

SPRING 2019

ILLINOIS TECH

Magazine



Tiny Devices, Boundless Ideas

Making Alexa

**From Classmates
to Playmates**

Letter from the Vice Provost for Research



WHEN I ENTERED POMONA COLLEGE,

I was surprised that there were questions my professors could not answer. During my elementary and high school education, all questions posed had answers, and we learned to express those answers clearly on our exams. But in college I was exposed to the frontier of knowledge, where some questions did not yet have answers. As an undergraduate student, I spent two summers working alongside faculty and other students discovering answers to questions at the frontier. It so excited me that I pursued a doctorate at Massachusetts Institute of Technology, where I learned to pose my own questions as well as answer some of them. This is why I have relished an academic career, and especially my past 14 years at Illinois Institute of Technology.

As the vice provost for research since October 2018, I have the privilege to work with faculty, students, and staff at Illinois Tech to build the foundation for the future growth of our research enterprise. Our university has recently reorganized and strengthened our administrative support for research. We are building new research collaborations across disciplinary boundaries, which makes it possible for us to solve important problems that are outside the scope of a single discipline. We are partnering with outside organizations to leverage our expertise for greater impact. We

are exploring new resources to support our scholarly activity. We are engaged with our undergraduate students in planning to involve them more in research—at their request!

“Discover. Create. Solve.” is our university’s new tagline. This is what excites us about research at Illinois Tech. While we must learn from what has already been discovered, created, and solved, we are keen to jump in and discover, create, and solve for ourselves. It is our passion as faculty, and a passion that we are passing on to our students.

If you have not visited Illinois Tech lately, I hope you will do so to become familiar with the exciting research that we are doing. In the meantime, enjoy learning from these pages what some in the Illinois Tech family have been up to in research—from improving upon Amazon Alexa to ensuring water quality.

Sincerely,

A handwritten signature in black ink that reads "Fred J. Hickernell".

Fred J. Hickernell

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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

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 Chicago-Kent College of Law
 College of Architecture
 College of Science
 Institute of Design
 Lewis College of Human Sciences
 School of Applied Technology
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Features

10 Inspired early on by the boundless horizons of science fiction and the promise of artificial intelligence, Rohit Prasad (M.S. EE '99) rose to become vice president and head scientist for Amazon Alexa.

14 After years working with the State Department's Afghanistan police program, Angelic Young (LAW '01) now trains this country's law enforcement in managing implicit bias—and gaining public trust.

16 Water, water, everywhere...so long as it's clean. Charles Haas (BIOL '73, M.S. ENVE '74) wanted to ensure water's safety and invented the field of quantitative microbiological risk assessment.

18 Susan Blessing (PHYS '82) is helping young women aspire to chart new directions in the STEM disciplines as director of Florida State University's Women in Math, Science & Engineering program.

20 The secret behind the career success of Sam Unsicker (DSGN '87) and Hiram Johnson (DSGN '89) is that they never grow up.

22 Through her work at Children's National Health System, Paige Mass (BME '17) is engineering innovations in pediatric cardiology.

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**On The Cover:**

Paige Mass (BME '17) examines a model of a child's heart at the Sheikh Zayed Institute for Pediatric Surgical Innovation, part of the Children's National Health System in Washington, D.C.
 Photo: Mike Olliver

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Letters

Rock On

Donald Lucas (CHEM '72) wants to get a weight off his chest through this admission:

"I would like to confess my role in the burying of the rock between the chemistry building and The Commons. (I assume the statute of limitations has passed.) I read your story about rumors about IIT ("IIT Urban Legends," fall 2004), and want to correct the record. We used our IIT training and realized that there was no way we could move it with any campus equipment. I then posed the idea that we bury it instead. A decision was made to have a small group dig a pit next to the rock, have it topple in, and then cover it with dirt. Apparently, it was going well when the rock started toppling into the adjacent pit. My roommate was in the pit digging, and he barely escaped. Early the next morning, I arrived in Wishnick Hall to watch everyone's reaction. I especially enjoyed the athletic director's reaction, as I was a member of the baseball team."

Here a Rabbit, There a Rabbit

Bernice E. Grunig (M.S. DSGN '69) attended what is now the Sayre Language Academy and Steinmetz College Prep with Hugh Hefner, who, as founder of *Playboy* magazine, provided comments about the late Art Paul (Institute of Design attendee) for "Mr. Entertainment," in the spring 2009 issue of *IIT Magazine*. Paul, *Playboy's* first art director, who passed away in 2018, was well known for having created the bowtie rabbit head logo that came to symbolize the magazine. Grunig says that classmate Hefner, "a real character," himself drew rabbit head doodles during his elementary school days.

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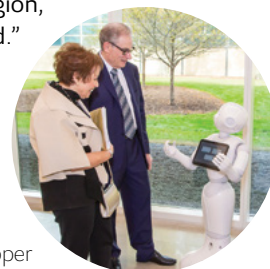
A standing-room-only crowd listened to benefactor Ed Kaplan (ME '65) speak at the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship grand opening evening gala.

Kaplan Institute Grand Opening

The Illinois Tech community and the City of Chicago came together on Mies Campus to celebrate the grand opening of the long-awaited Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship on October 25, 2018. "Pepper," a semi-humanoid robot, was in the crowd, as well as Chicago Mayor Rahm Emanuel, who, along with namesake benefactors Ed Kaplan (ME '65) and his wife, Carol, and other dignitaries helped to cut the ceremonial ribbon opening the institute.

"The Kaplan Institute's focus is to turn out highly qualified, instantly employable students for jobs that

haven't been invented yet, trained to use technologies that we are just now creating, in order to address problems that we do not yet know are going to be problems," said Howard Tullman, University Professor and executive director of the Kaplan Institute. "In this building the creative and imaginative ideas of the school's students and faculty will become meaningful innovations for our city, region, and beyond."



Carol and Ed Kaplan with Pepper

TRANSITIONS

The university welcomes two new members to the Illinois Institute of Technology Board of Trustees:
Victoria L. Noonan (LAW '84), Managing Principal, Chicago Market Leader, Cushman & Wakefield
Eric G. Vassilatou, Co-Owner, Skybox Capital

Illinois Tech congratulates the following individuals on their new roles at the university:
Vice President for Enrollment Michael Gosz, who is also named senior vice provost
Professor Fred J. Hickernell, who is also named vice provost for research
Distinguished Professor Patrick Whitney, to active professor emeritus

The Spark That Shines

Transformative Technology Grows Ever Brighter

With the rollout of its campus-wide microgrid in 2009, Illinois Tech sparked a new approach to keeping the lights on. In the years since, the dividends from this first-in-the-nation project have rolled in. Led by Mohammad Shahidehpour, director of the Robert W. Galvin Center for Electricity Innovation and associate director of Wanger Institute for Sustainable Energy Research (WISER), the microgrid integrates a high-reliability distribution system, smart metering, and renewable energy sources to boost overall efficiency, demand response, and resiliency. If necessary, the system can disconnect from the broader power grid, making the campus self-sufficient during emergencies. Thanks to a variety of efficiencies created by the microgrid, the university has saved about \$1 million a year. While many of the initiative's technological innovations are embedded in the power distribution system and largely out of sight, other fruits of the project have sprouted up across campus for all to see, such as solar panels, wind turbines, LED street lights, and charging stations for electric vehicles. At the decade mark, the Illinois Tech Microgrid continues to set the pace in transforming the electric grid by developing a model of reliability, efficiency, and conservation to be replicated in cities and towns—and university campuses—worldwide.

Wind Turbines

Units on campus and at the Grand Ridge wind farm outside Chicago provide renewable energy.



Smart Electric Vehicle Charging Station

Decked out with a solar canopy, it has spots for 11 vehicles to fill 'er up.

Keating Sports Center Lighting System and Nanogrid

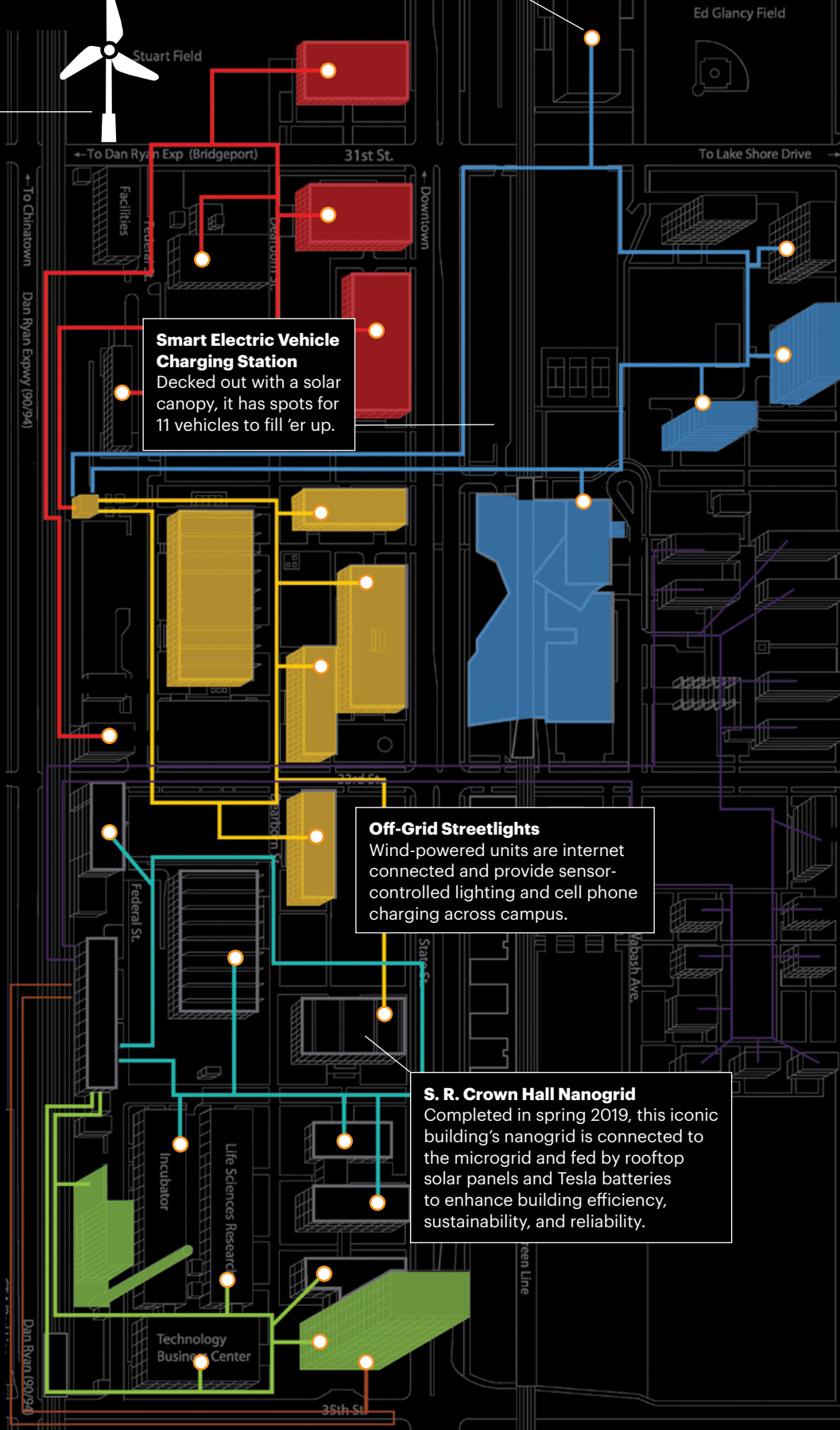
This one-building grid is powered by solar panels, storage batteries, and a hybrid AC-DC electrical system.

Off-Grid Streetlights

Wind-powered units are internet connected and provide sensor-controlled lighting and cell phone charging across campus.

S. R. Crown Hall Nanogrid

Completed in spring 2019, this iconic building's nanogrid is connected to the microgrid and fed by rooftop solar panels and Tesla batteries to enhance building efficiency, sustainability, and reliability.



Illinois Tech Headliners



“For people who are at risk for diabetes, cardiovascular disease and other health risks, knowing what foods have protective benefits and working them into your diet now can be an important strategy for slowing or reversing progression to disease.”

Associate Professor Britt Burton-Freeman, director of the Center for Nutrition Research at the Institute for Food Safety and Health, in EurekAlert!, on her group’s red raspberry study

“Imagine a large organisation like Monsanto. A determined hacker has the ability to go in and change the makeup of the seed.”

