

ILLINOIS INSTITUTE OF TECHNOLOGY

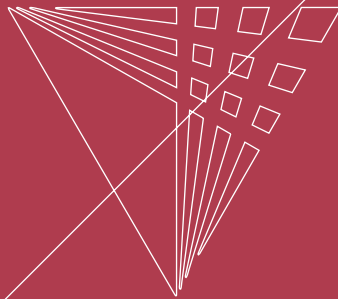
iit magazine

SPRING 2015

IITAT125

PEOPLE PLACES THINGS

125



THE WINDOW TO OUR COMMUNITY

Past, Present, and Future
Change Makers In

Tactical Engineering

Legal Advocacy

Urban Development

Communications Technology

letter from the President



“The best is yet to come.”

—William Shakespeare

As Illinois Institute of Technology celebrates its 125th anniversary, I am reminded of the many friends who have supported our university over the decades and all they have done to help us move forward. Through their philanthropy, they have honored those who have come before us—faculty and alumni whose accomplishments, both small and large, have made an impact and made us proud. And, in addition to celebrating our history, we are grateful for those whose gifts are paid forward—in anticipation for what is yet to come.

Our history is replete with examples of philanthropic support worth remembering:

- Two Chicago philanthropists can be called the fathers of IIT. The “Million Dollar Sermon” of Reverend Frank Gunsaulus inspired industrialist Philip Danforth Armour to found Armour Institute at about the same time that real estate investor Allen Cleveland Lewis funded what became known as Lewis Institute. The mergers of these two institutions in 1940 resulted in today’s IIT;
- In 1996 the legendary “Bobs,” Robert W. Galvin and Robert A. Pritzker (IE ’46), pledged a combined \$120 million to IIT—the largest philanthropic gift in Chicago at that time and a declaration that the best days of our university were still ahead of us;
- Our trustees, alumni, and university friends who are participating in the current *Fueling Innovation: The Campaign for IIT* have thus far contributed \$184,119,620 for endowed chairs, scholarships, and the revitalization of our physical infrastructure. Their support is making it possible for the next generation of students to think big and be bold; and
- Spurred on by a previous challenge gift from the IIT Alumni Association Board, students from the Class of 2014 raised more than \$21,000 in the Student Gift Campaign for the purchase of 19 bicycle racks and two bicycle repair stations on IIT Main Campus. They remind us that philanthropic gifts come in all sizes and each gift adds to making the university a special place to learn, teach, and work.

Some philanthropic efforts, such as the students’ class gift, can result in tangible outcomes almost immediately. Great philanthropists, however, have always understood that the true impact of their gifts may not be truly realized for many years. And so with their financial generosity must come trust—and an expectation that their support will be well stewarded over time.

At the annual meeting of the IIT Board of Trustees in November 2014, I illustrated this point by noting the significant return on Bob Galvin’s and Bob Pritzker’s historic \$120 million investment over the past 16 years in six key areas: enrollment (130% increase); degrees granted (67% increase); faculty growth (46% increase); major additions to infrastructure including a new campus center and residence hall; achievement of fiscal stability and a significant increase (130%) in a balanced operating budget; and research funding (110% increase).

I am also reminded that great philanthropy comes not with strings but with a deep pride that derives from giving back and paying forward. It is giving from the heart by people who care about this university—from friends and alumni who ask nothing more of us than to keep the university moving forward, true to its mission, and dedicated to providing an educational experience of uncompromised excellence.

Your support, and the support of those who came before you, is affirmation that what we do here at IIT is important and worthy of recognition. If our 125-year legacy of philanthropic support is indeed prologue, then our future looks bright indeed.

I look forward with great anticipation to see all that we can accomplish in the years to come.

John L. Anderson

A handwritten signature in black ink that reads "John L. Anderson". The signature is written in a cursive, flowing style.

President

Illinois Institute of Technology, also known as Illinois Tech, is a private, technology-focused, research university offering undergraduate and graduate degrees in engineering, science, architecture, business, design, human sciences, applied technology, and law.

One of 22 institutions that comprise the Association of Independent Technological Universities (AITU), Illinois Tech offers exceptional preparation for professions that require technological sophistication, an innovative mindset, and an entrepreneurial spirit.

IIT MISSION STATEMENT

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

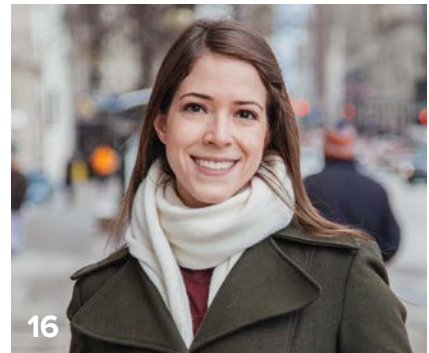
Armour College of Engineering
Chicago-Kent College of Law
College of Architecture
College of Science
Institute of Design
Lewis College of Human Sciences
School of Applied Technology
Stuart School of Business

ADA STATEMENT

Illinois Institute of Technology provides qualified individuals with disabilities reasonable accommodations to participate in university activities, programs, and services. Such individuals with disabilities requiring an accommodation should call the activity, program, or service director. For further information about IIT's resources, contact the IIT Center for Disability Resources at disabilities@iit.edu.

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Spring 2015



IIT AT 125

Since the university's founding in 1890, the people of IIT have served as the window to our distinctive community. We look at the past, present, and future leaders who continue to make IIT a university of excellence.

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IIT Magazine Online-Only Content!

Read extended coverage of stories featured in the print edition as well as special online-only content at iit.edu/magazine



ILLINOIS INSTITUTE OF TECHNOLOGY

SINCE 1890

Carr Chapel Memory

About 1960, one of my fellow students noticed that the Balaban and Katz Theatre at 22nd and State streets was going to be demolished. It was used for many performances during the 1920s Jazz Age. Members of our IIT team negotiated with the contractors and were given the Wurlitzer pipe organ. We took delivery at Carr Chapel in late 1960. A team of six or so students volunteered to install it over several weekends. I was involved in wiring the circuits as I was an EE major.

Getting the organ tuned was a problem since it was a theater organ used to support silent movies. We got it working properly; I believe an organ tuner was hired to make it sound church-like. The installers then formed a choir and sang at most Sunday services. We also sang at local hospitals and nursing homes at holidays. I don't remember the name of the

choir director except that he was band director of the high school across the street.

Phil Burger EE '62

Editor's Note: *Phil Burger was also an associate editor of Tech News and an editor of two Integral yearbooks.*

Leaders Listen

The enticing, timely cover title "Leaders Speak" [fall 2014 *IIT Magazine*] could not be more apt. As Claudio Abbado, the late conductor, proclaimed: We learn how to talk, but we don't learn how to listen. As a string quartet aficionado, I can tell you that members of the most effective ensembles play *and* listen at the same time. Ditto for all significant human relationships.

Perhaps your next issue should feature the obvious, natural sequel, "Leaders Listen."

Leon J. Hoffman M.S. PSYC '69, Ph.D. '70

Editor's Note: *Leon J. Hoffman is an avid writer (see Class Note in this issue) and welcomes interested colleagues to look up some of the many articles and letters he has written over the years. Please use the alumni directory at alumni.iit.edu/directory to search for Hoffman's contact information and reconnect with other fellow alumni.*

WRITE BACK!

IIT Magazine welcomes all signed letters to the editor and edits letters for content and clarity. Please send correspondence to:

IIT Magazine c/o Letters
 10 West 35th Street, Suite 4D7-1
 Chicago, IL 60616
 Email: iitmagazine@iit.edu

newsbriefs

Alan Cramb, IIT's Next President

The Board of Trustees of Illinois Institute of Technology unanimously elected Alan W. Cramb as the ninth president of the university. Cramb, who has been provost and senior vice president for academic affairs since 2008, will succeed John L. Anderson on August 1.

"Alan has been instrumental in moving the university to a new level of academic excellence over the past six years," says Alan "Bud" Wendorf (ME '71), chairman of the board. "His leadership has helped IIT increase its undergraduate enrollment to record levels, strengthen IIT's financial position, and attract eminent scholars to our colleges. He also understands the challenges facing higher education. The Board of Trustees believes that he will be an outstanding president and looks forward to working with him in the years ahead."

The Charles and Lee Finkl Professor of Metallurgical and Materials Engineering, Cramb received a B.Sc. with Honors in Metallurgy from the University of Strathclyde and a Ph.D. in Metallurgy and Materials Science from the University of Pennsylvania. In 2014 he was elected to the National Academy of Engineering.



Transforming Campus and Learning Environments

Three exciting capital projects in the **Fueling Innovation** campaign will redefine Main Campus and transform the educational experiences of the next generation of IIT innovators.

Revitalizing Core Campus Buildings

Engineering 1 Building to become the John T. Rettaliata Engineering Center

Labs and classrooms in the northwest side of the building are complete, and students and faculty are already using these newly renovated spaces. Work on an open, airy, light-filled atrium has commenced. The atrium will provide much-needed shared space for students and faculty to collaborate. Renovations have also addressed critical structural issues including repainting of the exterior.



One of three brand-new skylights toward the north end of E1, which will fill the atrium space below with light

Life Sciences Building to be renamed Robert A. Pritzker Research Center

Work has commenced to add an exterior plaza on the west side and a corresponding interior lobby. The plaza-style entrance will shift the main entrance



West plaza rendering for the Life Sciences Building (Courtesy of LCM Architects)

and lobby back to where it was originally, decades ago, better connecting the Pritzker Center's entryway to the main thoroughfare of campus, where student traffic flow and visibility is greater. Future phases will address the interior of the building to include flexible classrooms and collaboration spaces that incorporate updated technologies, lecture halls, and more.

Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship

This new, central hub for innovation and collaboration will be located in Morton Park along Footlik Lane—IIT's main pedestrian pathway. This high-traffic, high-visibility locale capitalizes on assembly, exhibition, and event spaces in Hermann Hall, and is conveniently located near Engineering 1 and the Life Sciences Building. Architect John Ronan and his team are finalizing an exciting design that incorporates a number of sustainable concepts for this project.

Campaign Progress Through December 31, 2014

\$184,119,620 Raised

- 15 Endowed Chairs
- Capital Projects:
 - Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship: \$24.2 million (includes \$10 million challenge gift from the Kaplans)
 - Robert A. Pritzker Research Center: more than \$5 million
 - John T. Rettaliata Engineering Center: more than \$10 million
- More than \$32 million raised for scholarships
- Six families have made gifts of \$10 million or more

fuelinginnovation.iit.edu

Visit fuelinginnovation.iit.edu to learn more about these projects and how the campaign is changing IIT. Be sure to check out the many innovative alumni, students, and faculty featured on the site.



Paging Dr. Building

It's been said that some people resemble their pets and with that in mind, Brent Stephens, IIT assistant professor of architectural engineering, likens the structure of a building to its human inhabitants to help explain the diagnostic work that he does. After all, as he notes, people and their buildings spend about 90 percent of their time together.

"The structure of the building is the skeleton of a body, the air-distribution system is the lungs, the electrical system is the central nervous system," he says, before adding the last of the list with a smile. "And the plumbing system, well, is the plumbing system."

The affable Stephens along with a team composed of five IIT graduate students, several undergraduates, and one post-doctoral researcher focus on a building's lungs, so to speak, through the Built Environment Research Group. Stephens, who founded the group when he came to IIT almost three years ago, has already garnered plenty of media attention (for his findings on 3-D printer emissions and Metra exhaust hazards) and more than \$1 million in funding from government and industry organizations, including his most recent grant from the United States Environmental Protection Agency for \$500,000 over a three-year period.

At the request of the EPA, the Institute of Medicine (IOM), the health branch of the National Academy of Sciences, summarized the current scientific understanding of the effects of climate change on indoor air and health. In June 2011, the IOM issued the report "Climate Change, the Indoor Environment, and Health," in which it issued three key findings: Poor indoor environmental quality is creating health problems today, climate change may worsen existing indoor problems and introduce new ones, and there are opportunities to improve public health while mitigating or adapting to alterations in indoor environmental quality induced by climate change.

