

# IIT Magazine

ILLINOIS INSTITUTE OF TECHNOLOGY



## NAVIGATING NEW DIRECTIONS IN ETHICS

Constitutionally Speaking  
Under the Microscope  
Planes and Powertrains



## Letter from the President

At the start of this school year, Mies Campus students were able to see the future literally taking shape before their eyes as they observed the progress being made on the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship. With a large number of rain-free days this past summer, the construction crew made great progress. The skeleton of the building could be seen by mid-August, when many of the girders were in place. Faculty member and Kaplan Institute Design Architect John Ronan received a 2017 R+D Award from *ARCHITECT*, the journal of the American Institute of Architects, for his unique use of ethylene

tetrafluoroethylene on the outside of the building. You can view a livestream of the construction site at <http://bit.ly/2vtbVyQ>.

In August we announced Anijo Punnen Mathew as the Kaplan Institute's inaugural academic director. A highly regarded associate professor at the Institute of Design, Anijo is also founder and chief experience officer of Vamonde, named by Built in Chicago as one of six Chicago startups shaping the future of virtual reality.

In other faculty news, we welcomed 29 new members to the university this fall. Two faculty, including J. D. Trout, the John & Mae Calamos Endowed Chair in Philosophy, will be joining Illinois Tech in January 2018. You can view all of their names and associated colleges on page 8 of this issue of *IIT Magazine*. Read their bios at [magazine.iit.edu/fall-2017/new-faculty](http://magazine.iit.edu/fall-2017/new-faculty).

Also in this issue of the magazine, the cover story is about one of the university's distinctive academic groups, the Center for the Study of Ethics in the Professions, now in its 41st year of existence. A pioneering institute in the study of ethics in science and technology, CSEP also houses the world's largest database of individual codes of ethics and guidelines in the world. You can learn about historian Marie Hicks, constitutional law expert Carolyn Shapiro, and Armour College of Engineering's Carrie Hall, whose research focus is on diesel engine technology. Nestor Zaluzec (PHYS '73), senior scientist at Argonne National Laboratory, shares information about next-generation electron microscopy, and recent Illinois Tech Young Alumnus Award recipient Alireza Khaligh (Ph.D. EE '06) discusses his current research at the University of Maryland, College Park.

Our people are indeed Illinois Tech's greatest asset. Our newest students are joining a strong university community that takes great pride in guiding and supporting them on their way to becoming tomorrow's leaders. I look forward to following our students' accomplishments in the academic year ahead.

Sincerely,

Alan W. Cramb

## IIT Magazine

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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 21 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.

### MISSION STATEMENT

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

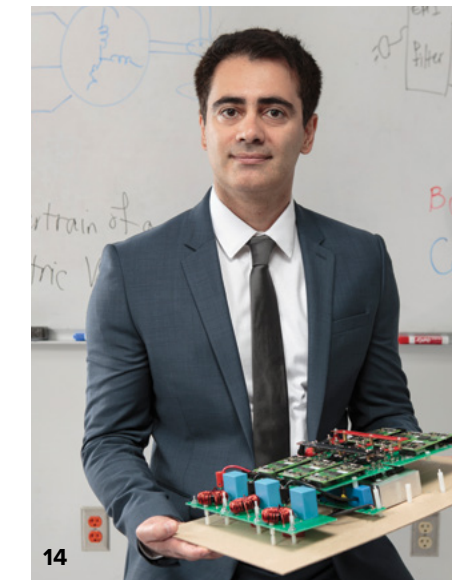
Armour College of Engineering  
Chicago-Kent College of Law  
College of Architecture  
College of Science  
Institute of Design  
Lewis College of Human Sciences  
School of Applied Technology  
Stuart School of Business

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FALL 2017

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ON THE COVER: The scope of Illinois Tech's Center for the Study of Ethics in the Professions is far reaching. Illustration: Bruce Rosch



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ILLINOIS INSTITUTE  
OF TECHNOLOGY

Letters

I was sorry to read in your “Passings” section that “Tink” [Calvin A. “Tink” Campbell Jr.] is gone.

I was vice president of finance for almost 13 years of a company that had a mining division. Tink wanted to purchase a part of the mining division looking to [using] the parts down the road. A mining expert and I visited with Tink at 48th and Halsted. Tink did not know that I was an IIT grad, and I did not know that he was a trustee at IIT.

I grew up in Englewood, and your “Passings” brought back memories of Tink and Chicago’s South Side—Dewey School, Holmes School, Sherman Park, and movie shows on Saturdays at 63rd and Halsted.

**Ron Dickman (BE ’67)**

**Write Back!**

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

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Transitions



Michael Horan

Illinois Tech welcomes **Michael D. Horan** as vice president for finance and administration.



R. Russell Betts

The university also thanks **R. Russell Betts**, Distinguished Professor of Physics and dean of the College of Science, for 10 years of dedicated service. Betts will be leaving Illinois Tech at the end of the 2017–18 academic year.



A crowd watched as the final steel beam was put into place for the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship. Illinois Institute of Technology donors, faculty, staff, students, and alumni were joined at the September 15 event by key local officials including Mayor Rahm Emanuel. Watch a livestream of the construction site at <http://bit.ly/2vtbVyQ>. Photo: Denise Moriarty



Jorge Acosta (CE '17)

## Illinois Tech Alumni Pay It Forward

“RECEIVING THIS SCHOLARSHIP HAS TRULY IMPACTED MY LIFE,” SAYS JORGE ACOSTA (CE ’17), who obtained his Illinois Tech degree this past spring thanks to a Goldstein Engineering Scholarship and is now employed as a software engineer at John Deere. “Without it, my life could have taken a different path.” Acosta grew up in Cicero, Illinois, where his mother, a janitor, struggled to raise four children after his father died. ¶ His story is not so unusual at Illinois Tech, which is among the 91 most generous universities in the nation, according to *Money* magazine. Virtually all full-time undergraduates at Illinois Tech receive scholarships of some kind, but only 5 percent of this money comes from private donations. ¶ That is something the university is hoping to change with the launch of its most ambitious scholarship initiative ever, an effort to raise tens of millions of philanthropic dollars for students like Acosta in the coming years. ¶ For decades the university has self-funded the majority of its

**“I chose Illinois Tech because when I looked at the landscape of engineering schools that were out there, not only was Illinois Tech one of the best, but, frankly, it was one within my grasp.”**— Judson Althoff (ME ’95)

scholarships, hoping that students would reap the rewards. It was a good bet. In 2015 the United States Department of Education released its College Scorecard and revealed that alumni of Illinois Tech are among the highest earners in Illinois and the nation. ¶ Further analysis of the College Scorecard by The Equality of Opportunity Project and the *New York Times* showed that students born to families in the bottom 20 percent of income are more likely to rise to the top at Illinois Tech than they are at any other college or university in Illinois. ¶ But ensuring that students from the bottom 20 percent receive the financial aid they need sometimes comes at a great cost to the university. That is why Judson Althoff (ME ’95) recently made one of the first gifts to Illinois Tech’s new scholarship initiative. ¶ Today, as executive vice president of worldwide commercial business at Microsoft, Althoff is among Illinois Tech’s most prominent alumni. Yet not so long ago he was a small town Ohio boy struggling to find a path to college. ¶ “I chose Illinois Tech because when I looked at the landscape of engineering schools that were out there, not only was Illinois Tech one of the best, but, frankly, it was one within my grasp,” explains Althoff. “I didn’t have a lot of means to go to college.” ¶ Althoff received a scholarship and now he is paying that gift forward. It is an act of generosity Acosta hopes to imitate. “I look at my scholarship as a loan that I expect to pay back with interest to the school ... in the form of donations toward scholarships.”

**To learn more about scholarships at Illinois Tech, visit [alumni.iit.edu/scholarship-initiative](http://alumni.iit.edu/scholarship-initiative).**



*"Ibuprofen, for example, can be found in the United States at almost every corner store. From Walgreens to gas stations, this white, plastic bottle sits innocuously on the shelves for around \$3. Little do we think and realize that this bottle is a superhero in many third-world countries."*  
 —Diana Wu (CHE 3rd year)



*"The brigade is a sign of IIT's dedication to educating conscientious, critical-thinking individuals."*  
 —Ilma Lodhi (BME 4th year)

*"Going on the MEDLIFE brigade brought light to the ways the medical device industry can innovate devices to make patient diagnosis more affordable and convenient."*  
 —Nirja Shah (BME '17)



## Mutually Beneficial Mission: MEDLIFE 2017

For 12 Illinois Tech students, a plastic soft drink bottle, child's toothbrush, and ibuprofen tablets rose far above the level of common, everyday items during the group's week in Managua, Nicaragua, this past summer.

Along with faculty advisor Kathryn Spink, director of Pre-Health Professions Programs, the group participated in a weeklong medical mission with the international humanitarian organization Medicine, Education, and Development for Low-Income Families Everywhere, or MEDLIFE. On their first day in Central America, the members of the Illinois Tech team joined a "reality tour," where they observed Managua residents picking through a landfill for coveted plastic bottles for resale. The students also assisted in children's tooth-brushing clinics and worked in the MEDLIFE pharmacy, among other activities. ¶ For some students, this was their first MEDLIFE experience; for others, a repeat mission trip. Watch an *IIT Magazine* Video Exclusive, featuring Nour Issa (BIOL 3rd year), Ilma Lodhi (BME 4th year), Evelyn Thomas (BCHM '17), and Spink at [magazine.iit.edu](http://magazine.iit.edu). —Marcia Faye

*"The brigade left me with newfound knowledge of the health care system in different countries, and the Nicaraguan culture and its people. It will be an experience and memory I will cherish for the rest of my life."*  
 —Shailee Shah (BME 4th year)

*"Going to other parts of the world to get a glimpse of what the health care system is like in other countries has helped me confirm my desire to pursue medicine."*  
 —Evelyn Thomas (BCHM '17)



*"My MEDLIFE trip opened my eyes to the differences in lifestyles of people living in the city and people living in separated communities. ... The people who live in a separate community have to walk for over an hour on a difficult, rough mountain trail in order to reach the city; therefore, many have difficulty getting a prescription when they are sick."*  
 —Abdallah Hasan (CHEM 2nd year)

*"My initial thought of being a participant on a medical brigade is that I am going abroad to help people in need, but the reality of the situation is much more. Having the opportunity to attend the brigade was life changing, as I was able to work and aid people of a different culture and language."*  
 —Mohannad Safadi (BIOL '17)

**MORE ONLINE**  
 "Global Activism: Medicine, Education, and Development for Low-Income Families Everywhere," WBEZ 91.5 Chicago *Worldview*: <http://bit.ly/2fNI4GB>

## Illinois Tech Headliners

**“People knew these foreclosures were unfair, but they were unable to articulate they were more than unfair—they were unconstitutional.”**

Chicago-Kent College of Law Professor **Bernadette Atuahene**, in the *Detroit Metro Times*, about the city’s foreclosure crisis this past summer

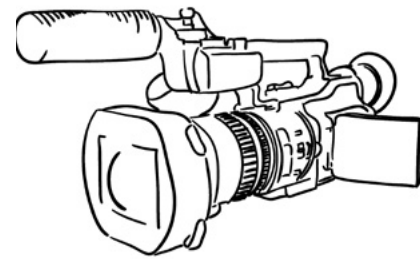
**“They’re replacing [baseload, reliable] low-carbon energy with low-carbon energy that requires backup 65 percent to 85 percent of the time. Everywhere that nuclear is closed, it gets replaced by natural gas. That means France will probably get dirtier.”**

Professor of Physics **Jeff Terry** in *Forbes*, about French President Emmanuel Macron’s intention to phase out the country’s nuclear power plants and replace them with wind and solar energy stations



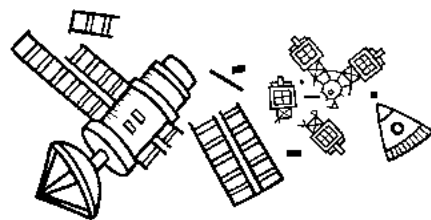
**“They start becoming reactive, decompose—and that basically makes them ineffective.”**