Maurice E. Dawson, assistant professor and director of the Center for Cyber Security and Forensics Education, in an article in London’s *The Times* and *The Sunday Times* about how cyberattacks could impact manufacturing in the United Kingdom

Recognizing Dedicated Philanthropy Leader



Illinois Tech thanks Elizabeth J. “Betsy” Hughes, vice president for institutional advancement, for her longtime service to the university. At Illinois Tech for a combined 25 years—first in the development office at the Institute of Design, and then joining Institutional Advancement—Hughes has worked with three presidents: Lew Collens, John Anderson, and Alan Cramb. Her career highlights include reviving the Illinois Tech Hall of Fame, creating the Mies van der Rohe Society and the Philip Danforth Armour Society, and *Fueling Innovation: The Campaign for IIT*, which surpassed its \$250 million goal.

Giant Slipstick Returns to Mies Campus

Kathleen Samson, wife of **John Samson (EE '70)**, recalls the circuitous journey her husband’s prized slide rule (known colloquially in the United States as a “slipstick”) took before he donated it to the Illinois Institute of Technology Archives in December 2018. Samson won the 30-pound, 92-inch-long mechanical analog computing device in a Slide Rule Contest during Homecoming in 1969.



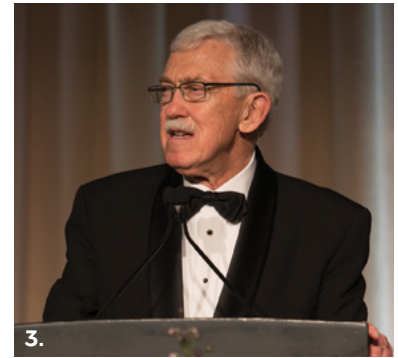
“It went from IIT to his mother’s basement in Oak Lawn and then to our apartment in the Back Bay neighborhood of Boston, across the river from MIT, where John was attending graduate school,” she says. “The slide rule went on to Waltham, Massachusetts, and then on to another basement, this time in Westwood, Mass. We next took it to our garage in Palm Harbor, Florida, where it resided for 34 years. Now, it’s come back home.”

No one as of yet can determine exactly how the slide rule originally came to campus. John Samson noted the red, white, and blue Williamsport War Models sticker on its front.

“I was told it was found in the basement of Siegel Hall and, reportedly, was used to train navigators and pilots during World War II,” he says. “The slide rule definitely was important enough to us to take it with us wherever we went. For me, it was a constant reminder of the night I overcame some formidable competition!”

Can you shed some light on the origins of John Samson’s slide rule? Send your clues to illinoistechmagazine@iit.edu.





PHOTOS: BONNIE ROBINSON

2019 Hall of Fame Inductees

Alumni representing architecture, computer science, engineering, physics, and psychology were feted at the 2019 Illinois Institute of Technology Hall of Fame Ceremony, held February 19 at the Four Seasons Hotel Chicago.

“Induction into the Illinois Institute of Technology Hall of Fame places our honorees among those select individuals whose accomplishments and unwavering pursuit of excellence inspire us all to welcome new challenges, explore the road less traveled, and give even more of ourselves,” Michael P. Galvin (LAW ’78), chairman of the Board of Trustees, told the audience. “Our Hall of Fame induction ceremony renews our realization that Illinois Tech’s future is filled with discovery, innovation, promise, and success.”

Guests heard biographies about three alumni who were previously inducted into the Hall of Fame by President Alan W. Cramb during the 2018 Alumni Awards: Robert “Pete” H. Bragg Jr. (PHYS ’49, M.S. ’51, Ph.D. ’60), Frank A. Crossley (CHE ’45, M.S. MET ’47, Ph.D. MET ’50), and Vice Admiral Diego E. Hernandez, Retired (PSYC ’55). Four new members were inducted that evening: Valdas V. Adamkus (CE ’61, Hon. Ph.D. ’99), Myron Goldsmith (B.ARCH. ’39, M.S. ’53), Martin C. Jischke (PHYS ’63), and Victor Y. Tsao (M.S. CS ’80).

1. Marc Goldsmith accepted the Hall of Fame award on behalf of his late father, Myron Goldsmith (B.ARCH. ’39, M.S. ’53). Also in attendance to honor Myron were his wife, Robin, and their daughter, Chandra Goldsmith Gray. **2.** Mantvydas Bekesius, consulate general of the Republic of Lithuania in Chicago, spoke on behalf of honoree Valdas V. Adamkus (CE ’61), former president of Lithuania. **3.** Honoree Martin C. Jischke (PHYS ’63) shares some of his university memories with the audience. **4.** [Left to right] Alan W. Cramb, Illinois Tech president, and Michael P. Galvin (LAW ’78), chair of the Illinois Tech Board of Trustees, served as Hall of Fame masters of ceremony. **5.** Victor Y. Tsao (M.S. CS ’80) addresses the audience at his induction into Illinois Tech’s Hall of Fame.



[Left to right] Michael P. Galvin (LAW '78) and Bud Wendorf (ME '71) at the October 25, 2018, Illinois Tech Board of Trustees meeting

In Celebration of “Bud”

Alan “Bud” Wendorf (ME ’71), who served as chairman of the Illinois Institute of Technology Board of Trustees from 2013 to 2018, is an inspirational example of an alumnus giving back to today’s students through scholarship and capital improvements, as well as volunteer initiatives.

In 2013 Bud—as he prefers to be called—retired as chairman and chief executive officer from a 41-year career at Sargent & Lundy, a world leader in professional services for the electric power industry, and became chairman of the university’s Board of Trustees. When he stepped down as board chairman in 2018, the university celebrated his tenure on September 21 with a special event featuring several of the students supported by the generosity of Bud and his wife, Suzie.

“I really enjoyed helping the university improve,” Bud says of his time as board chairman. “Continuing traditions and giving new life to this 129-year-old university have meant so much to me.”

It is an Illinois Tech tradition to name a space on campus or a university program in honor of an outgoing chairman of the board to reflect what he or she is passionate about. President Alan W. Cramb announced at the event that something special would be done for Bud: a scholarship program would instead be created in his name. Fellow trustees, university leaders, and Illinois Tech alumni employed at Sargent & Lundy came together to personally contribute to scholarships. More than \$1 million was raised to create three new scholarships in Bud’s honor.

University Regent John Rowe, who immediately preceded Bud as board chairman, remarked at the event, “Bud’s leadership has paved the way for the Board of Trustees for the last five years. He has led with sincerity, candor, and integrity, through his actions and his philanthropy.”

Bud and Suzie have shown extraordinary dedication to the university through their passion for

students by supporting scholarships at Illinois Tech for nearly 20 years. In 2007 the couple established the Alan and Suzanne Wendorf Endowed Scholarship and has fully supported 13 Wendorf Scholars over the past 11 years. The Wendorfs have also given generously through Interprofessional Projects (IPRO) Program sponsorship gifts and the naming of the Alan (ME ’71) and Suzanne Wendorf Lounge in the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship.

During a ceremony at the October 25, 2018, Board of Trustees meeting, it was announced that Bud would be elected a university regent—one of Illinois Tech’s highest honors. A regent is a trustee who, through extraordinary philanthropy and leadership, has distinguished himself or herself as a change agent for Illinois Tech. The late Bob Galvin, Bob Pritzker (IE ’46), and Al Self were the first university regents; Bud will now join trustees Craig Duchossois, Rowe, and Ralph Wanger as the next generation of exceptional leaders.

Bud says he was shocked at the announcement. “I am humbled because the quality of people who serve as our regents is amazing. I don’t feel that I belong in the same class as that group, but I am greatly honored by it and will do my best to continue leading the university.”
—Rebecca Scherer



Bud and Suzie Wendorf

Forward Momentum

Illinois Tech has given Jake Digiorgio (CHE 4th Year) everything he was looking for: a prestigious university with a strong engineering program that would lead to career opportunities, and the chance to keep playing basketball.

“You come here and you’ve got a lot of kids that think like you and have the same goals in mind, academic-wise,” explains Digiorgio. “It kind of pushes you to that next level.”

Men’s basketball Head Coach Todd Kelly recruited Digiorgio and some of his classmates to help turn around a program that had been shuttered from 2009 to 2012. The team went on to win two games during Kelly’s first coaching season in 2014–15, but doubled its total to four wins his first year on campus and 22 his second as Digiorgio readily embraced his coach’s vision. He and his teammates helped lead the program to more than 50 wins the past three seasons and an appearance in the United States Collegiate Athletic Association championship game in 2017.

“I think if every kid that comes through our program can match that work ethic and then improve like [Jake]

improved every year, then we’ll continue to have a good program,” Kelly says.

The same characteristics that have helped Digiorgio average double-digit points and rebounds all four seasons, amassing more than 1,200 career points and 1,200 career rebounds—“those two things are very, very hard to do,” Kelly says—stand out in the classroom, as Digiorgio has found ways to successfully balance academics, basketball, and his role as a resident assistant.

“He’s a good student, but he has real leadership qualities,” Distinguished Professor of Chemical Engineering and Former President John L. Anderson says about his

one-time thermodynamics student. “It’s the character. Success in life is often determined by that.”

Anderson, as Illinois Tech president, made the decision to cancel the program as the athletics department began its move from the National Association of Intercollegiate Athletics to the National Collegiate Athletic Association Division III. Since the program was restarted, Anderson has made sure to pay attention to both it and Digiorgio, whom he first came in contact with when Digiorgio interviewed him for a first-year career course—and made a strong impression.

“Jake’s a great young man and has a bright future ahead of him. He

represents the character and the commitment we like to see in the students,” Anderson says of the 6-foot-6 forward, who is pursuing an officer-training program with the United States Air Force after graduation.

“He’s a poster child for where we want to be in Division III,” Anderson adds. —Andrew Wyder

illinoistechathletics.com



PHOTO: STEVE FROMMELL

Jake Digiorgio (CHE 4th Year) goes up for a shot during a game against Carthage College.

Finding a Balance

The European Union took the lead in implementing stringent privacy protections for consumer data when it rolled out the EU General Data Protection Regulation (GDPR) in May 2018. With its strict rules spelling out how personally identifiable

information about EU residents can be gathered and used, GDPR has become a model that other countries, including the United States, are looking at closely as they grapple with their own approaches to data privacy.

What are the economic consequences of GDPR, particularly for tech companies that rely on access to streams of information about consumers to fuel their businesses? That question intrigues Liad Wagman, associate professor of economics at Stuart School of Business, whose prolific research agenda over the past decade has focused on privacy and the economics of information.

To get some answers, Wagman teamed up with Jian Jia (Ph.D. MSC student) and University of Maryland

Professor of Economics Ginger Zhe Jin. They took a deep dive into data on all technology-venture-related activity in the EU and the U.S. to investigate the impact during the first few months of GDPR on technology venture investment in Europe. What they discovered was an overall decline in venture funding, especially for companies less than three years old.

“There’s a concern that these kinds of regulations can hurt innovation,” at least in the short run, says Wagman. “They can hurt jobs and they can hurt new venture creation, so we’ve got to be careful how we implement them.”

When the group presented its findings in a research paper titled “The Short-Run Effects of GDPR on Technology Venture Investment,” the response was immediate. Invitations poured in from government officials, policymakers, and academics on both sides of the Atlantic eager to learn more. Wagman has participated in U.S. Federal Trade Commission hearings, met with European regulators, spoken at conferences in the U.S. and Europe, and corresponded with the White House Council of Economic Advisors.

Lawmakers and government agencies are drafting data privacy rules in the U.S., Wagman says, and are paying attention to the potential trade-offs between consumers’ privacy and economic costs. Following his presentation to the FTC, he recalls, commission officials said, “This is exactly what we’re looking for—someone to evaluate the consequences of the GDPR policies so that we can choose a better policy.”

Meanwhile, Wagman and his colleagues continue to add to their body of research on the effects of GDPR as they examine the investor, rather than the venture, side of the picture and analyze the longer-term effects of the regulations as they unfold over time. —Scott Lewis

MORE ONLINE
 EU General Data Protection Regulation:
eugdpr.org

PHOTO: OLIVIA DIMMER



Associate Professor of Economics Liad Wagman



Illinois Tech Board of Trustees Chair Michael P. Galvin (LAW '78) [left] is at the head of a group that includes President Alan W. Cramb, members of the Nayar family, the Nayar Prize I ADEPT team, and the Nayar Prize II finalist team.

Nayar Prize I Winner Displays Ingenuity in Cancer Screening

The inaugural \$1 million Nayar Prize competition—established by Madhavan Nayar (M.S. IE '68), and his wife, Teresa, on behalf of the Nayar Family Foundation—was created to motivate faculty at Illinois Institute of Technology toward impactful innovation. Advancements in cancer screening fit the bill.

Kenneth Tichauer, associate professor of biomedical engineering, and Jovan Brankov, associate professor of computer and electrical engineering/biomedical engineering and director of the Advanced X-ray Imaging Laboratory, each brought their own expertise into the development of the ADEPT (Agent-Dependent Early Photon Tomography) Cancer Imager. Tichauer's two-color dyeing process stains an entire lymph node of breast cancer patients. Currently pathologists dye slices of the lymph node and examine about

1 percent of the tissue. Tichauer's method includes a control dye and one binding to tumors. Once the sample is dyed, lasers are passed through and a camera captures images about the sample from many projections to identify lymph node regions where the binding dye has accumulated on tumors.