The IIT group will be measuring and modeling the amount of outdoor pollutants such as ozone and particulate matter (from sources such as diesel and gas-engine exhaust, plant emissions, wildfire dust, vehicular wear-and-tear from roadways) in homes across the country. Phase 1 will involve performing hourly indoor air quality modeling of indoor exposures to both indoor-generated pollutants and outdoor-infiltrated pollutants across the U.S. residential building stock under both current and future meteorological conditions.

"We can do a decent job of understanding how we think the hourly weather will change. But there's also the indirect impact, which is, in response to climate change, we are changing the way we build our buildings; we retrofit more buildings. With more aggressive climate policies, you get more incentives for energy-efficiency retrofits to try to bring energy use down because buildings are such an integral source of emissions of CO₂ and other greenhouse gases," explains Stephens, who had conducted a much smaller study of 20 homes in Austin, Texas, where he completed his graduate studies.

"The oldest, leakiest buildings I had measured there—and one of them was my home—had the highest amount of outdoor pollutant transport indoors. The newest, tightest, most energy-efficient, net-zero-energy home had the least amount. It was a huge difference, at about a factor of 20," he says.

Phase 2 of the project will then be conducted with the help of the Historic Chicago Bungalow Association, an organization created in 2000 by Mayor Richard M. Daley to help preserve the one and one-half story, brick-faced and stone-trimmed homes that still characterize many neighborhoods in the city and suburbs. Stephens will measure about 30 homes for ozone, particulate matter, and NO₂ both before and after the bungalows receive energy-efficiency improvements through the Retrofit Chicago Single-Family Residential Partnership program. —*Marcia Faye*

Read the *IIT Magazine* Online Exclusive about other air quality projects Brent Stephens and his IIT team are investigating in the converted lab space known as STUDIO E.

MORE ONLINE ▶

Built Environment Research Group: built-envi.com
Report on "Climate Change, the Indoor Environment, and Health": books.nap.edu/openbook.php?record_id=13115



PHOTO: BONNIE ROBINSON

STILL IN THE GAME

Taylor Duman (ARCH 4th year) may have spiked her final ball as captain of the 2014 IIT Scarlet Hawks women's volleyball team last October, but she's found a way to inspire student-athletes using an off-court strategy—by taking the spring Interprofessional Projects (IPRO) Program course IIT Pride: Improving Student and University Community Engagement.

Last fall the Walled Lake, Mich., native completed playing all four of her allotted seasons and wanted

to use her fifth year at IIT College of Architecture to share some of her real-world student-athlete tips within the real-world environment of the IPRO Program. After only the first class, Duman says she is enthusiastic about the possibility of racking up more points in school spirit with an assist from a familiar campus face: Talon the Hawk.

"We're hoping to do Spot the Hawk events where students spot Talon, take a photo, and post it on

social media. For doing that they could obtain food vouchers or school-spirit attire," explains Duman, about a project she plans to work on with a current member of the women's basketball team. She notes that such a project would involve all students on Main Campus, not only student-athletes, and would help to spread a sense of pride—and fun—throughout the IIT community.

Steve Hammond, course instructor and IIT Institute of Design adjunct faculty member, says that Duman is one of two student-athletes out of 12 total students taking this semester's IIT Pride, which aims to deepen the connection students have with the university. He notes that, in general, student-athletes in the IPRO have contributed much as both supporters and recipients of Hawk pride.

"Athletes understand intimately that sporting events bring the IIT community together," he says. "And we go beyond athletics. They have brought their discipline and enthusiasm to projects like the Mr. and Ms. Hawk event and the development of IIT apparel through design contests and student market research."

Duman follows in the footsteps of psychology graduate student Roma Mirutenko, assistant coach of the IIT Scarlet Hawks women's volleyball team, who was instrumental in further refining the IIT Pride course when she played for the IIT volleyball team and served as Student Athletic Advising Committee president.

"I am excited that another athlete has joined the IPRO. Her passion as an athlete as well as a student who desires to increase school spirit is what the school really needs," says Mirutenko. "She has seen how other schools of our size foster school spirit at home games and on campus, which will be helpful when trying to raise IIT's Hawk pride." —**Marcia Faye**

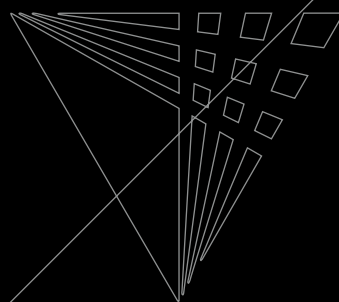
MORE ONLINE ▶

IIT Pride: http://ipro.iit.edu/project-listings/current-projects#Spring2015_497-363

IIT AT 125

PAST, PRESENT, AND FUTURE

PEOPLE

A large, stylized graphic of the number '125' is centered on the page. The '1' is a solid grey vertical bar, while the '2' and '5' are outlined in white. The background consists of a white grid of lines forming a perspective view of a cube or a similar 3D structure.

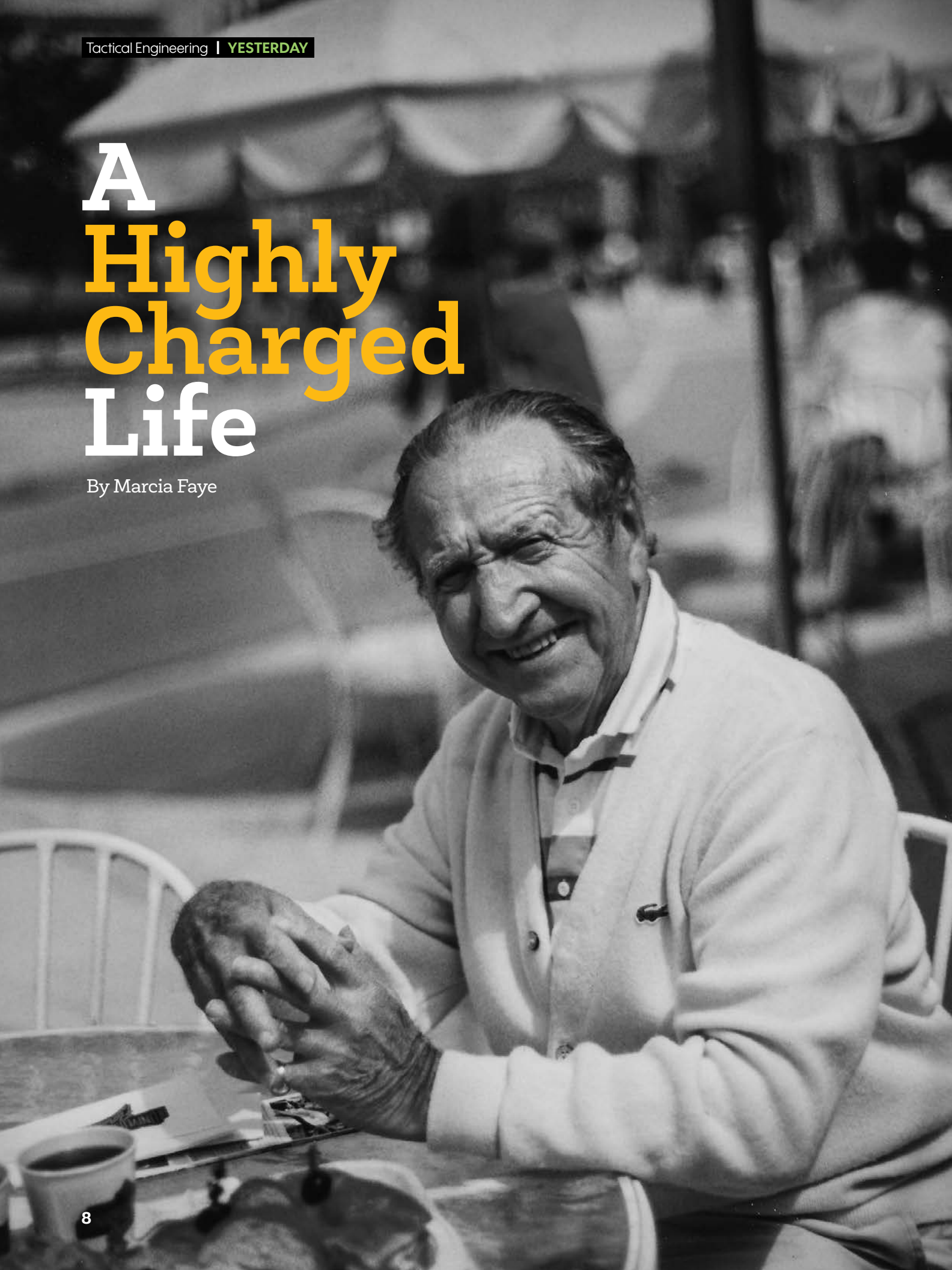
If the eyes are the gateway to the soul, then the people who have shaped IIT throughout its 125-year history are the window to our community. From the humanitarian (and entrepreneurial) act that founded IIT in 1890 to today's most innovative research, people have made IIT a smart, colorful, inquisitive—and truly distinctive—university.

In a series of three issues during 2015, IIT's 125th year, *IIT Magazine* will chronicle the past, present, and future of our university via the people, places, and things that have defined it. We begin with a celebration of its people.

Follow IIT on Twitter at
[#illinoistech125](#)

A Highly Charged Life

By Marcia Faye



It was a scene that could have been out of a James Bond flick. A man knew he had been selected to participate in a top-secret mission and was given a train ticket to Chicago's Union Station.

Once at the station, he was to make a telephone call for instructions. The voice at the other end of the phone told the man to stand in a certain area of the station holding a newspaper under his left arm. He would then be approached by another man, who would ask him if he were waiting for someone to pick him up. If his response was "yes," the man with the newspaper was to give his companion a designated telephone number, which was the password to their final destination, place unknown to the man with the newspaper.¹

That man was Harris Harold Levee (ME '49), who, in 1945, was sent from his post as a United States Army private at Fort Belvoir, Va., to Chicago to assist on a government mission so significant that he would not even be able to contact his family while he was on it. As Levee found out, he was on his way to the University of Chicago to work on the government's research effort to produce the first atomic bombs: the Manhattan Project.

"I'm 95 years old and I guess that I am as patriotic as it's possible to be because I was willing to do whatever was necessary for our country," says the spry nonagenarian, in a phone interview from his home in Gaithersburg, Md. "I didn't know if I was going to become full of radiation, but I did it anyway."

Levee was selected for the Manhattan Project because he had trained as a combat engineer once drafted by the Army and had achieved very high scores on a mechanical aptitude test. He was commissioned to serve as an engineer and was also responsible for maintaining project secrecy and obtaining project patent rights from scientists such as Enrico Fermi and Leo Szilard. Levee recalls that Fermi was easy to get along with but that Szilard was one tough but brilliant character. Initially,

Szilard did not wish to relinquish his patent rights, so Levee made a bold suggestion to his boss, Lieutenant Colonel Herbert E. Metcalf: Don't pay Szilard until he does so.

"I don't know if that's what they did," he says with a gleeful giggle. "But a few weeks later, Szilard signed his papers."

While being a member of the A-bomb team may have been the high point of his life, Levee says there are other high points, such as his consulting role for the building of the first air-transportable nuclear power plant to Antarctica and his supervisory role on the construction of the model of the world's first operational nuclear-powered submarine, the *USS Nautilus*.

"I remember that the father of the nuclear submarine [popularly known as the "Father of the Nuclear Navy"], Admiral Rickover [U.S. Navy Admiral Hyman G. Rickover], visited the plant and was supposed to be the first one to start the nuclear submarine," says Levee. "I convinced the general manager that I should be the one to see if it would, in fact, start. So I turned on the nuclear reactor, it worked, and I turned it right off, putting the control rods immediately back in so that Rickover could start it and let it run."

Levee says his most fulfilling high point took place in India, where he supervised the construction of several coal-fired electric-generating stations in New Delhi and Takhar in the early 1960s.