**Sohail Murad**, chair of the Department of Chemical and Biological Engineering, on CBS 2 Chicago, about the loss of potency of sunscreen left in a hot car



**“THERE IS LITTLE TO GAIN AND MUCH TO LOSE BY INTRODUCING CAMERAS IN THE COURTROOM.”**

**Nancy Marder**, Chicago-Kent College of Law professor, in a *Bloomberg BNA* article about the United States Supreme Court’s new website



**“This ability to grab onto an object nearly anywhere, instead of needing a specific grapple point that may not even be there, is really advantageous. It means you don’t need a precision approach.”**

**Matthew Spenko**, associate professor of mechanical engineering and director of the Robotics Lab@IIT, in the *New Scientist*, about how a gecko-inspired gripper he developed could potentially clean up space junk

**“IS THERE A HAZARD OR POTENTIAL RISK OF CANCER IN HUMANS WHO ARE EXPOSED TO RF (RADIO FREQUENCY) FIELDS? I BELIEVE THE ANSWER IS YES. BUT THE MORE IMPORTANT QUESTION IS, WHAT IS YOUR EXPOSURE?”**

IIT Research Institute President and Director **David McCormick**, on the controversial topic of cell towers near schools, on nprEd



PHOTO: SCOTT BENBROOK

## In His Own Words

*Architect and historian Michelangelo Sabatino considers the rhizome, a plant system utilizing both vertical and horizontal roots, as a perfect visual metaphor exemplifying specificity and interconnectivity as two separate but equally important concepts that make for a holistic educational environment. On the Illinois Tech faculty since 2014 as professor and director of the architecture Ph.D. program, Sabatino considers his vision for the college now as interim dean of the College of Architecture.*

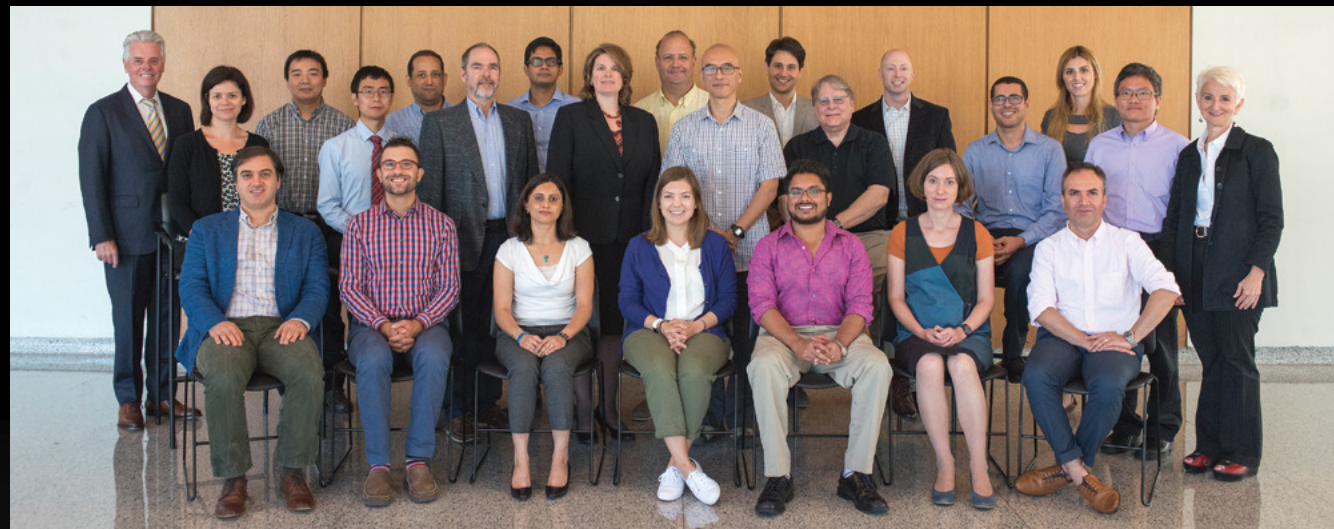
**I** SEEK TO RE-THINK THE RELATIONSHIP BETWEEN our college, IIT, Chicago, and the rest of the world. We are more powerful if we identify opportunities where we can collectively be more impactful as a college of architecture by way of strategic collaborations with the Institute of Design or Armour College [of Engineering], for example. While the very nature of education is specialized, the learning process does not stop at colleges. ¶ I am a big proponent of the built environment. When you say ‘architecture’ instead of ‘built environment,’ you’re putting all of the agency on the architect; whereas we all know that architects are hugely important in many aspects leading up to the design, you need great collaborators in engineers, landscape architects, urban planners (just to name a few), in order to make anything really work. So I would stress built environment over architecture with a capital A. That’s a bit of a provocation, I understand. But when you think about it, roads and infrastructure are equally as important as the buildings. ¶ We have various degree programs in the College of Architecture, but we also have the M.L.A. + U [landscape architecture and urbanism] program. When we talk about the legacy of the College of Architecture, I think we tend to give almost too much importance to [Ludwig] Mies [van

der Rohe]. He was certainly an innovator of huge impact, but he was also a man who collaborated. Three greats have influenced us at the school—Mies, Ludwig Hilberseimer, and Alfred Caldwell. Lafayette Park—a residential neighborhood realized in Detroit during the late 1950s and 1960s—is the result of a collaboration between them. ¶ My ambition is to think carefully about what it means to be a global architect today. To be a global architect you actually have to experiment with a local context that you learn from to apply your skills to other contexts. Take, for example, when Mies came to this city. Gary, Indiana, was a huge producer of steel. It was not only that Mies loved steel as an aesthetic, but the proximity to Gary also made the choice affordable. ¶ If one thinks of a building only in terms of aesthetics, you really don’t understand the context. Mies learned from America, and America learned from him. Being in Chicago was hugely important for him—he used what he learned in Europe, took it forward, and increased his oeuvre. —As told to Marcia Faye

**MORE ONLINE**  
**Michelangelo Sabatino:** <http://michelangelo-sabatino.com>

## Illinois Institute of Technology Welcomes New Faculty

PHOTO: BONNIE ROBINSON



New faculty joining Illinois Tech in 2017–18 include researchers and scholars in Armour College of Engineering, Chicago-Kent College of Law, the College of Architecture, the College of Science, the Institute of Design, Lewis College of Human Sciences, the School of Applied Technology, and Stuart School of Business. Read their bios at [magazine.iit.edu/fall-2017/new-faculty](http://magazine.iit.edu/fall-2017/new-faculty).

**Mohammad Asadi**

Assistant Professor  
Armour College of Engineering

**Rahman Azari**

Assistant Professor  
College of Architecture

**Somdev Banerjee**

Lecturer  
College of Science

**Maria Debije Counts**

Assistant Professor  
College of Architecture

**Steve DuBois**

Assistant Professor  
Lewis College of Human Sciences

**Yousef M. Elmehdwi**

Senior Lecturer  
College of Science

**Michael Gentithes**

Visiting Assistant Professor  
Chicago-Kent College of Law

**Bruce C. Gockerman**

Industry Assistant Professor  
Stuart School of Business

**Baisravan HomChaudhuri**

Assistant Professor  
Armour College of Engineering

**Yuan Hong**

Assistant Professor  
College of Science

**Cody Jacobs**

Visiting Assistant Professor  
Chicago-Kent College of Law

**Mark Jones**

Visiting Industry Professor  
Institute of Design

**Andrew “Andy” Kumiega**

Assistant Professor  
Stuart School of Business

**Trevor Lee**

Visiting Assistant Professor  
College of Architecture

**Katie Leight**

Lecturer  
College of Science

**Chun Liu**

Chair and Professor  
College of Science

**Mohamed El Marzouki**

Assistant Professor  
Lewis College of Human Sciences

**Tracey McGee**

Senior Lecturer  
School of Applied Technology

**Kiah Wah Ong**

Lecturer  
College of Science

**Zach Pino**

Studio Instructor  
Institute of Design

**Rajkumar P. V. (January 2018)**

Senior Lecturer  
College of Science

**Jenifer M. Robbins**

Director of Experiential Learning and Lecturer  
Chicago-Kent College of Law

**Jason Romano**

Senior Lecturer  
School of Applied Technology

**Amandeep Sandhu**

Assistant Professor  
School of Applied Technology

**Ruth Schmidt**

Director of Strategic Initiatives and Visiting Industry Professor  
Institute of Design

**Despina Stasi (AMAT, CS '03)**

Senior Lecturer  
College of Science

**J. D. Trout (January 2018)**

John and Mae Calamos Endowed Chair in Philosophy  
Lewis College of Human Sciences

**Alla Vronskaya**

Assistant Professor  
College of Architecture

**Heng Wang**

Assistant Professor  
Armour College of Engineering



Faculty member and Deputy Vice Provost for Academic Affairs Ron Landis [center] with Assistant Men's Soccer Coach Trevor Wheeler [left] and Head Men's Soccer Coach Marc Colwell [right], on Stuart Field on Mies Campus. Photo: Ron Landis

## Bringing Team Spirit Full Circle

**C**HICAGO IS A SPORTS MECCA, BUT ITS fervent fan base isn't exclusive to pro teams. The Illinois Tech Scarlet Hawks men's and women's sports programs have their faithful Scarlet Fever student cheering section, and through the new Coach for a Day (CFAD) engagement program are adding faculty and staff members to the fan squad. "Our goal has been to connect athletics and academics," says Athletics Director Joe Hakes, who developed the idea with Christopher White, vice provost for research and academic affairs. "The coaches, in recruiting student-athletes, have to know something about the academic curriculum. We're hopeful that faculty and staff will gain insight about what coaches and athletes do on a game night, how good our athletes are, and why they participate in sports." Hakes says that honorary coaches meet with the coach of the sport they are interested in to discuss their Coach for a Day game plan, including when practice is held, proper game protocol, and even appropriate coaching attire. White, who has been an honorary coach in four different sports including baseball, had a unique thrill when he was given a uniform to wear in the Guaranteed

Rate Field dugout during this year's South Side College Classic between Illinois Tech and the University of Chicago. Lewis College of Human Sciences Dean Christine Himes attended a 6 a.m. practice at Keating Sports Center with the women's basketball team in addition to observing a pregame practice and pregame talk. She also sat on the courtside bench during the game. "I've always admired student-athletes. I'm amazed at their ability to juggle classes, practices, homework, and games," says Himes, noting that she so felt a part of the team that she attended another game a few weeks later. "Being a Coach for a Day helped me better understand the time and effort students put into their sport. I did not participate in high school or college athletics, so I was surprised by how much information the coach gave the athletes and how many things there are to remember during the game. Being on the bench gave me a whole new perspective on students and student life." —Marcia Faye

**MORE ONLINE:** [illinoistechathletics.com](http://illinoistechathletics.com)



Assistant Professor Carrie Hall with a testing engine in her laboratory in the John T. Rettaliata Engineering Center

on understanding the fundamental dynamics of how a multi-cylinder, dual-fuel engine operates under various conditions. The next stage, she says, is understanding how to control such a complex, nonlinear system. “That becomes a very challenging mathematical problem, so lessons that we learn certainly have applications that we can take into other things,” she says. “We’re dealing with something that’s producing power from two sources, which is the same kind of thing that you’re doing on a hybrid vehicle, so a lot of other applications will have similar kinds of constraints and issues.” ¶ Hall became interested in engine technology because she wanted to tackle what she considers to be one of today’s biggest problems: how to efficiently produce energy with minimal environmental ramifications. She was drawn to automotive engineering because of the challenges involved in producing energy in a moving object. “You can produce energy in a stationary thing that’s just sitting there,” she says, “or you can produce it in something that’s moving around, and something that’s moving around is a lot more fun.” —Jim Daley

### Engineering Early Ed

Unlike a standard research grant, the CAREER proposal has an educational aspect. Carrie Hall is using it to approach the challenge of sparking younger students’ interest in STEM subjects. Beginning with first- and second-graders, Hall is working with a curriculum developer and a grammar school in Waukegan, Illinois, to integrate engineering activities as early as possible. They’ve used tuning forks and cup-and-string phones made of different materials to introduce first-graders to the engineering process. “A lot of times if we try to get girls into mechanical engineering programs, the norm is that you go to a high school,” says Hall. At that point, they’ve often already decided on other subjects.