Brankov's medical imaging background was beneficial in the creation of a camera that captures light passing directly through the tissue. Typically, when light passes through tissue, it scatters, creating a "foggy" image even with modern detection. Using a camera capturing direct light reduces the fog and produces a sharper image.

The combination of processes allows pathologists to find smaller tumors and prescribe a precise treatment. Finding tumors earlier leads patients onto a stronger path of recovery and a longer life.

"We went in with a specific application, and that was to improve diagnosis of stage 3 breast cancer," Tichauer says. "It's important because physicians are forced to decide to start chemotherapy or not after they have completed the removal of the breast cancer or after a mastectomy."

"Cancer is not just one type of cell," Brankov says. "But the drugs used target one type of cell. This system can help determine what array of cell types are present in a specific cancer. That way the patient can receive multiple drugs so all cancer cell types are targeted."

The final \$500,000 award was presented in a February 6 ceremony at the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship. —Casey Moffitt

MORE ONLINE

"A Noble Experiment": magazine.iit.edu/spring-2016/noble-experiment

"Brilliant Beacons on the Research Horizon": bit.ly/2Nm4eAx



Alexa, Challenge Me

By Marcia Faye

From the time that **Rohit Prasad (M.S. EE '99)**—now vice president and head scientist for Amazon Alexa—had his first serious talk with his father about the direction of his life, he had his eyes on the proverbial prize.



Prasad told his father that he didn't want to become the third-generation member of their family to go into mechanical engineering but rather, wished to pursue computer science or electronics and communications, because he saw them as being the fields of the future. That Prasad grew up in the "to boldly go where no man has gone before" *Star Trek* era only added to his vision. On Mies Campus to deliver the 2018 Darsh T. Wasan Lecture last November, in which he discussed some of the latest advancements in Alexa [see sidebar], Prasad animatedly recalled his fascination with science fiction and how it inspired his dreams to explore artificial intelligence.

"I had a clear passion for human-computer interaction even back then," he says. "It was easy to imagine talking to machines."

While determining which university to attend, Prasad had read about former Illinois Tech faculty member Geoffrey Chan's work in speech compression and coding. After a phone conversation with Chan from his home in Ranchi, India, Prasad decided to enroll at Illinois Tech. He says that his work with Chan on low-bit-rate speech compression satisfied his intellectual interests then, but as Prasad neared the completion of his degree program, he knew that he needed new challenges and a new direction.

"There was less opportunity to make a tectonic shift in that field [speech compression] because the technology had already become good. I wanted to explore something more nascent that would provide tons of hard problems for the next 20 years,"

says Prasad, noting how the Amazon Alexa voice service project is the ideal outcome of his longstanding desire to discover innovative ways for humans and computers to interact.

"From that point I turned to trying to learn more about how our brains work. We still understand so little, and what we have been able to do is based on exponential data and some modeling. Alexa is a great example of data-driven machine learning and AI. Understanding exactly how the human brain works is the ultimate goal," he says.

Before being recruited to Amazon in 2013 as director of machine learning, Prasad was on the staff of Raytheon BBN Technologies, advancing from staff scientist to deputy manager and senior director of speech, language, and multimedia technologies. John Makhoul, chief scientist at

"I want Alexa to be everywhere for everyone."

—Rohit Prasad

BBN and recognized expert in speech and language processing, says that Prasad exhibited great potential early on in his career and further developed his talents throughout the 14 years he worked at BBN. He says that one of Prasad's last projects at the company, a speech-to-speech translation between two languages on a handheld phone, truly exemplified his capabilities. Six components were running on the handheld at the same time: speech recognition, machine translation, and speech synthesis, for each of the two languages.

"He showed himself as being not only excellent technically but that he had a keen sense of what the customer wanted," recalls Makhoul, from his office in Cambridge, Massachusetts. "Rohit has a track record of very successful execution and being forward-looking in how technology

could be improved. He also has a contagious laugh but is a very humble and low-key individual. Everybody loved to work with him. Rohit cares a lot about what he's doing and about the people he has working with him."

Prasad says that one of the challenges his Amazon Alexa's team of researchers, developers, and other professionals continues to improve upon is integrating social and cultural features into Alexa-based home devices, which some may regard as extended family members. He says that Indian English, for example, composed of at least 100 different dialects, is very different in pronunciation from American English. Adding cultural norms is another subset to be considered, given that South Indian tastes in even music and movies differ markedly from North Indian. Prasad is invigorated by the thought that he may have 5, 10, or perhaps 20 more years of "hard problems" to solve.

"I want Alexa to be everywhere for everyone," he says about the smart system that, as of the 2018 holiday season, has been built into more than 100 million Alexa-enabled devices sold. "If you think about how many different countries there are and how many different languages, we still have a long way to go." He adds that of personal importance to him is that voice-activated Alexa truly liberates individuals from time-consuming activities such as the steps involved in looking up information on a computer. He likens its eventual impact to another radical and historic transformation that forever changed people's everyday lives.

"With Alexa our goal was to revolutionize daily convenience. I'm optimistic that the whole human generation actually makes better use of their time in every revolution," he says. "We have seen that happen with the Industrial Revolution." **E**

MORE ONLINE

"What Amazon's Alexa Will Tell Us in 2019": cnet.co/2syF5IW

Revolution Evolution

In November 2014 Amazon launched Echo and Alexa—an artificial intelligence device powered by voice and cloud-based voice service, respectively.

- In 1970 “conversational AI” was able to produce hundreds of words; in 2019 word production has far surpassed the tens of millions.
- The response an Alexa device can provide to a basic request a customer makes, for example—“Alexa, find me a recipe for spinach lasagna”—is the result of a complicated process of accurate far-field technology, automatic speech recognition, natural language understanding, and text-to-speech synthesis.
- Alexa research and development focuses on five areas: improving competency, expanding context awareness, expanding Alexa’s knowledge base, improving the voice service, and expanding how Alexa “learns” from experiences with the customer.
- To contribute to Alexa’s growth as well as to tailor Alexa to benefit various industries and businesses, Amazon “democratized” Alexa’s AI through Alexa Skills Kit (ASK). This allows a community of external developers to integrate their own skills into an Alexa device for their specific needs. To date, tens of thousands of developers representing companies such as Domino’s, BBC News, and Starbucks have built more than 80,000 Alexa skills using ASK.



Shifting Perspectives

By Kristin Baird Rattini



PHOTO: MIKE OLLIVER

If there is a through line in the esteemed legal career of Angelic Young (LAW '01), it is perspective. From her decade at the State Department to her current role as director of training for law enforcement for the Anti-Defamation League (ADL), Young has sought to broaden the perspective of those responsible for crafting and carrying out law enforcement and social justice policy both around the world and at home.

It was Young's own desire for a different point of view that attracted her to Chicago-Kent College of Law.

"I didn't know anything about the world beyond where I had grown up in the Pacific Northwest," she says. "The opportunity to come to Chicago appealed to me because it would expose me to a whole new set of people, a new environment, and a new culture."

Young's trajectory changed, along with the nation's, on September 11, 2001. It was only her second day at the United States Department of State's Bureau of International Narcotics and Law Enforcement Affairs, her first job after law school.

"I was someone who didn't know where Afghanistan was on a map in

“

I saw a growing divide between law enforcement and vulnerable communities at home.”

—Angelica Young

college,” she recalls, in a telephone interview from her office in Washington, D.C.

Six months of intense research propelled her into management of the bureau’s Afghanistan police program, a position she held for nearly six years.

“The work opened my mind to other ways of getting things done,” says Young, a recipient of the 2014 Chicago-Kent Honorable Abraham Lincoln Marovitz Public Interest Award. “Our way is not always the best way, so you try to understand and leverage the best local practices.”

That theme underscored her work at the Institute for Inclusive Security in Washington, D.C., where she developed national action plans that advance women’s inclusion in peace and security endeavors. From one-on-one talks with key players in Finland to roundtable sessions with 50 stakeholders in Jordan, Young incorporated a multitude of perspectives into the complex discussions that shaped each nation’s plan.

She had also worked domestically nearly every fall, teaching an International Policing and the Rule of Law course at George Mason University. But she redirected her focus squarely back home after the 2016 presidential election.

“I saw a growing divide between law enforcement and vulnerable communities at home,” she says. “I’ve seen what happens in other countries when there is a loss of trust in the police; it was worrisome to me.”

Upon joining the ADL in late 2017, Young launched her first nationwide training module, Managing Implicit Bias for Law Enforcement. “A lot of research went into the curriculum, ranging from breakdowns of how implicit bias functions to how gender and racial bias can play a role in law enforcement,” she says.

So far more than 2,600 police officers nationwide have completed the module. [See sidebar.]

“The training Angelic designs and leads provides law enforcement, from commanders to recruits, with the skills they need to treat each person fairly, with dignity and respect, as they serve their communities,” says Elise Jarvis Wilson, ADL’s director of law enforcement outreach and community security. “She is creative, brave, and bold, willing to take risks to challenge and push them to be the best officers they can be.”

For Young being back in a classroom, teaching facilitators to teach others, is where she feels at her best.

“This job gave me a chance to come home,” she says, “and do work that I love that is so important.” **E**

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MORE ONLINE

Anti-Defamation League: adl.org

Institute for Inclusive Security: inclusivesecurity.org

BREAKING DOWN BIASES



Angelic Young’s training module addresses implicit bias for law enforcement from three vantage points:

Language—Officers learn the definition of implicit bias versus explicit bias and its role in the schemas that the brain develops to quickly read and react to a situation.

Impact—Trainers share examples of how implicit biases impact the perceptions held by law enforcement and the communities they serve.

Management—Officers learn mindfulness and stress-management strategies that can reduce the likelihood of their brain defaulting to unconscious biases when on duty. Role-play exercises encourage officers to shift perspectives and understand how an incident or officer might be viewed differently by community members.

“If officers are trained on implicit biases in advance, just like they are on firearm use,” Young says, “they’ll be better able to consciously take control of the decisions they make in the moment.”

Free Flawing

BY STEVE HENDERSHOT

We live in an age of analytics, when seemingly everything can be measured, parsed, and optimized using data science and mathematical modeling. The approach is so ingrained that it's difficult to imagine a time when even scientific disciplines lacked that quantitative underpinning—yet that was the case when Charles Haas (BIOL '73., M.S. ENVE '74) studied at Illinois Tech in the early 1970s.

An undergraduate biology major from New York City, Haas was skilled and interested in both biology and math, and began to blur the boundaries between them while studying limnology, or water systems. He developed a passion for the environment—it was the era of the original Earth Day—but was dissatisfied with the way many biologists were ignoring math in their approach to ecological problems. Then he discovered environmental engineering.

“At that time a lot of biology was simply memorization without any systematic or quantitative framework. So when I discovered an alternative way of using my interest in life sciences, I jumped to it,” Haas recalls. “Environmental engineers solve problems, and I’ve always been interested in applying both the science and the math to solve problems.”

It was as a member of the Illinois Tech faculty (Haas returned to Chicago in 1981 after earning his Ph.D. from the University of Illinois at Urbana-Champaign in 1978 and then holding a junior faculty position at Rensselaer Polytechnic Institute in upstate New York) that he advanced toward his signature achievement. Haas was working as a consultant during a dispute over whether Chicago’s Metropolitan Water Reclamation District needed to chlorinate the wastewater it was discharging into waterways when he saw the need


for an empirical way to assess the impact. He built his own model in an attempt to do just that—a prototype of what would ultimately become quantitative microbiological risk assessment (QMRA).

“In order to solve the problem at hand, I wound up inventing the field,” says Haas.

In the years since, QMRA has become a standard for assessing water quality: it is recommended by the World Health Organization and is a vital tool as experts confront water-quality issues around the world such as the high lead levels detected in Flint, Michigan.

Haas “was uniquely situated [to create QMRA] because of his ability to look at things from a numbers perspective and then also to translate it to [microbiologists],” says Joan Rose, a professor at Michigan State University and, like Haas, one of the world’s foremost water-quality scholars. “Engineers do this all the time because they’re very quantitative. Microbiologists didn’t, and he bridged those two things. As a result, he’s been able to make really stellar contributions.”

Haas is now the L. D. Betz Professor of Environmental Engineering and head of the Department of Civil, Architectural, and Environmental Engineering at Drexel University, where he continues his water-quality research, these days focusing on “premise plumbing” issues that arise in facilities where people consume water, such as homes, schools, and hospitals. In 2017 he received the National Water Research Institute’s Athalie Richardson Irvine Clarke Prize for Excellence in Water Research.