"We used medieval equipment—and when I say medieval, I mean medieval—using shovels and hoes, and mixing cement by hand," explains Levee. "To build these stations, we used about 50 tribal women to carry bowls of cement and concrete blocks on their heads, who then walked up an incline plank to dump the cement into a container. It was remarkable and absolutely

amazing for someone from the United States to see and to supervise. When they fed their babies breast milk, they had to go underneath our construction site to do so."

As much as Levee relished his consulting projects, in 1967 he responded to an advertisement in the *New York Times* that he felt described him perfectly. A few weeks later, he accepted a position with Norair Engineering, Inc. as vice president and resigned from the company seven years later to form his own company, Halco Engineering, Inc.

Now, Levee spends his days reading the *Washington Post* and relaxing with his wife, Pearl, who accompanied him to India for his engineering proj-

"I didn't know if I was going to become full of radiation, but I did it anyway."

ects. He says that even though he came to IIT after his work on the Manhattan Project, the knowledge he received at the university added to the significance of his engineering career.

"Besides the fact that I enjoyed the teachers, who were very good, one of them, Bill Goodman, taught a graduate course in air-conditioning that I used because I eventually entered into such a business [Halco]," he says. "That course ended up being very instrumental in my future life." ●

MORE ONLINE ►

¹ Harris Harold Levee, interview by Cynthia C. Kelly, president, Atomic Heritage Foundation; interview conducted in Maryland on October 28, 2011: www.manhattanprojectvoices.org/people/harris-harold-levee

Manhattan Project: <http://energy.gov/management/office-management/operational-management/history/manhattan-project>

It's a Skull... It's a Brain... It's GelMan

By Emma Macmillan

One of the most common injuries that soldiers in Iraq and Afghanistan sustain is traumatic brain injury due to blast impacts.

BLAST INJURIES ARE NOT WELL UNDERSTOOD from a medical perspective, and body armor performance is not well understood from an engineering perspective. Peter Matic (ME '77) of the United States Naval Research Laboratory is working to relate blast pressure impacts to the motion of the brain and changes in neuronal cells.

"We want to bridge the gap between the engineering and medical fields by gaining a better understanding of injury processes and the way personal protective equipment performs," says Matic, superintendent of the Materials Science and Technology Division at NRL.

In standard crash test dummies, a metallic model of the human head with a rubber coating and sensors mounted to the interior is used to measure accelerations from blunt impact. In contrast, Matic and his team wanted to focus on soft tissue and skeletal structures for the blast pressure. Matic proposed to simulate the likeness of a brain using soft polymers and an array of embedded sensors. They called him GelMan.

To build GelMan, Matic's colleague Amit Bagchi, who also has a background in mechanical engineering, worked on the design, fabrication, and testing strategies. Chris Kindle, also a mechanical engineer, used a mold from an anatomical model of the brain, and then filled that mold with a polymer. While casting the brain, sensors were embedded that measure pressure and acceleration. The brain was then placed inside the polymer skull, mounted on a neck component, and applied with soft coatings on top to simulate skin.

Thomas O'Shaughnessy, a neuroscientist, brought expertise in cellular-level work to measure what percentage

of cells survive in the hours and days after a blast. The team quantified how a cell would respond to blast pressures and discovered that cells die off at a faster rate if exposed to certain levels of blast.

Matic's research team specifically measures how the brain responds to primary blast pressure. They are also interested in the effect of blast fragments, so they analyze high-speed video of fragments, track shockwaves hitting the target, and measure the relative motion of the protective equipment and the body.

"This type of research, data, and technology provides a more complete description of blast, ballistic, and blunt impact," Matic says. "We want to optimize equipment and continually improve performance."

Research coming out of NRL provides information that helps the U.S. Marine Corps make decisions based upon quantitative data that describes how different equipment performs.

"The entrepreneurial environment at NRL allows us to do basic research that transitions into the applied realm and provides the Navy, Marine Corps, and Department of Defense with superior technologies," Matic says. "It's a good place for collaboration between the disciplines needed to solve challenging problems." ●

MORE ONLINE ►

U.S. Department of Defense Special Report on Traumatic Brain Injury: www.defense.gov/home/features/2012/0312_tbi
United States Naval Research Laboratory: www.nrl.navy.mil

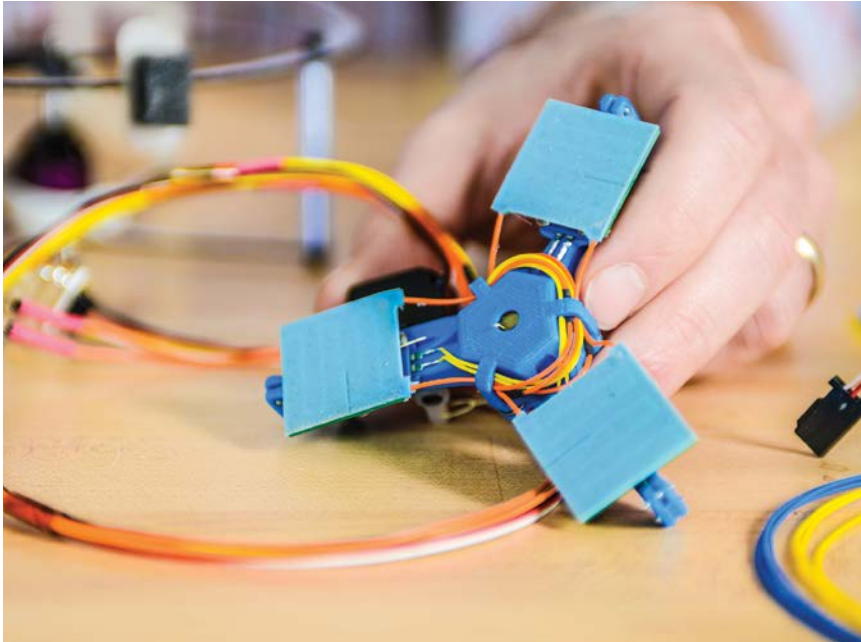


PHOTO: MIKE OLLIVER

Getting a *Grip*

By Chelsea Kalberloh Jackson





A three-pronged gripper for grasping flat objects that uses a combination electrostatic/gecko-like adhesive [*left*] and [*right*] the underside of a gecko's foot

In the 1960s, “The Jetsons” cartoon creators Hanna-Barbera imagined the outer-space robot housekeeper of the future as Rosie, a sassy didactyl who was mostly successful at keeping the Jetson family’s Orbit City apartment tidy.

Today, truth is arguably just as strange as fiction—considering an inspiration for the engineering behind real twenty-first-century robots able to clean up space debris comes from an unlikely place: the forests of southeast Asia.

Associate Professor of Mechanical Engineering Matthew Spenko and his research team at the IIT Robotics Lab have taken cues from the Asian gecko lizard in their development of a surveillance robot that can climb up and perch on vertical surfaces. NASA hopes the mechanism that enables this robot’s adhesive-like gripping ability can be used with robots designed to remove space junk from low Earth orbit.

“In space there is no suction, and magnetized surfaces can’t be guaranteed,” Spenko says, noting that traditional methods of adhesion are ineffective there. “A typical approach would then be to design a robot that could attach to grapple points on debris. But much

of the debris, such as satellites, don’t have grapple points, making it difficult to grasp.”

NASA estimates that 21,000 pieces of debris (10 cm or larger) are circling Earth, with upwards of 100 million smaller pieces in orbit. In November 2014, NASA controllers raised the orbit of the International Space Station by one mile to avoid the near trajectory of a defunct, junked satellite.

Spenko and his team are researching whether the innovative combination of gecko-like adhesives and electrostatic electrodes that compose their robot’s gripping mechanism could be a debris-remediation solution that sticks. Part engineering and part biomimicry, this mechanism employs what is known as dry adhesion. It involves joining a molded material containing nano-sized hairs—much like the beta keratin setae on the feet of geckos, which are especially adept at gripping smooth surfaces—with charged electrodes whose polarized electrostatic fields create a force that enables the gripping of rough surfaces.

Used alone, the nano-hairs or the electrodes are limited in the types of surfaces they can attach to. Combined, they result in a gripping mechanism

that is not surface dependent and able to hold seven times the robot’s body weight. Spenko says that these grippers also have potential applications in manufacturing, such as on factory lines—anyplace where a better gripping tool might surpass outdated machines.

A focus of Spenko’s Robotics Lab is building robots that achieve mobility in challenging environments, which makes unwieldy surfaces like space junk right up the team’s alley. The team developed HyTAQ, a teleoperated robot that is capable of both flying and rolling over rough terrain (a toy version of the robot is now available on Amazon), and conducts research on how wheeled robots move over various types of soil. The group is currently working with ComEd to develop robots that can supply remote monitoring in areas with unknown terrain. ●

MORE ONLINE ▶

IIT Robotics Lab: robots.iit.edu

Matthew Spenko Audio Extra: iit.edu/magazine

NASA Orbital Debris Program Office: <http://orbitaldebris.jsc.nasa.gov>

Consumer Crusader

By Koren Wetmore

In a world where laws lag behind technology, bioethicist Lori Andrews fights for people's rights at the intersection of law and medicine.

It's a mission that requires determination and the ability to field questions that range from heart wrenching to bizarre.

Take, for instance, the woman who asked about genetic testing for her two sons to see if one was predisposed to disease, because she could afford to send only one to Harvard. Or the surgeon who inquired about the legal rights of a frozen severed head that he wanted to attach to a suddenly available body.

"At one point I had a temporary secretary who threw out half of my messages because she thought they were pranks," says Andrews, Distinguished Professor of Law and director of IIT's Institute for Science, Law, and Technology (ISLAT).

For Andrews, who was drawn to law by a desire to draft more pro-consumer policies, her bioethics mission seemed almost predestined. She passed the bar exam on the day the first test-tube baby was born. A paper she wrote in law school garnered her an invitation to speak at the first world conference on in vitro fertilization. That speech led to a flood of inquiries from doctors eager to understand the legal and moral implications of their work.

Shortly after law school, she was asked to testify in Congress on issues related to surrogate motherhood and other reproductive technologies.

"At that point I was asked a lot of questions about what the law felt about this or that," she says. "In many cases the law hadn't yet caught up, and so I had to start answering based upon ethical principles."

When Dolly the sheep was cloned, the White House requested Andrews's advice on whether cloning of humans could legally be prohibited. She chaired the federal advisory commission that explored the ethical, legal, and social impacts of the Human Genome Project. Andrews also helped lead the successful charge against Myriad Genetics, a company that drove up patient costs and hindered medical research when it patented two genes associated with breast and ovarian cancers.

A talk she gave on gene patent issues inspired author Michael Crichton to draft *Next*, a novel based on the topic. Andrews's own novels, a mystery series featuring fictional geneticist Alexandra Blake, have encouraged reading groups to discuss the legal and ethical issues raised in her books.

"I had a certain frustration with getting legal policy changed at the legislative level, and I wanted to spur public debate for things like genetic discrimination," she says. "I knew I could reach more people by smuggling these ideas into traditional mystery novels."

Recently Andrews began a new book with a different protagonist and a

setting closer to home: a woman biotech researcher who lives in Chicago.

She also launched a new initiative to protect the privacy of online health information. In a recent study of more than 200 medical apps, ISLAT researchers found that many leaked private data such as an individual's daily glucose levels to data aggregators and marketers. Even someone's online health topic searches and medical organizations "liked" on Facebook can be accessed by prospective employers or insurance providers, she says.

"We fought and eventually got a federal law passed that says employers and insurers can't discriminate against you if you're healthy yet have a genetic predisposition for a disease," she says. "We now need something that will protect people who search for and post health-care information online."

Named one of the 100 Most Influential Lawyers in America by the *National Law Review* for her pioneering work in health law, Andrews has no intention of leaving the fight. So, while technology continues to race ahead of policy, her efforts are helping to close the gap. ●

MORE ONLINE ▶

ISLAT: kentlaw.iit.edu/institutes-centers/institute-for-science-law-and-technology

Lori Andrews Audio Exclusive: iit.edu/magazine



PHOTO: MICHAEL GOSS

“We now need something that will protect people who search for and post health-care information online.”