Hall says that by also focusing on the societal impacts of engineering, educators can make the field more attractive to young women in particular. “A lot of times girls and women like to be doing something that helps people or that’s going to make a difference,” she says. “What I was interested in was this energy problem. I was intrigued by that, and it led me to mechanical engineering. I think that for a lot of girls it can be that way. But I also think there’s a role in coming into the classroom a lot earlier and getting people a lot more acquainted with what the engineering process actually looks like.”

**MORE ONLINE**  
 “How Do Bi-Fuel Natural Gas Cars Work?”: <http://bit.ly/2fMjPrn>

## Two Fuels Are Better Than One

Optimizing fuel performance and minimizing emissions has been the ambition of every engineer who designed a combustion engine since George Brayton developed his “ready motor” in 1872. Illinois Tech Assistant Professor of Mechanical, Materials, and Aerospace Engineering Carrie Hall is currently at the cutting edge of that search for new ways to make diesel engines cleaner and more efficient using dual-fuel technology.

Hall, the recipient of a \$500,000 Faculty Early Career Development (CAREER) Award from the National Science Foundation, is applying innovations from studies of single-cylinder engines that use dual-fuel technology to multi-cylinder engines like those found in commercial trucks. Dual-fuel models like the Volvo V90 Bi-Fuel use a blend of two fuels, such as natural gas and gasoline. Each fuel is optimally efficient under different conditions, and using both allows for a more efficient engine overall. The goal is to develop automotive engines that can use an ideal blend of fuels that run more cleanly and provide the most efficient power output for the load demands on the engine. ¶ “In passenger cars it’s simpler to just go to electric or hybrid vehicles,” says Hall. “But for larger Class A trucks, we can’t have an electric option. They’re going to have to burn diesel fuel or something like it for the foreseeable future. These technologies could make them potentially more efficient.” ¶ Hall’s current research is focused

# MORAL COMPASS

More than 40 years after its founding, Illinois Tech’s Center for the Study of Ethics in the Professions continues to provide guidance and leadership in education and research.



ILLUSTRATION: BRUCIE ROSCH

BY MARCIA FAYE

# M

ichael Davis,  
Illinois Tech  
professor of  
philosophy,  
considers  
today's super-  
sized America before answering the  
question: Does our country need  
ethics guidance now more than  
ever before?

"We live within an enormously complicated system—there are 300 million of us whereas in 1900 there were 75 million. Corporations are much bigger and divided up in ways that are different than they used to be. Products are more sophisticated. And much of what we do now is invisible," he explains, sharing an anecdote about his first job hand-developing photographs, nearly five decades ago. "Most of what I used to do is now inside this, along with the camera itself," he adds, pointing to his smart phone. "Most of what makes this such a valuable thing is in the minds of the people who laid out the design. If you have so much invisible quality, you're really more dependent upon people than you used to be. And if we are, then their ethics is more important."

Equally invisible to the average person and perhaps less accessible than the concept of a smart phone's capabilities is genetic editing via CRISPR technology, a method that cuts and replaces DNA at precise locations in a cell. In August a study was published in the journal *Nature* by a team of researchers from the United States, China, and South Korea who corrected the mutated gene behind the disease hypertrophic cardiomyopathy in human embryos. This scientific breakthrough raised numerous ethical concerns on the already controversial subject of human genetic engineering. The ethical implications of such emerging technologies comprise an area in which the Center for the Study of Ethics in the Professions (CSEP) at Illinois Tech and faculty associates are working to establish ethical guidelines.

Bioethicist Elisabeth Hildt heads the center, which has been a touchstone for many in the ethics community-at-large since its establishment in 1976. Former head of the Research Group on

Neuroethics/Neurophilosophy at Johannes Gutenberg University Mainz (Germany), Hildt says that CSEP's Ethics Code Collection, which Librarian and Information Researcher Kelly Laas compiled from some 1,500 organizations, is an especially valuable resource for today's ethical challenges. It is the largest database of individual codes of ethics and guidelines in the world.

"Ethics codes and guidelines offer a huge opportunity to shape technology development, not just to recommend individual or company behavior. They can help to provide direction on whether or not humans should be cloned or on the use of CRISPR and similar technologies, where modifications can be made to the genetic endowment of an organism," says Hildt. "What does it mean to have something implanted in your brain? Is there a way to manipulate people through it? What do people think about having different types of technology in their bodies? Do we really want this?"

Shortly after her arrival on campus in 2014, Hildt and postdoctoral student Geoff Holtzman began a two-year project funded by the Swiss Cogito Foundation that examined the ways that neuroscience and ethics intersect. Last year they organized the symposium "Does Neuroscience Have Normative Implications?" drawing experts from around the country. And earlier this year, *The Human Sciences after the Decade of the Brain*, a book that Hildt co-edited, was published.

Engineering, genetic or otherwise, has been a mainstay of the Ethics Center, in particular since 1987, when the late Vivian Weil came on board as director. An Illinois Tech philosophy faculty member for more than 40 years, Weil, along with Davis and Robert Ladenson, emeritus faculty associate, initiated a CSEP landmark program that many colleges and universities around the country have copied: Ethics Across the Curriculum.

"One thing that made the center work is that we focused on issues that the university was very much interested in, like engineering ethics," Davis, CSEP senior fellow, explains. "The reason we did Ethics Across the Curriculum was that a couple of mechanical engineering faculty wanted to integrate ethics into their classes. We had nothing that was suitable for them so we spent a year developing materials they could use."

Initially taught to Illinois Tech faculty, the National Science Foundation (NSF)-funded curriculum was soon offered to faculty from other institutions who spent two weeks during the summer on Mies Campus learning how to integrate ethics into their technical courses. Davis says that each participant came away with either a case study, module, or lesson plan to use in the classroom as well as to share with their fellow faculty. Before it concluded in 2016, the program was incorporated into ethics teaching by domestic and international schools alike.

Laas says that a partial list of these schools would include Purdue University, the Colorado School of Mines, Tokyo Institute of Technology, and the University of Illinois at Chicago. Laas, who has done drop-in ethics instruction for Lewis College of Human Sciences, Armour College of Engineering, and the College of Science, says that the center's goal has always been to have the faculty commit to teaching ethics.

"Although dedicated ethics courses are offered at the university (engineering ethics, architectural ethics, and business ethics), the center prefers a true integration into most any course within any discipline," she says. "Also, the NSF is no longer offering funding for stand-alone ethics courses; it believes that people

PHOTO: SCOTT BENBROOK



[Left to right] Elisabeth Hildt, director of Illinois Tech's Center for the Study of Ethics in the Professions, and Kelly Laas, CSEP librarian and information researcher

need to look at the culture of institutions and the culture of labs, and integrate ethics into the research being done. We've been gratified that the center's approach has been recognized as one of the best practices in ethics education."

Laas and Hildt, along with Illinois Tech Clinical Associate Professor of Innovation Christine Miller and Eric Brey, University of Texas at San Antonio professor and chair of biomedical engineering, are collaborating on an NSF-funded project to further refine ethics education within the university and, over time, to initiate a change in ethical behavior within science, technology, engineering, and mathematics (STEM) departments and laboratories at Illinois Tech and beyond. The team's "Building a Culture of Responsible Research and Practice in STEM" project aims to develop guidelines for identifying ethical problems and navigating the decision-making process within a STEM department or lab. Select doctoral students in biology, physics, biomedical engineering, and electrochemical engineering are conducting interviews with undergraduates, peers, and staff to determine areas of ethical concern and to develop laboratory-specific ethical guidelines.

"It's often not that easy to teach ethics in an efficient way, so we began thinking of new approaches such as teaching out of the classroom and directly within the context of the research lab, where people are confronted by ethics issues," explains Hildt, adding that the Ethics Center team

spent the summer conducting information-gathering surveys. "The students will use ethics codes from their fields, many collected by the center, as potential resources. In most cases, there's not much information regarding labs. Once guideline drafts are completed, the students will share them with faculty, staff, and colleagues within their respective departments."

Brey says the hope is that by leading much of the project, the students will learn to develop and nurture a mindset, rather than just try to manage situations of inappropriate behavior after the fact.

"Ethical issues are about how faculty should interact with students and mentor them and how researchers can make decisions about understanding their data and promoting their data in a way that is responsible, that can best inform people, and that doesn't direct people in the wrong way," says Brey. "How confident do we need to be? No one person can know everything."

Illinois Tech students also have two extracurricular opportunities to explore ethics topics. The ethics club, QED: The Ethical Debaters, meets weekly over lunch during the academic year to debate ethics issues in the news. The annual Intercollegiate Ethics Bowl, held annually since its inception at Illinois Tech in 1993, is a nationwide competition that features two teams of three to five undergraduates who answer questions on a wide variety of ethics issues and debate their responses

with the opposing team. A panel of judges determines the winning team using detailed evaluation criteria.

Reno Fera-Ducatt Waswil (PHYS '17), who teaches high school students SAT test-taking strategies for *The Princeton Review*, was a member of the regional 2016-17 Ethics Bowl team and former QED president. He reflects on how his experiences served to make him a more effective decision-maker today.

"There are three main areas I can point to in which involvement in QED and the Ethics Bowl has helped me—in recognizing the patterns of complex ethical issues; in making concrete conclusions based on the population of information and evidence available; and in justifying these considerate analyses and conclusions publicly and being able to respond to an array of critique on them," he says, adding that his ethics experiences have helped him to make a wide range of lifestyle improvements from refining his job interviewing techniques to relating better to his audience when making presentations to even developing empathetic characters as an aspiring creative writer.

Attorney Gretchen A. Winter, executive director of the Center for Professional Responsibility in Business and Society at the University of Illinois at Urbana-Champaign College of Business, says that while the Ethics Bowl has given many students the chance to discuss ethical issues in a variety of contexts, it is only one facet of a center that she made her first stop when seeking ethics resources and guidance on ethics center design and management after being named to her current position.

"The center's leadership in defining and sharing ways to apply professional ethics standards in a wide range of circumstances has been a valuable source of guidance to faculty, students, and practitioners," she says. "The Ethics Center has been at the cutting edge of professional ethics since Vivian Weil took the helm many years ago. Under Elisabeth's direction the leadership and guidance continues—and the community of academically based ethics centers continues to grow." ●

**MORE ONLINE**  
CSEP: <http://ethics.iit.edu>  
Center for Professional Responsibility in Business and Society:  
<https://business.illinois.edu/responsibility>





rowing up in Tabriz, Azerbaijan, Alireza Khaligh (Ph.D. EE '06) sometimes accompanied his father to his job at the local electric power plant. The sight of the generators, smokestacks, and spinning turbines along with conversations he had with his father made such a profound impact on Khaligh that he turned to constructing circuits and electronic components as an adolescent hobby. With an aptitude for mathematics and physics, Khaligh had scored an academic trifecta by the

Recipient of a 2017 Illinois Tech Outstanding Young Alumnus Award, Khaligh has brought in more than \$5 million in research funding for his power electronics converter projects as well as for projects on electric vehicles, energy harvesting, and undergraduate education programs since coming to UMD in 2011.

“The concepts that everybody is trying for in energy conversion are efficiency improvement, smaller size, and greater reliability,” says Khaligh, whose team is preparing to deliver prototypes of an auxiliary power-supply device to The Boeing Company, the culmination of a multi-year project. “In an aircraft there are individual air-conditioning units, as well as TVs and screens used as infotainment that are all powered by auxiliary power supplies that are supplied by generators. We designed the power supply to convert the three-phase voltage from the generator to a low direct-current (DC) voltage to provide power to the auxiliary load on the plane. Traditionally this was done on a much bigger, heavier, and inefficient scale.” The UMD team is also building a prototype of a new converter for electric cars that combines the chargers for the main 400-volt battery and the auxiliary 12-volt battery that powers the headlights, radio, fan, and other components, much like in a plane.