When Haas lived in Chicago, he enjoyed a view of Lake Michigan from his home. He has a similar setup in Philadelphia, where he and his wife—whom he met while on the faculty at Illinois Tech—have a view of the Delaware River. For a scientist whose career has deftly married biology and mathematics, the waterfront is a thread connecting different chapters of his life and career, as well as a vibrant, daily reminder of nature’s beauty, value, and force. 

“

Environmental engineers solve problems, and I’ve always been interested in applying both the science and the math to solve problems.”

—Charles Haas

MORE ONLINE

Center for Advancing Microbial Risk Assessment: camra.msu.edu/index.html
National Water Research Institute: nwri-usa.org





CHANGING THE CULTURE

By Emily Ayshford

Susan Blessing (PHYS '82) and students from the Women in Math, Science & Engineering program surround a statue of theoretical physicist Paul Dirac at Florida State University.



As a high school student, Susan Blessing (PHYS '82) was enthralled with physics and the way it could explain exactly how the universe worked. "Physics is everything," she says.

But at the same time, after she enrolled at Illinois Tech, she realized that physics wasn't everything—it *wasn't* gender equal. From the time she began studying physics, she was surrounded by men. "There were very few women," she says. "I knew I had to get used to it because that is what the future would hold."

Since then, Blessing has been driven not only by the need to find and understand the basic building blocks of matter, but also by a mission to recruit more women into science. Now, 37 years after graduation, she can say she has contributed to fundamental physics research while shepherding hundreds of young women into scientific careers through a STEM mentorship program.

"I work hard to get more women in science and to build a community, since what helps women helps everybody," Blessing says.

Her physics research career began as an undergraduate, when she worked at Fermi National Accelerator Laboratory on a neutrino experiment, eventually helping to write the software that would reconstruct and analyze experiment data. After graduating from Illinois Tech, she earned a Ph.D. from Indiana University Bloomington and ultimately secured a tenure-track professorship at Florida State.

She built her career conducting research at Fermilab on the DZero experiment, studying the collision of protons and antiprotons to look for new phenomena predicted to exist within the standard model of particle physics. She was part of the team that discovered the top quark and searched for the quark's supersymmetric partner, the squark.

But as she became more successful in her career—she was elected as a fellow of the American Physical Society in 2017—she expected the ranks of female physicists to rise. Although the percentage of Ph.D.s in physics

awarded to women rose from 10 percent in 1988 to almost 20 percent in 2012, according to the American Institute of Physics, Blessing knew there was still much room for growth. So, in 2005, she took over Florida State's Women in Math, Science & Engineering program, which brings together female STEM students in a living-learning community to develop personally and professionally. There, young women are encouraged to conduct research and explore STEM careers.


Since Blessing took over the program, more than 450 young women have participated, with more women participating in undergraduate research than ever before. The key to their success is confidence, she says.

"Most young women who try research love it," she says. "I tell them to not get discouraged, that science is hard work, but it's hard work for everyone, even for the guys, even if they don't show it."

One of those women was Brianna Griffin, who enrolled in the program as a freshman six years ago. Though Griffin was set on going to medical school, Blessing encouraged her to try biology research. Griffin was soon hooked.

"I felt that her support helped me reach my goal of attending graduate school for a Ph.D. in plant biology," Griffin says. "She has been a wonderful mentor."

Blessing remains connected to Illinois Tech—she met her husband, architect Kevin Sossong (ARCH '84), as an undergraduate, and now her son, Dominick, is enrolled as a third-year mechanical engineering student—but says that, as an undergraduate, she likely would not have participated in a mentorship program like the one she runs. That only gives her more motivation to recruit young women and help them grow.

"I like seeing what they can do, what they can come up with on their own," she says. "It's great to send them off into the world." 

MORE ONLINE

American Physical Society: aps.org
 FSU Women in Math, Science & Engineering:
wimse.fsu.edu

Toy Boys

By Olivia Dimmer

Sam Unsicker (DSGN '87) and Hiram Johnson (DSGN '89) don't go to work every morning. They go to play.

"I play every day," Unsicker says of his job as partner at Big Monster Toys in Chicago's West Loop. "I don't have to be a real person; I can be a little kid the rest of my life. I love being here every single day."

Unsicker and Johnson became friends while studying at Illinois Institute of Technology and went on to design products for Big Monster Toys, where they have both had a hand in creating the toys that have ended up on shelves across the globe for the last 20 years. Some of their successes include Polly Pocket, Hyper Slide, and the GeoTrax Airplane playsets.

Unsicker started at the company as a toy and game inventor. After successes such as the tabletop games Planet Hollywood: The Game and Bulls-Eye Ball, he now pitches ideas and manages Big Monster Toys' invention space.

"I think to create toys and games for kids as a 50-year-old man, you just have to be a little off in the head," Unsicker says. "Everybody here has quirks, tons of quirks, and I think that's what it takes to be able to have that mindset to think as a child."

For Big Monster Toys, the secret to creating the next big hit starts with asking the right questions. What movies will be out next year that kids will be excited about? What is technology going to allow toys to do now that they couldn't a year ago? And how can designers build on the company's previous successes?

"A successful toy for us is something that comes out of left field," Unsicker says. "It's something no one has thought of."

This has led Big Monster Toys to some unusual toy ideas such as Barbie on a unicycle, an idea that was shot down for being too "unrealistic." Another idea that turned into a successful board game was the first of its kind to utilize radio-frequency identification chips in a kid's game.

"So for us, things that are successful are things that hit the niche of, 'Hey, we never thought about that!'" Unsicker says.

Johnson, now a toy designer, started out by wanting to be a medical instrument designer before finding his way to Big Monster Toys in 1993.

He normally sits at a desk near the back of the Big Monster Toys warehouse surrounded by doll heads and colorful toy parts, and spends his time sketching up new toy sets and fabricating them via a 3D printer.

"For me, it's about wanting to improve on things that are out there," says Johnson, acknowledging that he equally enjoys working each day with the rest of the creative team. "[I love that] I get to be creative every day and make something every day."

Currently, Johnson and Unsicker are working on the next iteration of toys that will wind up in the hands of kids around the country. One of the toy sets being perfected is a compact-sized Polly Pocket playset that unfurls into a carnival scene, complete with a dunk tank for the tiny doll. That toy is scheduled to hit the market in a year or two.

In the meantime, Unsicker and Johnson don't plan on growing up. **E**

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MORE ONLINE
Big Monster Toys: bmttoys.com



[Left to right] Hiram Johnson (DSGN '89) and Sam Unsicker (DSGN '87) outside of Big Monster Toys

WITH HER HEART AND MIND

By Marcia Faye



From her laboratory within the Sheikh Zayed Institute for Pediatric Surgical Innovation at Children's National Health System in Washington, D.C., Paige Mass (BME '17) can see the SkyBear medical helicopter delivering critical patients, from infants to teenagers. While Mass is not likely to meet any one of them in person, she could conceivably change the lives of some of those patients through her design of a cardiac device specific to their individual needs. In a telephone interview from Children's National, Mass, an R&D development operations engineer, recalls being allowed to observe a surgery in which one of her 3D-printed models was being tested.

“That was a huge moment for me, to see something go from my computer screen to the heart of a patient, and to know that it helped and made a difference,” she says. “I would like to someday see the devices I’m working on get FDA approval and become commercially available or the standard of care. If we can improve patient care through things like taking what is currently an open-chest, highly invasive procedure down to a small incision and see better outcomes for patients, that would be the dream.”

A self-described “legacy student,” Mass did not initially aspire to become an engineer even though her grandfather, father, brother, and an uncle all received engineering degrees from Illinois Tech. She considered becoming a pediatrician but thought that she might make greater contri-

market needs,” she explains.

Last summer Mass herself became a mentor to an Illinois Tech student when Austeja Staneviciute (BME/M.S. CHE 4th Year) joined the Sheikh Zayed Institute lab through the Children’s National Summer Innovator Program. Staneviciute worked with Mass on a minimally invasive technique to implant epicardial pacemakers.

“It was an enriching experience to take my initially sketched ideas and build a prototype for phantom and animal-model testing,” she says. “Paige introduced me to a side of biomedical engineering that I never knew existed. I couldn’t believe that as an engineer I could be working so closely with doctors. One minute I was building a prototype with the engineers and then the next, I was discussing the

has a 20-year life expectancy when the child ideally has a lot longer.”

To address such challenges, Mass and her colleagues—one additional engineer and several clinicians—are investigating how they can use 3D printing to custom-design grafts that not only offer optimal design and fit but also can grow with the child over a lifetime. Mass is also designing a tool to fit onto a 3-millimeter-in-diameter catheter to assist in cardiac ablation. After observing that surgeons needed to pinch the tiny catheter for long periods while trying to insert it into even tinier heart vessels, Mass felt that a tool would both improve outcomes for the patient as well as prevent fatigue for those performing the procedure. Mass’s efforts have not gone unnoticed. Charles Berul, M.D., division chief of cardiology and co-director of the Children’s National Heart Institute, describes another project that she spearheaded.

“One in particular that she developed on her own is a simulation doll that can be used for trainees to practice manipulating catheters through the vascular system to key parts inside the heart, under direct visualization,” says Berul. “She designed the simulator herself, and we have tested it among students, cardiology fellows, and faculty cardiologists. She presented this work at a scientific conference last year, and it was enthusiastically received. She took the idea and ran with it from conceiving the idea to developing a model to testing it among a wide range of experienced users. The phantom simulation doll may help trainees practice before learning interventional cardiac procedures in people.”

For Mass, it is about never losing sight of the SkyBear landing pad outside of her laboratory window. **E**

“That was a huge moment for me, to see something go from my computer screen to the heart of a patient and to know that it helped and made a difference.” —Paige Mass

butions from the laboratory. Once at Illinois Tech, her biomedical engineering Senior Design course set Mass in a pivotal direction on her career path. She was a member of a team sponsored by Medline Industries that developed the NextGen Walker, a Medline ambulatory aid with an innovative hinge that allows the device to fold more easily and take up less space than models already on the market. One of her mentors was Michael Turturro (BME ’07, Ph.D. ’12), senior manager of research and development for Medline, the largest privately held manufacturer and distributor of medical supplies. Mass says that her opportunity to work on her senior design project under Medline’s expertise “set me up for success.”

“I learned a lot about designing a device while understanding the patient’s needs. On top of that, by working with Medline as a distributor, I got to know what the market is like and what the

potential benefits and complications of the medical device design with a clinician. Beyond the technical skills, Paige led by example on how to be an enthusiastic, resourceful, and empathetic engineer.”

Mass says that she’s “always had a spot in my heart for children” and adds that she quickly learned that in pediatric cardiology—her specialty area at Children’s National—kids are not simply miniature adults. That realization presents challenges.

“With adults you can expect more repeatability—a valve starts to fail or an artery gets blocked, there’s general wear and tear on the body,” Mass explains. “But kids are young; they aren’t supposed to get sick and when they do, it’s complicated not only by patient size but also by their unique problems. You can put a stent in an adult that is one size and that will probably work for them for the rest of their life, but with kids, you put in something that fits them now that they will outgrow. Or the device

MORE ONLINE
“A New Prototype for Tiny Pacemakers, Faster Surgery”: bit.ly/2V1znRn
Children’s National Health System:
childrensnational.org

Class Notes

1950s

Theodore Brown

(CHEM '50), Bonita Springs, Fla., celebrated his 90th birthday at the Beckman Institute for Advanced Science and Technology at the University of Illinois at Urbana-Champaign. As the founding director of the institute, he enjoyed birthday festivities that included lectures on climate change as a tribute to his 1971 book, *Energy and the Environment*.

Ted Erikson

(CHE '52, M.S. CHEM '59), Chicago, was mentioned in the episode of the podcast *BUCKIT* that featured guest Kim Chambers, an open-water and ultramarathon swimmer, for his 1967 Farallon Islands swims.

James Albrecht

(FE '53, M.S. '55), Baltimore, serves on the board of directors for the World Trade Center Institute, and the boards of trustees for the Baltimore Council on Foreign Affairs and the International Advisory Council of the Monell Chemical Senses Center. Albrecht is an adjunct lecturer at the University of Illinois at Urbana-Champaign, where he counsels and mentors international students studying food science and human nutrition.

Robert Moss

(MET '56), Palo Alto, Calif., has spent more than 40 years developing materials and equipment for spacecraft and space exploration programs including the first missions to Mars, Jupiter, Neptune, Saturn, Venus, Uranus, and beyond the solar system. He has been married for 63 years and has five children, nine grandchildren, and one great-grandson.

Donald Novotny

(EE '56, M.S. '57), Madison, Wis., is now fully retired after 59 years of teaching at the University of Wisconsin-Madison and one year at Illinois Tech. He formally retired in 1996 and for the past 22 years of semi-retirement has taught live and recorded internet courses on a part-time basis.