A Voice for Incarcerated Kids

By MARCIA FAYE



PHOTO: SCOTT BENBROOK

AT EIGHT OR NINE YEARS of age, Rachel Brady (LAW '13) may have been just a kid, but her life's purpose had already begun to germinate.

"My dad was speaking to me about gay marriage and how same-sex couples couldn't marry," she recalls from the offices of Equip for Equality, where she will begin working as a 2015 Skadden Fellow in September. "I told him that was outrageous, and he said that if I wanted to do something about it I should work for the ACLU [American Civil Liberties Union] one day. I thought that if you see social injustice, you should do something about it."

As one of only 28 fellows across the United States, Brady has begun taking the first steps in securing social justice for a select Illinois population. Over the next two years, she will be representing disabled youth who are either in or transitioning out of the state's juvenile justice facilities and Chicago's alternative schools. She says that about half of incarcerated youth in Illinois have disabilities and many do not receive appropriate educational services. With the support of her host organization Equip for Equality, she will work toward keeping the kids in school as well as ensuring that their special educational needs are met.

"The ACLU has done some work in this area but is not positioned to take on individual cases. Rachel is the perfect person to work on this project. She can hone in on individuals who are in the detention centers and make sure that they get the appropriate education that they're entitled to receiving," says Olga Pribyl, vice president of Equip for Equality's Special Education Clinic and Pro Bono. "It's a great fit for the work that we've been doing. We haven't been able to expand in this area because of resources and are so appreciative of the Skadden (Foundation) Fellowship Program, which allows Rachel to do this important work."

A former Teach for America seventh- and eighth-grade mathematics and science teacher, Brady experi-

Legal Advocacy | **YESTERDAY**



PHOTO: COURTESY OF IIT ARCHIVES

Rowine Hayes Brown Truitt (LAW '61)

Chicago-Kent College of Law alumna Rowine Hayes Brown Truitt came to the legal profession eagerly but had only one real desire in life: to go into medicine. So great was her intention—even during the Great Depression—that Brown Truitt wore hand-me-downs while attending the University of Illinois College of Medicine and lived with a woman who took her into her home largely out of kindness.

After graduating with her medical degree in 1938, Brown Truitt entered into a pediatric residency program at Children's Memorial Hospital (now the Ann & Robert H. Lurie Children's Hospital of Chicago) and married physician William Lee Brown during her residency program. In 1950 she began a 36-year career at Cook County Hospital (now John H. Stroger Jr. Hospital), ultimately becoming the first female medical director of a major hospital in the country.

Brown Truitt's husband died in 1952 and as her administrative duties increased at Cook County, she believed that a law degree would provide her with the knowledge to become a more effective health-care leader. She began writing medical-legal papers with attorney Richard B. Truitt (LAW '31) on the issues of child abuse, minors' medical-care rights, and euthanasia, and eventually joined the Chicago South Side law practice where he was a founding partner; they also married in 1992. One of Truitt's sons from his first marriage, David Truitt (LAW '62), and grandson, Craig Truitt (LAW '92), would also join the firm and carry on the family's legacy.

Brown Truitt would also go on to attain faculty positions at the University of Illinois and IIT Chicago-Kent College of Law. She was the first vice president of the Chicago-Kent Alumni Association (president from 1979–1981) and president of the Women's Bar Association of Illinois from 1975–76. —*Marcia Faye*

enced firsthand how special-needs students could slip through cracks in the school system and also achieve success once they were evaluated and placed in a curriculum tailored to help them learn and advance. Brady felt she could do more to ensure that special-needs students obtained optimal education opportunities by becoming a legal advocate.

Now serving as a staff clerk in the United States Court of Appeals for the Seventh Circuit, Brady sees the Skadden Fellowship as the culmination of

her public interest dream—and the chance to make a child's dream for a more normal life come true.

"With the right type of attention and the right services, kids really can succeed," says Brady. "They just need somebody to believe in them and treat their education individually. With that, anything is possible." ●

MORE ONLINE ▶

Equip for Equality: www.equipforequality.org
Skadden Fellowship Program:
www.skaddenfellowships.org

Taking the High-Craft High Road

BY JEANNE HARTIG

The *Online Etymology Dictionary* traces back the origins of the word “architect” to the Latin *architectus* and Greek *arkhitekton*—someone known as a master builder, the designer of works, or a carpenter.



PHOTO: MATT BIGELOW

However, an Old English definition, *heah-craeftiga*, or “high-crafter,” best describes John Ronan. The design architect for the building that will house the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship, Ronan creates works that are elegant pieces of art and design as well as practical, well-constructed buildings that enhance communities rather than merely ego statements.

A professor at IIT College of Architecture, he is the founding principal of John Ronan Architects. Established in 1999, the firm rose to national prominence in 2004 with the winning design for the 500,000-square-foot Perth Amboy High School in New Jersey. His firm received two American Institute of Architects (AIA) Institute National Honor Awards, for the Poetry Foundation and the Gary Comer Youth Center, both in Chicago. In 2010, Princeton Architectural Press published a monograph entitled *Explorations: The Architecture of John Ronan*. The firm’s work has also been displayed in galleries and exhibitions such as *Iterations: John Ronan’s Poetry Foundation*, shown at the Art Institute of Chicago in 2013–14.

IIT Magazine met with this Chicago high-crafter to discuss a wide range of topics—from statement buildings to which architects would make the most interesting dinner guests.

After seeing a young man shot on the street near a school you designed in Chicago, you said, “For the students to learn, they have to feel safe.” When you design a building, is its functionality as important as the feelings people experience when they see it or are in it?

HOW A BUILDING connects with people on an emotional level is one of the most important aspects of architectural design, and I don’t think it comes at the expense of function but resides in how you handle the most fundamental questions of building design. How do I enter? How do I move from floor to floor? How is the structure handled? Too much emphasis today is placed on imagery and form, and as a result too many buildings strive to be *noticed*, which leads to the worst kind of excesses. My interest is to design buildings that will be *remembered*.

The architect Stanley Tigerman drew parallels between your work and that of Mies. Are such comparisons complimentary? Confining? A mixed blessing?

IT DEPENDS WHO you are being compared to [laughs]. I suppose it’s always flattering to be mentioned in the same sentence as Mies, an architect whose work I admire greatly and who remains relevant today. My work is about fundamental issues of building—space, material, structure—and doesn’t look outside of the discipline for validation, so in

that way I can see the affinity. But there are other architects whose work has been more influential for me such as Eero Saarinen, for example.

When does a building earn or deserve the right to be called iconic?

IT VARIES. Some buildings are instant classics while others prove themselves to be so in retrospect. Unfortunately, the term “iconic” has now become rather indiscriminately applied to any building that exhibits some kind of formal exuberance, which only encourages further self-expression and object making. This trend is leaving a legacy of self-referential “object” buildings, which refer to nothing except their authors’ egos, which impoverishes our collective urban space. Our definition of iconic needs to change, and perhaps IIT can play an instrumental part in that change.

Your approach to design, an iterative approach using handmade models and digital tools, is reminiscent of artists who started with chalk drawings before moving to oils. Are three-dimensional models important in “selling” the concept to your clients—or done primarily to help the architect shape and refine a vision?

IT’S IMPORTANT TO distinguish between different kinds of drawing and model making. The drawings or sketch models I do at the beginning of a project are done as a means of thinking. Later drawings and models, whether digital or by hand, tend to be more about communication—to the owner, the builder, the community—that explains the design and the arguments behind it. I don’t privilege hand drawing over digital tools, but I do privilege speed, and it is simply faster to draw by hand at the beginning of the process to develop ideas; a computer forces a precision on the project that is unmerited at that early stage and just slows the process down.

You are recognized for having done a wide range of building types. Is there something about them that signals that they are John Ronan designs?

I AM NOT interested in developing a signature style, but there is a similar sensibility at work in all the projects—whether they be institutional, commercial, or residential—and also similar themes operating in each, such as the approach to materials, the spatial layering, and the importance of natural light. But I think design should be anonymous, in a way, and not constantly referring back to its author; so if someone walks into a building and immediately says my name, then that isn’t necessarily a good thing.

Which architects, living or dead, would you invite to a dinner party?

JOHN SOANE, SIGURD LEWERENTZ, EERO SAARINEN. (By the way, don’t invite [Frank Lloyd] Wright and Le Corbusier to the same party. I did that once. What a mistake.) ●

The Retrofitted City

By Marcia Faye

PHOTO: BONNIE ROBINSON

CHOOSING TO BE AN ARCHITECT WAS PENG DU'S means to an end, rather than being his life goal. Du, a doctoral candidate at IIT College of Architecture, says his longtime passion has been in improving cities—learning more about how they work, how they're organized, and how to keep them growing. He decided upon a career in architecture as a way to determine both how the building as a unit could play a more dynamic and sustainable role within its city family and how to encourage more people to make the city their home.

"My vision for the city of the future is that the whole be considered more than the parts," he says. "We may have fantastically designed single buildings, but we need to determine how they and others can connect and effectively share infrastructure and transportation. We also need to think about how their occupants could more fully enjoy their lives in the urban environment."

The architecture community is interested in Du's views and has acknowledged him with the 2013–14 Architectural Research Centers Consortium/King Student Medal for Excel-

lence in Architectural and Environmental Research. Early in 2014, he and mentor Antony Wood, IIT research professor and executive director of the Council on Tall Buildings and Urban Habitat (CTBUH), launched "A Study of the Sustainability Implications of Differing Urban + Suburban Locations in Chicago." The objective of this first phase of their joint project is to provide a better understanding of the factors that contribute to sustainability (energy/carbon expenditure, mobility, infrastructure, and quality of life) in two different communities: three high-rise units in downtown Chicago and one of the city's collar suburbs, Oak Park.

In addition to collecting the data from the public resources, building designers, and building management, Du and Wood created a survey and a questionnaire asking participants to provide such information as demographics, household type, residential type, mode of transportation and travel behavior during a typical week, monthly utility usage, land-use characteristics, satisfaction with residential life, and sustainable living behavior. Approximately 200 households in both the tower and low-rise or single-family

dwellings have participated. The duo is now in the process of analyzing the data gathered.

“With United Nations statistics indicating that almost one million people are becoming urbanized every week, the debate on whether our cities should develop along dispersed suburban-horizontal or dense urban-vertical directions is at the very heart of sustainability and our continued survival on this planet,” says Wood, also a visiting professor of tall buildings at Tongji University in Shanghai, China. “Yet no one has actually done detailed research to investigate the full carbon and lifestyle implications of living in high-rise or low-rise buildings. This research project could thus hardly be more important, and looks to fill a massive research gap internationally.”

Prior to studying and working in Chicago, Du obtained his Master of Architecture at Tongji University, which has a leading architecture school in Asia, and began earning design and urban best practices awards as far back as 2006. He is currently a CTBUH research assistant, studio instructor, and operations coordinator for CTBUH Asia Headquarters, the 2012 and 2014 CTBUH Shanghai conferences, and CTBUH Skyscraper Center efforts.

A resident of Bronzeville’s South Commons high-rise development and regular user of the Divvy bike-sharing system, Du is looking forward to implementing his vision for the city at the completion of the study in 2016, when he and Wood plan to present their findings and recommend guidelines for increasing a city’s density.

“Peng has tackled this study with an enthusiasm and diligence befitting the project—knowing he was breaking new and important ground—with IIT and the IIT-based CTBUH in support,” says Wood. ●

MORE ONLINE ▶

Architectural Research Centers Consortium: www.arccweb.org
Council on Tall Buildings and Urban Habitat: www.ctbuh.org

Urban Development | YESTERDAY



PHOTO: COURTESY OF IIT ARCHIVES

Ludwig Mies van der Rohe (1886–1969)

According to Ludwig Mies van der Rohe’s obituary in the *New York Times*, S. R. Crown Hall (1956) was Mies’ favorite design project, with the Chicago Federal Center [Everett M. Dirksen U.S. Courthouse, John C. Kluczynski Federal Building, and U.S. Post Office, Loop Station] (1964, 1973, 1974) being his second favorite. Thanks to the Graham Foundation for Advanced Studies in the Fine Arts and architect Sidney Epstein, one member of a group of architects who worked with Mies on the Federal Center project, the story behind this photo [above] of Mies and his bronze bust can be told.