Khaligh is also continuing two projects that he began at Illinois Tech while he was an assistant professor from 2007 to 2011: researching energy-harvesting systems and overseeing the National Science



PHOTO: MIKE OLLIVER

# IN PERPETUAL MOTION

BY MARCIA FAYE

time he received his doctorate: He ranked first in both his bachelor's and master's power engineering programs at Sharif University of Technology and first in the Ph.D. qualifying examination in the Department of Electrical and Computer Engineering at Illinois Tech.

“As a Ph.D. student, he was able to co-author eight journal papers with six of them as the lead author,” says Ali Emadi, professor and Canada Excellence Research Chair in Hybrid Powertrain at McMaster University, who served as Khaligh's advisor during his former tenure at Illinois Tech. “Dr. Khaligh is truly innovative, exceptionally hardworking, and a highly productive world-class researcher and educator.”

In a telephone conversation from the University of Maryland, College Park (UMD), where he serves as an associate professor of electrical and computer engineering and director of the Maryland Power Electronics Laboratory, Khaligh says his achievements are the result of a simple formula.

“I work hard and always have faith in God,” he says, adding that a little good luck doesn't hurt. “Electrical engineering was the perfect subject for me. Some people oscillate around an axis, going back and forth between subjects. I knew what my passion was and wanted to get from this point to that point, so I worked hard.”

Foundation (NSF)-funded Research Experience for Undergraduates program that focuses on hybrid-electric vehicle technologies. Khaligh is an expert in the Energy, Power, Control, and Networks Program at the Electrical, Communications, and Cyber Systems (ECCS) Division at NSF, organizing panels and making funding decisions for grant proposals from universities across the country. Khaligh is contemplating his own team's future projects, thinking back to the power plant that played such a central role during his childhood.

“Transportation electrification is one of the inevitable ways of independence from oil. There are over 250 million registered passenger vehicles in the United States. More than 40 percent of greenhouse gas and 70 percent of emissions come from transportation, and for a long time transportation has been 99 percent dependent on only one source of fuel, which is petroleum,” he says. “Electrification of transportation will create new opportunities from reducing CO<sub>2</sub> emissions and reducing greenhouse gases, to new jobs for the next generation of engineers and scientists. We believe that our work will contribute to improving the quality of all human life.”●

**MORE ONLINE**  
 Maryland Power Electronics Laboratory: [khaligh.ece.umd.edu](http://khaligh.ece.umd.edu)



PHOTO: SCOTT BENBROOK

By Marcia Faye

# The Answer Man

A group winds its way down the white brick stairwell of Building 212 on the campus of Argonne National Laboratory (ANL), near west suburban Lemont, Illinois. The voice of one member, Nestor Zaluzec (PHYS '73)—senior scientist, inventor, and educator—booms out over the sound of equipment as he leads the way next door to the significantly quieter confines of the Sub-Ångstrom Microscopy Microanalysis Laboratory, or SÅMMLab. As Zaluzec unlocks the facility, which sits on a 100-ton concrete base, he can barely contain his excitement. Within SÅMMLab, part of the ANL Center for Nanoscale Materials, is the \$8 million Argonne Chromatic Aberration-Corrected Transmission Electron Microscope FEI Titan, or ACAT. But the building's design is meant to convey even more to come. It is being readied for the arrival of the ng-AEM—"the world's highest-resolution, highest-sensitivity analytical electron microscope"—slated for delivery in 2018.

"SÅMMLab was specifically built to house the next generation of subatomic resolution instrument, and concepts from it have been adopted in other laboratories around the world," says Zaluzec. A member of ANL's Photon Sciences Division, he is a principal figure in the design and implementation of the ng-AEM as well as related scientific instruments and resources at ANL. He notes that SÅMMLab, which he describes as a "building inside a building," was an ANL design/build team effort, and its performance has surpassed the team's

design goals. Upon entering one of the microscope rooms, Zaluzec points out waffle-padded walls that resemble a car's radiator, designed to cool yet minimize the perturbing effects of air flow.

"Each room also has its own vibration-isolation control zone; the microscopes are vibration-isolated from the walls, which are vibration-isolated from the floors, which are vibration-isolated from each area," he explains. "The rebar used in construction of the floor is made of fiberglass because normal steel material is potentially electromagnetic and can create

ground loops and fields. Surrounding the edges of the concrete are two additional vibration-isolation materials—neoprene and foam. Stray external electromagnetic fields in SÅMMLab were low enough that monitors were even able to detect the streetlights turning on and off during commissioning, while the acoustic noise/vibration isolation is under 30 decibels."

ACAT allows researchers to study materials at a resolution of less than 1 Ångstrom; observing and studying atoms in materials is a routine task in this research instrument. For perspective, imagine that there are about 254 million Ångstroms in one inch and that one million Ångstroms make up the thickness of a sheet of paper. ACAT was the result

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**"We're developing new technologies and methodologies to study nanomaterials in their native states and/or environments."**

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—Nestor Zaluzec (PHYS '73)

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of a 2004 United States Department of Energy (DOE) project involving a team of national microscopy experts and industry partners FEI and CEOS, and was tailored to examine nanomaterials such as metals, ceramics, catalysts, semiconductors, and superconductors, all at atomic resolution. Zaluzec and other members of the DOE team worked together to design and build the world's first chromatic and spherical aberration-corrected instrument. The Cs/Cc aberration corrector, the device that enabled ACAT to currently be the world's highest-resolution microscope, is a series of specially designed electromagnetic and electrostatic lenses, and adjusts for optical limitations typically present in all electron microscopes. ACAT, which is part of ANL's suite of DOE national user facilities, is accessible to all members of the scientific research and education community.

Another first for Zaluzec's research group and implemented in the new generation of electron microscopes is the ability to simultaneously examine and chemically analyze by X-ray spectroscopy nanoscale specimens undergoing dynamic processes in liquids and gases. This was previously impossible in electron

microscopes because they utilize a vacuum chamber to eliminate air molecules from interfering with the specimen.

The ng-AEM “will not only reach resolutions exceeding ACAT but will also include ultrahigh-spatial resolution spectroscopy and diffraction. It will have a sub-Ångstrom probe as well as the highest-efficiency detectors in the world,” he says, adding that the new microscope will be ideal for extending into the realm of soft matter such as polymers, biological systems, and molecular materials, fields into which Zaluzec is expanding his research interests and efforts.

“We’re developing new technologies and methodologies to study nanomaterials in their native states and/or environments—to study and to ultimately understand how they move, evolve, grow, and change over time,” says Zaluzec. “In situ, dynamic, and having atomic-level elemental/chemical sensitivity—that is the next frontier for understanding materials and their properties. And at ANL we will keep pushing that agenda forward, many times at the bleeding edges of R&D.”

The South Side Chicago native says he knew that science was his calling as early as the fourth grade at Oliver Hazard Perry School. But Zaluzec discovered his true niche years later when he obtained a part-time job at the Sherwin-Williams Research Center. Already an Illinois Tech student, he was hired to wash test tubes until managers learned that he had programmed a new calculating machine during his free time to do his homework; Zaluzec was quickly reassigned to tackle analytical challenges. Curious about the light qualities of paint, he designed and built a spectrogoniophotometer dubbed “The Nestrometer” by the Sherwin-Williams lab team.

“That’s where my physics came in,” he says about his academic foundation at Illinois Tech, where, as an adjunct faculty member in the 1980s, he also taught electron microscopy courses. “I had a lot of great professors at IIT, including Earl Zwicker, Fred Ernst, and Tom Erber.”

Word of Zaluzec’s prowess as an inventor and problem solver quickly spread throughout the materials sciences community. He was offered a full scholarship to the graduate program at the University of Illinois at Urbana-Champaign, where he received a Ph.D. in metallurgical engineering and collaborated with acclaimed metallurgist

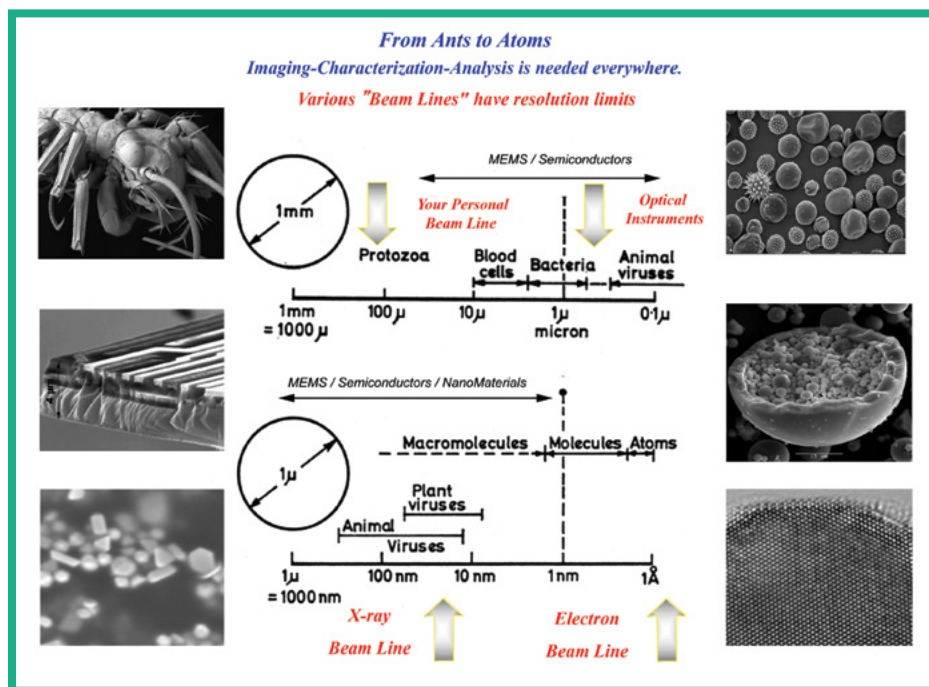
Hamish Fraser. Zaluzec also was honored with the Eugene P. Wigner Fellowship from Oak Ridge National Laboratory, and continues to be a fellow there and in the Computation Institute, established by Argonne and the University of Chicago. In his more than 30-year career, Zaluzec has been recognized with numerous national and international awards, the most recent being the Microscopy Society of America (MSA) 2017 Distinguished Scientist Award for Physical Sciences.

“Nestor Zaluzec’s career has been distinguished by his early recognition and implementation of new technologies and techniques that impact the microscopy field,” says Ian M. Anderson, MSA president, noting that Zaluzec’s contributions include the incorporation of compositional and chemical imaging within a transmission electron microscope (TEM), the early theoretical basis for X-ray spectroscopy in the TEM, and the interpretation of spectra to quantify the composition of nanometer-scale volumes of a specimen. “Even as a high school student, Nestor showed a keen interest in the use of computer technology, and another hallmark of his career was the interfacing

of computers and information technology to the electron microscope. A signature accomplishment was the development of what Nestor called the ‘telepresence microscopy collaboratory,’ which enabled the control of microscopy equipment over the Internet, as well as the use of Internet technology for remote collaboration.”

His outreach extends to aspiring scientists. Zaluzec is a member of the Illinois Junior Academy of Science and participates in state and regional science fairs for middle and high school students. Through Argonne he currently hosts the website MicroScope (<http://bit.ly/2wMAIj6>), which gives viewers the chance to use a “virtual microscope” to identify objects at high magnification.

“I do what I do because not only is it important to solve vexing problems in today’s complex and technologically demanding society, but it’s also admittedly fun. I get a little bit of a physical high in the sense that I’ve answered a question and solved a problem. I feel really good about it! And then, it’s like, okay—what are we going to do tomorrow?” says Zaluzec, a youthful joy in his voice. “We need to pass this excitement on to the next generation of scientists.” ●



How small is small? A slide depicting various objects ranging from an ant and pollen grains [top left to right], semiconductors and engineered materials [center left to right], to nanocrystals and an array of atoms in a crystal [bottom left to right], as seen through various electron microscopes, along with a size resolution limit chart for four different “beam lines” Courtesy of Nestor Zaluzec

**MORE ONLINE**  
 Argonne User Facilities: [www.anl.gov/user-facilities](http://www.anl.gov/user-facilities)  
 Microscopy Society of America: [www.microscopy.org/index.cfm](http://www.microscopy.org/index.cfm)



## The Fall of a Technology Empire

By Amanda Cleary Eastep

The tech bubble of the 1990s had not yet burst when Marie Hicks graduated from Harvard University and began working as a system administrator. There, she made an observation that would eventually become the impetus for her critically acclaimed book, *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing*, published by MIT Press earlier this year. Although most of Hicks’s co-workers were male, all the supervisors were female—and from a different generation.