University Professor and Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship Executive Director Howard Tullman leads a tour of the building during the Chicagoland Alumni Gathering. Photo: Michael Goss

1960s

Norbert "Pete" Pointner

(ARCH '61, M.S. CRP '62), Wheaton, Ill., had his essays "Attracting Good Development," "Defensible Design Review," "Rebuilding Urban Roadways," and "We Need More Public Art" reprinted in newsletters of the Urban Design and Preservation Division of the American Planning Association. Pointner is a mentor for graduate students. He recently accepted an offer to teach a class of public administration graduate students at Northern Illinois University.

Donald Hervey

(ME '63), Centerville, Texas, has been writing *The Gravidia 2 Saga*, a series of sci-fi books about the first people to settle on a star. The books he has released thus far are *Calypso Founding* and *Calypso Outward Bound*, which are available as e-books. Hervey also has additional books in various stages of progress.

Michael Huth

(ME '66, EE '70), La Grange Park, Ill., is enjoying a diverse retirement after 33 years with Rockwell International. He and his wife, Pat, purchased an 1893 caboos that is now

part of their bed-and-breakfast in southwest Michigan.

Huth is currently pursuing hobbies such as theater—designing sets, playwriting, and directing—along with kayaking and playing tennis.

William Johnson

(LAW '66), Northfield, Ill., a shareholder and president of Johnson & Bell, is also a litigator who focuses on injury and mass tort cases. He was given the Defense Attorney Lifetime Achievement Award at the Jury Verdict Reporter Awards for Trial Lawyer Excellence.

Charles Prysby

(PS '66), Greensboro, N.C., is a professor of political science at the University of North Carolina at Greensboro. He recently co-authored a computer-based instructional package on the 2016 election that was published by the Inter-university Consortium for Political and Social Research at the University of Michigan.

James Rohrbacher

(ME '66), Downers Grove, Ill., has been retired for 20 years and volunteers as a DJ as he loves to dance.

David Wendtland

(ARCH '67, M.S. CRP

'68), Muskegon, Mich., and his wife are busy as grandparents, keeping up with four grandchildren and two step-grandchildren that are 13 to 21 years old.

Robert Chorvat

(Ph.D. CHEM '68), Newtown Square, Pa., has been working on developing a new therapeutic agent for liver disease. The investigational new drug application for the agent was recently allowed by the United States Food and Drug Administration for human clinical studies.

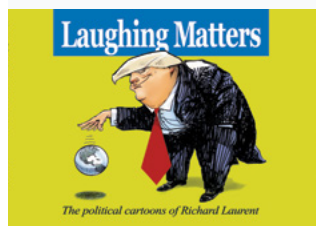
Leon Hoffman

(M.S. PSYC '69, Ph.D. '70), Chicago, continues to enjoy his clinical psychology private practice, counseling individuals and groups, as well as providing consulting services to organizations. He frequently contributes letters and commentaries to various lay and professional publications. Hoffman continues his lifelong involvement in chamber music as a cellist.

Robert Johnson

(CE '69, M.S. '71), Buffalo Grove, Ill., has been an active member for more than 30 years of the Structural Engineers Association of Illinois, which aims to bring

an awareness of the structural engineering profession. His efforts include promoting a host of engineering competitions to students including being interviewed for a Chicago public-access television program called "Structural Engineering for Kids."



Richard Laurent (DSGN '69), Chicago, recently released his new book, *Laughing Matters: The Political Cartoons of Richard Laurent*.

1970s

Marilyn Boncela (M.S. MT '70), Willoughby Hills, Ohio, and her spouse celebrated 49 years of marriage and have one daughter and three grandchildren. Boncela has been working as a certified public accountant for 44 years.

John Grillos (MATH '70), Sonoma, Calif., started Augmented Reality, Inc., a company focused on providing real-time task support to skilled trades workers using technology that reduces the amount of education and training needed to work efficiently and safely. Grillos is also heading a project on California cannabis testing labs, and teaches and coaches about entrepreneurship.

William Hansen (MATH '70), Castle Rock, Colo., has donated his private library containing the IT courses and professional articles he wrote between 1972 and 1994 to the Living Computers: Museum + Labs in Seattle. Thirty-six boxes of materials lighter, Hansen and his wife, Sandy, now travel between their homes in Littleton, Colorado, and Minnetrista, Minnesota.

Jeffrey Jones (ARCH '70), Leo, Ind., and his wife, Diane, celebrated their 50th wedding anniversary at the Grand Hotel on

Mackinac Island, Michigan. He retired from Verizon after a career in construction and property management. The couple has four children and 10 grandchildren.

Lester McKeever (LAW '71), Chicago, was awarded the 2018 American Institute of Certified Public Accountants Gold Medal Award of Distinction. The award, established in 1944, is the highest honor granted by the AICPA.

Robert Mayer (EE '72), Batavia, Ill., has retired from Diamond Rigging Corporation, a Chicago-area machinery moving company he founded 30 years ago.

Stephan Bellinger (PSYC '73), Chicago, won the 2018 Best Indie Book Award for science fiction for his novel, *The Chronocar*, a time-travel story in which the main character is an Illinois Tech student. Copies of *The Chronocar* are currently available at Paul V. Galvin Library and in the University Archives.

Michael Jackson (LAW '75), Shaker Heights, Ohio, was appointed to serve

as chair of the Military and Veterans' Affairs Committee of the Ohio State Bar Association.

John Tolomei (CE '75, M.S. '76, LAW '83), Lake Zurich, Ill., has joined McCracken & Gillen as of counsel. He focuses his practice on patent counsel and other intellectual property issues.

Steven Meyers (M.S. DSGN '76), Durango, Colo., was awarded the Kathy Wellborn Outstanding Teaching Award at Fort Lewis College in Durango, where he has taught for the past 20 years and is currently a semiretired author and senior lecturer in English teaching semantics and creative writing. He was also honored as faculty marshal for the 2018 winter graduation ceremony at the college. Author of numerous books and articles, Meyers lives in Durango with his wife, Debbie.

Jeffrey Doman (M.A.S. CRP '77), Evanston, Ill., and his wife, Sue, celebrated their 44th wedding anniversary and became grandparents for the first time in 2017. He was a member of the Meteors basketball team that qualified for the 2019 National Senior

Olympics in Albuquerque, New Mexico. In a professional career spanning more than three decades working in general contracting, Doman has worked on more than 300 awarded construction projects including, most recently, the Guarneri Hall recording studio in Chicago.

Richard Bumstead (CRP '78), Flossmoor, Ill., retired in January after a 35-year career as the landscape architect for the University of Chicago. During his tenure, the university undertook the Botanic Garden Initiative, which transformed the Hyde Park campus.

Frances Crean (Ph.D. CHEM '79), Oak Lawn, Ill., the longest-serving STEM faculty member at Saint Xavier University, retired after 47 years of service. A ceremony for her life's work and an endowment fund in the Department of Chemistry are being planned by the university in recognition of Crean.

1980s

David Bechtol (EE '80), Chicago, is showing first major solo photographic exhibition, *Panoramic Vistas*, at the Chicago Cultural Center



Charles L. Owen Endowed Chair in Design **Vijay Kumar (M.S. DSGN '92)** [center, with medallion] is surrounded by friends and colleagues at his investiture: [left to right] Institute of Design Dean Denis Weil (M.D.S. '01), Provost Peter Kilpatrick, President Alan W. Cramb, Rob Pew, Larry Keeley, Steelcase/R. C. Pew Chair in Design Patrick Whitney, and Chairman of the Board of Trustees Michael P. Galvin (LAW '78).

Photo: Michael Goss

A Life-Changing Legacy

“Illinois Tech means everything to us. It was a wonderful place for two blue-collar kids that provided leadership opportunities and support from faculty who were leaders in their fields. We wanted to give back, so we dedicated a portion of our estate plan to Illinois Tech.”

— *Eleanor (ENG '64) and Fred (ARCH '66, M.S. CRP '68, Ph.D. CRP '79) Tolson*



For Eleanor (ENG '64) and Fred (ARCH '66, M.S. CRP '68, Ph.D. CRP '79) Tolson, ties to Illinois Institute of Technology run deep. Both Tolsons were the first in their families to attend college, where they found extraordinary support for first-generation students. Both had siblings follow them to Illinois Tech, and each went on to earn their Ph.D.s and to pursue satisfying careers in academia and technical construction planning. Today the Tolsons receive 85 holiday cards yearly from lifelong friends they made at the university.

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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 and avoid income tax on IRA and retirement plan gifts.
- Retain control of your assets during your lifetime.

If you have named Illinois Tech as a beneficiary in your estate plan through your will, trust, IRA, or retirement plan, 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 recognition for members in university publications.

Visit iit.edu/giftplanning to learn how you can benefit from these giving methods and more. Contact Dean Regenovich, Office of Gift Planning, at dregenovich@iit.edu or **312.567.5018**.

Gunsaulus | SOCIETY

through May 3. The exhibition features large-scale panoramas from Alaska, the Hawaiian Islands, Iceland, Paris, Versailles, and various locations in Canada.

Michael Mercer

(Ph.D. PSYC '80), Barrington, Ill., was elected to the board of directors of Sky Las Vegas. Previously, he served for 16 years as board member of a publicly traded corporation. Mercer is an industrial psychologist and the author of six books.

Brad Krygier

(MGT '80), Savannah, Ga., was selected to be a member of the inaugural Illinois Tech Athletics Advisory Board in 2019.

Heidi Rank

(ARCH '81), San Rafael, Calif., recently accepted a position at Swinerton Builders as assistant project manager for high-rise residential construction in downtown San Francisco. She describes the projects as logistically challenging and technically exciting.

Nancy Paridy

(LAW '83), Evanston, Ill., received the 2018 Top Women Lawyers in Leadership award through the Women's Bar Association of Illinois. Paridy is the senior vice president and chief administrative officer at Shirley Ryan AbilityLab, where she serves as general counsel.

Michael Rogers

(CE '83), Murrieta, Calif., vice president and global practice leader for dams at Stantec, was elected president of the International Commission on Large Dams at its annual meeting in Vienna, Austria, in 2018. As ICOLD president, he is leading the organization of 100 countries and more than 10,000 individual members that keep the current State of the Practice in international safe design of dams and levees.

Stanley Schachne

(ARCH '83), Davie, Fla., and Donna Schachne, partners at Schachne Architects + Builders, were recognized by the Fort Lauderdale, Florida, chapter

of the American Institute of Architects with an Honor Award for their design and construction of a condominium renovation in Hollywood, Florida. They also received a Gold Award for a house addition/renovation and a Bronze Award for a kitchen renovation during *Qualified Remodeler* magazine's Master Design competition in its September 2018 issue.

Timothy Murphy

(CE '84), Chicago, received the 2018 Barry Dempsey Bituminous Technical Contribution of the Year Award at the 59th Annual Illinois Bituminous Paving Conference. The award recognizes an industry employee for outstanding technical/engineering contributions to the bituminous paving field.

Naresh Shanker

(CS '85, M.B.A. '86), Menlo Park, Calif., has joined the board of directors of Clarizen, a project management software and collaborative work management company.

John Fijolek

(M.S. CS '87), Naperville, Ill., joined Transpacific IP Management Group as chief technology officer. He is an award-winning inventor at companies including Bell Labs and CableLabs, where he developed and commercialized engineering inventions in Asia.

Gregory Kimura

(EE '87), Pasadena, Calif., was elected by the Santa Clarita Valley International Charter School governance board as its new president. He was elected to the board in 2013 and served as vice president for four years. He also recently became senior consultant for the office of Direct Auto Sales and Lease.

Grant Leitma

(Ph.D. PSYC '87), Frederick, Md., celebrated 35 years at Washington Adventist University. He chairs the undergraduate psychology program and the graduate master of arts program in clinical mental health counseling.

UPCOMING ALUMNI EVENTS

For information about the upcoming events listed below and other alumni activities, please visit alumni.iit.edu/events or contact the Office of Alumni Relations at alumni@iit.edu or 312.567.5040.

**Morton Arboretum Family Event
Saturday, June 8, 2019**

Bring your family and join us at Morton Arboretum for this annual gathering. Enjoy a continental breakfast while mingling with alumni, family, and friends. After breakfast, stay and explore the grounds of the beautiful arboretum.

SAVE THE DATE!

Illinois Tech Homecoming & Reunion Weekend

**Friday, September 20
and Saturday, September 21, 2019**

You won't want to miss reunion gatherings celebrating the classes of 1969, 1994, and 2009; campus tours; the Homecoming carnival; athletic games; learning opportunities; the Alumni Awards celebration; and so much more!

Be sure to save the date, gather your friends and family, and plan to come home to Illinois Tech this fall for Homecoming & Reunion Weekend 2019.

CONNECT TODAY

Are you connected to the Alumni Association? When you update your mailing address, phone number, and email, you ensure that you receive up-to-date information from your alma mater

Visit alumni.iit.edu/information-update to update your contact information today.