Epstein, then of A. Epstein and Sons (now Epstein), and his fellow collaborators from three other Chicago architecture firms met with Mies for a lunch meeting once a month, often held at the Graham Foundation, over the seven years that the Federal Center project was being developed.

“I thought that Mies was a wonderful man; he and I became good friends,” says Epstein. “I felt that he was very modest.”

To commemorate Mies’ 75th birthday, Swiss-born artist and former IIT Institute of Design faculty member Hugo Weber created a series of Mies portraits, including the bust in the photo, which was taken at the Graham Foundation. In 1961, the Graham Foundation presented the then Department of Architecture at IIT with one of Weber’s three Mies busts. High atop its black pedestal at Crown Hall’s south exit where it is displayed today, the caricatured Mies seems to look out over the architecture students creating favorite design projects of their own. —*Marcia Faye*

Cyber Security and Forensics Through the Decades

By Emma Macmillan



“You don’t want to waste time looking for something that isn’t there, but you do want to spend time looking for information that could be potentially valuable.”

A good intuition, dedication to problem solving, and an ability to detect the next big thing—never mind technological wizardry—are all in the toolbox of a serious computing sleuth like Bill Lidinsky (EE ’61, M.S. ’70).

Lidinsky, industry professor and director of IIT School of Applied Technology’s Computer Security and Forensics Laboratory, developed and honed much of his cyber security and cyber forensics expertise at IIT. Over the past four decades, he has become a leader in several areas of computer networking and security, and is regularly called upon to testify as an expert witness for government agencies on such matters.

IIT Magazine spoke with Lidinsky about three areas where he has made—and continues to make—a mark throughout the years.

Spanning-Tree System

While at Bell Laboratories and Fermilab, Lidinsky and members of a committee developed the spanning-tree system standard that is now used in almost every computer-network router throughout the world. They devised the standard for a modem, router, and computer to communicate and set up automatically. This system is used to set up all Ethernet and Wi-Fi networks today.

“There’s a negotiation that goes on that allows users to ‘plug and play,’ meaning consumers don’t have to configure much, a password at most,” Lidinsky explains.

Metropolitan-Area Networks

Lidinsky worked with Bell colleagues who designed, developed, and built the first metropolitan-area computer network, or MAN, in the 1970s. At the time, personal computers did not exist; instead, individuals used time-sharing systems that connected to a mainframe computer. Workstations, now known as personal computers, were emerging. These workstations in different parts of a metropolitan area could not easily communicate with each other, so Lidinsky developed networks that would cover an entire city and support workstations, based on an idea similar to a telephone system.



PHOTO: MICHAEL GOSS

Steganography

The origins of Lidinsky’s current area of expertise, steganography, can be found in ancient Greece. The fifth-century B.C. historian Herodotus left an account of the tyrant Histiaeus, who shaved the head of a slave, tattooed a message on it, let the slave’s hair grow back, and sent him to Histiaeus’s friend Aristagoras to warn him of impending danger. Hiding the covert in the overt—so outsiders are unaware not only of what is being communicated but that any communication even exists—is the heart of steganography.

Spies and terrorists want to be able to communicate with each other but not to identify each other, so they utilize a steganographic technique known as a dead drop. One spy, for example, would know to look on eBay for a particular item with a photo so that they could download the photo and then retrieve the message. The spies never know or see each other but are still able to communicate valuable information.

At IIT, Lidinsky has researched how to hide information in image, video, and audio files. He has also investigated steganalysis—how to know whether covert information has been hidden in a file or not, and how to extract it if it’s there. While there is currently no general method to determine whether seemingly innocent files have covert information that could be extracted, Ben Khodja, Lidinsky’s graduate student, has found a way to gauge the probability that an MP3 file may contain a covert message.

“You don’t want to waste time looking for something that isn’t there,” says Lidinsky, “but you do want to spend time looking for information that could be potentially valuable.”●

MORE ONLINE ▶

IIT School of Applied Technology: appliedtech.iit.edu
“Trends in Steganography”: <http://cacm.acm.org/magazines/2014/3/172511-trends-in-steganography/fulltext>



By Chelsea Kalberloh Jackson

A Smarter Smart Phone

According to *Consumer Reports*, 3.1 million cell phones were stolen in the United States in 2013.

WHEN PHONES ARE stolen, often more than just the device is compromised; personal identities, private information, and pride of the owner are also at risk (just ask insert-name-of-shamed-celebrity-here).

Sure, we can activate numerically coded screen locks, but locks offer only one layer of protection—and as any thief will attest, locks were meant to be broken. What’s more, locking functions may not activate before a thief gains access. And it doesn’t need to be a thief. Even if we willingly lend our phone to, say, a friend who needs to make a call, we may not want our friend to have access to our online-banking apps or those embarrassing photos on Facebook.

IIT computer science doctoral student Cheng Bo is developing a new method of protection that uses equipment already built into smart phones in a different way to add a new layer of protection—through biometrics that allow cell phones to identify their owners by the way users touch or tap a screen.

Bo has written a machine-learning algorithm, dubbed SilentSense, that teaches existing phones to recognize their users’ phone-handling patterns—from their grips and pressure of contact to finger size and the angles at which they hold their phones. His software works alongside the accelerometers and motion sensors already in cell phones, enabling phones to recognize owners with 99 percent accuracy. If the phone doesn’t know its user, it locks itself entirely.

Bo explains that SilentSense teaches phones to identify owners based on two patterns of use. “The first is how you hold and touch the phone. There is a correlation between the location that you press and the vibration [in relationship to the location of the motion sensor]. The second is when you touch the phone the device reacts. We can capture that reaction. Then we link the two together to teach the machine how to learn,” Bo says.

“You, only you, can make the phone act like that,” he adds. “Even if someone knows how you hold or touch a phone, they cannot know the strength of your touch.”

Bo says that the newest security options on some phones allow owners to deactivate certain apps so that other users who may borrow the phones cannot access these apps. But unlike SilentSense, which knows automatically how to recognize another user, these newer options require the owner to perform an additional manual selection.

Bo presented his project at the mobile computing and networking

conference ACM MobiCom 2013 in Miami and plans to do additional work to make SilentSense even more accurate. In the meantime, he continues to field calls from companies, especially security companies, about how to implement SilentSense into their own products. He is currently working on new software that can override built-in GPS systems in smart phones to more accurately identify locations within critical regions—such as metropolises, where GPS can have poor accuracy—as well as on software that will lock or silence a cell phone if the user is driving. ●

Communications Technology | **YESTERDAY**

Lee de Forest (1873–1961)

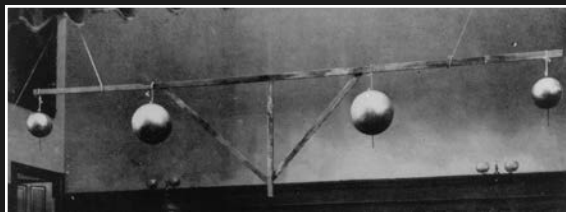


PHOTOS: COURTESY OF IIT ARCHIVES

Although instructor Lee de Forest taught at Lewis Institute and performed research at Armour Institute of Technology (AIT) for only a brief time, he entered into the wireless annals with the first successful long-distance telegraphy experiments while on what would become IIT Main Campus. A prolific inventor, de Forest, along with his business partner, E. H. Smythe, developed an improved telegraphic detector, which they called the responder, and conducted a series of wireless-transmission distance trials in the long hallways of Main Building as well as on its roof. In 1901 the duo met with further victory when they sent a signal—the letter “h” in Morse code—from the roof of Main Building to the now nonexistent Lakota Hotel at 30th Street and Michigan Avenue, about a half-mile from Main Campus.

“I have heard glorious symphonies of Beethoven, the thrilling measures of Wagnerian music ringing through the soul, with all joy and inspiration; yet to my waiting ear did that faint *whirr-whirr*, ticking the h’s of the agreed signal, seem the sweetest music—the most enthralling sound heard by man!” said de Forest, in an article printed in the May 1924 edition of *The Armour Engineer*.

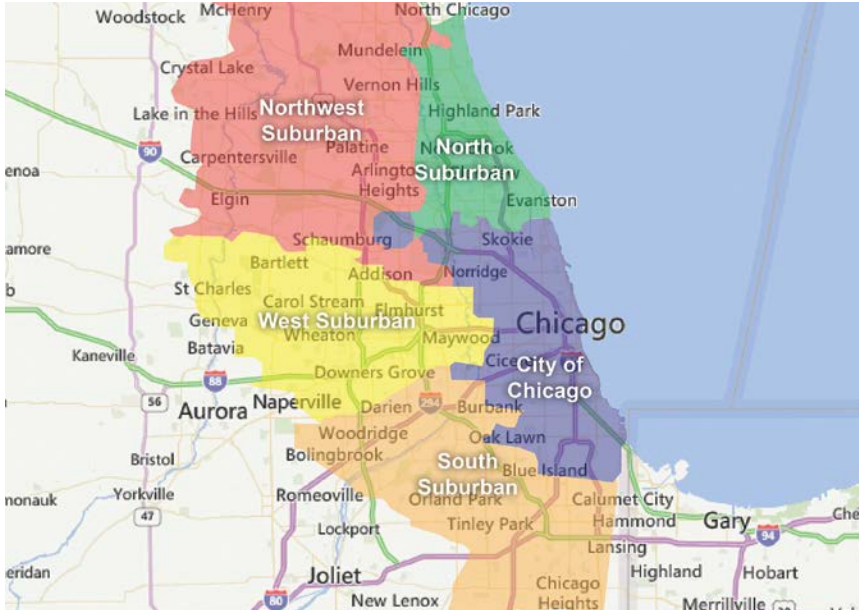
De Forest would go on to make significant contributions to the radio, television, and film industries, earning an Academy Award and a star on the Hollywood Walk of Fame. —*Marcia Faye*



[Top] Lee de Forest receiving honorary doctorate from Lewis Institute.

[Left] Early de Forest transmitting device

IIT Worldwide Alumni Chapters, Clubs, and Networks



Steve Nargang (ME '96), chair of the new IIT Chicagoland Alumni Chapter, shares information about the group's debut year:

With more than 30 events, 25 volunteer leaders, and several signature events under our belt, the IIT Chicagoland Alumni Chapter had a very successful first year. The year 2014 was just the beginning; we are looking forward to continued growth in the coming years by reconnecting even more alumni.

How did we host 30 events? A key to our success has been the growth of the volunteer leadership team and multiple social events in each branch to generate interest and momentum. The chapter is structured with a central team of officers and five branches covering the city and four suburban areas [see map]. Consider joining the team in your area [see contact list below].

Highlights from the year include a tour of Argonne National Laboratory and a panel discussion on innovation at Calamos Investments. The focus of 2015

will be a blend of social and networking events, more professional development speakers, and "behind the scenes" tours. Be on the lookout for exciting tours, career opportunities, and networking events.

If you would like to participate in a committee, host an event at your business, or simply help reach out to classmates, please contact a branch director, visit alumni.iit.edu, or reach out to me personally for more information.

Thank you to all our committee members for your commitment to the chapter and to all the event attendees. We hope to see all of you—Chicago-area alumni—at an upcoming chapter event.