“Our bosses would tell us, ‘You don’t understand: Progress isn’t linear...there used to be more women in the field,’” says Hicks, now an assistant professor of history at Illinois Tech, whose course *Women in Computing History* is a first for the university. “It made me wonder why that gendered labor flip occurred.”

Hicks’s dissertation at Duke University, and later her book, explored how labor feminization and gendered technocracy caused Britain to go from being a world leader in computing to having a nearly extinct computer industry by the 1970s.

Hicks decided against focusing on the computing industry in the United States, despite its own rich history of both advancement and—sadly—discrimination. “Sometimes we learn more by going outside our comfort zone and out of the U.S. context and looking at what other nations have experienced,” says Hicks.

Britain’s computer workforce consisted of women who carried out the daily operating, input, and programming work required to make government and industry run. Although we understand the importance of programming today, in computing’s early days everything from punching to programming was viewed as low skill, and therefore considered “women’s work.” Hicks explains that this discriminatory mindset was one of both gender and class.

“The idea was that working with these machines in this technical way wasn’t intellectual, that it didn’t require that much brain power,” she says. Even the lowest-level workers, who punched data on cards, needed higher levels of education and skill than their employers imagined. Yet, they were paid little and treated poorly. When an eventual strike over their working conditions nearly shut down the British government, leaders began to more fully realize the importance of these jobs.

At the same time, programming was also becoming recognized as high-level, skilled work. “As computing rose in status, the work wasn’t changing, but women were getting pushed out of the field because of the belief that it was now important enough for men to do,” says Hicks.

By the 1960s and 1970s, the jobs were becoming male-identified and computing experienced a gender flip. Hicks explains that despite similar discriminatory practices, Britain’s computing industry was “a huge failure story” compared to that of the United States because the United Kingdom had a far smaller labor force to insulate it from the results of its bad decisions. The United States, however, was still negatively affected by discrimination.

“You see this in Margot Shetterly’s book *Hidden Figures*,” says Hicks, noting that Shetterly endorsed *Programmed Inequality*. “If the U.S. had allowed all of the incredible black women who were so important to NASA’s success to work to their full potential, we may well have been able to do better than eke out a late win in the space race. Think of all the many black women and men who never even got the chance to contribute because they could not work in their chosen fields.”

Hicks sees the U.S. as being just steps behind the U.K. historically and hopes that her book can provide a cautionary tale for the computing industry.

“I make a big point in the book about how discrimination wrecks economies. Britain and its waning empire—we’re kind of a redux. It would be smart for us to look at the similarities,” she says.

Hicks’s second book shifts focus to the transgender population in the U.K. in the 1950s through the 1970s and how large state systems, such as health care and welfare, form people’s identities. This happens not only by the way these systems will and won’t describe people on official documents, for example, but also by how those affected push back against discrimination. ●

**MORE ONLINE**  
 BBC Radio 4 “Woman’s Hour” Interview: <http://bbc.in/2vuZo90>  
 Times Higher Education Book Review: <http://bit.ly/2tjktHz>  
 Chicago INNO article: “This Illinois Tech Class Puts Women Back in Computing History”: <http://bit.ly/2j0DK76>

PHOTOS: COURTESY OF MARIE HICKS

# The People Will Prevail

By Marcia Faye

**F**OR CAROLYN SHAPIRO, Chicago-Kent College of Law associate professor, the words “we the people”—the same words that begin the United States Constitution—seem to define her life.

Even before she entered law school, Shapiro knew that she wanted to assist people in ways that were impactful and lasting. She first thought about a career in social services. After college she worked for Jewish Vocational Services and for what is now Illinois Action for Children, advocating for affordable quality child care for low-income and working families. As she became more involved in advocacy and policy issues, she pursued both a master’s degree at the University of Chicago Harris Graduate School of Public Policy and a juris doctor at the University of Chicago Law School, which is where she discovered her passion for constitutional law.

“I’m interested in the commitments we make to each other as citizens of the same country, as members of the same polity,” she says. “I’m interested in how we navigate our differences.”

After graduation she clerked for Supreme Court of the United States Associate Justice Stephen G. Breyer and also former Chief Judge Richard A. Posner of the U.S. Court of Appeals for the Seventh Circuit, who retired in 2017. She says that her year clerking for Breyer, who was then relatively new to the Supreme Court, gave her much insight on what makes for a good justice and how the U.S. Constitution should serve as the country’s “rules of the road.” Shapiro returned to Chicago as a Skadden Fellow in public interest followed by a job with the civil rights firm Miner, Barnhill & Galland, where she became acquainted with fellow attorney and state senator Barack Obama.

After spending one year as a visiting professor at Chicago-Kent, Shapiro became a tenure-track faculty member in 2004. Even within the classroom setting, she continued her efforts for the people. Shapiro says that one reason she has been so fortunate throughout her career path is

that most of her jobs have allowed her to have a meaningful personal life.

“As a law professor I try to be a role model for people who have families,” she says, describing her life with teenage sons, Jonah and Gabriel, and her attorney husband, Joshua Karsh. “I care a lot about issues related to work-family balance and have taught courses in this area because we as a society are still struggling with it.”

In 2010 Shapiro founded the Institute on the Supreme Court of the United States (ISCOTUS) to promote education and dialogue about the Supreme Court. ISCOTUS, which Shapiro now co-directs with her Chicago-Kent colleague Christopher Schmidt, regularly partners with Constitutional Rights Foundation Chicago to provide programming for high school students and teachers. It also hosts speakers and symposia at Chicago-Kent. Shapiro is now a recognized scholar and Supreme Court expert whose opinions and comments are featured in both local and national media outlets, from WTTW’s *Chicago Tonight* to the *Washington Post*. She also blogs on *ISCOTUS now* and contributes to the Huffington Post as well as the *American Constitution Society Blog*.

**“As a law professor I try to be a role model for people who have families.”**

—Carolyn Shapiro

“The Supreme Court is completely relevant today, incredibly important,” says Shapiro, noting the court’s involvement in the travel ban initiated by President Donald J. Trump and the ruling of marriage equality as the law of the land as required by the 14th Amendment.

“They approach these cases with a philosophy about the Constitution, how to balance competing interests and how to balance aspects of the Constitution that are in tension with each other. They also consider how to resolve ambiguity in the Constitution, of which there is plenty, and how to apply very general constitutional language to circumstances that nobody

could have possibly anticipated when it was written or the amendments were written.”

This past March ISCOTUS held a program for high school students that featured the case of the U.S. Patent and Trademark Office (USPTO) vs. Simon Tam of the Asian-American band The Slants, who had petitioned the court to allow the band to register the name. The USPTO denied the request because it maintained that the name was derogatory to “persons of Asian descent.” Tam spoke to the students via Skype about why keeping the name was important to him. (In June the court ruled in favor of Tam.) This fall Shapiro also arranged for Supreme Court Associate Justice Elena Kagan—whom Shapiro describes as being an inspiration and “the best teacher I’ve ever had”—to speak at Chicago-Kent.

Kagan’s visit caps Shapiro’s return to the university after a two-and-a-half year hiatus (2014–16) as Illinois solicitor general, a position that allowed her to maximize her public service efforts. She reviewed the civil appeals and criminal appeals briefs filed in the Illinois Supreme Court, the U.S. Court of Appeals (Chicago), and the U.S. Supreme Court by the more than 40 attorneys representing the state. She herself filed briefs and argued on behalf of the state in the U.S. Supreme Court, the Illinois Supreme Court, and both state and federal courts of appeals. In 2017 Shapiro was also honored by the Chicago Lawyer Chapter of the American Constitution Society for Law and Policy with an Abner Mikva Award for advancing the progressive mission of the organization.

“In addition to her extensive depth of knowledge of the law and exceptional experience with the U.S. Supreme Court and the Seventh Circuit Court of Appeals, Carolyn brought a strong passion for public service to our office,” says Illinois Attorney General Lisa Madigan. “I was confident the people of Illinois would greatly benefit from her expertise and dedication to seeing that Illinois law was upheld for all residents.”●



PHOTO: MICHAEL GOSS

## CLASS NOTES

## 1940s

**Bud Mann** (ME '46), Shelby Township, Mich., enjoyed 50 years as a research engineer at Chrysler Corporation, then retired and began writing historical fiction stories based on his family's journey from New York to western Michigan in the early 1800s. Two books have been published and the third is in process.

**John Basic** (ME '47), Marco Island, Fla., is working with colleagues to produce an efficient hydraulics energy-generating system.

**Jurgen Schmidt** (BE '48), Huntington Beach, Calif., was inducted into the 2015 Huntsman World Senior Games Hall of Fame in St. George, Utah. Schmidt has been a swimmer for most of his life as a lifeguard, an American Red Cross swimming instructor, and a member of the United States Navy. He has participated in the Huntsman World Senior Games for 18 years and has won many events, collecting more than 100 medals (96 of them gold). Schmidt holds records in the 85-89 age group in the 200-, 800-, and 1,500-meter freestyle. He also holds records in the 90-94 age group in the 200-, 400-, and 800-meter freestyle. He is now a spokesman for Speedo, was featured in the online video campaign "Fueled by Water," and has been featured in *USA Today*.

**Eugene Sevin** (ME '49, Ph.D. UNK '58), Lyndhurst, Ohio, started a blog featuring former Armour Research Foundation/IITRI colleagues as a way to keep in touch. Those interested in joining or participating can log in to [www.graybeardblog.com](http://www.graybeardblog.com) using the password Gbeard\_ or send a note to [esevin@ameritech.net](mailto:esevin@ameritech.net).

## 1950s

**Boris Stern** (CHEM '50), Tampa, Fla., was awarded a 2017 Légion d'Honneur medal for his service in World War II.

**Robert Moss** (MET '56), Palo Alto, Calif., has been active in community affairs by preventing unwanted development, gaining more support for local libraries as a member of the City of Palo Alto Library Advisory Commission, helping to pass a \$76 million library construction bond, and helping to stop office spaces from replacing retail in commercial areas citywide.

**William Kusner** (EE '59), Sedona, Ariz., served as a U.S. Air Force lieutenant, worked for Bell Labs, and was an engineer and district manager at Illinois Bell. He retired in 1995 and relocated to Sedona the following year. He married his wife, Justine, in 1966 and they have two children, Ruth and Jon, and two grandchildren, Luke and Lucie. He is director at the Arizona branch of The Nature Conservancy, has volunteered at Friends of the Forest, and is chairman of Keep Sedona Beautiful, Inc.

## 1960s

**Russell Notar** (BE '60, M.S. '60), Lewes, Del., published the memoir *Journeys of Hope and Reality* describing his international work in sustainable development on behalf of cooperatives in Indonesia, El Salvador, Niger, Mali, and other places in the 1990s. He conducted a book signing in August in Rehoboth Beach and has received positive feedback from the Peace Corps and the U.S. Agency for International Development.

**Walter Goldstein** (CHE '61), Las Vegas, developed a mathematical model to aid diabetics by predicting blood glucose values based on exercise, food intake, and medicinal data.

He has also applied knowledge in engineering and sciences to aid resolution of legal cases as an expert witness.

**Duane Anderson** (ARCH '62), Summerfield, Fla., worked for Ludwig Mies van der Rohe until his death in 1969. Anderson has designed 45 Lutheran churches across the country and considers Open Bible Lutheran Church in The Villages, Florida, as the most beautiful. He and David Swan (ARCH '62) have worked on many projects together.

**Howard Rotblat-Walker** (PS '65), Bristol, R.I., spoke to a meeting of the Photographers' Guild of the Newport Art Museum about his interests, which he developed during his undergraduate years. Since retiring as an Oracle database specialist for the State of Rhode Island, Rotblat-Walker has widely exhibited his award-winning images in southern New England.

