master Plan. It creates new connections across the LA River and the 710 Interstate with a platform park and a pedestrian bridge. The platform offers a variety of program and habitat areas, as well as a unique elevated view of the LA River.

MORE ONLINE

LA River Master Plan: larivermasterplan.org



A LIFE LARGER THAN THE BIG SCREEN

By Laura Schmitt

Photo: Jacob Osborne

Over the last 28 years, United States Marine Corps Brigadier General Len Anderson (STC '93) has graduated from the Navy's premier fighter pilot TOPGUN training school, participated in NATO-led airstrikes that helped end the Bosnian War, flown combat sorties over southern Iraq, and performed gravity-defying aerial moves with the Blue Angels precision flying team at airshows nationwide.

As if that's not enough, he also spent several years in Hollywood pursuing his lifelong interest in acting, landing roles in action-adventure flicks such as *Captain Phillips* and *13 Hours*, and the television show *The Brink*.

Today, Anderson leads a team of about 250 Marines, other military personnel, and civilian cyber experts in battling the Islamic State of Iraq and Syria (ISIS). As deputy commanding general of Joint Task Force ARES under U.S. Cyber Command, Anderson and his team have provided intelligence to coalition forces in combat, and they have reduced the quantity and quality of ISIS media, which has disrupted and degraded the extremist group's influence and power.

"His professional journey has never been done before and will most likely never be repeated," says longtime friend and former Illinois Tech fraternity brother Brian Ippolito (AE '92), president and chief executive officer of Orbis Technologies, Inc. "In short, General Anderson is an inspiration—he knows no fear and believes anyone can do anything. He is proof that morals, hard work, education, and passion are the ingredients to success."



What role did ARES play in destroying the ISIS caliphate?

When U.S. Cyber Command stood up our Joint Task Force in 2016, the Islamic State was winning the information battle. Using ubiquitous technology like cell phones and internet access, they were demoralizing Iraqi troops, recruiting adherents from afar, and inspiring global jihad. JTF-ARES was part of the U.S. military's solution to fight the Islamic State's global information system. Our approach leveraged both physical and informational aspects of military power in close coordination with other joint, interagency, and allied forces. Through relentless, combined application of physical and informational power—within and outside the combat zone—we were able to reduce the quantity and quality of Islamic State media, which in turn degraded their ability to coordinate with and gain new followers. We also provided support for kinetic strikes and ground maneuvers.

How does your ARES team disrupt ISIS's funding and recruiting?

ISIS depends on an international network of enablers, supporters, and affiliated groups as its proto-state has crumbled. We identify and disrupt the operations of their enabler networks, such as their propaganda and logistics support capabilities. Their physical defeat was accelerated because the Joint Task Force either helped remove resources that sustained Islamic State combat forces or identified connections between those forces and their supporters that could be used to create internal strife in the organization.

Think of all the things that drive you crazy about today's technology—slow downloads, dropped connections, access denied, program glitches. Now imagine how the ISIS forces would feel with these kinds of problems. In some instances, we've created tension between ISIS media members who've spent days editing videos only to see their final release and distribution fail. Creating confusion from the inside out can really impact their credibility and reputation, which leads to less support and less followers.

Has any of your military cybersecurity work translated into improved cybersecurity in the civilian sector?

While my task force is focused on operations against violent extremist organizations, there's not a day that goes by where we don't learn something new about cyberspace or information operations. We work closely with mission partners, which include federal cybersecurity organizations, to share our technical and tradecraft lessons learned.

I think the most important trend I've seen after overseeing JTF-ARES operations is phishing and poor cybersecurity hygiene continue to be top vectors for compromised computer networks. You wouldn't believe how often hackers find usernames and passwords in unprotected locations. ●

Read the complete interview with USMC BG Anderson, recipient of an Illinois Tech 2020 Professional Achievement Award, and his experiences as a cyber warrior, fighter pilot, and movie actor at magazine.iit.edu.

SELF MADE

BY STEVE HENDERSHOT

There was no college recruitment battle for Stephen Burks (DSGN '92). He applied to just one school, Illinois Institute of Technology, though it was more like applying to a single building: Ludwig Mies van der Rohe's S. R. Crown Hall.

Burks wasn't a globally renowned industrial designer back then, just an art-obsessed teen. As a pre-teen, he made his first solo trek on the "L" from his South Side home to the Art Institute of Chicago; by the time he finished high school, he knew both the Art Institute of Chicago and the Museum of Contemporary Art Chicago inside and out, along with the city's architectural history. And Crown Hall pulled at him like a magnet, not only because he considered it to be "a temple of architectural education," but also because he loved the building itself, and the triumph of design that it represented.



Photos: Courtesy of Stephen Burks



“Something about the proportions and the way the milky white glass abstracted the light was so uplifting and essential that it made an indelible impression on me,” Burks says.

But something peculiar happened once Burks arrived on campus. As he absorbed the lessons of Bauhaus and began to find his own creative voice, he moved away from the aesthetic that drew him to Crown Hall in the first place. He dropped architecture in favor of product design and the multidisciplinary design education of the New Bauhaus that would later inspire him to gravitate toward a less-heralded aspect of the Bauhaus tradition: its emphasis on craft.

That shift in focus has helped to propel Burks to global acclaim. After moving to New York to attend graduate school at Columbia University, Burks broke through in the early 2000s with projects for major Italian design houses Cappellini and Missoni. His work was distinct because it incorporated textiles and other references rooted in his early work in countries such as Senegal and South Africa. Those early collaborations also helped Burks forge a creative identity that was fresh and well-suited to the cultural moment, even as it was strongly rooted in the century-old Bauhaus tradition.



"Everyone is capable of dreaming; therefore, everyone is capable of design, and everyone should have access to the possibilities of design."

—Stephen Burks

"Stephen is a true inheritor of the Bauhaus tradition, but instead of the steel-and-glass version of that legacy, it's the deep, process-led, aspect of it," says design historian Glenn Adamson, former director of the Museum of Arts and Design in New York. "He's connecting to one of the founding principles of modernism, which was later lost—to be flexible and attentive to locality and cultural specificity."

Burks has stayed true to that concept, and his career has flourished. In 2015 he became the only African-American to win the National Design Award in Product Design from the Cooper Hewitt, Smithsonian Design Museum, and in 2019 he became a Loeb Fellow at Harvard University. Burks has excelled not only while working from his Brooklyn studio, Stephen Burks Man Made, and while teaching at both Harvard and Columbia, but also as a globe-trotting traveler, who has worked with artisans around the world, from India, Ghana, Australia, and the Philippines, to students at Berea College in Kentucky.

Amidst that sustained success, 2020 marked an inflection point for Burks. It was the year of the pandemic as well as of America's national reckoning over racial justice. As perhaps the world's foremost African-American industrial designer, Burks was a natural fit to help his peers grapple with racial issues in their industry.

"This past year was traumatic but also galvanizing," says Burks. Over the last year, he seized on opportunities to speak out against inequality and a lack of inclusion in the design industry. While his message necessarily has racial and cultural implications, Burks has even broader ambitions when it comes to breaking down barriers in the rarified world of design.

"Everyone is capable of dreaming; therefore, everyone is capable of design, and everyone should have access to the possibilities of design," Burks says. "There is enough space for everyone to have a seat at the table, if we're open to more pluralistic approaches to what we make and how we make it."

Burks also has become a sort of journalist during the pandemic, co-hosting with Adamson a Zoom conversation series called Design in Dialogue, through New York gallery Friedman Benda. The series began early in the pandemic, and once racial justice joined COVID-19 as the top issues of 2020, Adamson invited the collaborative and inquisitive Burks to join him.

"He's played this incredible, pioneering role [as a breakthrough American designer of color]," says Adamson, author of the 2021 book *Craft: An American History*. "He's not old enough to be an elder statesman, but a lot of people have that kind of respect for him, simply for having broken through that barrier."

Next up for Burks is a midcareer retrospective exhibition at the High Museum of Art in Atlanta, where Curator of Decorative Arts and Design Monica Obniski is drawn to the diversity of Burks's work. She plans to present his craft-oriented projects alongside more commercial products, such as his Grasso seating collection for BD Barcelona, which earned Burks recognition as the first American to win a Furniture of the Year award from Spanish design association ADI-FAD.

"When you see the products of these two disciplines side by side, it becomes clear that they actually have more in common than we think," says Obniski. She notes that Burks "comes at design from this architectural and industrial design background, but it's filtered through this creative lens that you don't see from a lot of designers, which is his devotion to the handcrafted."