Tobin Anselmi

(M.S. PSYC '88, Ph.D. '94), Chagrin Falls, Ohio, joined Bridgepoint Education as its senior director of talent management and development. Prior to taking on his new role, Anselmi served as the director of global talent management and organizational effectiveness at Materion Corporation, and has worked for Aon Consulting, Frito-Lay, Dell, and Microsoft.

Cynthia Cobbs

(LAW '88), Orland Park, Ill., was installed by the Illinois Judicial Council as its chair for 2018–19. Previously appointed as director of the administrative office of the Illinois courts in March 2002, she became the first woman and the first African American appointed by the state Supreme Court to serve as the Illinois courts administrator.

Mark Frey

(LAW '89), Crystal Lake, Ill., president and chief executive officer of AMITA Health, was elected to the Illinois Health and Hospital Association Board of Trustees in 2018. Frey's term on the board will extend through 2020.

1990s

Eileen O'Neill Burke (née O'Neill)

(LAW '90), Chicago, was installed as the secretary of the Illinois Judges Association. She served in the Law Division until her election to the Illinois Appellate Court in 2016. Prior to that she worked as a Cook County state's attorney for 10 years, and then had her own practice focusing on criminal defense until her election to the Circuit Court of Cook County in 2008.

Stephen Krull

(LAW '90), Maumee, Ohio, joined La-Z-Boy as vice president, general counsel, and corporate secretary. He has been responsible for mergers and acquisitions, compliance, intellectual property, litigation, labor relations, government and public affairs, and security throughout his career.

James Schoell

(BA '90), Lemont, Ill., a former Scarlet Hawks baseball player, held a baseball alumni golf outing and barbecue reunion at his home. Jim Darrah, former Illinois Tech baseball coach and athletic director, attended

along with more than 20 former players. Schoell said that many stories were shared and that he will make it an annual event.

Peter Tonyan

(LAW '90), Davie, Fla., has joined Seminole Hard Rock International as vice president of tax. He has a background in mergers and acquisitions as well as in tax strategy.



Scott Conwell

(ARCH '91), Naperville, Ill., was elected a fellow of the Construction Specifications Institute in 2018. He is also a fellow of the American Institute of Architects.

Matthew Filippini

(M.A.S. ARCH '91, M.A.S. CE '94), Chicago, is the director of the Architecture and Building Science practice group for CTLGroup, an internationally

recognized expert consulting firm in engineering, materials science, architecture, research, and testing.

Huan-Jung Fan

(M.S. ENVE '92, Ph.D. '96), Taichung City, Taiwan, is an award-winning professor in the Department of Safety, Health, and Environmental Engineering at Hungkuang University. He led the Illinois Tech Department of Civil, Architectural, and Environmental Engineering seminar on Occurrence and Treatment Efficiency of Pharmaceuticals in Landfill Leachates. Fan previously served as dean of student affairs, dean of research and development, and department chair.

Junjian Tang

(M.A.S. ARCH '93), Lisle, Ill., gave the speech "The True Meaning of Success—A Chinese Immigrant's Story as an Architect" at the inaugural conference of the North American Entrepreneur Society of Huazhong University of Science and Technology in Silicon Valley last year.

Benedict Jones

(MATH '94), Irvine, Calif., began his second year as director of



Retired faculty were welcomed back to Mies Campus for an annual luncheon that included a guided tour of the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship. Photo: Bonnie Robinson



More than 60 alumni gathered to welcome President Alan W. Cramb to Shanghai, China, last December. Shanghai was one stop on the presidential Asia tour, which also included visits to Japan and Korea.

information technology for the Rincon Band of Luiseño Indians, supporting government, gaming, and Rincon Enterprises.

Kathleen Mundo (née McDonough) (LAW '94), Chicago, has been appointed to the newly established 12-member women's advisory board serving the *Chicago Lawyer* and *Chicago Daily Law Bulletin*. McDonough is a partner at Wilson Elser Moskowitz Edelman & Dicker, where she focuses her practice on transactional and business consulting.

Lonnie Nasatir (LAW '94), Chicago, regional director of the Anti-Defamation League's Greater Chicago/Upper Midwest area, has been named president-elect of the Jewish United Fund/Jewish Federation of Metropolitan Chicago. He is the eldest son of Steven Nasatir, who has led the organization for almost 40 years.

Jessica Lipson (CHE '96), Southport, N.C., was promoted to partner at Morrison Cohen. She is a member of the intellectual property group and the corporate department, with a

focus on technology transactions, intellectual property, and privacy/data security.

Robert Brevelle (CS '98, M.S. '98), Rowlett, Texas, has been appointed as an entrepreneur in residence at the intellectual property and investment firm Technium and Intellectual Ventures. He is a founding sponsor of the National Museum of the United States Army, and a life member of the National Guard Association of the United States, and serves as president of the Dallas chapter of the Association of Old Crows.

Umer Khan (CPE '98), Orange, Calif., was promoted to vice president of information technology and information security at SpaceX, a company that designs, manufactures, and launches advanced rockets and spacecraft. He also recently completed two master's degrees to become an Islamic Scholar. Khan is married and has four children.

2000s

Mitchell Gold (Ph.D. PSYC '00), Overland Park, Kan., joined Gallagher Integrated as a managing director and senior advisor for its Employee Engagement practice.

Michael Lee (L.L.M. '00), Hinsdale, Ill., was appointed senior vice president and regional wealth advisor in Northern Trust's Chicago office. He has almost 25 years of experience as an attorney and wealth advisor focusing on income and transfer tax planning and wealth management for ultra-high net worth individuals and families.

Andrea Wolfson (née Ricker) (LAW '01), Miami Beach, Fla., was elevated from Miami-Dade County Court judge to Circuit Court of Florida judge, Criminal Division, by former Governor Rick Scott.

Melissa Allen (née Sarmiento) (CHE '02), Lakeland, Fla., and her college sweetheart, **Jason Allen** (CS, ME '04), have been married for almost 14 years. They are the proud parents of two young children.

Karen Williams-Blackman (PPPY '02, M.P.A. '05), Chicago, is married and is starting a travel company that she plans to launch in 2019-20.

Glenn Krell (M.P.A. '03), Chicago, is director of research integrity at Rutgers, The State University of New Jersey. He is leading an initiative on responsible conduct of research for the Big Ten Academic Alliance, the nation's premier higher education consortium of top-tier research institutions.

Aman Sareen (CPE '03), San Francisco, was featured in *Street Fight* magazine for his role as a chief executive officer and co-founder of ZypMedia, a digital advertising technology platform that has been providing cutting-edge marketing technology services to local advertisers.

Jason Allen (CS '04, ME '04), Lakeland, Fla., was promoted to software architect at Publix corporate information technology.

James Ciston (AE '04, ME '04), Oakland, Calif., co-authored the study "Multiple Generations of Grain Aggregation in Different Environments Preceded Solar



Phuong Vu (CHE '96), New Haven, Conn., [third from left] was welcomed by the Dominican Sisters of Peace as a new sister of the Dominican Novitiate, a significant step on the path to a perpetual profession as a Dominican Sister of Peace.

ALUMNI NEWS

System Body Formation,” which was published in *Proceedings of the National Academy of Sciences of the United States of America* in June 2018. The study found the existence of ancient dust particles that predate the formation of the solar system.

Izzet Kucukertunc

(M.B.A. '04), Abbott Park, Ill., worked for three years in Chicago, and one year in Singapore, then returned to his hometown of Istanbul at the end of 2010. He says that he now has a big family that includes two children and a dog.

Katherine Darnstadt

(ARCH '05), Chicago, shared her experiences as founder of Latent Design—a progressive architecture and urbanism firm leveraging civic innovation and social impact—during the 2018–19 Visiting Artist Series, a collaboration between the College of DuPage Fine Arts Program and the Cleve Carney Art Gallery.

Angie Hamada (née Cowan)

(LAW '05), Chicago, was appointed as a commissioner to the Cook County Commission on Human Rights.

Lyndsay Markley

(LAW '05), Chicago, is one of *Chicago Lawyer's* 40 Under Forty for 2018. She is the founder of Lyndsay Markley Law.

Virgil Abloh

(M.A.R. ARCH '06), Chicago, debuted his spring-summer 2019 menswear collection for Louis Vuitton at Paris Fashion Week in June 2018.

Gerald Bekkerman

(LAW '07), Chicago, is one of *Chicago Lawyer's* 40 Under Forty for 2018. He is a joining member of Taxman, Pollock, Murray, and Bekkerman, where he focuses his practice on personal-injury litigation.

Jessica Boike (née Winkler)

(LAW '07), Chicago, is one of *Chicago Lawyer's* 40 Under Forty for 2018. She is a partner at Beermann LLP, where she focuses her practice on commercial litigation, appeals, and family law.

Eric Choi

(LAW '07), Glenview, Ill., is one

of *Chicago Lawyer's* 40 Under Forty for 2018. He is a partner at Neal, Gerber and Eisenberg, where he focuses his practice on complex business litigation.

Courtney Fong

(LAW '07, M.B.A. '07), Northbrook, Ill., is chief legal officer and chief privacy officer of the Computing Technology Industry Association.

Seth Herkowitz

(LAW '07, M.B.A. '07), Birmingham, Mich., is a *Crain's Detroit Business* 40 Under 40 honoree. He is a partner at Hunter Pasteur Homes, a real-estate agency that services various Michigan locations.

Chi Hwan Lee

(ME '07), Stanford, Calif., led a team of researchers at Purdue University in creating a new fabrication method of electronic stickers that could allow Internet of Things devices to sense their environments and connect with other devices.

Juan Morado

(LAW '07), Chicago, of counsel in the health care practice at Benesch, is the new president of the Hispanic Lawyers Association of Illinois. He was also recognized by *Crain's Chicago Business* as one of Chicago's Notable Minority Lawyers in 2018.

Katharine Netherton (née Pyles)

(PSYC '07, M.S. REHB '09), Louisville, Ky., and her spouse,

Daniel Netherton (CE '07, M.A.S. CM '09), welcomed their second child in February 2018. She is a vocational rehabilitation specialist for Prudential Financial and supports the vocational team with return-to-work planning and long-term disability services.

Christina Lutz

(LAW '08), Chicago, is one of *Chicago Lawyer's* 40 Under Forty in 2018. Lutz is a partner in Levenfeld Pearlstein's litigation group, where she concentrates in general and commercial litigation.

Peter Smagur

(CE '08), Arlington, Va., a lieutenant commander in the United States Navy, led recovery efforts on the island of Tinian in the Northern Mariana Islands after a typhoon hit in October 2018.



Andrea Occhipinti (ME '14), Meridian, Miss., [front] United States Marine Corps first lieutenant, and twin brother, Captain Matteo Occhipinti—who both studied mechanical engineering—received their wings last July after years of training at Naval Air Station Meridian.

David Gosse

(LAW '09), Naperville, Ill., a partner at Fitch, Even, Tabin & Flannery, has been appointed to a two-year term as co-vice chair of the American Intellectual Property Law Association's PTAB Trial Committee. At Fitch, Gosse helps clients protect their intellectual property rights through litigation.

Rajesh Thangappan

(M.S. CS '09), Chennai, India, was certified in the Russian language in 2012 after taking a course in reading and interpretation. He is planning to participate in a forum for engineers to be held in Russia this summer.

2010S

Robert Boyer

(BME '10), Gladstone, N.J., was recently promoted to director of product development at HS Design, a user-centered product development firm. He and his wife, Risa Magid Boyer, celebrated the one-year anniversary of their restaurant, Vanillamore, in Montclair, New Jersey. Vanillamore was named New Jersey's Best Dessert Restaurant for 2018 by *New Jersey Monthly* magazine.

Timothy Bresnahan

(LAW '10), Chicago, is one of *Crain's Chicago Business* Notable LGBTQ Executives for 2018. Bresnahan is the senior director of gift planning at The Chicago Community Trust. He is a highly involved member of Rivendell

Theatre Ensemble's board and is on the advisory committee of the Rogers Park Business Alliance.

Elizabeth Corson

(CHE '11), Richmond, Calif., advanced to Ph.D. candidacy at the University of California, Berkeley in chemical engineering.

Adam Rayman

(M.S. TCID '13), San Diego, is a user-experience designer for ICW Group, a workers' compensation insurance company.

Sarah Ekblad

(M.Des. '14), Chicago, and Matthew Messner were married last year in Sicily. She is a principal researcher and design strategist at IA Collaborative in Chicago.

Vasilios Pappademetriou

(ITM '14, M.A.S. ITM '17), Harwood Heights, Ill., is adjunct faculty advisor of the Illinois Tech HAM Radio Club.

Scott Slone

(MSE '14), Champaign, Ill., joined the United States Army Corps of Engineers as a federal researcher. His work focuses on computational materials studies to reduce construction costs in all services of the military.