**Michael O'Rourke** (CE '68), Clifton Park, N.Y., and his wife, Karen, are conducting research on roof snow loading. He is a structural engineering faculty member at Rensselaer Polytechnic Institute.

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

## 1970s

**Scott Diamond** (LAW '71), Decatur, Ill., is retiring after more than 36 years as a Macon County judge. During his time on the bench, he presided over civil, criminal, and family cases.

**Alexander Kovnat** (MAE '71), West Bloomfield Township, Mich., retired in July from the U.S. Army Tank-Automotive Command in Warren, Mich., where he has worked since 1977. He has two sons and one grandson (and as of press date, was expecting another grandchild).

**Jon Suzuki** (Ph.D. BIOL '71), Bellevue, Wash., received the Alumnus of the Year Distinguished Achievement Award from the University of Maryland School of Dentistry.

**Charles Haas** (BIOL '73, M.S. ENVE '74), Philadelphia, received the Dr. John L. Leal Award from the American Water Works Association for contributions to the field of water and public health. He also received the Athalie Richardson Irvine Clarke Prize from the National Water Research Institute for pioneering and applying methods to assess and minimize health risks caused by exposure to disease-causing microorganisms in water and wastewater.

**Nestor Zaluzec** (PHYS '73), Bolingbrook, Ill., an Argonne National Laboratory senior scientist, has been awarded the 2017 Distinguished Scientist Award for Physical Sciences by the Microscopy Society of America [see story on pages 16-18].

**Robert Bernardi** (LAW '74), Mount Laurel, N.J., has retired from his career as Burlington County prosecutor. He was one of the longest-serving county prosecutors in state history.

**John Brophy** (ME '78), Santa Clarita, Calif., developed two Phase I concepts, greenlighted by NASA, that could set the stage for interstellar space travel. The Interstellar Precursor Mission, headed by Brophy, would see the construction of an orbiting 100-megawatt laser array with a 10-km diameter. The array would convert the laser power

into electrical energy, generating enough power to enable long-distance travel of a conventionally sized spacecraft on a reasonable timescale.

**Vincent Moreth** (LAW '78), Carlinville, Ill., has opened his own law office after 24 years as Macoupin County state's attorney.

## 1980s

**Brad C. Krygier** (MGT '80), Winter Park, Fla., was named manager of managed care finance at Memorial University Medical Center in Savannah, Georgia.

**Mathai Varghese** (MATH '81), Adelaide, South Australia, has been awarded an Australian Laureate Fellowship for the Simons Center for Geometry and Physics program Mathematics of Topological Phases of Matter.

**William Konefes** (ME '86), Fort Gibson, Okla., was recognized for his service to the Powder River Basin (PRB) Coal Users' Group Board of Directors at the PRB Coal Users' Group Annual Meeting.

**Mary Tudela (née Aguina)** (M.B.A. '88), Lihue, Hawaii, was the inaugural honorary degree recipient and commencement speaker at Pacific Oaks College and Children's School in May.

**Jean Rogers** (Ph.D. ENVE '89), Oakland, Calif., is a member of the Inaugural Sustainability Accounting Standards Board.



**James Walton** (AE '89), Crested Butte, Colo., is president and chief executive officer of TRAILSOURCE.COM, Inc. He provides overall strategic management for the

suite of sports-travel-oriented websites, including [trailsources.com](http://trailsources.com), [snorkeldiving.com](http://snorkeldiving.com), [myriverguide.com](http://myriverguide.com), and [snowboardguides.com](http://snowboardguides.com). Since 1997 he has provided direction for content acquisition, web development, search marketing, and financing.

## 1990s

**Eileen O'Neill Burke** (LAW '90), Chicago, was awarded Alumna of the Year by the Student Bar Association at the 2017 Bar & Gavel Awards Ceremony. She invited a group of students to observe oral arguments in two criminal cases during Alumni-Student ConneCKtions Week, and was elected to the Illinois Appellate Court in November 2016.

**John Fanelli** (M.S. CS '92), Alameda, Calif., was a speaker at the Association of Strategic Alliance Professionals Tech Partner Forum. Held in June the one-day executive-learning event was called Collaborate at the Speed of Digital Transformation.

**Maribeth Anderson (née Meehleis)** (M.P.A. '94), Chicago, is the regional affairs vice president candidate for the American Society of Safety Engineers.

**Gary Grant** (LAW '94), Chestertown, Md., is vice president for development and chief

development officer at Florida Institute of Technology.

**John Ladd** (LAW '94), Alexandria, Va., served as chief counsel of the Subcommittee on the Constitution of the U.S. House of Representatives and continues to represent clients in telecommunications, higher education, and health care. He helped to direct the congressional and regulatory efforts involving the acquisition of Sprint by SoftBank in 2013 and to resolve the Medicaid disproportionate share hospital funding issues for safety net hospitals in the nation's capital. At Carmen Group, Inc., Ladd also led Hurricane Katrina federal funding relief efforts for four Historically Black Colleges and Universities located on the Gulf Coast.

**Daniel McCabe** (LAW '94), Chicago, joined Greensfelder, Hemker & Gale as an officer in the Litigation Group.

**Tracy Chajewski** (MATH '98), Poway, Calif., is a proud survivor of epithelioid hemangiothelioma and thyroid cancer.

**Mark Cumba** (LAW '98), San Diego, received the Stetson University College of Law Young Coach of the Year Award. He coaches trial advocacy at Thomas Jefferson School of Law.



Alumni had exclusive access to a pre-event breakfast before joining in to build a LEGO Block City at the popular annual summer event. Photo: Michael Goss

## 2000s

**Carl Schultz** (LAW '00), La Grange Park, Ill., established the law firm Holy & Schultz in Naperville. The firm focuses on civil litigation and trial work, particularly in the areas of professional malpractice, employment law, health care, general liability, and commercial litigation.

**Angelic Young (née Little-Turner)** (LAW '01), Hyattsville, Md., has been promoted to director of national action plans for Inclusive Security, where she helps countries develop strategies to implement their commitments to women, peace, and security. Young has also designed and led workshops for the U.S. Department of State on integrating a gender perspective into foreign policy, and on development and diplomacy in the Philippines and Myanmar. With her recent trip to Moldova, she reached her goal of traveling to 40 countries by the age of 40.

**Ravikiran Madduri** (M.S. CS '02), Naperville, Ill., a researcher at Argonne National Laboratory, was recognized by the office of the U.S. Secretary of Energy for helping to predict precise therapies for specific cancer patients.

**Crystal Sargent (née Watkins)** (M.S. MCOM '02), San Diego, is founder and

chief executive officer of Invested Advisors, a management and consulting company in the San Diego area.

**Ankur Jain** (CS '03), New Delhi, India, is founder of Bira, a craft beer company launched in 2015.



**Julie Michiels** (ARCH '03), Chicago, has been promoted to associate principal at Perkins+Will.

**Barbara Flores** (LAW '04), Chicago, was reappointed by Governor Bruce Rauner and confirmed by the Illinois Senate to serve another three-year term as an arbitrator at the Illinois Workers' Compensation Commission. She was first appointed by former Governor Pat Quinn in 2011. Flores also serves with various organizations focusing on diversity, education, and student mentorship.

**Alexandrine Kinnebrew** (M.Des. '04), Palo Alto, Calif., is head of strategy

at Waggl, a crowdsource employee-feedback company for organizations. She will define and scale Waggl's business through innovative partnerships and positioning, as well as strong internal processes to support rapid growth.

**Matthew Stanton** (LAW '04), Gurnee, Ill., was elected to serve a six-year term on the College of Lake County Board of Trustees.

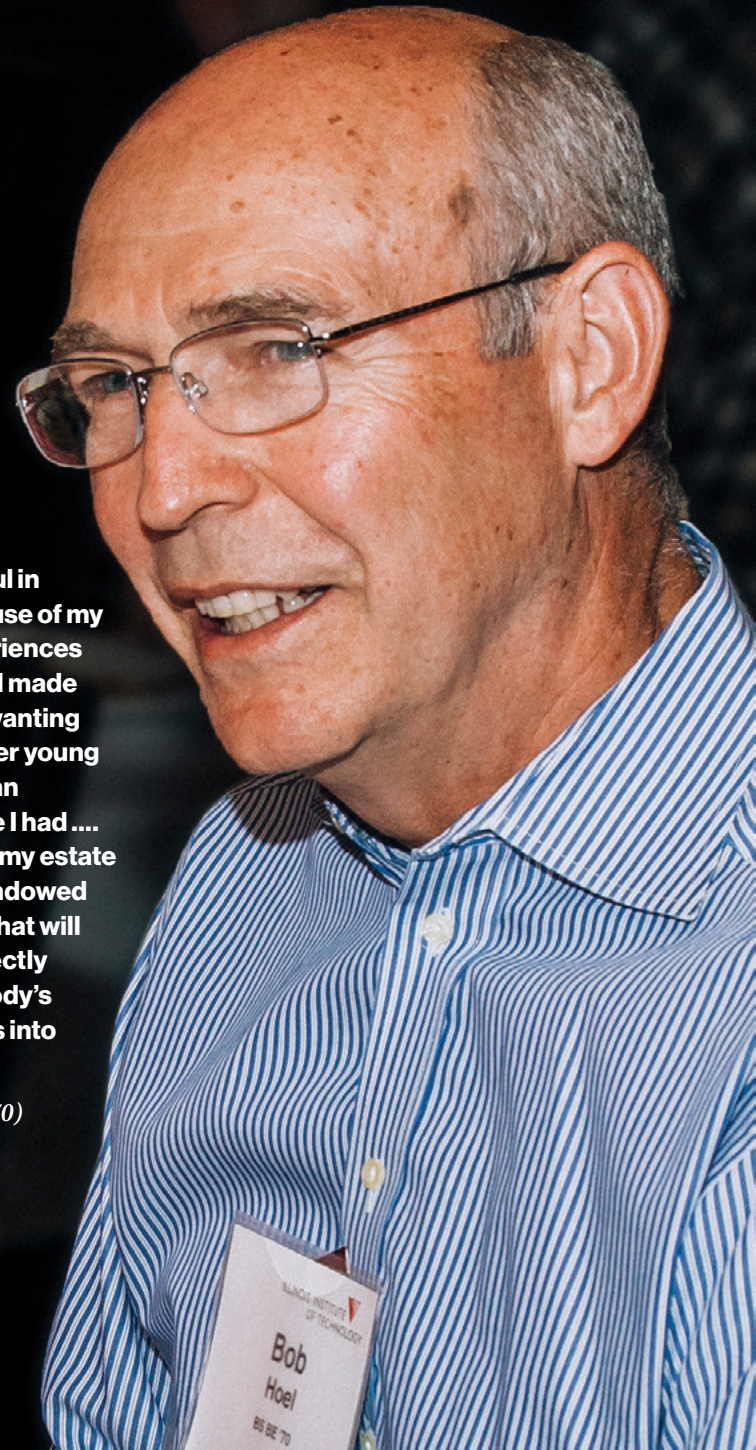
**Richard Duncan** (AE '05, M.S. FIN '07, Ph.D. MAE '11), Williamson, W.V., was appointed superintendent of Roane County Schools.

**Fiona McEntee** (LAW '07), Chicago, is an immigration attorney who heads her own practice, McEntee Law Group. She is a member of the O'Hare International Airport team of lawyers assisting refugees and immigrants and of a litigation team challenging Executive Order 13780/Travel Ban 2.0 in the Northern District of Illinois. Named to the *Super Lawyers* "Illinois 2017 Rising Stars," McEntee has received international recognition for her work in immigration, including being named to the *Irish Voice's* "Irish Legal 100" and the *Irish Echo's* "Top 40 Under 40." Originally from Dublin, McEntee resides in Chicago's Lakeview neighborhood with her husband and their two young children.