The frayed connection between craft and design seems odd to Burks. After all, his Bauhaus-inspired training taught him that that relationship to craft is not only natural, but imperative. So now, through his words and his work, Burks seeks to demonstrate his "belief that the closer the hand gets to the act of making, the more potential there is for innovation." ●



MORE ONLINE

Stephen Burks Man Made: stephenburksmanmade.com



BY ANDREW WYDER

STOPPING THE SPREAD

The research laid bare what a growing number of scientists who studied indoor air believed: aerosol transmission of COVID-19 was not just possible, but was likely a key transmitter of the SARS-CoV-2 virus.

Photo: Tony Rinaldo

Among them was Parham Azimi (Ph.D. ENVE '16), a research fellow at the Harvard T. H. Chan School of Public Health, who led a team of scientists whose study of COVID-19 transmission on a cruise ship was among the first to show that aerosol transmission was a concern that needed to be taken seriously.

Public health organizations such as the Centers for Disease Control and Prevention and the World Health Organization pushed back at the notion of aerosol transmission, only begrudgingly acknowledging its possibility after more than 200 scientists, including two of Azimi's mentors, argued for it in a letter to the WHO and as more research, including that done by Azimi's team, poured in about its reality.

Never expecting to spend his career researching infectious diseases, Azimi found himself frustrated by the push-back. Settling into this career field, one focused on educating the public to help people stay safe, he saw the two public health organizations diluting the message.

"[The public] really cares about their health," Azimi says. "I saw that [schools and restaurants he consulted for] wanted to have a healthier environment. They were cleaning surfaces every hour. And they were injecting disinfectants into the air. They didn't know that the right way to do it is increasing ventilation."

Azimi began his infectious disease transmission research as Illinois Tech Professor of Architectural Engineering Brent Stephens's first doctoral student in 2012, with a project studying the impact of HVAC filters on limiting the risk of influenza transmission in indoor environments. It continued at T. H. Chan, where one of his early projects focused on finding a way to control the 2019 outbreak of measles among children. His experiences modeling the transmission of infectious diseases proved indispensable when the potential enormity of COVID-19's impact started to hit home in January 2020.

A member of the research team led by Joseph Allen, an associate professor of exposure assessment science at T. H. Chan and director of the Harvard Healthy Buildings Program, Azimi was tasked with studying COVID-19 transmission. The team, which included Stephens and Azimi's wife, Zahra Keshavarz, among others, recognized the importance of studying a controlled environment. The COVID-19 crisis aboard the *Diamond Princess* cruise ship in Japan (where one infected passenger turned into more than 700 infected) in early 2020 immediately jumped to mind.

"We knew that it was just one infector," Azimi says of the outbreak on the vessel. "We knew how many days he was there. And then, approximately, we knew how people interacted on that cruise ship and how many people got infected during that time. We used that case study to be able to

estimate the contribution of different pathways in transmission of COVID-19."

Azimi says the initial plan was to run 12 scenarios, but they ended up running more than 20,000. The results showed that aerosol transmission—small droplets that hang in the air—likely accounted for more than 50 percent of the COVID-19 transmission on the *Diamond Princess*.

Azimi's modeling programs allowed scenarios to simultaneously look for transmission through droplets and aerosols, transmission beyond six feet, and transmission through contaminated surfaces. Most modeling programs look solely at airborne transmission, Allen says. The research brought the idea of aerosol transmission of COVID-19 to the public

and was noteworthy enough to earn publication in the *New York Times* in late July 2020, well before its publication in the *Proceedings of the National Academy of Sciences* in February 2021.

"The modeling work is really quite sophisticated, and it is a credit to Parham's skill," Allen says. "The real power of the model is for what it can become. Yes, we were interested in understanding the disease dynamics on the *Diamond Princess*, but it's a

model that can be used for other infectious disease models going forward."

That's what drives Azimi, helping to keep the public safe from infectious diseases like COVID-19. He wants them to understand that they simply can't wait for a vaccine; they have to understand the importance of indoor air and ventilation. It's the only way to prepare for whatever comes next.

"I'm a member of the ASHRAE Epidemic Task Force, with a focus on ventilation. We wanted to suggest what is the required or desired ventilation for indoor environments," he says. "We are working on that, too, making suggestions to homeowners and building managers to tell them know how they can find out if their building is safe. Is it reducing the number of the people that are there or increasing the ventilation? What are the mitigation techniques that they are taking, and how it would help them to reduce the risk?"

Azimi adds, driving home the point: "We had a measles vaccine, and the influenza vaccine is safe and cost effective, but there are outbreaks of that....Now that we have a COVID vaccine, what happens in 10 years? If we have another disease, are we ready for that? We have to make our buildings and built environments ready for another pandemic." ●

"Now that we have a COVID vaccine, what happens in 10 years?"
—PARHAM AZIMI

MORE ONLINE

"Aboard the *Diamond Princess*, a Case Study in Aerosol Transmission": nyti.ms/3836oAu;
Harvard Healthy Buildings Program: forhealth.org



Biomedical Engineer at Work:

Making Sticker-Like Sensors

By Simon Morrow

Chi Hwan Lee (ME '07) is known for bringing people—and ideas—together.

“He’s a social guy,” says Young Kim, an associate professor of biomedical engineering at Purdue University. “He brings people out of their offices.”

Lee’s friendly proactiveness spills over into his research. He spent his first year at Purdue giving a seminar about his research building solar cells in sticker-like thin films, called Sticktronics, to an unexpected group: Purdue’s medical researchers. In doing so, Lee formed new connections, and now his lab uses Sticktronics to revolutionize medical monitoring by designing wearable bioelectronic devices.

Learn what one Illinois Institute of Technology alumnus is doing to improve medical monitoring.

WHO: Chi Hwan Lee, assistant professor of biomedical engineering and mechanical engineering, Purdue University

WHAT HE DOES: Lee developed a printing technology—Sticktronics—that turns any thin film into a sticker that can be stuck onto any surface as easily as a temporary tattoo. Now he is using Sticktronics to develop wearable medical devices based on clinical needs.

WHY HE CAME TO ILLINOIS TECH: Lee started college as an industrial engineering student at Ajou University



Photos: Courtesy of Purdue University

and his colleagues developed a flexible, sticker-like sensor that a patient can easily put on in the comfort of their home. The sensor attaches directly to a patient's neck and sends their doctor all the necessary information to monitor their chewing and swallowing. In clinical trials, the little sensor sticker performed as well as the sensor contraptions that most patients currently need to visit a hospital to use.

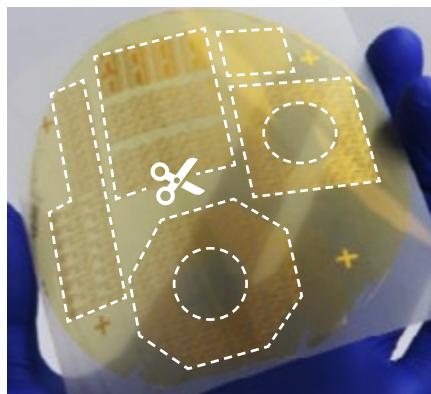
Lee is also working on a smart contact lens project that provides ocular health monitoring. Adding electronics into a material that has to be transparent—and wet—has unique design challenges. While companies such as Google have attempted smart contact lens projects, they have tended to make the contacts using plastics that are easy to add electronics into but not very wearable, drying out the eye or depriving it of oxygen. Instead, Lee and his colleagues have developed a way to build the sensors directly into the standard commercial hydrogel soft contact lenses that many people already comfortably wear. Lee's Purdue colleague Hugh Lee, associate professor of biomedical engineering, says, "None of the advances in wearable sensors and other devices will matter if people do not actually wear them. His technology enables this."

GREATEST CHALLENGE: The problems his research takes on, Chi Hwan Lee says, are too big for just one researcher. The multidisciplinary teams he has formed are essential to the success of his research. However, Lee says, "for general engineers, doctors use a completely different language," which means identifying and understanding actual clinical needs is the most difficult yet most important step in his research process.

WHAT'S NEXT: Lee says he wants to focus on progressing his contact lens design into a next-generation wearable medical device. "For translational research, it's important to put a lot of effort into the commercialization of technology. I'm really eager to bring these technologies out of the university, and I believe these wearable devices can help actual patients manage disease in the near future," says Lee. ●

in Suwon, South Korea, and then took advantage of the university's dual-degree partnership with Illinois Tech to complete a mechanical engineering degree in Chicago. While he came to Illinois Tech with plans to make a career in industry, Lee says Illinois Tech introduced him to a new culture of innovation, entrepreneurship, and ambition, ultimately convincing him to continue his education as a graduate student at Stanford University.