IIT Chicagoland Alumni Chapter

Chapter Officers

Chair: **Steve Nargang** (ME '96)—snargang@hawk.iit.edu
 Vice Chair: **Lucy Hynes** (EE '88)
 Chapter Secretary: **Natalie Hammer** (EE '09, M.A.S. PWR '14)

City of Chicago Branch

Branch Director: **Charles Horn** (MGT '82)—chorn@hawk.iit.edu
 Assistant Director: **Wendy Wu** (M.B.A. '09)

North Suburban Branch

Branch Director: **Ann Trandai** (EE '89, M.S. '93)—trandairealty@gmail.com
 Assistant Director: **Brett Champlin** (M.B.A. '90)

Northwest Suburban Branch

Branch Director: **Bruce Meier** (MATH '76)—brucemeier5540@gmail.com
 Assistant Director: **Dave Kamath** (M.S. IE '73)
 Assistant Director: **Luke Dykstra** (CPE '00, M.S. CS '01)

West Suburban Branch

Branch Director: **Bill Lam** (ME '82, M.B.A. '88)—wlam@hawk.iit.edu
 Assistant Director: **Joe Koblich** (BA '88)

South Suburban Branch

Branch Director: **Jerry Wilks** (MET '72, M.A.S. MET '82, M.A.S. CHE '05)—gwilks@citgo.com
 Assistant Director: **Marlene Lojas** (CHE '91)

U.S. Chapters

Volunteers who enjoy connecting IIT graduates to their alma mater manage each IIT chapter. Domestic chapters and their leaders are:

Bay Area: **Heidi Rank** (ARCH '81)
heidirank@sbcglobal.net

Chicago: **Steve Nargang** (ME '96)
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Southern California:
Benny Jones (MATH '94)
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New York City:
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Phoenix: **Peter Koliopoulos**
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San Diego: **Crystal Sargent**
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Seattle: **Mike Wayte** (ME '61)
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Washington, D.C.:
Randy Sullivan (ES '74)
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Alumni networks and activities are underway in Austin, Texas, headed by Arun Prakash (AE '99, prakaru@gmail.com) and in Minneapolis by Harley Feldman (CHEM '69, harleyfeldman@gmail.com).

The IIT alumni community is expanding to include chapters in Houston and Dallas, and is coordinating annual activities in Atlanta, Boston, and Denver. If you

live in any of these areas and want to get involved, contact the chapter chair or email the Office of Alumni Relations at alumni@iit.edu.

Global Chapters

China: General Secretary
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Thailand: **Paiboon Pongchairerks** (M.S. IE '75)
paiboopo@gmail.com



IIT Chicagoland Alumni Chapter leaders: [seated, left to right] Bob Hoel (BE '70), Lucy Hynes (EE '88), Natalie Hammer (EE '09, M.A.S. PWR '14), Ann Trandai (EE '89, M.S. '93), and Steve Nargang (ME '96); [standing, left to right] Joe Krause (EE '77), Joe Koblich (BA '88), Bill Lam (ME '82, M.B.A. '88), Bruce Meier (MATH '76), Gerald Goodlow (EE '82), and Raj Rajaram (LAW '91).

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1950s

Robert Krupp

(M.S. PHYS '56, Ph.D. PHYS '65), Plainfield, Ill., is a retired professor of physics. His book *Laura and Grandpa Discovering Da Vinci* was named by Mom's Choice Awards as among the best family-friendly products suitable for juvenile readers. Since 2011, four of Krupp's picture storybooks written for children about scientific topics have been recognized and presented with an MCA award.

1960s

Hayden Aronson

(PHYS '64), Corvallis, Ore., has had three distinct careers—first, as a rocket scientist working on the Saturn rocket; second, as a physics teacher; and third, as a software manager for an engineering company. He has three daughters and recently welcomed his first grandchild.

Roy Coleman

(PHYS '64), Chicago, taught high school physics for more than 40 years, and worked at IIT in the SMILE and SMART programs. He and his wife were ranked in the road rallying top 10 nationally for several years by the Sports Car Club of America. He has been the Chicago-area first-place grandmaster rallyist for seven out of the last 15 years.

Frank Dean

(MATH '64, M.S. '66), Albuquerque, N.M., retired from Sandia National Laboratories.

He and his wife, Pat, have two sons.

Moshe Eres

(EE '64, M.S. '65), Kfar Maas, Israel, is enjoying retirement with his wife, six daughters, and 10 grandchildren.

George Frank

(ME '64), Centennial, Colo., has lived in the Denver area for more than 30 years. He and his wife of 44 years, Mary, have three daughters.

Michael Friduss

(IE '64), Highland Park, Ill., worked in the telephone industry for 30 years, including as chief operations officer at Michigan Bell and as a vice president at Ameritech. He and his wife have two children and a one-year-old granddaughter.

James Gabala

(PHYS '64), Schaumburg, Ill., spent his career as a patent and corporate intellectual property attorney while also serving 23 years as a captain with the U.S. Navy Reserve. He is a private pilot of a single-engine land aircraft. Gabala has been married for more than 25 years and is close to his many nieces and nephews.

Ronald Golden

(CHEM '64), Marietta, Ga., received his Ph.D. in physical organic chemistry from the University of Chicago, spent more than 40 years in the chemical industry, and has been consulting since 2005.

Christopher Hill

(CHE '64), Knoxville, Tenn., earned his Ph.D. in chemical engineering and went on to a career in science, technology, and innovation policy; he now spends about half his time working with SRI International in the Middle East.

Ronna Page

(MATH '64, M.S. MT '75), Chicago, taught mathematics in a public school district outside Chicago for 30 years. She is an avid reader and embroiderer, and has traveled widely in the U.S. to attend stitching seminars.

Charles Rice

(ARCH '64), Racine, Wis., started his own architecture firm in 1970, which is still going strong after 44 years. He and his wife have two daughters and two grandchildren.

David Rogers

(M.S. EE '64), Fargo, N.D., earned both a Ph.D. in electrical engineering and a master of divinity degree after IIT. He taught in Brazil until 1980 and then relocated to North Dakota, where he is still a professor. He and his wife, Darlene, have been married for 49 years.

Barry Spielman

(EE '64), Ellisville, Mo., earned a Ph.D. in electrical engineering and went on to a career with the U.S. Naval Research Laboratory and as a professor. He and his wife, Louise, have two children.

Anthony Stavros

(MET '64), Carmel, Ind., earned his Ph.D. from Carnegie Mellon University and worked for Bethlehem Steel for 17 years and Union Carbide (Praxair) for 22. He developed a method to protect steel rolls from molten zinc or aluminum that was used to produce automotive-grade galvanized steel sheets.

Connie Tregay

(BIOL '64), Rockford, Ill., founded and runs a nature center at Camp Awana. She spent her career as a mother to seven children and a foster mother to 98. She has attended 14 World's Fairs, driven the United States from coast to coast, and visited all 50 states as well as all provinces of Canada and 40 other countries.

Alan Unikel

(IE '64), Hinsdale, Ill., spent his career as an intellectual property and patent law attorney, having worked early in his career for

John Paul Stevens before he became a justice on the U.S. Supreme Court. Unikel and his wife, Eva, have three children and four grandchildren.

Kenneth Wolniak

(EE '64), Littleton, Colo., received his M.B.A. from the University of Chicago in 1972 and spent his career in the finance industry, working as a stockbroker, financial advisor, and tax preparer. He has two sons and four grandsons.

John Zulaski

(M.S. EE '65), Mount Prospect, Ill., was recognized by IEEE-USA in August 2014 for the creation of STEM (science, technology, engineering, and mathematics) teaching programs at public libraries in nine states using STEM kits.

Charles Gregersen

(ARCH '66), Chicago, is author of the book *Louis Sullivan and His Mentor, John Herman Edelmann, Architect*.

Marianne King

(LAW '66), Portland, Ore., spent her career in education, has worked to create nutrition education programs for the National Dairy Council, and has established a nonprofit vocational and job readiness agency. She and her husband met at IIT and have been married for 51 years; they have two children and two grandchildren.

Kathleen Thorne-Thomsen

(DSGN '67), Santa Fe, N.M., wrote a new book, *Frank Lloyd Wright for Kids*.

John Ason

(MATH '68), Westfield, N.J., has been a professional angel investor for approximately 17 years and has funded more than 40 startup companies.

Leon Hoffman

(M.S. PSYC '69, Ph.D. '70), Chicago, maintains a thriving private practice of clinical psychology in the city. A lifelong chamber music cellist, Hoffman also writes on disparate subjects for lay, scientific, and professional publications.

Thomas Morel

(M.S. ME '69, Ph.D. '72) was awarded the Soichiro Honda Medal at the President's Luncheon during the American Society of Mechanical Engineers 2014 International Mechanical Engineering Congress and Exposition. The Soichiro Honda



Amanda (Stenson) Grabowski and Luke Grabowski (both ME '10), Lockport, Ill., were married on September 13 at St. Vincent de Paul Church in Lincoln Park.

Medal, established in 1983 in recognition of Soichiro Honda's exemplary achievements in the field of personal transportation, is awarded in recognition of an individual's outstanding achievement or a series of significant engineering contributions in developing improvements in the field of personal transportation. During his time at IIT Armour College of Engineering, Morel was a part of the team that developed The Blue Flame, a rocket-powered car that set the land speed record of 622 mph in 1970.

1970s

Manu Vora



(M.S. CHE '70, Ph.D. '75), Naperville, Ill., was selected to receive the 2014 Harrington/Ishikawa Medal. This award is given annually to an individual who has made outstanding contributions to the advancement of quality in the Asia Pacific region.

Robert Zagar

(M.S. PSYC '75), Chicago, published several articles pertaining to reducing youth violence in the journals *Behavior Sciences* and *The Law, Comprehensive Psychology*, and *Psychological Reports*.

Oscar Baile

(M.S. CE '76), Union City, Calif., is president of Landru Chocolates, which he runs with the help of his wife and son.

William Schmalz

(ARCH '77), West Hollywood, Calif., has written the book *The Architect's Guide to Writing*. He is a principal with the architecture firm Perkins+Will.

Alan Druschitz

(MET '78, Ph.D. '82), Blacksburg, Va., was inducted into the *Foundry Management & Technology* Hall of Honor.

Tesuyuki Hirano

(ARCH '79), Tokyo, was recognized as a winner in the Japan Ministry of Economy, Trade, and Industry Awards for Contributors to the Industrial Property Rights System program for fiscal year 2013. Hirano was honored for years of service in the areas of administration, policy development, design, and diplomacy.

1980s

David Bechtol

(EE '80), Chicago, had a major role as the technical supervisor, co-editor, and producer of the social documentary *Free Speech and the Transcendent Journey of Chris Drew, Street Artist*.

Bridgette Young Ross

(MGT '80), Nashville, Tenn., has been named as dean of the chapel and spiritual life at Emory University.

Sherita Ceasar

(ME '81, M.S. '84), Philadelphia, was named by Women in Cable Telecommunications, the largest and oldest organization serving women in cable media, as the recipient of the 2014 Women in Technology Award. Ceasar is vice president of national video deployment engineering for Comcast Communications.

John Swan

(EE '81), San Jose, Calif., won the Outstanding Leadership and Professional Service Award, first for IEEE in Silicon Valley, then for the IEEE Region 6 Central Area.

Mathai Varghese

(MATH '81), Adelaide, Australia, was awarded the 2014 Silver Jubilee staff memento and certificate in recognition of 25 years of outstanding service to the University of Adelaide.

Kirankumar Topudurti

(Ph.D. ENVE '88), Champaign, Ill., was recently named a Distinguished Member of the American Society of Civil Engineers, recognizing his contributions in advancing the engineering, science, and field implementation of innovative hazardous waste remediation, sampling, and characterization technologies. The award is the society's highest accolade; only 649 of ASCE's worldwide members have been elected to receive this honor since the society's founding in 1852.

1990s

Ronald Nordmeyer

(CE '91), Westfield, Ind., joined Clark Dietz as a senior project manager for the transportation group. Clark Dietz is a recognized leader in civil, environmental, transportation, mechanical, electrical, structural, and industrial engineering.

Anthony LoBello

(ARCH '92), Downers Grove, Ill., joined SmithGroupJJR, one of the nation's largest architecture, engineering, and planning firms, as learning studio leader at its Chicago office.

Benedict Jones



(MATH '94), Aliso Viejo, Calif., and his wife, Alejandra, welcomed their new baby, Vincent. Jones is the volunteer chairperson for the IIT Southern California Alumni Chapter.

Robert Emanuel

(LAW '95), Chicago, was named managing partner at the Chicago office of Parker Ibrahim & Berg. Emanuel is a member of the board of directors of the Illinois Mortgage Bankers Association.