Alumni, families, and guests took part in a guided walking tour at the annual Morton Arboretum Family Day. Photo: Michael Goss

# A Legacy of Transformative Education



**“I was successful in business because of my variety of experiences at Illinois Tech. I made my estate gift wanting to facilitate other young people having an opportunity like I had .... The purpose of my estate gift will be an endowed scholarship ... that will allow me to directly impact somebody’s life generations into the future.”**

—Bob Hoel (BA '70)

You could say **Bob Hoel (BA '70)** became a whole new person at Illinois Tech. As an introverted first-year chemistry student, he discovered that he loved people while working with the Student Government Association, and he was eventually elected student body president. That experience led him to a successful 34-year career in sales and management. Having retired early, Bob can now be found volunteering in the community and advocating for different causes.

One of his causes is Illinois Tech, so he has included the university in his will, becoming a member of the Gunsaulus Society. The Gunsaulus Society honors those who have arranged for estate gifts to the university with special events and recognition.

### Benefits of a Real Estate Gift in Your Will or Trust:

- Help ensure Illinois Tech’s future.
- Leave a legacy of giving back.
- Give without affecting your current cash flow or standard of living.
- Retain control of your assets during your lifetime.
- Potentially reduce income tax and/or estate tax.
- Direct your estate gift to a particular purpose.\*

If you have named Illinois Tech as a beneficiary in your estate plan through your will, trust, IRA, or retirement plan, please let us know so that we may acknowledge your generosity and include you in the Gunsaulus Society.

Visit [iit.edu/giftplanning](http://iit.edu/giftplanning) to learn how you can benefit from these giving methods and more. Contact Dean Regenovich, Office of Gift Planning, at [dregenovich@iit.edu](mailto:dregenovich@iit.edu) or 312.567.5018.

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

Gunsaulus | SOCIETY

**Jordan Powell** (LAW '07), Chicago, opened the firm Powell Law Offices.

**Brad Schneiderman** (LAW '07), Chicago, was promoted to partner at Anderson, Rasor & Partners.

**Judd Fineberg** (LAW '09), Chicago, joined Dussias Skallas Wittenberg Koenigsberger as an associate.

**Ahmed Hassan** (M.A.R. ARCH '09, Ph.D. '17), Chicago, was awarded the 2016-17 Architectural Research Centers Consortium King Student Medal for Excellence in Architectural and Environmental Design Research for his doctoral research project entitled “The BioEnclos© Façade Panel: From Selection to Design, Assessment, and Beyond.” He aims to develop a façade panel composed of biopolymeric agri-based materials to replace the conventional curtain wall glass and aluminum panel in office buildings and to assess its impact on the environment and the building’s overall energy consumption, thermal performance, and structural stability.

### 2010s

**Theresa Lechner** (FLW '10), Chicago, joined Dussias Skallas Wittenberg Koenigsberger as an associate.

**William Lopez** (LAW '11), New York, N.Y., was named associate general counsel at Foley & Lardner.



**Tech-X honoree Howard Tullman of 1871** addresses technology and civic leaders of Chicago with words of gratitude and reflection on his life and career at the first annual Tech-X Award event. Photo: JM Photo Chicago



**2017 Global Gathering keynote speaker** and Illinois Tech Trustee Michael Graff (CHE '77) [left], chairman and chief executive officer of American Air Liquide Holdings, spoke with attendees Patrick Bourbon (M.S. FIN '00) [right] and Ramiro Atristain (M.B.A. '93) [center]. Photo: Matthieu Gauchet Photographe



**Alumni met with academics and leaders** from around the world this year at Illinois Tech’s second Global Gathering in Paris. Photo: Matthieu Gauchet Photographe



**Participants at the 2017 Global Gathering** heard from expert panelists on what Illinois Tech can do to address “Global Challenges of the 21st Century” in the areas of water, health and wellness, energy, and security. Photo: Matthieu Gauchet Photographe



**President Alan Cramb** [left], Illinois Tech Trustee Chris Gladwin [center right], and J. B. Pritzker [right] present Howard Tullman of 1871 with the first Tech-X Award. Photo: JM Photo Chicago



**Participants in the 10th Reunion** reminisced around the Class of 2007 bench, their student gift to Mies Campus when they graduated. Photo: Bonnie Robinson



**Members of the 50th Reunion** committee look on as President Alan Cramb addresses attendees at the Reunion Luncheon, which honored the 50th, 25th, 10th, and 1st reunion classes and members of the Golden Society, individuals who graduated more than 50 years ago. Photo: Bonnie Robinson



**Alumni enjoyed dining with featured speaker** Robert Brackett [far left], Institute for Food Safety and Health director, at a luncheon sponsored by the Gunsaulus Society, Illinois Tech's planned giving society. Photo: Michael Goss



**Students celebrated their Spirit Day 2017** Illinois Tech pride alongside alumni at the Homecoming Carnival.

Visit [bit.ly/alumni-event-photos](http://bit.ly/alumni-event-photos) to see more event photos from the Alumni Association. PHOTOS: COURTESY OF THE OFFICE OF INSTITUTIONAL ADVANCEMENT

**Kwame Mensah** (LAW '11), Gaithersburg, Md., was promoted to senior patent attorney for AstraZeneca, where he manages all issues related to the company's immunology portfolio. Previously he served as in-house counsel for AstraZeneca, and as patent agent and associate at McDonnell, Boehnen, Hulbert & Berghoff.

**Charles Ventura** (M.A.S. MAE '14), Chicago, is chief executive officer of Hemotek Medical, Inc.

**Anne Cooper** (LAW '15), Chicago, is an associate at Fragomen, Del Rey, Bernsen & Loewy, where she assists large companies and their employees with a variety of U.S. immigration matters. Previously she

served as a law clerk at Fragomen's New York and Chicago offices.

**John Krzyminski** (LAW '15), Orland Park, Ill., recently relocated to Orlando, Fla., and joined the commercial real estate company Cite Partners as a retail investment sales director.

**Meriem Sakrouhi** (ARCH '16), Chicago, a junior architect at IBI Group, won second place overall and first place as the Community People's Choice Award (Architecture) for her app MAPALL in the FordMobilize New York Challenge.

**Emma Ghariani** (BA '17), Chicago, is a construction project manager with Blinderman Construction after completing a two-year internship with the company.

**Timothy Henry** (ME '17), Chicago, was commissioned as a second lieutenant in the U.S. Army. Assigned to the U.S. Army Corps of Engineers, he is part of the Strike Brigade of the 101st Airborne Division. Henry was designated a Distinguished Military Graduate for ranking in the top 20th percentile of the national order-of-merit list. He married Gillian O'Byrne in June.

**Niharika Karia** (M.A.S. DSC '17), Chicago, is working for AspenTech in Boston, aiming to create a world with zero breakdowns, zero casualties, and zero environmental hazards through the use of machine learning.

**Leana Osmer** (AE '17), West Hills, Calif., appeared in the *Los Angeles Daily News* (May 14) article "For This LA Mother and Daughter, Work Is Rocket Science and Every Day Is Mother's Day," about how Osmer and her mother, Diane, are both scientists employed at Aerojet Rocketdyne.

**Spencer Peterson** (ME '17), Wheaton, Ill., was commissioned as a second lieutenant in the U.S. Army in May. Assigned to the Transportation Corps, he is part of the 101st Sustainment Brigade. Peterson married Rachel Steeves in May.

**Stephen Yonke** (AE '17), Wheaton, Ill., was commissioned as a second lieutenant in the U.S. Army in May and is a cyber officer. Yonke was designated a Distinguished Military Graduate for ranking in the top 20th percentile of the national order-of-merit list.

## ALUMNI EVENTS

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

### ILLINOIS TECH IS COMING YOUR WAY

The Illinois Tech Alumni Association is a community of thought leaders, designers, engineers, scientists, architects, and so much more. We need your help to keep the community thriving outside of our historic Chicago campus. If you want to learn more about how you can help the Illinois Tech Alumni Association continue to connect alumni, students, and friends of the university, please join us for an upcoming alumni planning meeting and social in your city. Visit [alumni.iit.edu/calendar](http://alumni.iit.edu/calendar) for an up-to-date listing of events in your area. In the coming months, we will visit:

**Atlanta**  
**Detroit/Ann Arbor**  
**Minneapolis**

Don't see your city listed? Contact Zach Rus, director of alumni engagement and giving programs, at [zrus@iit.edu](mailto:zrus@iit.edu) to learn more.

### DuPage Area STEM Expo Alumni Program

**Saturday, February 24, 2018**  
*Illinois Tech Rice Campus*

Families are invited to the second annual Dupage Area STEM Expo event, hosted by the School of Applied Technology. Your school-aged children will have a blast at this hands-on exploration of science, technology, engineering, and mathematics!

**Save the Date!**  
**Mies Birthday Party**  
Mark your calendars to celebrate the annual birthday party for Ludwig Mies van der Rohe with the Mies Society on Thursday, March 29, 2018, in S. R. Crown Hall.

**SAVE THE DATE!**

**ALUMNI AWARDS 2018**

Save the date for the 2018 Alumni Awards luncheon on Friday, April 20 in Hermann Hall. Plan to be on Mies Campus to help us celebrate our innovative and exceptional alumni.

**ILLINOIS TECH ALUMNI ASSOCIATION**

### CONNECT TODAY

Are you connected to the Alumni Association? When you update your mailing address, phone number, and email, you ensure that you receive up-to-date information from your alma mater, including event invitations, networking opportunities, and university news. Visit [alumni.iit.edu/information-update](http://alumni.iit.edu/information-update) to update your contact information today.

Members of the alumni online community enjoy extra perks such as access to the alumni directory—perfect for networking!

Visit [alumni.iit.edu/sign-up](http://alumni.iit.edu/sign-up) to join today.



Judson Althoff (ME '95), Mercer Island, Washington

## Creating His Own Luck

Judson Althoff's late mother, a high school calculus teacher and celebrated debate coach in his small hometown of Wooster, Ohio, inspired him to embrace mathematics and sharpen his persuasive skills. Althoff (ME '95) says, more importantly, she presented him with a gift that charted his success in the many directions his life has taken him.

"[My work ethic] is probably the single biggest thing she left behind for me; this notion that the harder you work, the luckier you get," he explains. ¶ Althoff shared highlights from his childhood, his time at Illinois Tech, and his rise to Microsoft executive vice president for worldwide commercial business at a talk for students, faculty, and staff on Mies Campus when he visited the university to accept the Alumni Association's 2017 Professional Achievement Award. ¶ He told the group that after graduation he received a surprising surplus of computer science job offers and, with a growing family to consider, accepted a position with a Canadian startup that outfitted mainframe systems with Internet capabilities. Althoff said he began to embrace all things high tech, teaching himself programming and delving into the intricacies of every computer the company serviced. After a few years, he felt he was ready to join a company "that could move the needle" and persuaded a recruiter to get him an interview for a position answering sales calls at Oracle in Chicago. ¶ "I said this is what life is handing me right now and I'm going to make the very best of it. I jumped in and answered the phones at Oracle in a little cube with three other guys," he shared with his audience. "I worked my way up to become

one of the youngest senior vice presidents the company has ever had. Four years ago Kevin Turner [former Microsoft chief operating officer] recruited me to run Microsoft North America." ¶ In 2016 Microsoft Chief Executive Officer Satya Nadella named Althoff to his current role leading Microsoft's Worldwide Commercial Business. Althoff predicts that digital transformation—which he defines as "a new wave of business innovation that's fueled by cloud technologies like artificial intelligence, augmented reality, and data science"—will be the hot topic in technology for at least the next decade. Althoff shared stories of customers, such as Land O' Lakes and Ecolab, that are partnering with Microsoft on their digital transformation journey. ¶ Althoff told the students in the audience that while the university will academically prepare them for this next advancement in technology, they would be wise to remember the deeper lessons that comprise their education. ¶ "They're come a day when you're not the best programmer anymore and your differential equations aren't quite what they used to be," says Althoff. "But those fundamentals—how you problem solve, how you work together, how you collaborate for a greater end—those will stick with you. That's what IIT taught me." —*Marcia Faye*

PHOTO: SCOTT BENBROOK



## Homecoming Weekend 2017



From reunion gatherings to athletics events to the Homecoming Carnival, alumni celebrated their alma mater at festivities the weekend of September 15 and 16 on Mies Campus.