NOTABLE ACCOMPLISHMENTS: Every year approximately 9.4 million adults in the United States alone experience swallowing disorders. Treatment for a patient with persistent problems requires frequent monitoring that may involve making trips to a hospital multiple times per week for rehabilitation. In 2019 Lee



Sticker-like electronic sensors cut from thin film can be adapted to fit a variety of surface areas.



Jeanne and John Rowe Endowed Professor in the College of Architecture John Ronan [left] with Gerald "Jerry" Maatman (FPE '51)

Making a Big Swing for Illinois Tech Athletics

IN 1988 GERALD "JERRY" MAATMAN (FPE '51) invited his industry's most powerful critic out for dinner. Joan Claybrook, president of Public Citizen, was a lobbyist with a thick Rolodex and a grudge against auto insurers such as Kemper National Insurance Company, where Maatman had recently been appointed chief executive officer.

Maatman took a big swing that day, one that he hoped would help insurers and public interest groups bury the hatchet for good. By the time Maatman and Claybrook had finished their meal, they had formed a partnership that would go on to save hundreds of thousands of lives. Did he have any idea the conversation would go so well?

"Hell no," says Maatman, with his characteristic candor and humility. But big swings have always been Maatman's specialty.

Born in Chicago's Roseland neighborhood, Maatman was a bright student who finished high school at 16. As a first-year student at Illinois Institute of Technology, he went out for varsity baseball. He was featured in *Tech News* that same year for

clouting the Scarlet Hawks' first home run of the season, the first of many school newspaper reports on "Jerry Maatman, Star Outfielder."

After graduation Maatman went to work for the Illinois Inspection and Rating Bureau, which had funded his education with a scholarship. He enjoyed his time there, but by 1958, Maatman returned to Illinois Tech, for what turned out to be another big swing, as an associate professor and chair of the fire protection engineering department. Around the same time, he was summoned to Chicago City Hall to meet with Mayor Richard J. Daley.

"He felt it was time to overhaul the fire protection codes for the entire city," Maatman recalls, "in part because he was irritated that New York had a better rating than Chicago."

Daley hired him as a consultant and adopted many of his suggestions to update fire safety standards to make buildings and their occupants safer.

By 1966 Maatman ended his teaching career to join Kemper as chief engineer, responsible for providing fire safety guidance as a service to policyholders; he retired from the company in 1995 as chair and CEO.

But his proudest achievement began at his dinner with Claybrook. Maatman knew that even though auto insurance rates seemed high to consumer advocates, rates were actually undervalued in many states. Regardless, as a former government official in the Carter administration, Claybrook could use her influence in Washington, D.C., to put insurers into regulatory hot water.

Maatman had the data to prove that the fatality rates of automobile accidents, not insurance rates, were the problem. He proposed the formation of Advocates for Highway and Auto Safety, a lobbying organization dedicated to highway safety. Maatman recruited eight other insurers to fund the enterprise, while Claybrook recruited eight other public interest groups to staff AHAS and work on policy proposals.

The organization, still active today, has had tremendous success in shaping public policy. It lobbied for mandatory airbags and rollover cages in automobiles, mandatory motorcycle helmets, and other safety standards, including a 0.08 percent blood alcohol limit for motor vehicle operators.

Much as he had shown in baseball, Maatman possesses the qualities of an ideal teammate: he is selfless, serious, high-achieving, and creative. These qualities are what spurred his success, from center field to the C-suite, and are those that his former coach Ed Glancy saw that convinced him to put a 16-year-old first-year student on the Scarlet Hawks roster.

"I've always been proud of having been an engineering student at [Illinois Tech]," says Maatman. "[Illinois Tech] goes out of its way to offer a high-quality education for outstanding students, some of whom otherwise might not go to college at all."

Maatman's planned gift will benefit the Illinois Tech baseball team, supporting the same proving ground where he learned to take big swings. Students will have the opportunity to develop the same qualities of integrity, excellence, and collaboration that Illinois Tech Athletics nurtured in Jerry Maatman. —Joe Giovannetti

Class Notes

1950s

Theodore Brown

(CHEM '50), Bonita Springs, Fla., co-founded the new nonprofit, SWFL RESET Center, devoted to addressing environmental issues arising in southwest Florida. Initiatives are focused on clean water, systemic reforms in agricultural practices, implementation of new technologies in food production and distribution, and advocating for the rights of nature.

1960s

John K. Harasciuk

(ARCH '61, M.ARCH '63), San Diego, founded the nonprofit CRISIS (Community Resources in Support of Institutional Services) to serve and support private and public institutions with financial and professional resources.

H. C. Potter

(PHYS '63), Hermitage, Mo., wrote the book *The God Knot: Undone by Religion* by *Origins and Cycles*, which was published by Dorrance Publishing Co. in 2019.

Gerald Bepko

(LAW '65), Naples, Fla., was recognized as an "influential person" by the *Indianapolis Business Journal* for the publication's 40th anniversary.

Timothy Skvarenina

(EE '69, M.S. '70), San Antonio, received the 2020 Meritorious Achievement Award in Accreditation Activities by the Institute of Electrical and Electronics Engineers Educational Activities Board.

1970s

John Grillos

(MATH '70), Sonoma, Calif., wrote the book *The Art of the Exit: Choosing Your Exit Path and Maximizing*

Value When you Get There, which was independently published in 2020.

Francis Patrick Murphy

(LAW '75), Chicago, was named to the 2020 *Lawdragon* 500 Leading Lawyers in America ranking for the 11th year. He was also named to the 2020 *Lawdragon* 500 Leading Plaintiff Consumer Lawyers ranking for the second year.

Gail Bley

(LAW '79), Northfield, Ill., was recognized as one of the *Crain's Chicago Business* 2020 Notable Women in Law.

1980s

Brad Krygier

(MGMT '80), Savannah, Ga., was named director of finance and operations, Memorial Health Partners at HCA Healthcare.

Carol Gilden

(LAW '83), Lake Forest, Ill., was recognized as one of the *Crain's Chicago Business* 2020 Notable Women in Law.

Cynde Munzer

(LAW '83), Highland Park, Ill., was recognized as one of the *Crain's Chicago Business* 2020 Notable Women in Law.

Michael McGreal

(FPE '85), Denver, is a fire protection engineer with the Denver Fire Department after running his own fire protection engineering and code consulting business in Chicago for 27 years.

James Adelman

(LAW '86), Bel Air, Md., joined the Maryland Office of Attorney General and is now assigned to the Maryland Health Benefit Exchange.

Isaac K. Gamwo

(M.S. CHE '87, Ph.D. '92), Murrysville, Pa., received the 2020 American Institute of Chemical Engineers Minority Affairs Committee's Eminent Chemical Engineers Award.

1990s

Rachel Cowen

(LAW '93), Chicago, was recognized as one of the *Crain's Chicago Business* 2020 Notable Women in Law.

Eric V. Fullilove

(EE '94), Chicago, joined the Illinois Tech Alumni Association Board of Directors.

Larry Rogers

(LAW '94), Chicago, was installed as the 67th president of the Illinois Trial Lawyers Association.

Shannon Hassler

(LAW '96), Sandy Springs, Ga., was named a principal consultant for Yardstick Management.

Phuong Thuy Vu

(CHE '96), New Orleans, recently professed her initial vows to become a Dominican Sister of Peace.

Shanita Baraka Akintonde

(M.B.A. '97), Chicago, joined the Illinois Tech Alumni Association Board of Directors.

Brian Friedman

(LAW '97, M.B.A. '02), Deerfield, Ill., joined the William Blair Equity Capital Markets investment banking team in Chicago.

2000s

Amy Antonioli

(LAW '00), Chicago, contributed to the book *Distributed Generation Law: A Guide to Regulations, Policies, and Programs*, the first to take an in-depth look at the history and regulatory journey of the developing technology of distributed generation.

Mark Radtke

(LAW '01), Chicago, joined Cozen O'Connor's Bankruptcy, Insolvency, and Restructuring practice in the Chicago office.

Gina Arquilla DeBoni

(LAW '02), Glenview, Ill., received the Illinois State Bar Association Elmer Gertz Award, which focuses on human rights.