Ryan Hynes

(BA '15, LAW '15, M.S. FIN '16), Chicago, is pursuing a Ph.D. in economics, specializing in trade, at the University College Dublin in Ireland.

Ceola Oware

(M.P.A. '16), Chicago, is the owner and principal of Oware Consulting, a business services company located in Accra, Ghana, that provides business strategy, coaching, and marketing solutions.

Brahadon Ramirez

(ARCH '16), Blue Island, Ill., has a new position at Gresham Smith as an architectural designer.

Joseph Valio Jr.

(BME '16), Bartlett, Ill., is a partner at Radiology Physics Solutions.

Emma Ghariani

(BA '17), Chicago, transitioned from Chicago to Seattle to accept a position as a senior project engineer after completing a full seismic/structural upgrade of the historic former Hotel Deca, now the Graduate Seattle Hotel, as a joint-venture partner.

Leana Osmer

(AE '17), Canoga Park, Calif., component project engineer at Aerojet Rocketdyne, is happy to report that she bought her first house, in Los Angeles.

Yusra Sarhan

(BME '17), Oak Lawn, Ill., was featured in a *Chicago Tribune* story about young immigrants from 12 different countries. Sarhan currently works as an engineer in downtown Chicago and is one of more than 42,000 Illinoisans approved for the Deferred Action for Childhood Arrivals program, or DACA, since its 2012 inception.

Anthony Accove

(ME '18), Chicago, was hired at Maestros Ventures on a three-month provisional internship upon graduation. Within six months he was offered a permanent, full-time position as a mechanical engineer specializing in mechanical, electrical, and plumbing systems design.

Garrett Bernhagen

(ARCH '18), Naperville, Ill., will be celebrating one year since joining Eastlake Studio as a technical coordinator.

Dinesh Ganesan

(M.A.S. ITM '18), Brighton, Mass., interned at MathWorks and is now celebrating his first-year anniversary of employment. He is working on multiple projects including MATLAB and Simulink.

Yonas Gebre

(PHYS '18, AMAT '18), Chicago, is pursuing a graduate degree in physics at the University of Colorado Boulder, with a focus on theoretical atomic physics.

Attendee/Non-Degree**Sandra Biedron**

Chicago, had her residence in Morgan Park, also known as the Ingersoll-Blackwelder House—a historic home that she has rehabilitated—selected as part of the Chicago Architecture Center's Open House Chicago tour. The *Chicago Tribune* ranked the home among the top 10 recommended sites of the more than 250 locations on the tour.

Haofeng Tang

Washington, D.C., is interning at Congressman Raja Krishnamoorthi's office in Washington, D.C., this spring. Tang is pursuing a master's degree in international relations at The Institute of World Politics as the first Chinese student in the program. He was also previously invited to a discussion with the Luxembourg ambassador at that nation's embassy.

Spotlight**John A. DeRuntz Jr.**

(ME '59, M.S. MECH '62, Ph.D. MECH '65)

Transcending Space and Time Through Physics and Piano Music

Midway through his senior year of high school in Chicago, John A. DeRuntz Jr. was fulfilling his duty as a hall guard when he decided to slip into one of the school's reception rooms to play the piano, his passion. His homeroom teacher, Elmer Del Favero, caught him. Instead of scolding him, Del Favero was surprised that the mostly self-taught DeRuntz didn't have a scholarship to study music—or any plans for college—after graduation.

"He said, 'I've got an idea.' He got me to enter into a mechanical drawing competition IIT held in those days," DeRuntz remembers. "I got an honorable mention, which allowed me to take a test that turned out to be the IIT entrance exam."

DeRuntz did well enough to earn a scholarship to attend Illinois Tech for one year, which would roll over to the next if he kept his grades up. He ended up earning his doctorate, specializing in mechanics, a branch of physics, as well as in applied mathematics. His university studies set him on a path toward his crowning achievement—the Underwater Shock Analysis code—while working at the Lockheed Palo Alto Research Laboratory in California. The software accurately simulates how underwater shockwaves and sound affect vessels such as a submarine, data that the United States Navy and other government entities have utilized. DeRuntz was awarded the Shock and Vibration Information Analysis Center's most prestigious honor, the Melvin L. Baron Award, in 2007 for his work.

DeRuntz says that throughout his career, his passion for the piano never waned. He earned the chance to showcase his skills in 2011 when he performed his own compositions at the Van Cliburn International Competition for Outstanding Amateurs, where the best non-professional pianists in the world are invited.

"Music and physics are both studies in space and time," DeRuntz says, "and somehow my brain has the capability to work in space and time." —Andrew Wyder

Visit bit.ly/alumni-event-photos to see more event photos from the Alumni Association.



Vasudevan “Raj” Rajaram (LAW '91) has made it his priority in life to serve others. He has dedicated himself to nonprofit work since 2004, much of it with Illinois Tech. He mentors students in Stuart School of Business, helps the Office of Undergraduate Admission recruit minority students, and rallies international alumni to aid in recruiting programs. He has served two terms on the Alumni Association Board of Directors and has returned for a third. He has volunteered countless hours to domestic and international alumni initiatives in his role as chair of the International Alumni Committee.

Rajaram spent 43 years in the geotechnical and environmental engineering field and worked for five major companies in the United States and Canada. In 1986 he founded Midwest Engineers in Chicago and decided to act on his lifelong interest in environmental law and take night classes at Chicago-Kent College of Law. Although he earned his juris doctorate, he elected to remain in the engineer-

Connecting Alumni Around the World

ing field and founded Tetra Tech India, an environmental management company, in India in 1997. Illinois Institute of Technology has chosen Rajaram as the recipient of three Alumni Association awards: the International Leadership Award in 2000, the International Award of Merit in 2002, and the Alumni Service Award in 2016.

During Rajaram's time on the Alumni Association Board of Directors, he chaired the university's first-ever Global Alumni Gathering in 2014, and now his volunteer efforts have come full circle as he has been hard at work raising sponsorship funds for the 2019 Global Alumni Gathering. This year's event, to be held from November 1–3 in Bengaluru, India, will focus on the topics of climate change and its

mitigation and adaptive technologies. Full program details are still being finalized, but information is available at alumni.iit.edu/global2019.

“We are very lucky this year to have two generous alumni from India who have stepped up to cover the cost of the program,” Rajaram says. Parth Amin (BA '85) and Sanjay Kirloskar (ME '78) had offered their assistance with the 2016 Global Alumni Gathering, held in Paris, France, but ultimately were not able to participate. Rajaram remembered their offer and asked for their help this year, which they were eager to provide. Kirloskar, chairman of Kirloskar Brothers, Ltd., will present keynote remarks at the program's opening reception and dinner. Amin, chairman of SLK Group,

will lead a tour of SLK Software for participants and host a gathering in his home for attendees. Illinois Tech's Office of Alumni Engagement and SivaKumar Dandapani, operations director of Illinois Institute of Technology (India) Private Ltd., are actively working with Rajaram and the planning committee to make the Global Alumni Gathering a success.

“This year's Global Alumni Gathering is going to be very exciting,” Rajaram says. “We are a global university, with students and alumni from all different parts of the world, and we're all looking for opportunities to connect. Here we can network, share news, and discover the great things our fellow alumni are doing. It's all about making connections.”
—Rebecca Scherer



Visit alumni.iit.edu/global2019 to learn more about and register for the 2019 Global Alumni Gathering, or contact James Acton, associate vice president of alumni engagement, at **312.567.5053** or jacton@iit.edu with questions.

In Memoriam

Clifford Larkin
EE '25

Paul Petersen
UNK '26

Thomas Smith
ME '26

Armand Hahn
CHE '35

Wallace Cumming
CHE '36

Margaret Etter
ARSC '39

Edward Gruca
CHE '40

Otto Barteldes
CE '41

Edwin Crouse
ME '41

William Harrison
ARSC '41

Albert Bredlau
ME '42

Dorothy Gardner
ARSC '42

Thomas Cox
EE '43

Robert Kaul
ME '43

Aaron Kolom
ME '43

John Nordhaus
ME '43

Donald Gray
MECH '44

Richard Larson
CHE '44

William Lenzi
ME '44

Norma Hochberg
ARSC '45

Peter Parlos
ME '45

Norton Boime
IE '47

Joseph Rimac
ME '47

Robert Sulzer
ME '47

Robert Svenson
ME '47

Ion Caloger
EE '48

Edward Davis
ME '48

Cecil Lencioni
EE '48, M.S. '53

Harold Swirsky
EE '48

Laddie Thomka
CHE '48

Robert "Bob" Filler

St. Paul, Minn., beginning in the 1950s, served as a professor of chemistry, chair of the Department of Chemistry, and dean of then-Lewis College of Sciences and Letters. He is remembered as being a passionate researcher and scholar who received numerous grants, published more than 180 papers, and advised many graduate students. Filler was an active member of the American Chemical Society from 1947 and in 1976 chaired the fluorine division. He lectured widely, serving as a visiting professor at universities in England, Israel, and Germany, as well as giving papers in Russia, Poland, and Japan. Filler also co-founded a research and development startup, working into his 90s.



Ronald Born
BE '49

John Brukaker
ME '49

Hillert Vitt
EE '49

Reynir Einarson
CE '50

Eugene Hasenberg
ME '50

Ervin Hawrylewicz
BIOL '50, M.S. BCHM '53,
Ph.D. BIOL '60

Sidney Jeffe
ME '50

Richard Johnson
CE '50

Howard Lavitt
CE '50

Jack Root
EE '50

Raymond Senkowski
ME '50

Edgar Taylor
DSGN '50

Norman Wollscheid
EE '50

Robert Dunn
EE '51

Emil Germanos
EE '51

Lawrence Korenchan
ME '51

Toru Ogasawara
EE '51

Herbert Rosen
ME '51

Edward Steuer
DSGN '51

William Walker
EE '51

George Warga
BE '51

William Eggar
CHE '52

Irving Erickson
ME '52

William Grannan
FPE '52

Norman Jacobs
ME '52

John Kirkland
LAW '52

Russell Sault
M.S. CHE '52, M.A.S. GT '52

Donald Seibert
CE '52

Herbert Sledd
LAW '52

Robert Urban
ME '52

Rudolph Wendes
ME '52

Harold Anson
ME '53

James Gerdes
IE '53

Robert Jones
M.S. CRP '53

Ralph Lockhart
MET '53

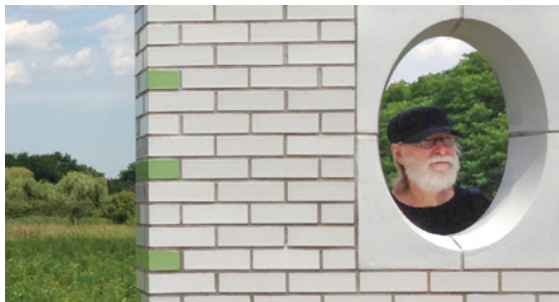
John McLaughlin
FPE '53

John Sherman
LAW '53

Richard Squires
MET '53

Shih-Ming Yang
Ph.D. ME '53

Matilda Zompetta
HE '53



Dale Fahnstrom

Chicago, served as a faculty member at the Institute of Design from 1966 to 2011, faculty emeritus, and director of ID from 1982 to 1986. Early in his career he was product designer for Unimark International and then co-founded the Chicago design firms Source, Inc. and Design Planning Group, contributing products to Knoll International and Steelcase, among other firms. The recipient of numerous design awards, Fahnstrom had his early work in packaging design featured in the permanent collection of Cooper Hewitt, Smithsonian Design Museum. In 2017 the Dale Fahnstrom Endowed Teaching Fellowship was established at ID by co-founders of the design consultancy Gravity Tank, who were also Fahnstrom's former students.