Jonathan Atwood

(CHE '96), Chandler, Ariz., was selected by *Aviation Week & Space Technology* as one of the aerospace and defense industry's Top 40 Under Forty.

Rodneyse Bichotte

(M.S. EE '98), Brooklyn, N.Y., won election to the 42nd New York State Assembly District. She is the first Haitian-American from New York City to be elected to the assembly.

Michael Dallas

(CS '98), Crystal Lake, Ill., is owner of the new craft brewery

Scorched Earth Brewing Co., located in Algonquin.

Edward Curley

(ARCH '99), Chicago, was promoted to associate vice president for business development at Epstein.

2000s

Hisham Saleh

(BAAS '06), Oak Park, Ill., is the founder of Skeleton Hand, a Chicago-based independent game-development company.

Radhika Jalumuri



(M.A.S. CHE '07), Los Gatos, Calif., launched RAUES, a company offering made-to-measure, high-quality yet affordable women's clothing online.

Patrick Bauer and Jennifer Guilfoyle

(AE '09, M.A.S. MAE '11) and (CHE '10), respectively, Glendale Heights, Ill., welcomed their first child, Charles Joseph Bauer, in August 2014.

Michael Dunn

(CS '10, M.P.A. '11), Las Vegas, married Amber Lynn Walker in May 2014. The couple recently welcomed their first child, daughter River Grace Dunn.

Lama Abu-Amara

(CPE '14), Chicago, is now working as a risk and compliance analyst at the headquarters of W. W. Grainger.

Dharmit Patel

(MAS CS '14), Chicago, was awarded first place in the professional category of the IEEE 2014 Hack Chicago Challenge for his app submission, "Rack Chicago." He works at IIT as the applications administrator, information services in the Office of Institutional Advancement.

Alberta Johnson

(M.P.A. '14), Chicago, was named to *Diversity MBA Magazine's* 2014 Top 100 Under 50 Diverse Emerging Leaders.

Leaving a Legacy



John Anderson recognized the impact that philanthropy had on his life early on. As a scholarship recipient and the first in his family to attend college, he realized that an education would transform his life—which spurred his desire to give back. He wrote his first check to his alma mater as a newlywed and while still a struggling graduate student.

“John has been the driving force behind our giving,” says Pat. “He feels deep gratitude for the opportunities afforded by his education, knows that he paid just a fraction of the cost of tuition, and wants to give back.” Along with being generous to their own alma maters, the Andersons have decided that IIT will be the recipient of the bulk of their giving from here on out. In addition to establishing a scholarship and making a significant gift to the new Kaplan Institute, they have also included IIT in their estate plans. This gift will leave a legacy—providing generations of IIT students an opportunity to receive a world-class education that will transform their lives.

“IIT is our home. My wife, Pat, and I feel incredibly privileged to have been a part of this university for the last eight years. I made my first gift to IIT before day one of my job here, and we both are firmly committed to continuing our support.”

IIT President John Anderson

Planned gifts are truly a win-win. With some careful planning, you can ensure that you and your family are provided for and support your alma mater at the same time.

Benefits of Leaving a Gift in Your Will:

- Help to ensure IIT’s future
- Leave a legacy of giving back
- Give without affecting your current cash flow
- Retain control of your assets during your lifetime (direct your gift to a particular purpose—check with us to make sure the gift can be used as intended)

Visit iit.edu/giftplanning to begin learning how you can benefit from these giving methods and more. Contact Stuart Gold, director of gift planning, at sgold@iit.edu or 312.567.5020.

If you have named IIT as a beneficiary in your estate plan (by providing a gift to IIT in your will, for instance), please let us know so that we may acknowledge your generosity and include you as a member of our esteemed Gunsaulus Society.

Gunsaulus | SOCIETY

ALUMNI EVENTS

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



Remember. Celebrate. Dream.

It's IIT's 125th anniversary in 2015! The Office of Alumni Relations is coming to cities around the country to recognize this occasion with you. Join President John Anderson—in his final year leading the university—to acknowledge IIT's accomplishments and learn about plans for its future.

Dallas Celebration
Tuesday, March 17, 2015
Iron Cactus Restaurant

Houston Celebration
Wednesday, March 18, 2015
Tango Malbec (Buenos Aires Room)

Los Angeles Celebration
Wednesday, April 15, 2015
alumni.iit.edu/los-angeles

San Diego Celebration
Thursday, April 16, 2015
La Jolla Shores Hotel—Acapulco Room & Deck

Young Alumni Pi Day Celebration
Saturday, March 14, 2015
Chicago

It's Pi Day 2015! Spend the evening with IIT alumni from the past decade and enjoy food, beverages, and pie while networking and mingling.

Mies' Birthday Celebration
Thursday, March 26, 2015
S. R. Crown Hall
IIT Main Campus
Chicago

Grab a martini and join the Mies van der Rohe Society to toast and celebrate Mies' 129th birthday! See the SHOW ROOMS created by Chicago's emerging designers and inspired by the timeless design of Mies furniture. For more information, contact Lauren Shelby at 312.567.5030 or rsvpevents@iit.edu. Visit www.miessociety.org/happenings for more information.

Alumni Awards

Friday, April 24, 2015

Hermann Hall
IIT Main Campus
Chicago

Join us to recognize the accomplishments of IIT's most distinguished alumni. The day will begin with a reception at 11 a.m. followed by a formal luncheon and awards presentation.

Presidential Lecture Series
Monday, March 30, 2015
IIT Main Campus
Chicago

Join President John Anderson for a lecture featuring Rowe Family College of Architecture Dean Endowed Chair Wiel Arets.

Chicago Alumni Gathering
Thursday, May 7, 2015
Chicago

Architect John Ronan will share exciting plans for the new Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship. Join us!

Scarlet Hawk Send Off!
Thursday, May 14, 2015
The Bog, Hermann Hall
IIT Main Campus
Chicago

Enjoy food and drinks, and mingle with friends as we congratulate the members of the Class of 2015 and welcome them into the IIT Alumni Association.



1. DARSH T. WASAN LECTURE Faculty, staff, alumni, and students gathered for the 2014 Darsh T. Wasan lecture, presented by Robert S. Langer, in honor of Wasan's 50 years at IIT. *Photo: Bonnie Robinson*

2. HENRY H. KOCI CLASSROOM DEDICATION [Left to right] Lee Herring joins her father Henry Koci (ME '45); mother, Florence Koci; and daughter, Allison, for the classroom dedication in honor of Koci's 90th birthday. The classroom gift was made possible through a generous donation from the Herring family.

3. DONOR AND SCHOLAR DINNER Carol and Ed Kaplan (ME '65) with Uriel Duran Aguilera (ITM 1st year) [center], Kaplan Foundation Scholar, at the annual dinner where scholars and benefactors have the opportunity to meet one another. *Photo: Bonnie Robinson*

4. SEATTLE ALUMNI GATHERING Alumni from the Seattle area paused at a Boeing 777 during a tour of Boeing's Future of Flight Aviation Center last October.

5. ARGONNE VISIT Chicago-area alumni learned about the work being done by IIT faculty and students at the Argonne National Laboratory Advanced Photon Source in Argonne, Ill., in November 2014.

6. HOMECOMING WEEKEND Alumni of all ages—and some future ones—enjoyed the activities of the Homecoming Carnival at the 2014 Homecoming Weekend celebration. *Photo: Bonnie Robinson*

7. GLOBAL ALUMNI GATHERING More than 300 alumni and guests from around the globe attended the first-ever Global Alumni Gathering held in September 2014 on IIT Main Campus. Tetsuyuki Hirano (ARCH '79) and family traveled from Japan and concluded the weekend on the Lake Michigan dinner cruise with Chicagoland Alumni Chapter North Suburban Branch Director Ann Trandai (EE '89, M.S. '93) [left of Hirano].

8. CARR CHAPEL REDEDICATION Mies van der Rohe Society Board Chair Barbi Donnelley addressed the audience at the rededication event of the Robert F. Carr Memorial Chapel of St. Savior, held in October 2014. The Mies Society raised \$1 million to restore Mies' only ecclesiastical building, affectionately known as the "God Box." *Photo: Bonnie Robinson*

9. WASHINGTON, D.C., ALUMNI GATHERING Alumni gathered at the National Academy of Sciences Building in Washington, D.C., in November 2014. They heard about the future of IIT from President John Anderson [back row, fourth from left], Board of Trustees Chairman Alan "Bud" Wendorf (ME '71) [front row, second from left], and the work being done by Dennis Roberson, IIT vice provost for research and research professor in computer science [back row, left].

10. INNOVATION AT CALAMOS Scott Ternovits (DSGN '92) addressed alumni on the process of innovation at Calamos Investments in Naperville, Ill., in December 2014. *Photo: Bonnie Robinson*

11. GOLDEN SOCIETY REUNION Members of the Class of 1964 reunited for their 50th reunion during Homecoming Weekend 2014. *Photo: Michael Goss*





Visit iit.edu/magazine to read about

- Life in the archives from outgoing University Archivist **Catherine Bruck**
- **Keira Havens** (MBB '04), whose company is working to develop a petunia that can change from one color to another on its own
- CAEE Assistant Professor **Brent Stephens's** STUDIO E
- **Brandon Pearlman** (M.S. EMS '14), whose company is creating software that enables better management of water in oil and gas operations

Also check out Video Extras and Audio Extras with

- **Ralph Pugh**, incoming university archivist, on Charles W. Pierce (Class of 1901)
- Distinguished Professor of Law **Lori Andrews** on medical apps and privacy
- **Matthew Spenko**, associate professor of mechanical engineering, on robots

Ralph Pugh



OBITUARIES

John Dygdon (IE '50)

IIT Armour College of Engineering
Professor Emeritus of Engineering Graphics

John Dygdon was devoted to IIT, its students, and its staff. He began his teaching career as an instructor at the university only two years after his graduation. Dygdon attained the position of professor of engineering graphics and also served as director of the Division of Academic Services and Office of Educational Services. In 1995 he retired from these positions and became a professor emeritus of engineering graphics.

A passionate educator, Dygdon co-authored several highly regarded textbooks, including *Basic Technical Drawing* and *Technical Drawing with Engineering Graphics*. He also ran the IIT High School Drawing and Design Competition for more than 20 years. The competition attracted thousands of participants to IIT's campus from all over the Chicago area.

Dygdon was the beloved husband of the late Jeanette Dygdon. He is survived by a sister, two sons, two daughters, a grandson, and two nieces.

Mark V. Morkovin

IIT Armour College of Engineering
Professor Emeritus of Aerospace and Mechanical Engineering

Born in Prague, IIT Armour College of Engineering Professor Emeritus Mark V. Morkovin, began his teaching career at IIT in 1967 and established a strong reputation and tradition of fluid dynamics research in the Department of Mechanical, Materials, and Aerospace Engineering.

Morkovin devoted his work to understanding the pertinence of fluid dynamics to the aerospace industry. He headed the design team and designed the wing and tail of the Bell X-1, the first aircraft to break the sound barrier (the craft was dramatized in the 1983 film *The Right Stuff*). He also worked on the Saturn rocket and the Space Shuttle. The X-1 and Shuttle are on exhibit at the Smithsonian Institution.

He was elected as a member of the National Academy of Engineering in 1987 for contributions to the understanding of instability, transition, and turbulence. He was also a fellow of the American Society of Mechanical Engineers, American Institute of Aeronautics and Astronautics, and American Physical Society.

He conceived the Morkovin Hypothesis, which was first discussed in his paper "Effects of Compressibility on Turbulent Flows" in *Mecanique de la Turbulence* (1962). The hypothesis states that "for moderate Mach numbers compressibility effects did not influence the dynamic behavior of turbulence directly, and the principal effect of high speeds was felt through the change in fluid properties." The paper is his most cited work.

His legacy continues today through the IIT Fluid Dynamics Research Center, whose facilities include the namesake Mark V. Morkovin Wind Tunnel, which enables environmental research such as the study of wind effects on skyscrapers and buildings, investigated using scaled-down models.