Jeffrey Greenspan

(LAW '02), Highland Park, Ill., was named to the board of directors of the Center for Enriched Living, a nonprofit organization serving teens and adults with intellectual and developmental disabilities.

Thomas Wendt

(LAW '02), Marathon, Wis., was appointed professor at Northcentral Technical College in Wausau, Wisconsin.

William Gibbs

(LAW '04), Chicago, was named to the 2020 *Lawdragon* 500 Leading Plaintiff Consumer Lawyers ranking.

Jessica Kimbrough

(LAW '04), Chicago, was named the chief diversity, equity, and inclusion officer for United Airlines.

Antonio Caldarone

(LAW '05), Oak Park, Ill., was named to the 40 Under Forty for 2020 ranking by the *Chicago Daily Law Bulletin*.

Linda Fine

(LAW '05), Lake Zurich, Ill., co-founded Buckley Fine, LLC.

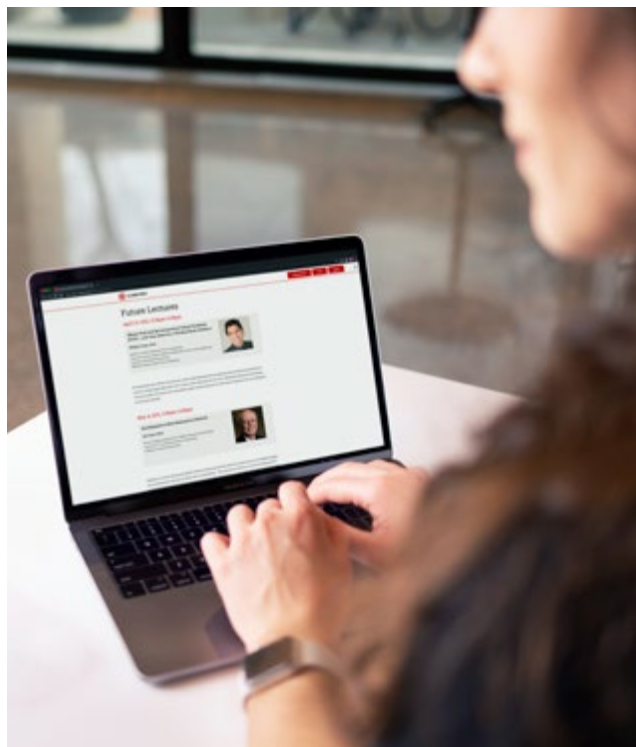
Lilianna Kalin

(LAW '05), Woodridge, Ill., was promoted to general counsel for the College of DuPage in Glen Ellyn, Ill.

Joseph Moore

(LAW '05), Crown Point, Ind., joined Segal McCambridge Singer & Mahoney as a shareholder in the Chicago office, as part of the Litigation and Catastrophic Insurance Claim Defense practice groups for Illinois and Indiana.

Calling All Lifelong Learners



With seven colleges, four research institutes, and \$56 million in annual research volume, Illinois Institute of Technology continues to make a difference through its groundbreaking work. New this year, Alumni University offers alumni the opportunity to “come back to class”—virtually—for a glimpse into how our faculty, staff, and researchers are making a real-world impact every day.

Since January alumni have participated in lectures just for them on fermentation, landscape architecture, and cutting-edge diabetes research. They’ve also had

the chance to hear first-hand about what’s new on campus, with town halls featuring two of Illinois Tech’s newest leaders, Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship Executive Director Maryam Saleh and Kenneth T. Christensen, the Carol and Ed Kaplan Dean of Armour College of Engineering.

Your student days might be behind you, but for Illinois Tech alumni, learning is a lifelong pursuit. Stay connected, explore new frontiers, and gain insight into how Illinois Tech makes a difference.

Join us for these upcoming Alumni University lectures:

Monday, June 14, 2021, 5:30–6:30 p.m. CDT

Beating the Stigma of Mental Illness



Patrick Corrigan

Distinguished Professor of Psychology

Research at Illinois Tech has shown that the stigma experienced by people with mental illness can be as troubling as the illness itself.

In this presentation, Distinguished Professor of Psychology Patrick

Corrigan will review his research describing the impact of mental illness stigma and effective ways to combat it. One such way is to promote interaction among people with the lived experience of mental illness and the rest of the population.

Wednesday, July 7, 2021, 5:30–6:30 p.m. CDT

Dolly Ludens: Why American Girl Dolls Play Video Games



Carly A. Kocurek

Associate Professor, Digital Humanities and Media Studies

American Girl presents dolls with often lavish accessories—the catalog includes doll kitchens, bedroom sets, and even a bowling alley—and Courtney, the brand’s most recent historical doll, is no exception.

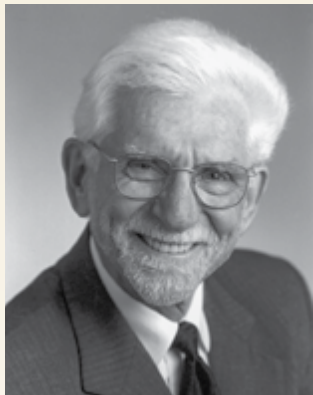
The character’s Pac-Man obsession is a fun bit of nostalgia for classic arcade games, and the doll-sized arcade cabinet certainly made a splash. But, why, exactly, is a doll playing video games? Join Department of Humanities Associate Professor Carly A. Kocurek for a talk about dolls playing games and what American Girl’s vision of the 1980s can tell us about our past and present.

Learn more and sign up at iit.edu/alumniuniversity

Have an idea for a speaker or topic you’d like to see? Let us know at alumni@iit.edu.

Speaking of Lifelong Learners...

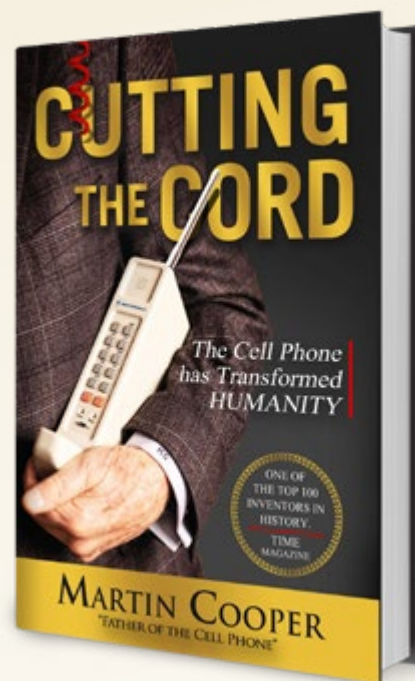
In *Cutting the Cord: The Cell Phone Has Transformed Humanity*, Martin “Marty” Cooper (EE ’50, M.S. ’57), “father of the cell phone,” recounts his storied career and the innovations that led to his invention of the world’s first practical cellular phone in 1973.



Martin Cooper (EE ’50, M.S. ’57)

Though that tale alone could fill a book, Cooper goes a step further, laying out a vision for the future of mobile communications technology, including how our thinking and policy on health care, education, and poverty reduction can all benefit from that ingenious device in your pocket.

Pick up your copy of *Cutting the Cord: The Cell Phone Has Transformed Humanity* at the Illinois Institute of Technology Official Bookstore (iit.bncollege.com) and other retailers.



Sam Nemanich

(BME ’06), Shorewood, Wis., began a tenure-track faculty position in the Department of Occupational Therapy at Marquette University.

Heather Kissling

(LAW ’07), Chicago, was selected as a *Managing IP*’s Top 250 Women in IP 2020.

Emer Simic

(LAW ’08), Chicago, was named to the 40 Under Forty for 2020 ranking by the *Chicago Daily Law Bulletin*.

2010s

David Doyle

(LAW ’10), La Grange, Ill., joined Cozen O’Connor’s Bankruptcy, Insolvency and Restructuring practice in the Chicago office.

Dana Popish Severinghaus

(LAW ’10), Chicago, was nominated by Governor J. B. Pritzker to be the director of the Illinois Department of Insurance.

Alexis Douglass

(LAW ’11), Chicago, was elected to partnership at the global law firm of K&L Gates in 2020, and focuses her intellectual property practice on a variety of transactional and litigation matters related to trademarks, domain names, social media, and copyrights.

Aura Lichtenberg

(LAW ’11), Chicago, was named to the 40 Under Forty for 2020 ranking by the *Chicago Daily Law Bulletin*.

Crystal Trauner

(ME ’11), Johnson City, Tenn., joined the Illinois Tech Alumni Association Board of Directors.