Charles “Chuck” Harrison

M.S. DSGN '63, Canyon Country, Calif., is credited with being one of the first African-American industrial designers of his era and the first to lead a design department at a major corporation. Initially rejected for a job at Sears, Roebuck and Company in the mid-1950s because of his race, Harrison became its first African-American executive five years later. A prolific designer who overcame struggles with dyslexia, he executed more than 700 designs, including many popular household products such as the plastic trash can; the redesigned, iconic View-Master handheld image-reel viewer; the portable hairdryer; and the riding lawnmower. Among Harrison’s many notable awards is the 2008 National Design Award, Lifetime Achievement honor from the Cooper Hewitt, Smithsonian Design Museum. He was the first African American to receive this honor. *Photo: Tim Klein*

Leon Lederman

Driggs, Idaho, who shared in the Nobel Prize in Physics in 1988, served as Pritzker Professor of Physics at Illinois Tech, where he was on the faculty from 1992 until his retirement in 2011. Lederman’s idea for a United States national accelerator laboratory became Fermilab, where he was director from 1978 to 1989, and led the team that discovered the bottom quark subatomic particle. Under his directorship, the Tevatron superconducting accelerator opened, which helped place Fermilab into a global leadership position in accelerator and neutrino research. Lederman also worked to promote general public science literacy and enkindle a passion for science among youth. In 1985 he established the Illinois Mathematics and Science Academy. *Photo: Reidar Hahn, Fermilab*



Wallace Aikens
ARCH '54

Richard Draus
ME '54

Robert Geppert
ARCH '54

George Kacek
EE '54, M.S. '55

Robert Marino
CE '54, M.S. '59

John Miyasaki
EE '54, M.S. '67

Raymond Schaefer
ME '54, M.S. '59

Charles Walmsley
DSGN '54

David Jordan
ENGL '55

Marvin Luntz
ME '55

James Strom
CHE '55, M.S. '57

Lawrence Waters
M.S. PSYC '55

Reed Robertson
CHE '56, M.S. ENVE '69

Peter Roesch
M.S. ARCH '56

Lorraine Bolton
M.S. ART '57

Richard Carlson
ME '57

David Ehrlich
PHYS '57

Wendell Hall
LAW '57

John Hechinger
LAW '57

Patrick Loftus
CHE '57

Richard Smith
ME '57

Stephen Tobey
CHEM '57

Russell Agnew
ME '58

Charles Gallagher
EE '58

Lawrence Greenstein
EE '58, M.S. '61, Ph.D. '67

Harold Hayer
FPE '58

Richard Molay
LPSC '58

Vincent Reis
EE '58

Rudolph Behnke
CE '59

Ronald Douglas
MATH '60

William Holod
ME '60

Robert Kegel
ME '60

Donald Mech
EE '60

Ray Richards
CE '60

Tung-Men Tang
Ph.D. ME '60

James Dahms
EE '61

Michael Donovan
EE '61

Harold Wakeley
PSYC '61, M.S. '69, Ph.D. '77

George Yurka
ME '61

Aaron Averbuch
EE '62

Richard Gerardy
CE '62

Dickron Mergerian
Ph.D. PHYS '62

Charles Rice
BE '62

Leroy Botten
PHYS '63

James Buechler
BIOL '63

Everett Loury
LAW '63

John Zayner
EE '63

George Gojewyc
CE '64

Roy Kruse
ARCH '64

Wayne Marsh
EE '64

F. Ronald Musket
CHE '64

Michael Jackowski
EE '65, M.B.A. '70

Richard Kleifgen
EE '65

Jorge Servin
ME '65

David Voorhees
ARCH '65

George Carey
Ph.D. CHEM '66

Robert Haeger
LAW '66

Marshall Medoff
MATH '67

John O'Connor
LAW '67

Jacinto Rodriguez
M.S. EE '67

Eric Strauts
EE '67

Ross Tyrrell
LAW '67



Walter Nathan

ME '44, Chicago, an Illinois Institute of Technology Life Trustee and a member of the Institute of Design Board of Advisors, was founder and retired chairman of RTC Industries, a global retail-oriented business. Through RTC, Nathan built a company culture around in-store merchandising and

researching. He was a longtime national leader of the American Jewish Committee, on the board of the Chicago Lighthouse, and a supporter of the Leo Baeck Institute. He served in the United States Navy during World War II and worked to memorialize his family's history, which dates back to Nazi-occupied Germany. Nathan was an important supporter of Illinois Tech's Voices of the Holocaust online project.

Daniel G. Martin

LAW '84, Chicago, was a United States magistrate judge who taught trial advocacy to more than 1,000 students during his 30 years as an adjunct professor at Chicago-Kent College of Law; he also coached several of the law school's most successful competitive trial teams. Before becoming a federal judge, Martin served as a staff attorney with the Federal Defender Program for the Northern District of Illinois and in 2002, he created and administered the Federal Defender Program's Summer Trial Skills Institute. He received the Chicago-Kent Alumni Association's Professional Achievement Award in 2015.

Robert Cunningham
CHE '68

Thomas Johnsen
LAW '68

Joseph Kroll
MATH '68

Frank Madsen
DSGN '68

Jay McClasky
EE '68

Richard Morris
MATH '68

William O'Hara
LAW '68

Joseph Castello
LAW '69

Richard Long
M.S. MT '69

Howard Oberfield
MATH '69

Nicholas Pitsoulakis
MAE '69

Peter Pran
M.S. ARCH '69

Peter Di Ciaula
Ph.D. PSYC '70

Steven Gilman
MATH '70

Marvin Rogan
MATH '70

John Schoeph
PHYS '71, M.S. CS '75

Dennis Wisinski
MATH '71

Daniel Butler
ECON '72

Thomas Howard
M.S. SOCT '72

Betty Whittaker
(née Allport)
M.S. SOCT '72

Anthony Duthie
M.S. IE '73

James Francoeur
EE '73

Steven Vassilatos
CE '73

Donald Fosnot
MGT '74

Robert Komarek
MGT '75

Terrence Pencek
Ph.D. BIOL '75

Abigail Spreyer
LAW '75

Tibor Borsos
EE '76

Gerald Keeley
MGT '76

Robert Marino
CRP '76

William Pileggi
LAW '76

Philip Igoe
LAW '77

Stuart Hong
MGT '78

Elizabeth Belkin
LAW '79

Berton Braun
LAW '79

Steven Dolasinski
EG '79

Susan Franklin Fulton
LAW '79

James Koch
LAW '79

Daniel Matter
PHYS '79

Maurice Thompson
EE '79

Jun Yoshitani
M.B.A. '79

Lawrence Carlson
LAW '80

Lawrence Lundgren
LAW '80

Curtis Beckman
LAW '81

George Norman
LAW '82

Satya Singh
M.S. CE '82, Ph.D. '89

Steven Hirsh
LAW '84

James Austing
M.S. CHE '86

Joseph Bingen
ARCH '86

Houssam Jabour
CE '87

Donald Zriny
M.S. EE '87

Theresa Davis
LAW '94

Craig Kemnitz
M.S. FMT '98

Melody Farance
LAW '00

Nancy Gacki
M.A.S. CS '05

Diane Viise (née Mueller)
M.A.S. STE '07

Attendee/Non-Degreed

Alexandrea Aland

Jean Anderson

Champ Davis

Walter Linzing

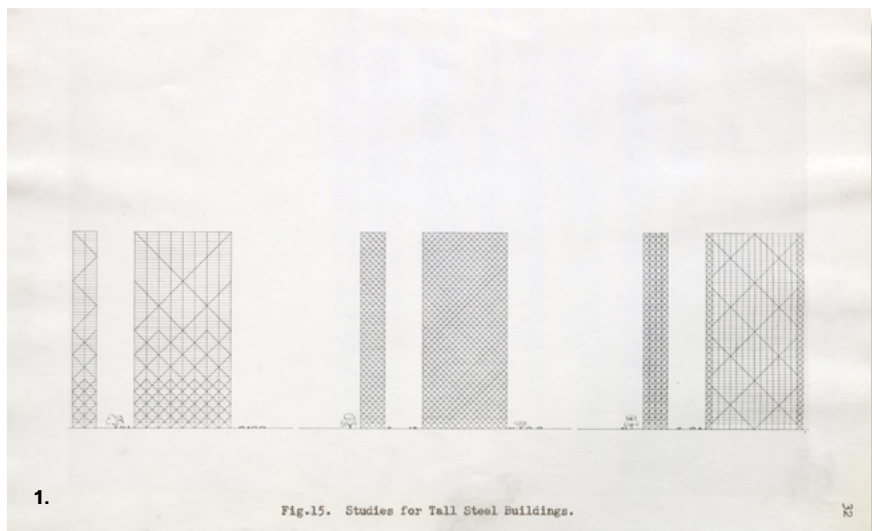
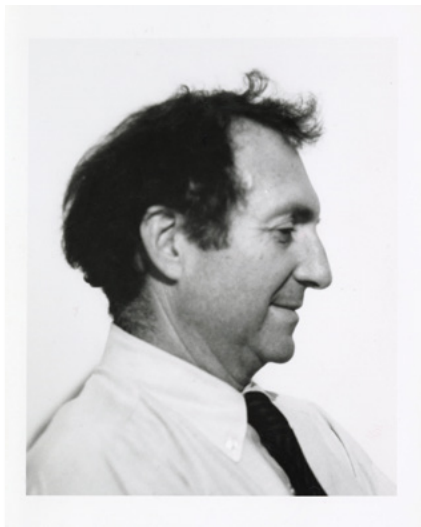
Laveta Medlock

Margaret Stewart

Harry Woll

Mikio Sasaki

M.S. ARCH '64, Tokyo, was president of Sasaki, Inc., Architects & Engineers. He established his architecture talents in his master's thesis under faculty member Myron Goldsmith (B.ARCH '39, M.S. '53) as the first architect to explore steel-framed diagonal-bracing systems for tall buildings. He developed a prototype for Chicago's John Hancock Center, which became the systems' first commercial application. Sasaki founded the IIT Japanese Alumni Association in 1966, serving as its president from 1977 to 2000. He completed a number of major architecture projects in Japan, where he was a member of the Japan Institute of Architects.



Remembering “Goldy”

Colleagues and friends lent their voices in tribute to Myron Goldsmith (B.ARCH '39, M.S. '53) in a collection of testimonials honoring the acclaimed architect and engineer, who was celebrated in a memorial service held on October 19, 1996, at S. R. Crown Hall. The late Alfred Caldwell (B.ARCH '42, M.S. '47), notable landscape architect, poet, and College of Architecture faculty member, penned a verse in honor of Goldsmith:

**Oh, Goldy!
Everyone loved Goldy.
He was so important
to the Farnsworth House.
Mies depended on him.**

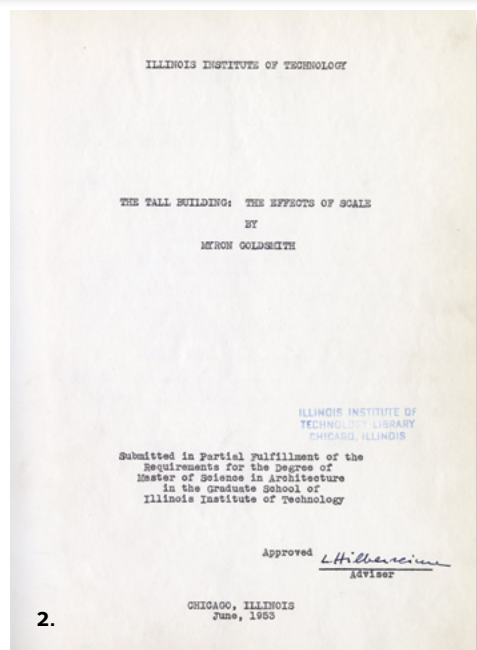
On February 19, 2019, Goldsmith was once again recognized along with six other Illinois Tech luminaries as the latest university Hall

of Fame inductees [see page 5]. William F. Baker, Skidmore, Owings & Merrill structural engineering partner and College of Architecture Board of Advisors member, describes the Saturday sessions that he and Goldsmith held for graduate students followed by lunch at Bertucci’s Corner. Baker says that the students were greatly inspired by Goldsmith’s own master’s thesis done under Ludwig Mies van der Rohe, in whose office Goldsmith worked from 1946 to 1953. Goldsmith left to study with renowned structural engineer and architect Pier Luigi Nervi through a Fulbright grant before going on to a long career at SOM.

“Myron was not dictatorial; he provided a soft and gentle guidance to students,” says Baker. “He was highly respected by everyone. His work was so elegant and refined.”

“Myron brought so much to the students,” says Robin Goldsmith of her late husband. She shares the thought she had after her first conversation with Myron, more than 60 years ago.

“I just met one of the finest people that I will ever know,” she recalls having said to herself. —*Marcia Faye*



1. A page from Myron Goldsmith’s College of Architecture graduate thesis cover page, signed by advisor Ludwig C. Hilberseimer

**Students
need *your*
expertise.**



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Questions? Contact Akshar Patel
at apatel34@iit.edu.

Homecoming & Reunion Weekend 2019

September 20–21

Join us for a weekend of celebration on Mies Campus!



Reunion Gatherings

Calling all reunion classes! Members of the classes of 1969, 1994, and 2009 will share an exclusive luncheon gathering with President Alan Cramb. Members of the Class of 1969 and earlier will have the special honor of becoming members of the Golden Society. Class of 2018, don't miss your first reunion!

ALUMNI AWARDS—NEW!

A new feature of this year's Homecoming & Reunion Weekend is the annual Alumni Awards ceremony, formerly held each year in the spring. Illinois Tech has been presenting these awards to our most accomplished, innovative, and influential alumni since 1946. Join us on Friday, September 20 to help celebrate their accomplishments!

...And Much More!

A carnival, campus tours, lectures, learning opportunities, and a variety of athletic events—don't miss out on these and many more activities during Homecoming & Reunion Weekend 2019.

