SPRING 2017

IIT Magazine

ILLINOIS INSTITUTE OF TECHNOLOGY

ROLE MODELS AND MENTORS

Alumnae and Women Faculty Inspiring Future STEM Leaders

Drugs for Orphan Diseases
Model Statistician
Power of Pigments

Letter from the Provost and Senior Vice President for Academic Affairs

At a recent Student Government Association forum I attended with President Alan Cramb, a student asked what we are doing to bring more female students to campus. While there are many facets to this, I responded in terms of the role modeling, compelling curricula, and creative problem solving that take place here.

Out of the 21 schools in the Association of Independent Technological Universities, Illinois Tech is the only one with a provost, dean of engineering, and head of computer science who are women. Role modeling is a principal vehicle for demonstrating diversity; it complements important attributes of Illinois Tech—that we are an institution that values different ideas and multiple ways of being in the world.

Illinois Tech's long history as a progressive higher-education institution continues today with the appointment of numerous women leaders across the university who are at the apex of their fields. Each of them is also building the leading edge of disciplinary pedagogical innovation and practice. Prominent members of this academic STEM community include:

- Armour College of Engineering Dean Natacha DePaola, whose research investigates the role of physical mechanisms on cellular behavior, is chair-elect of the Global Engineering Deans Council. She will assume the role of GEDC chair this October. A signature program at Illinois Tech under her leadership—the Engineering Themes initiative focused on water, health, energy, and security—has transcended the ordinary focus on STEM by creating a novel cross-disciplinary culture shift within Armour College.
- Known for her path-breaking work on obesity and aging, Lewis College of Human Sciences Dean Chris Himes is leading new ways of thinking at the intersection of the humanities and technology. She encourages research and teaching that brings a cultural awareness to the rapid advances in technology we witness today.
- Eunice Santos, chair of the Department of Computer Science, has further developed a thriving data sciences program as well as helped initiate a new decision sciences program. The number of computer science professional society fellows and government-sponsored awardees has grown by 50 percent since Eunice joined the university in 2015. [*Read more about Eunice Santos on pages 12–13 of this issue*.]

Many senior-level women leaders are working to ensure that our students derive the very most from their academic experience. These include renowned faculty, chairs, associate deans and directors, and leadership staff. Sharon Bostick, our dean of libraries, is most proud of the library's incredibly high rankings in student satisfaction surveys. Through her own research she has developed the Library Anxiety Scale, a statistically valid instrument demonstrating the most significant factor in lowering anxiety is human interaction. This finding has informed staffing strategy.

All of our academic leaders give as much weight to the successes of their students, faculty, and units as they do their own personal trajectories. Given that as a framework, our academic leaders have exemplary relationships with outstanding senior administrators. Katie Stetz, vice provost for student affairs and dean of students, is a respected academic team member. Faculty call upon her office for advice about students and make referrals to her departments at an increasing rate every year. Collaboration with the Office of Academic Affairs has been key.

Under Betsy Hughes, vice president for institutional advancement, more than $400 million in philanthropic funding has been raised. This is critical in supporting the mission of Illinois Tech. Vice President for Finance and Administration Pat Laughlin has built a powerful and sustainable base to strengthen the university's finances. And alumnae such as Andrea Berry (CS '84) [*see letter on page 29*] and Susan Solomon (CHEM '77) inspire our students to create new STEM traditions even after they leave Illinois Tech.

The goal across all of our fields is to build a strong environment for success. Outstanding role models who excel across the breadth of academic domains in STEM-related fields provide ambitious and varied paths for achievement.

Sincerely,

Frances Bronet

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

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DEPARTMENTS

ON THE COVER: Associate Professor Georgia Papavasiliou (CHE '96, Ph.D. '03) [*left*] and Merjem Mededovic (BME 3rd year) work on hydrogel scaffold fabrication using an argon-ion laser in Illinois Tech's Polymeric Biomaterials and Tissue Engineering Lab. Photo: Elena Zhukova

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ILLINOIS INSTITUTE OF TECHNOLOGY

Letters

More Train Talk

Here's a brief observation to the letter written by Roy Sahlstrom (ME '45) in the winter issue of IIT Magazine *regarding the mechanical drafting classes in Main Building:* The class was on the top floor, and in addition to the coal smoke, the building shook whenever a train rushed by. We learned to lift our pencils as soon as we heard a train approaching.
Charles Ticho (EE '48)

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

Illinois Tech welcomes the following individuals to the university:

Jess Goode, Vice President for External Affairs
Brian Walker, W. W. Grainger, President (Technology); Illinois Tech Trustee
Denis Weil (M.Des. '01), Dean, Institute of Design


Jess Goode


Brian Walker


Denis Weil

NAYAR PRIZE

ILLINOIS INSTITUTE OF TECHNOLOGY

In 2015 Illinois Tech Trustee Madhavan Nayar (M.S. IE '68) and his wife, Teresa, on behalf of the Nayar Family Foundation, established a $1 million gift to fund the Nayar Prize to challenge Illinois Tech faculty, staff, and students to develop breakthrough, innovative projects that will, within three years, produce meaningful results with a societal impact. Last November one team—the ADEPT Cancer Imager—was selected to advance to the second phase of the prize cycle and was awarded $200,000 to continue its work over a two-year period. Upon the successful completion of benchmarks and performance metrics set by the team and approved by the Steering Committee, team members will receive $500,000.