Christopher Griffin

(LAW ’12), Chicago, joined Swanson, Martin & Bell’s Chicago office as an associate.

Carlos Vera

(LAW ’12), Chicago, was named to the 40 Under Forty for 2020 ranking by the *Chicago Daily Law Bulletin*.

Bradley Puklin

(LAW ’12), Palatine, Ill., joined Swanson, Martin & Bell’s Chicago office as an associate.

Philip Micha

(LAW ’14), Wilmington, Del., joined Richards, Layton & Finger in 2019 in the Environmental, Commercial Real Estate, and Litigation practice groups.

Sultan Felemban

(M.B.A. ’14), Saudi Arabia, has been promoted to manager and nominated as a board member for the Riyadh Taqnia Fund, one of the earlier venture capital tech funds in Saudi Arabia.

Olurotimi “Timi” Akindele

(PS ’15), Chicago, joined the Illinois Tech Alumni Association Board of Directors.

Matthew McElwee

(LAW ’16), Chicago, announced the launch of the RM Law Group in Chicago, a firm he co-founded with **Jared Reynolds** (LAW ’15).

Benjamin Van Airdale

(LAW ’16), Ada, Mich., joined Carter & Tani, a franchise and business law firm in Wheaton, Ill., joining **Christine Tani** (LAW ’77) and **Alissa Carter Verson** (LAW ’16).

Kwanwoo Lee

(LAW ’17), Chicago, was elected to the board of the Asian American Bar Association of Greater Chicago for a second two-year term.

Taylor Brewer

(LAW ’19), Chicago, is an associate at Kopon Airdo.

Nicholas Saveas

(CS ’20), Shorewood, Ill., is a data engineer for Vertical Trail, a cloud-based solutions company.

Share Your News!

We want to hear from you. Send us your class note by visiting alumni.iit.edu/class-notes. Submissions may be edited for style and brevity.

Alumni Awards 2021

Since 1946 the Alumni Awards have been presented to Illinois Institute of Technology's most accomplished, innovative, and influential alumni. Alumni Award winners add to the university's rich history of visionaries who make the Illinois Tech community proud. Join us during Homecoming & Reunion Weekend 2021 (September 17–18, 2021) to celebrate these outstanding award recipients.

Alumni Medal

Theodore “Ted” Brown (CHEM '50) is a professor emeritus of chemistry at the University of Illinois at Urbana-Champaign, where he began working in 1956. Co-author of *Chemistry: The Central Science*, Brown was named a fellow of the American Chemical Society in 2010. He received Illinois Tech's Professional Achievement Award in 1992 and has given back significantly to the university's chemistry students.

Alumni Service Award

Jim Albrecht (FE '53, M.S. '55) worked for McCormick & Company for more than 40 years. He was a founder of the World Trade Center Institute in Baltimore, Maryland, and has had a lifelong commitment to youth education and global issues. At Illinois Tech Albrecht has a passion for connecting with students, mentoring dozens of students in Interprofessional Projects (IPRO) Program courses as well as supporting IPRO faculty and staff.

Collens Merit Award

Illinois Tech Board of Trustees member **Mayari Pritzker** (Ph.D. PSYC '01) is president of the Robert and Mayari Pritzker Family Foundation. She consults with various organizations worldwide, specializing in the areas of leadership assessment, selection, and development. Pritzker has championed the mission and values of the university as well as contributed transformative gifts in many academic areas.

Galvin Award

James Hill Jr. founded his own accounting firm in 1972, becoming Hill, Taylor Certified Public Accountants, which merged with Mitchell & Titus in 2009. Hill is a member of numerous professional organizations, including the Illinois CPA Society and the National Association of Black Accountants. He has served as a board member of community organizations including the Better Government Association, the Chicago Economic Advisory Committee, and the Rainbow PUSH Coalition. At Illinois Tech, Hill is a Life Trustee, having served on the board since 1991.

International Award of Merit

Managing Director of Atristain Financial Advisors, **Ramiro Atristain** (M.S. FIN '93) is an executive-in-residence and adjunct professor at Dominican University in River Forest, Illinois. He has volunteered as a mentor for Stuart School of Business students and is also the host of a weekly podcast *SPR y Tu Dinero* on Spanish Public Radio.

Jongsub Moon (Ph.D. CS '91) is a professor at the Sejong Campus of Korea University. He has been instrumental in expanding Illinois Tech's alumni base and reach in South Korea and has also served as a mentor and point of contact for alumni living in Asia.

John J. Schommer Honor I Award

A standout student-athlete in swimming while at Illinois Tech, **James McMahon** (MET '81) worked at Abbott Laboratories for more than 31 years before retiring as a quality manager. He volunteers as president of the board of directors of Manzanita Ranch, which serves cancer and post-traumatic stress disorder patients through equine therapy.

Lifetime Achievement Award

Madhavan Nayar (M.S. IE '68) founded Unitech Systems in 1982, which evolved into the multi-million dollar company Infogix, Inc. He later established Illinois Tech's Nayar Prize, encouraging and challenging faculty, staff, and students to develop breakthrough, innovative projects that will produce meaningful results with a societal impact. Although Nayar passed away in 2019, he leaves a lasting legacy at Illinois Tech.

Outstanding Young Alumnus/ Young Alumna

Gerald J. Bekkerman (LAW '07) is a trial lawyer at Taxman, Pollock, Murray & Bekkerman. With a history of success representing plaintiffs in personal injury cases, he was named to the *Chicago Daily Law Bulletin's* 40 Under Forty ranking in 2018.

James “Jim” Ciston (AE, ME '04) is a staff scientist at the National Center for Electron Microscopy at Lawrence Berkeley National

Laboratory. The core of his research within the Molecular Foundry has been the use of advanced electron microscopy techniques to elucidate the role of structure and bonding at surfaces and interfaces of materials. Ciston is the recipient of several industry awards in diffraction data and microscopy.

Rashi Khurana (M.S. ITM '09) is vice president of engineering at Shutterstock, where she leads the technical teams for the e-commerce site and the front-end platform. Khurana previously led the contributor experience team at Shutterstock. She also serves on the Ithaca College Cybersecurity Advisory Board and was featured by WeAreTechWomen as an Inspirational Woman in 2020.

Professional Achievement Award

Piyush Desai (M.S. EE '04, Ph.D. '09) is the co-founder and vice president of motor design for the Software Motor Company, now Turntide Technologies. He holds several granted and pending patents in the United States and internationally. Desai's research and experience focuses on electric motors, drives, controls, and photovoltaic solar.

Kumbakonam Rajagopal (M.S. MAE '74) is a University Distinguished Professor at Texas A&M University, where he holds the J. M. Forsyth Chair in Mechanical Engineering and joint appointments in other departments. Rajagopal is also a senior research scientist at the Texas Transportation Institute and has written three books on mechanics.

Robert “Bob” Surette (LAW '97) is president and a shareholder of the law firm McAndrews, Held & Malloy. His practice is focused on intellectual property dispute resolution and technology-related disputes. Surette has also served as president of the Chicago-Kent Alumni Board of Directors.

Mae Whiteside (CE '99) is the founder and president of CKL Engineers, a civil, environmental, and structural engineering firm. She is also involved in philanthropic and political endeavors, and is the founder of the Women STEM Entrepreneurs Breakfast Club, which advocates for women business owners.