Morkovin was preceded in death by his wife, Alva. He is survived by his sons, Michael and Gregory.

INMEMORIAM

Louis D'Alba CE '34 Niles, Ill.	James Kordig CHE '48, M.S. '53 Salt Lake City	Donell Tekawa CE '52 Seattle	Frank Paterik ME '56 Prescott Valley, Ariz.	Charles Goldstein ME '64 Sumter, S.C.	Frank Scrbacic EE '70 St. John, Ind.
Clareese McDaniel Tyree ARSC '40 Louisville, Ky.	William Rock BE '48 Ellenton, Fla.	Thaddeus Cegielski ME '53, IE '57 Barrington, Ill.	Clarence Polfer IE '56 Punta Gorda, Fla.	Fred Hensley LAW '64 Clovis, N.M.	LeRoy Stoldt M.S. MT '70 Hinsdale, Ill.
Robert Arko ME '42, M.S. '51 Mount Prospect, Ill.	William Sponseller CE '48 Norristown, Pa.	John Farkonas ME '53, IE '56 Long Grove, Ill.	Scott Russell CHE '56 Palm Harbor, Fla.	Richard Kerwin LAW '64 Palos Heights, Ill.	Russell Schmidt M.S. PHYS '72 Altamonte Springs, Fla.
Richard Radke ME '43 Yukon, Okla.	Wilford Wittenberg EE '48 Vienna, Va.	William Galliani LAW '53 Lincolnwood, Ill.	Irving Doucet ME '57 Palos Heights, Ill.	Frederick Niemi LAW '64 Chicago	Edward Lee MET '74 Peoria, Ill.
George Stone ME '43 Naperville, Ill.	Howard Arnould M.S. MATH '49 Lawrence Township, N.J.	Olden Paris Ph.D. CHEM '53 Davis, Calif.	Richard Johnson EE '57 Bradenton, Fla.	Donald Siller ME '64 O'Fallon, Mo.	Michael Realmuto ARCH '77 Coloma, Mich.
Angus Wynn ME '43 Dayton, Ohio	Robert Baskin CE '49, M.S. '54 Chicago	Emil Bahnmaier EE '54 Mount Prospect, Ill.	Gerald Struck ARCH '58 Hanover Park, Ill.	Rahmi Soyugenc IE '64 Evansville, Ind.	Quigley Fletcher CE '79 Palatine, Ill.
Raymond Batina CHE '44 Lafayette, Ind.	Joseph Dannenmaier ME '49 Dallas	James Mosby MET '54 Ballwin, Mo.	James Thrush ME '58 Peoria, Ill.	Ted Belytschko ES '65, Ph.D. MECH '69 Winnetka, Ill.	Eiji Munemoto CS '79 Buffalo Grove, Ill.
Robert Browning ME '46 Sylvania, Ohio	David Halperin BE '49, LAW '58 Berkeley, Calif.	Joe Pohlman M.S. EE '54 Pittsburgh	Leonard Yarotsky EE '58 Houston	Louis VanSlyck Ph.D. EE '65 Columbus, Ohio	Bryan Yonan M.S. OR '79 North Berwick, Maine
Walter Czeropski EE '46, M.S. '51 Saratoga, Calif.	E. Howard Smith FPE '49 Cape Coral, Fla.	Kenneth Thomas EE '54 Athens, Tenn.	Hugh Strickland LAW '59 Chesterfield, Mo.	John Zygowicz IE '65 Melrose Park, Ill.	Craig Dashut LAW '85 Downers Grove, Ill.
Marvin Larson CHE '46 Chicago	Nels Wiberg ME '49 Whitewater, Wis.	Duane Walter LAW '54 Bloomington, Ill.	Douglas Thomson EE '59 Orange, Calif.	Ted Schmidt M.S. CHE '66 Orange Park, Fla.	Abraham Mazor Ph.D. MET '85 Dix Hills, N.Y.
Robert Backlund ME '47 Morton, Ill.	Frank Fisher ME '50 Kure Beach, N.C.	John Bacon ME '55 Canton, Mass.	Richard Hudrlik ME '60 La Mirada, Calif.	Paul Kuhel PHYS '68 Tucson, Ariz.	George Beranek M.S. EE '92 Homer Glen, Ill.
Jacob Dumelle ME '47, M.S. PEA '50 Oak Park, Ill.	William Kaske LAW '50 Addison, Ill.	William DiGiolamo EE '55 Pleasant Prairie, Wis.	Wendell Knox LAW '60 St. Petersburg, Fla.	Bryan Lanahan MAE '68 Big Flats, N.Y.	Jeffrey DesJarlais EE '92 Buffalo Grove, Ill.
William Roessler IE '47 St. Charles, Ill.	Alfred Yue M.S. MET '50 Cupertino, Calif.	Sidney Langer Ph.D. CHEM '55 Agoura Hills, Calif.	Ayoub Talhami CE '60 Evanston, Ill.	Leroy Strzelecki MAE '68 Downers Grove, Ill.	Dennis Loske M.S. CS '94 Elburn, Ill.
Richard Yale Unknown '47 Virginia Beach, Va.	John Mikota BE '51 Trumbull, Conn.	Colin Thomas ME '55 Tyler, Texas	Donald Gordon LAW '61 Normal, Ill.	Roy Adams LAW '69 Long Island City, N.Y.	Tito Rodriguez BA '08 Hillside, Ill.
Robert Cunningham ARCH '48 Cupertino, Calif.	Herbert Stein EE '51 Plainview, N.Y.	Robert Briska ME '56 Lanark, Ill.	Martin Nielsen ME '61 Munster, Ind.	Phyllis Witthoef PSYC '69 Lake In The Hills, Ill.	
Richard French EE '48 Palos Heights, Ill.	Gerhart Buehrer DSGN '52 St. Paul, Minn.	James Cormack MATH '56 Naperville, Ill.	Richard Midland EE '62, M.S. '66 Inverness, Ill.	William Brennan Ph.D. PHYS '70 Flat Rock, N.C.	
Tom Friedman ME '48 Highland Park, Ill.	Louis Kosover ARCH '52 St. Louis	Richard Gralow PSYC '56 Palos Verdes Estates, Calif.	Daniel Dowling ME '63 Plainfield, Ill.	Ralph Fertig M.S. DSGN '70 Fort Worth, Texas	
Robert Huelsman IE '48 Wheeling, Ill.	Louis Miceli ME '52 Rockford, Ill.	George Malten ME '56 Des Plaines, Ill.	Devereux Bowly PS '64 Chicago	Kevin Martin DSGN '70 Murray, Utah	

A Satisfying Life Among the Stacks

By Catherine Bruck

Former University Archivist, IIT



PHOTO: SCOTT BENBROOK

IF YOU KEEP READING, I'LL LET YOU IN ON A SECRET.

While I've never seen it listed in any job description, one of the most crucial qualifications to success in the archival field is passion. Whether we approach our work from a historical perspective or a technical one, the endorphin-induced high of finding an archival gem, locating a long-lost photograph, processing a hidden collection rich in content, or finding THE document that provides the missing link—any of

these “Eureka!” moments—can make an archivist's day sparkle. Experiencing a long series of them over the course of nearly 17 years can turn an archivist's work into career fulfillment.

But what makes an archivist's life a blessing is sharing her finds with others. Thus, it is with joy that I tell you of a secret I discovered in the IIT Archives: The history of Illinois Tech is richer, deeper, and more profound than any of us might have suspected; the contributions of IIT and our predecessor schools

to the field of higher education and to the city of Chicago are greater than we ever could have imagined.

Anniversaries are about recognizing past successes and counting accomplishments as well as years. As we begin to celebrate the university's 125th anniversary, I could easily list 125 collections in the IIT Archives to make your heart race and your mind boggle, but print space is limited; here's a random list, unprioritized and in no particular order. Enjoy the hunt—revel in the treasures you find. And thank you for having let me accompany you on the expedition. ●

Editor's Note: *Catherine Bruck served as IIT university archivist for nearly 17 years before retiring on February 28. Five of her favorite collections are featured here; their images and other collections on her list can be found in an IIT Magazine Online Exclusive with Bruck at www.iit.edu/magazine.*

- An image of a beaming, young Gwendolyn Brooks, Chicago's poet laureate at the time, with two IIT “co-eds” when Brooks was awarded an honorary degree in 1968. (1998.199/-Box LL/Con-Eq)
- A vintage copy of the handwritten music score “IIT Loyalty Song,” the university's original alma mater, by O. Gordon Erickson. (1998.209)
- Two collections of IIT-published brochures, both visually attractive but whose primary importance is comprehensive documentation of fundraising programs in the 1940s and 1960s. (1998.294 and 1998.296)
- Lois Bey's 1950 class ring, designed by Bey because she wanted a feminine-looking ring instead of the designs offered to her male classmates. (2012.004)
- A photo of the 1949 junior prom held at the Congress Hotel with integrated student attendees. (1950 *Integral* [IIT yearbook]; page 237)

“I would like to take this opportunity to extend my heartfelt gratitude for the Leadership Academy scholarship. The scholarship has helped me focus on my academics and engage in activities that benefit both the university and me.”

James Mwakichako
(AMAT 3rd year)
*M. A. Self Leadership
Academy Scholarship*



“The Schutt Endowed Chair definitely provides an additional measure of respect and recognition for my work. Some of the younger faculty have mentioned that it inspires them and gives them something to strive for.”

John F. Zasadzinski
*Paul and Suzi Schutt
Endowed Chair in Science*



“I was honored to receive the prestigious Rowe Family College of Architecture Dean Endowed Chair. The support of the Rowe family is essential to my work—my research, teaching, and service. I will continue striving to advance the ideals for which this chair was established.”

Wiel Arets
*Rowe Family College
of Architecture Dean
Endowed Chair*



“IIT’s emphasis on interdisciplinary work is preparing me to work in the real world. Thank you for giving me the opportunity to come to this university. It means a lot to my family.”

Caroline Johnson
(CE 5th year)
*Duchossois Leadership
Scholars Program*

Redefining IIT—Reshaping Lives

With 15 new endowed chairs, more than \$32 million in funding for scholarships, and close to 9,100 alumni donors thus far, the Fueling Innovation campaign is not only transforming campus* but also profoundly impacting the lives of our students and faculty.

This support is a statement about the power and value of an IIT education—and its ability to change the world.

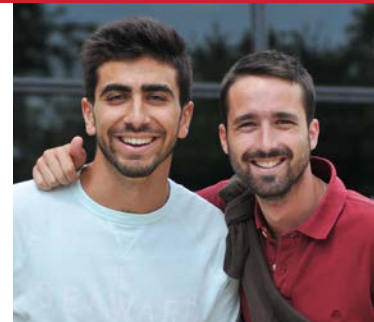
*See page 3 for an update on capital projects. Visit fuelinginnovation.iit.edu to learn more about the campaign and to read about IIT alumni who are fueling innovation around the globe.

Visit fuelinginnovation.iit.edu for more on how the Kaplan Institute and the Fueling Innovation campaign will redefine how IIT educates the next generation of innovators.

fuelinginnovation
THE CAMPAIGN FOR IIT

Homecoming, Reunions, IIT Spirit Day

September 18–19, 2015



Golden Society Reunion: Calling Class of 1965 and all prior years. Come celebrate 50 (or more) years since your graduation. Connect with old friends, receive your Golden Society medallion, and take a tour of Main Campus. Visit alumni.iit.edu/golden for details.

Class of 1990 25th reunion: Yes, it has been a quarter of a century since you graduated—time to celebrate! Visit alumni.iit.edu/25th for details.

Homecoming: Carnival, alumni beer garden, campus tours, sporting events, alumni gatherings, and more. Check out alumni.iit.edu/homecoming for details.



BUT WAIT...THERE'S MORE!

IIT Spirit Day: On September 18, alumni around the world will unite to show their school spirit in celebration of IIT's 125th anniversary! With regional alumni gatherings and online activities, you can participate no matter where you are. Watch alumni.iit.edu/spirit-day for details on how you can be a part of this celebration!