VOLUNTEER NEWS



PHOTO: MATHIEU GAUCHET PHOTOGRAPHE

## Illinois Tech Goes Global

The mark of an Illinois Institute of Technology education stretches throughout the world, and alumni around the globe demonstrate its influence every day. Last fall, alumni in Europe joined together to form the Europe Alumni Association.

One of the Europe Alumni Association's main objectives is to connect international alumni and renew in them the sense of belonging they felt when they were students in Chicago. "That amazing experience in Chicago connected us for life, but European alumni tended to lose sight of one another when they went back to their home countries," says Charlotte Leroy (LL.M. '11) [above], Europe Alumni Association president. To remedy this, Leroy helped to establish the association with the intent to encourage European Illinois

Tech alumni to meet, network, and share their experiences. "We want to help them build upon the efforts they made while they were studying in Chicago and keep on developing their networks and careers."

Though the organization is not even a year old, the members of the Europe Alumni Association assumed the huge undertaking of hosting the second Global Alumni Gathering, held in Paris from June 30 through July 2, 2017.

The event's theme focused on global challenges—energy, health and wellness, security, and water—chosen because they mirror Illinois Tech's Engineering Themes program, which explores areas that alumni, faculty, and partner schools can impact the entire global population.

"Global challenges involve everyone, regardless of where they come from or the field they studied or work in," says Leroy. "It was a unifying theme that allowed for rich debates between engineers, architects, and lawyers from different countries—few other themes would have been that universal and allowed us to cross the lines so easily." [Visit [alumni.iit.edu/paris-2017](http://alumni.iit.edu/paris-2017) to view conference materials and photos from the event.]

The last Global Alumni Gathering was held in 2014 in Chicago, and the next will be in 2019 at a location yet to be determined. In the meantime, connect with the Alumni Association through social media at [alumni.iit.edu/connect](http://alumni.iit.edu/connect) or join the online community at [alumni.iit.edu/login](http://alumni.iit.edu/login) for information about local chapter involvement and alumni gatherings in your area.

**Interested  
in getting involved?  
Volunteers are still needed  
to lead chapters in various  
European countries. Contact  
Charlotte Leroy at [contact@  
alumni-iit.eu](mailto:contact@alumni-iit.eu)  
for more information.**

### PASSINGS

#### ALUMNI

**Edward Horn**  
EE '40  
Hot Spring Village, Ark.

**Gerald Golden**  
ME '43  
Lac Du Flambeau, Wis.

**Albert Wiltjer**  
ME '44  
Sedalia, Mo.

**Stanley Cervenka**  
ME '45  
Burien, Wash.

**Robert Lichtmann**  
CHE '45  
Riverside, Calif.

**Lester Mandelstein**  
FPE '45  
Wilmette, Ill.

**Theodore Shapin**  
EE '48  
Orange, Calif.

**Warren Sommers**  
EE '48  
West Hartford, Conn.

**George Andrews**  
ME '49, M.S. '54  
Los Angeles

**Lawrence Berg**  
IE '49  
Naperville, Ill.

**L. Charles Gutberlet**  
CHEM '50  
Wheaton, Ill.

**Otto Hausknecht**  
CHE '50  
Cincinnati

**Victor Kaufman**  
ARCH '50  
Buffalo Grove, Ill.

**Edward Lever**  
MET '50  
Naples, Fla.

**Melvin Orloff**  
IE '50  
Mokena, Ill.

**Donald Ward**  
EE '50  
Glen Ellyn, Ill.

**Marshall Appel**  
IE '51  
Granada Hills, Calif.

**George Aravosis**  
ME '51  
Elmhurst, Ill.

**Leonard Bloomquist**  
EE '51  
Merritt Island, Fla.

**Donald Perreault**  
EE '51  
Thousand Oaks, Calif.

**Jack Summers**  
CE '51  
Orland Park, Ill.

**Alfons Weber**  
PHYS '51, M.S. '53, Ph.D. '56  
Gaithersburg, Md.

**Raymond Reip**  
ME '52  
Clarendon Hills, Ill.

**Henry Berolzheimer**  
IE '53  
Forest Hills, N.Y.

**Carl Grant**  
FPE '54  
Des Moines, Iowa

**Maurice Webster**  
DSGN '54, M.S. MT '70  
Santa Fe, N.M.

**Harry Westhaus**  
FPE '56  
Livonia, Mich.

**Edward Godbersen**  
PSYC '57  
Eugene, Ore.

**Curtis Parker**  
LAW '57  
Glenview, Ill.

**Gunars Bilsens**  
EE '58, M.S. '60  
Scottsdale, Ariz.

**John Trytko**  
IE '58  
South Bend, Ind.

**Charles Fox**  
PHYS '59  
Redmond, Wash.

**Robert Overmyer**  
M.S. PHYS '59  
Brandenton, Fla.

**Allen Shiner**  
ME '59  
Chicago

**Alan Schwaighart**  
ME '60  
Crest Hill, Ill.

**Lawrence Rice**  
UNK '61  
Gilbert, Ariz.

**Donald Farquhar**  
ME '62  
Villa Park, Ill.

**Robert Flowers**  
PHYS '62, MATH '66  
Ballwin, Mo.

**Jack Goodin**  
IE '62  
Hoffman Estates, Ill.

**George Grady**  
FPE '62  
Cuba, Mo.

**Richard Lee**  
ME '63  
Clearwater, Fla.

**Al Sicherman**  
EE '63, Minneapolis, was a notable food writer, author, and humorist who had worked at what is now the *Minneapolis Star Tribune* for nearly 40 years. After a short career in electrical engineering, he studied journalism and obtained his first job in the field as a copy editor in 1968. Besides writing regular columns and food articles, Sicherman authored the books *Caramel Knowledge* and *Uncle Al's Geezer Salad*.

**Ralph Wilson**  
ME '63  
Fort Atkinson, Wis.

**James Tait**  
CE '64  
Doylestown, Penn.

**Ronald Bridge**  
ME '65  
Chicago

**George Kaminski**  
FPE '67  
Woodridge, Ill.

**Daniel Mahoney**  
EE '67  
Watertown, Conn.

**Milton Gordon**  
Ph.D. MATH '68, Santa Ana, Calif., fourth president of California State University, Fullerton, was the longest-serving president in the history of the Fullerton campus. During Gordon's more than 21-year tenure, the student body grew from 25,600 to greater than 36,000, and the number of academic degree programs increased from 91 to 104. The Fullerton campus also became more diverse. In 1990 students of color comprised 31 percent; when Gordon retired 12 years later that number had risen to 57 percent. The university also underwent its most ambitious construction period, adding 22 buildings during his tenure. Before joining CSU in 1990, Gordon held administrative and academic positions at several institutions of higher learning, including Sonoma State University, Loyola University Chicago, and Illinois Tech, where he served as a mathematics instructor.

**Thomas Russel**  
EE '69  
Norfolk, Va.

**Robert Cline**  
M.S. PSYC '70  
Port St. Lucie, Fla.

**Shyamnarayan Dixit**  
M.S. CHE '70, Ph.D. ENVE '76  
Clearwater, Fla.

**James Hendricks**  
BE '70  
Kankakee, Ill.

**Arthur Kleist**  
DSGN '70  
Jensen Beach, Fla.

**Michael Henshaw**  
LAW '71  
Harrisburg, Ill.

**David Steffensen**  
MATH '71  
The Villages, Fla.

**Stuart Thomas**  
M.S. PHOT '71  
Farmingdale, N.J.

**Michael Logan**  
M.A.S. PA '72  
Denver

**R. Ben Perkins**  
LAW '72  
Richmond, Va.

**John Bloniarz**  
MAE '74  
Schaumburg, Ill.

**Donald Dybowski**  
CHE '75  
Sylvania, Ohio

**Philip Hartmann**  
EE '75, M.S. '77  
Boulder, Colo.

**George Maniatis**  
M.S. DSGN '75  
Chicago

**James Dakuras**  
SOC '77  
Chicago

**Judy Koster**  
LAW '78  
Northbrook, Ill.

**Jack Vaughn**  
CE '79  
Centennial, Colo.

**Sheldon Rubin**  
LAW '80  
Eugene, Ore.

**Cesare Chiaradonna**  
EE '82  
Cleveland

**Jerome Dintenfass**  
M.S. CS '84  
Greensboro, N.C.

**Dean Westbrook**  
PS '85  
Chicago

**Kevin Estrada**  
ARCH '90  
New York

**Wendy Schauer Landwehr**  
M.S. CS '90  
Arlington Heights, Ill.

**Sharon Prayor**  
LAW '91  
Chicago

**Andrea Mastro Hoinacki**  
LAW '96  
New York

**Rebecca Payne (née Trump)**  
M.Des. '98, Brooklyn, N.Y., was considered a trailblazer of human-centered design in product and service innovation. After graduating from the Institute of Design, she worked for several years as a designer and researcher at IDEO, then co-founded the design firms Tenka (2000) and Nest (2004). Additionally, Payne helped to establish a design group within the Memorial Sloan-Kettering Cancer Center Department of Strategy and Innovation. Her husband, John Payne (M.Des.'98) also graduated from Illinois Tech.

**Michael McCullar**  
ME '00, Houston, devoted his life to his faith, his family, and innovation. While at Illinois Tech, McCullar met his future wife, Angelina Houston (ARCH '02), and joined the United States Air Force ROTC. After graduation, he continued in the officer corps and was honorably discharged as a captain in 2005. McCullar held positions at Logik Research, GeoControl Systems, and NASA Johnson Space Center before founding ExoPlanet Technologies in 2014. He was also working on his dream to design and build Macho Mengi, a unique space telescope system. Active in First New Hope Bible Church, McCullar also hosted the weekly radio show "Eyes of the Universe" on the Bridge of Light radio broadcast. McCullar was the recipient of the 2010 Outstanding Young Alumnus Award from Illinois Tech.

**Jolynne Andral**  
Ph.D. PSYC '01  
Lincolnwood, Ill.

**Amy Royer**  
M.S. REHB '04  
Sewickley, Penn.

**Lucas Daniel**  
M.Des. '05  
Riverside, Ill.

**Mathew Devendorf**  
ARCH '12  
Highland Park, Ill.

#### ATTENDEE/ NON-DEGREE

**Robert Benson**  
Chicago

**Abel Hayes**  
Kansas City, Mo.

#### FACULTY

**Jolynne Andral**  
Ph.D. PSYC '01  
Lincolnwood, Ill.

# Everything Old Is New Again

By Marcia Faye

This year marks the 80th anniversary of the Chicago Bauhaus. In 2019 the original Bauhaus will observe its centennial. Martin Thaler, Institute of Design studio professor, offered the course Bauhaus Futures this past spring in anticipation of the 100th anniversary. His students selected three Bauhaus classics—the Dell Wine Jug, the Wagenfeld Lamp, and the Cesca Chair—and reconsidered their underlying design principles then applied the social and cultural context for today. They began the workshop by examining the actual artifacts, which included a visit to the archival collections of the Art Institute of Chicago.

With its simple but sturdy tubular steel frame, the Cesca Chair, designed by Bauhaus master Marcel Breuer in the 1920s, used the new manufacturing technology of bending tubular steel. Working from Breuer’s maxim, “Let our dwelling have no particular style,” Thaler’s students Andrew Bates (DSGN 2nd year) and Isabel Dec (DSGN 2nd year) created the Basis Chair guided by their user research: People live in less space, move often, and combine home and work lives. Their result is a versatile piece of furniture that can function as either a chair or a table surface, ready to take users into the next 100 years.



Basis Chair, 2017

**MORE ONLINE**  
“The Many Lives of a Very Common Chair”:  
<http://nyti.ms/1vXJApV>

PHOTO: COURTESY OF MARTIN THALER



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**JOSHUA KAZANOVA**  
(MASTER OF CYBER FORENSICS AND SECURITY) CHICAGO, ILLINOIS

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- Follow Illinois Institute of Technology Alumni Association on social media for updates and videos throughout the day.**

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