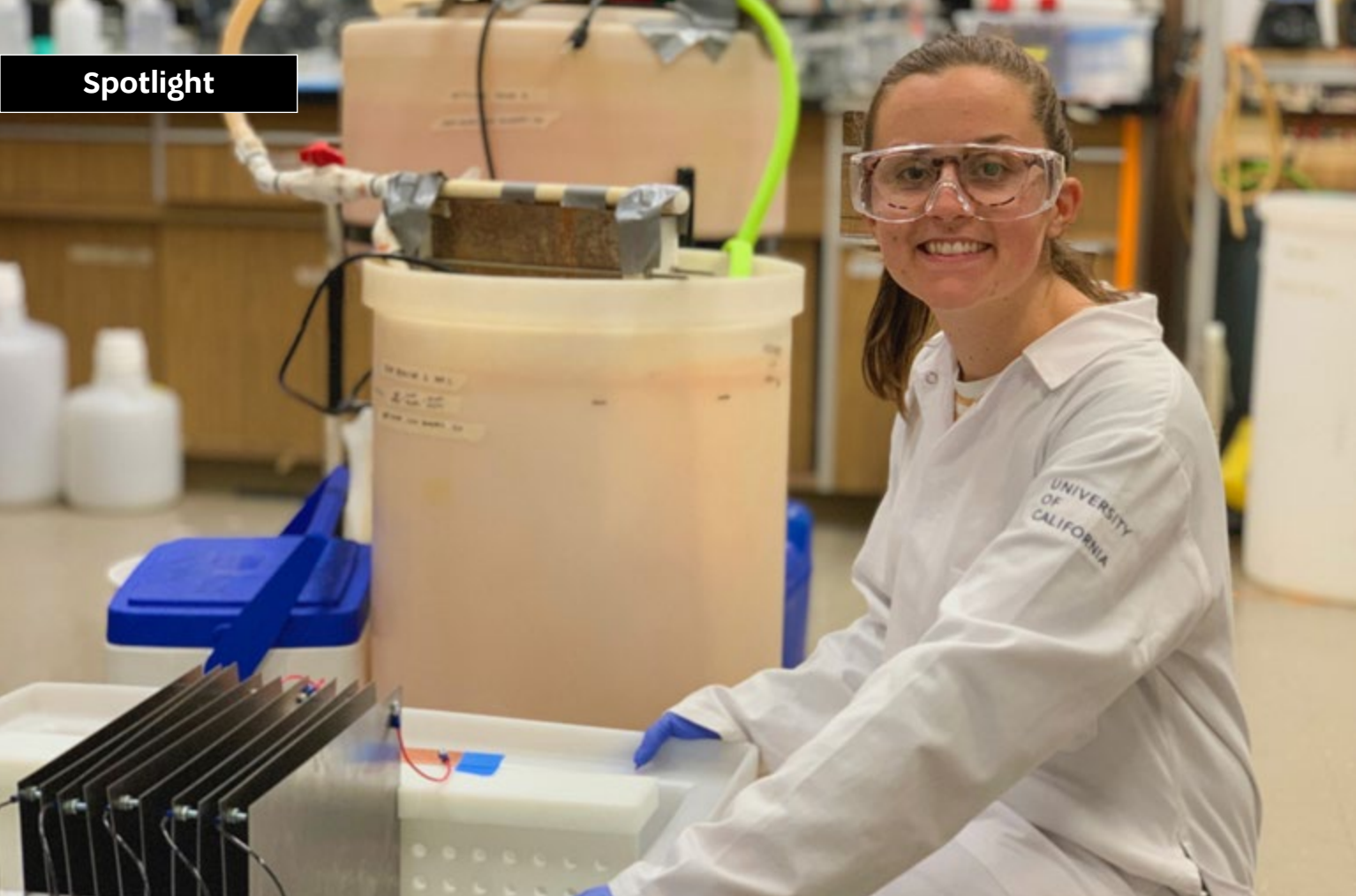


PHOTO: COURTESY OF SARA GLADE

Following the Life-Giving Flow

SARA GLADE (CHE, M.S. ENVE '15) says that she took for granted having accessible, safe, and affordable drinking water as a normal part of daily life until she visited Haiti and Nicaragua through the Engineers Without Borders USA Illinois Institute of Technology Student Chapter as an undergraduate.

She won multiple water-related awards and scholarships while at Illinois Tech, and upon entering the Ph.D. program in environmental engineering at the University of California, Berkeley, she received a National Science Foundation Graduate Research Fellowship. As a member of a team headed by Berkeley's Ashok Gadgil, professor of civil and environmental engineering, she was able to explore an affordable method to remove arsenic from drinking water.

"In California, many small, low-income communities are disproportionately impacted by arsenic-contaminated drinking water, because they lack access to treatment solutions," says Glade. "The technology I investigated in my research is called ElectroChemical Arsenic Remediation (ECAR), a technology studied extensively in the Gadgil Lab at UC Berkeley and previously implemented in India. ECAR has potential as a technology lower in cost and easier to manage than existing alternatives; however,

the design of ECAR used in the India context needed to be modified before testing in the United States."

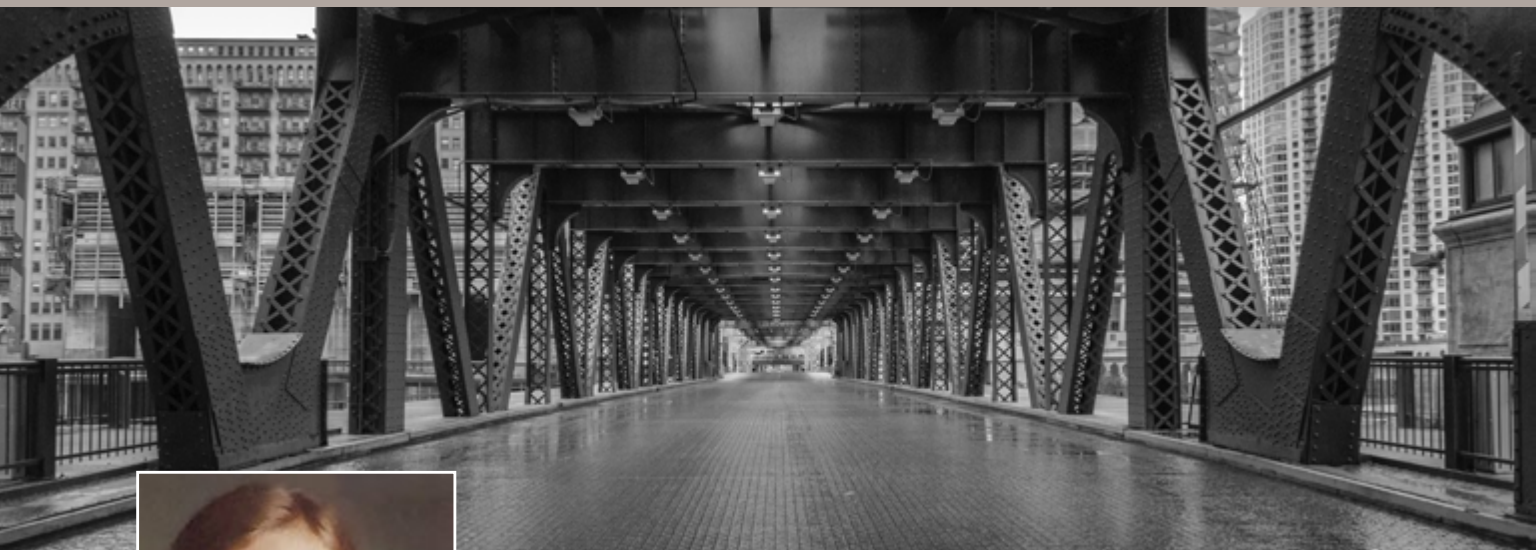
Glade designed, implemented, and field tested the modified treatment technology on a farm in the historically Black community of Allensworth in California's Central Valley. While the region is considered to be one of the most agriculturally productive in the world, many of its communities, such as Allensworth, where the farmworkers live and their children go to school, have to ship in expensive bottled drinking water because the tap water is filled with arsenic and other groundwater contaminants.

"Our results showed that we were able to successfully remove arsenic from initial concentrations of [about] 150 micrograms per liter to below the Environmental Protection Agency Maximum Contaminant Level of 10 micrograms per liter," says Glade. She also assisted testing in Allensworth a next-generation version of ECAR known as Air Cathode Assisted Iron Electrocoagulation, which significantly decreases the purification time.

Glade graduated from Berkeley last December and was accepted as a postdoctoral associate at the University of Colorado Boulder, where she is working on projects within the Resilient Infrastructure with Sustainability and Equity interdisciplinary research theme. —**Marcia Faye**

Bridge for Future Generations

Gunsaulus | SOCIETY



Doris Jean Oldham (CE '76) always dreamed of building bridges. A registered nurse by the time she was 21, she used her own savings to enroll at Illinois Institute of Technology, graduating at 31 with a 4.0 grade-point average and a degree in civil engineering.

While achieving her goal of becoming a civil engineer, Oldham experienced gender-based discrimination in the workplace,

which inspired a new dream: to encourage more women to embrace engineering careers.

Oldham's bequest to the university established the Doris Oldham Endowed Scholarship fund for female engineering students, which is building a different kind of bridge for future generations of strong and determined women, much like Oldham.

Benefits of an Estate Gift in Your Will or Trust

- Help ensure Illinois Tech's future.
- Leave a legacy of giving back.
- Give without affecting your current cash flow.
- Reduce any potential estate tax.
- Retain control of your assets during your lifetime.
- Direct your gift to a particular purpose.*

*Please check with us to make sure the gift can be used as intended.

If you have named Illinois Tech as a beneficiary in your estate plan through your will, trust, IRA, retirement plan, or insurance policy, please let us know so that we may acknowledge your generosity and include you in the Gunsaulus Society, which offers exclusive university events, lectures, and luncheons as well as member recognition in university publications.

FOR MORE INFORMATION, contact Marian Quirk at quirk@iit.edu or **312.567.5017**.

An Update from the Alumni Board Chair **Sherrie Littlejohn**

OVER THE LAST YEAR, I think it's safe to say we've all become used to confronting daily change. These changes have come in all varieties: anticipated change, unexpected change, change we've hoped for, change we've feared, and some of which we're still processing.

President John F. Kennedy once said, "Change is the law of life. And those who look only to the past or present are certain to miss the future." As a trustee of our alma mater and the chair of our Alumni Association board, I have a goal to help keep our entire alumni community firmly aware at this moment, recognizing that we get to make the change we want to see. It is the renewed thinking and conscious, intentional actions that we take today that will allow the best future to emerge for all of us.

Among the many changes at Illinois Tech this year is the retirement of Illinois Tech's ninth president, Alan W. Cramb. As we enter this transitional period between President Cramb and his successor, I want to share my gratitude to President Cramb for his leadership throughout his tenure. He has demonstrated his commitment to our entire community, traveling the world to connect with alumni, improving Illinois Tech's financial standing, and stewarding students, faculty, and staff through an unprecedented shift to remote learning and working thoughtfully, safely, and gracefully.

I am also appreciative of the groundwork laid by President Cramb and others over the past several years, which our next president will have the opportunity to build upon. The last two years in particular have yielded the establishment of the College of Computing and record-breaking fundraising. Both have set the stage for what, I believe, will be the beginnings of new and exciting opportunities for Illinois Tech, our communities, and the industries who will benefit from our students and faculty excellence.

Our 10th president will also have the opportunity to build upon our university's commitment to diversity, equity, and inclusion (DEI) in several critical, concrete ways. One of the first hires made by our next president will be the newly created position of vice president for diversity, equity, and inclusion. This will ensure a robust partnership between the president's offices and our ongoing DEI work across our university and our commu-



nity, and with industry leaders. Additionally, the work of our African American Alumni Association (4A) is taking a prominent role in helping to shape our DEI conversations under the leadership of 4A Chair Lester McCarroll Jr. (EE '83) and 4A Chair Emeritus Michael Hill (CS '82). These conversations among other cultural dialogues are stimulating actions for desired change yielding more inclusiveness and belonging.

President Cramb will also pass the baton to our next president to steward what we're calling The Chicago Difference. This initiative includes Illinois Tech's newly formed integrated skills, scholarship, and support for students from underrepresented backgrounds, including women and people of color, with a special focus on young people from Chicago's South Side and West Side. By cultivating and retaining homegrown local tech talent, Illinois Tech will activate its commitment to diversity, while simultaneously realizing our vision of propelling the city of Chicago to realize its future as a global technology leader.

As Illinois Tech alumni, we all share in Illinois Tech's journey to this point, including more than a century of making change. No matter what other changes we encounter this year, I am optimistic about our path forward, and I'm glad to share the journey with my fellow Scarlet Hawks.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sherrie Littlejohn'.

Sherrie Littlejohn (M.S. CS '82)

Trustee, Board of Trustees
Chair, Alumni Association Board of Directors

Obituaries

Joel T. Daly

(LAW '88), La Grange Highlands, Illinois, was a notable Chicago WLS-TV news anchor who worked at the ABC7 station for nearly 40 years before retiring in 2005. He was one member of the well-respected "Eyewitness News" team that also included Fahey Flynn, John Coleman, and Bill Frink. Daly and his co-anchor Flynn are credited with bringing the concept of conversation into news delivery. After his retirement, Daly worked as a legal analyst and consultant. He was inducted into the Chicago Journalism Hall of Fame (2001) and the National Academy of Television Arts and Sciences Silver Circle Chicago/Midwest Chapter (2002), and received the first Pioneer Award from the Illinois Broadcasters Association (2008) and five Emmy Awards from the Television Academy.

William M. Hannay III

Barrington, Illinois, was an adjunct professor at Chicago-Kent College of Law. A graduate of Yale University and Georgetown Law, he had a career that included a clerkship for retired Supreme Court of the United States Justice Tom C. Clark and U.S. Appellate Judge Myron H. Bright. Hannay was also an assistant district attorney in New York and became a partner in the Chicago office of Schiff Hardin. Hannay enjoyed acting and singing, and he was a member of the Barrington Village Singers, among other vocal groups.

Narinder S. Kapany,

Redwood City, California, was a physicist and entrepreneur who was considered to be the "father of fiber optics." From the time he was in high school in Dehradun, India, Kapany aimed to prove that light rays can be bent and went on to demonstrate in 1954 the transmission of light in bundles of connected thin glass fibers, in part, establishing the beginning of fiber optics communications. In the late 1950s Kapany and his wife moved to Illinois, where he joined the faculty of Illinois Institute of Technology. In 1960 they relocated to California, where Kapany began the company Optics Technology to commercialize his research and focus on product development. He later founded two more companies, Kaptron and K2 Optronics.

Marilyn Kouba

(CHEM '50, M.S. '63), Schaumburg, Illinois, credited her university education for her more than 35-year career as a chemistry and physical science teacher at Harold Washington College and other schools within the City Colleges of Chicago, beginning in the 1950s. She supported women in the science, technology, engineering, and mathematics fields through her longtime participation in the Delta Zeta international college sorority. A member of the American Chemical Society for more than 50 years, Kouba was active in the Chicago Section.

Robert J. Krawczyk

Batavia, Illinois, joined the College of Architecture in 1983 and retired as professor in January 2020. He held a number of administrative roles at the college over the years, including director of the Architectural CAD Lab (1988–1996), director of the undergraduate program in architecture (2006–2011), and director of the art@IIT Gallery (2004–07). Before coming to Illinois Tech, Krawczyk worked at the former C. F. Murphy Associates, Benkert Associates, and Burnham and Hammond. A recognized artist in the field of computer-generated art work, Krawczyk owned BitArtWorks, a digital art studio in Batavia.

Norman G. Lederman

Wakefield, Rhode Island, was an internationally recognized leader in and advocate for the field of inquiry-based mathematics and science teacher education. He and his wife, retired Illinois Tech faculty member Judith Sweeney Lederman, established the former Mathematics and Science Education Department at Illinois Tech in 2001, and in 2008, were selected by Perspectives Charter Schools to help launch the Perspectives/IIT Mathematics and Science Academy. A prolific researcher and mentor, Lederman was named Distinguished Professor in 2011 and received numerous awards, including fellowship in the American Association for the Advancement of Science and the American Education Research Association, as well as the Distinguished Contributions to Science Education through Research Award from the National Association for Research in Science Teaching.

David McKinney

(ARCH '67, M.S. CRP '68, Ph.D. '76), Fallbrook, California, was provost and chief academic officer at Westcliff University in Irvine. He also co-owned the Golden Garden assisted living facility in Fallbrook with his wife, Catalina. Before joining Westcliff, McKinney worked on the Model Cities initiative in Chicago and then as an architect for Clark Construction. In Indianapolis, he was a serial real estate entrepreneur, developing single-family home communities, and served on the Pike Township School Board, helping to make soccer a high school varsity sport.

James "Jim" Nagle

Chicago, was a member of the "Chicago Seven," a group of seven influential architects who in the 1970s held a series of exhibitions and symposia that questioned the architectural status quo. He was a founder of what is now Sheehan Nagle Hartray Architects, with offices in Chicago and London. An American Institute of Architects fellow, Nagle received the Illinois AIA Gold Medal for outstanding lifetime service, among numerous other honors. He taught at the university's College of Architecture for a period of time, served on its Board of Advisors, and established the Nagle/Hartray Scholarship.

Brigitte Peterhans

(M.ARCH '61), Stuttgart, Germany, was an architect with Skidmore, Owings, and Merrill, where she was considered to be a design leader. She joined SOM in 1970, became an associate in 1973, and advanced to associate partner six years later. Peterhans contributed to such notable projects as Willis Tower, Baxter Travenol Laboratories, and the Hilton Cairo World Trade Center. She was preceded in death by her husband, the noted photographer Walter Peterhans, whom she met at the College of Architecture, where he was on the faculty.

Roy Sahlstrom

(ME '45), Elmhurst, Illinois, had a long career as a manufacturer's representative specializing in equipment for power and process applications, eventually owning his own company, BellTech Utility. During World War II Sahlstrom worked full-time on the glider bomb program at Tonopah, Nevada. He was elected a life fellow of the American Society of Engineers and was active with the organization throughout his life. He was passionate about his time at Illinois Tech and wrote in an essay for the 50th anniversary of his graduation, "Looking back is a kaleidoscope of beautiful memories."

In Memoriam

Alumni

Lawrence W. Johnson FPE '45
Marvin L. Nussbaum CHEM '46, M.S. '48
William Thomas Gregg FPE '48
Lun Lee Yuan M.S. CHE '48, Ph.D. '51
Thomas P. Mertes EE '49
James E. Quinlan ME '49
Shaheen Azeez Shaheen B&E '49
Harvey Y. Weinstein CE '49
Robert C. Wiese CHE '49
Edward R. Fencil ME '50
Robert R. Holmes CHEM '50
John J. Scott Sr. CE '50
Kenneth Losch PHYS '51
Robert F. Nootbaar M.S. CHE '51
Robert W. Ritchey CHEM '51
Kwang Tzu Yang ME '51, M.S. '52, Ph.D. '55
Frederick A. Antonelli CE '52
Richard G. Fisk ME '52
James R. Dowdall LAW '53
William F. Homer EE '53
J. J. Kaganove MAT '53
Juele Marie Blankenburg (née Hughes) HE '54
James Corwith Jr. ME '54
Lawrence J. Hubacek IE '54
Arthur F. Kunst Sr. B & E '54, IE '68
Arthur Robert Michaels ME '54
Charles H. Stillwell CE '54
Richard K. Sutz METE '54
Edwin G. Vogl ME '54
Roger J. Gendron ME '55
John G. Page UNK '55
Joseph S. Yudelson Ph.D. CHEM '55
Henry J. Zoubek CE '55
Karl F. Gengler LAW '56
Henry J. Grimme EE '56
Sylvan Silberg EE '56, M.S. EE '62
Norbert C. Zyk ME '57
Belén Cámara Brown M.S. CHEM '58
Jon Russ Cooley B&E '58
Arthur O. Cromer PSYC '58
Robert W. Postma ME '58
Luigino J. Sartor ARCH '58
Edward J. Starostovic Jr. ARCH '58
Arnold Loeb EE '59
Calvin M. Love CHEM '59
Arthur C. Schlicht CHE '59
Wayne W. Schurter EE '59
Bernard G. Staib ME '59
Daniel Gary Wise EE '59
Robert J. Arado CE '60
G. S. Krishnamurthy Ph.D. CHEM '60
Richard H. Pertel Ph.D. CHEM '60
Christopher Bohus ME '61
Dale Eugene McDaniel FPE '61

Robert J. Thompson FPE '61
Ruth W. Johnson M.S. HE '62
Edward C. Jones Jr. PHYS '62
Robert H. Leach B&E '62
James A. Ulrich CHE '62
Richard W. Dombroski EE '63
Carl L. Schutt ARCH '63
Francis Monroe Fawcett B&E '64
Clifford W. LaBelle LAW '64
Herbert Kohn Ph.D. PSYC '65
Menelaos J. Reckas EE '65
Frank J. Ryan ME '65
Anne M. Berry M.S. ID '66
Robert F. Nussbaum LAW '66
Ronald H. Porzak LAW '66
Ronald L. Eshleman Ph.D. MAE '67
Thomas E. Linnenbrink EE '67
John Medige Ph.D. MECH '67
James G. Stine ARCH '67
Jeffrey M. Shimada EE '68
Thomas J. Leuthner MAT '69
James T. Allen MAE '70
Wayne S. Cartwright CHE '70
Ramesh C. Gupta M.S. EE '70
John W. Braski PSYC '73
Beatrice A. Takeuchi ID '73
Robert A. Burch METE '74
Walt Fabian PHYS '74
Robert W. Soelter PSYC '74, LAW '78
Paul Chen ID '75
Edward C. Brooks M.P.A. '76
Thomas W. Good LAW '76
Judith W. Munson LAW '76
Doris J. Oldham CE '76
Robert J. Rillie LAW '76
Barbara D. Salmeron LAW '79
Timothy J. Holmes Ph.D. EE '80
James E. Courtney Ph.D. PSYC '83
Gregory A. Hansen CHE '83
Martin Chmura LAW '84
G. P. Green M.P.A. '87
Sue Roberts-Kurpis (née Clouse) LAW '92
Kathleen C. Halpin LAW '95
Georgette F. Garcia-Kaufmann LAW '98
Pradeep Nayar M.S. CS '02
Leonard R. Nelson EE '03
Kenneth E. Quinn Jr. EE, CE '06
Richard L. Gulling ARCH '10
Melissa B. Anderson LAW '11
Michael T. Grover M.A.S. STE '12
John R. Fox LAW '17

Attended/Non-Degreed

Philip A. Balkas



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The Original Influencer

Twelve years ago this June, some 200 Illinois Institute of Technology alumni (including the newly formed African American Alumni Association), among them engineers, Fortune 500 leaders, educators, and even a Broadway entertainer, gathered on Mies Campus to honor and welcome back a man who was their guiding career star: Nathaniel “Nate” Thomas. Founder of Illinois Tech’s Early Identification Program for underrepresented minority recruitment, Thomas passed away late last year.

According to documents from Paul V. Galvin Library University Archives and Special Collections, only nine underrepresented minority engineering students

were enrolled at Illinois Tech in 1973, the year that Thomas was named assistant director of co-op education. The General Electric Company made a \$25,000 grant to the university to begin an underrepresented minority engineering co-op program, which Thomas set in motion. By 1974, 39 underrepresented minority first-year students enrolled at Illinois Tech and 52 underrepresented minority high school seniors entered into the new Early ID Program, with the goal of providing access and support to young aspiring engineers, computer scientists, architects, and medical experts from diverse backgrounds. Because of Thomas’s innovative vision and approach to recruitment, Illinois Tech President Thomas Lyle Martin Jr. promoted him to director of admissions that same year.

After serving as the executive director for the Committee on Institutional Cooperation and the Midwest Programs for Minorities in Engineering from 1977–1980, Thomas returned to Illinois Tech to serve as

head of minority affairs. He retired from the university as assistant vice president of external affairs in 1988.

While Martin could not attend Thomas’s tribute in 2009 for health reasons, he sent a letter acknowledging Thomas’s impact:

“It’s a little simplistic, but the university admissions process is a lot like prospecting for gold, only university ‘gold’ is called ‘intellectual talent,’ and [Illinois Tech] was in competition with all of the best universities in mining the same traditional places for the same limited supply of intellectual talent,” said Martin. “Nate was unique in prospecting for gold in the areas that no one else thought about, and then using tools and techniques uniquely appropriate to those lodes. He was a pioneer and was appropriately nationally recognized as a leader. I am proud to have worked alongside him at [Illinois Tech], but more importantly, in leading the way in developing a new mother lode of intellectual talent for our country.”

—Marcia Faye

Before You Go

Alan W. Cramb concluded his presidency not with the fanfare of a brass band, but with the crackle and hiss of vinyl records playing some of the music of his "personal history." On March 5 from 7-8 p.m., Cramb served as a guest disk jockey at the A. Sidney Katz Radio Studio of WIIT 88.9 FM, Illinois Tech's student radio station. This gig came one year after Cramb's WIIT DJ debut on April 3, 2020, to kick off a 60-hour COVID-19 stay-at-home dance party.



Save the Date for Homecoming & Reunion Weekend 2021

Friday and Saturday, September 17-18

Spend the weekend reconnecting and celebrating with your Illinois Institute of Technology community!

Reunion Gatherings

Exclusive events for members of the Class of 1971 including induction into the Golden Society. Do you want to host a reunion? Contact alumni@iit.edu and let us know!



Alumni Awards

Since 1946 Alumni Awards have been presented to Illinois Tech's most accomplished, innovative, and influential alumni. Join us in recognizing our 2021 awardees!

Come Back to Where It All Started

Homecoming & Reunion Weekend 2021 will feature campus tours, lectures, and learning opportunities. Don't miss out on these and many more activities during this special Illinois Tech event.



Mark your calendars and join us for Homecoming & Reunion Weekend 2021!
iit.edu/homecoming