The ADEPT team comprises Kenneth Tichauer (Department of Biomedical Engineering), Jovan Brankov (Department of Biomedical Engineering, Department of Electrical and Computer Engineering), and Rajendra Mehta (Department of Biology, IIT Research Institute). The imaging system will be capable of spatially mapping the variable characteristics of cancers at the cellular level. By doing so it will help to identify patients with more aggressive forms of cancer as well as to identify new effective drugs designed to handle disease variability. In the first phase of the competition, the team developed an imager prototype and applied for a patent. In the second phase the team will collaborate with two cancer experts from the University of Chicago and Georgetown University. They will assist team members in bridging the gap between testing the ADEPT system and using it in hospitals.

The Nayar Family Foundation announced a second Nayar Prize in 2016. Three teams of researchers were selected for the first phase of the prize cycle: A Data-Driven Crime Prevention Program (Miles Wernick, Department of Biomedical Engineering, Department of Electrical and Computer Engineering; Lori Andrews, Chicago-Kent College of Law; and Yongyi Yang, Department of Biomedical Engineering, Department of Electrical and Computer Engineering); Cyberbullying Early Warning and Response System (Libby Hemphill, Department of Humanities and Aron Culotta, Department of Computer Science); and Microfluidic Drug-Microbiota Interaction Platform (Abhinav Bhushan, Department of Biomedical Engineering; Genoveva Murillo, Department of Biology, IIT Research Institute; and Rajendra Mehta, Department of Biology, IIT Research Institute).

Visit web.iit.edu/nayar-prize to learn more about Nayar Prize I and Nayar Prize II.

Was November 15, 2016, a great day in Illinois Tech history?

TECH YEAH, it was!

Giving Day 2016 was a tremendous success thanks to the generosity of the **948** donors who made gifts in our 24-hour fundraising period on November 15, 2016.

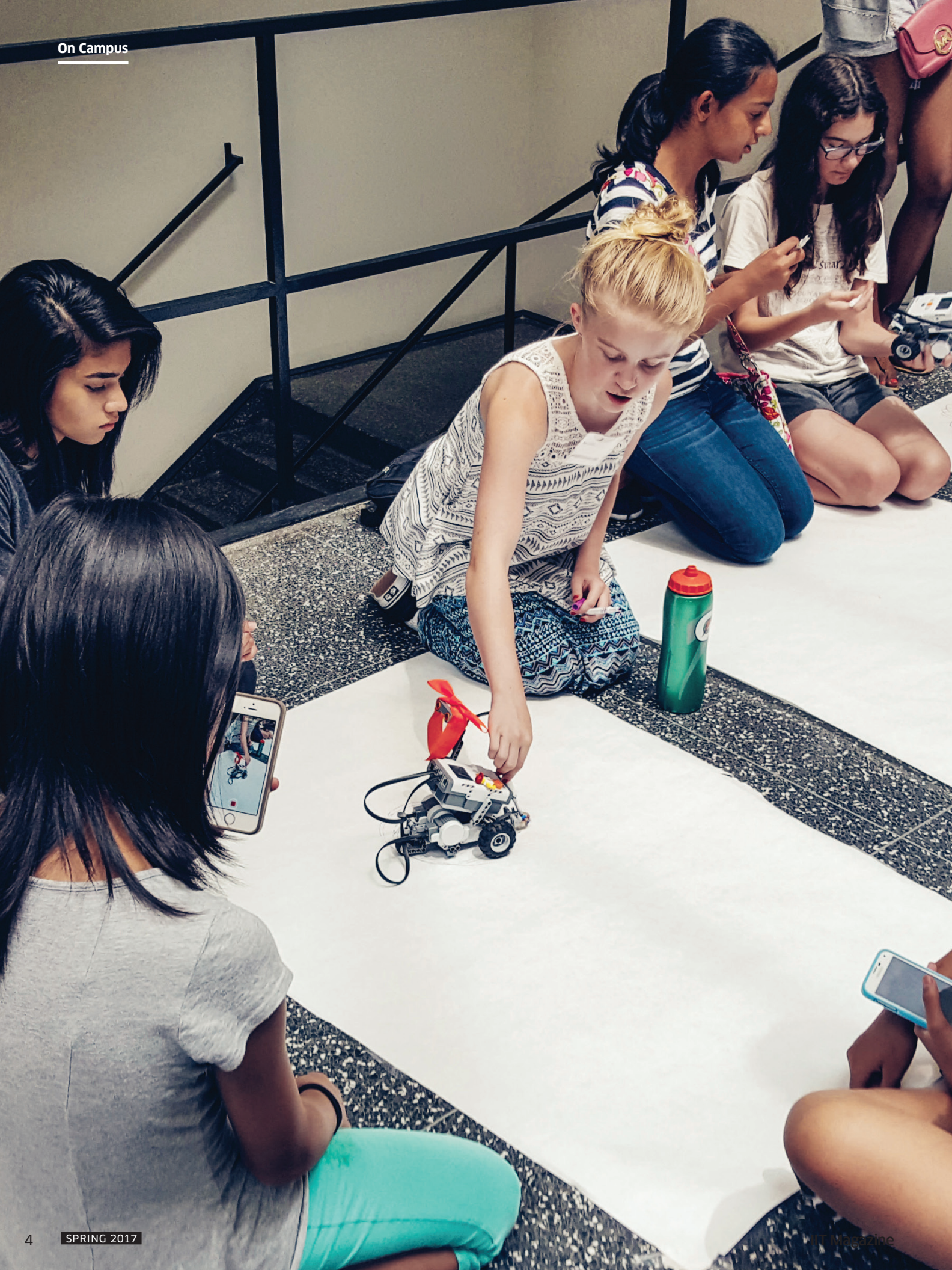
Last year we raised $685,000, and we went even further this year, raising a total of **$881,100.** That's an extraordinary amount of scholarship funds, educational supplies, and support for the next generation of innovators!

Generous alumni issued several giving challenges throughout the day, adding extra incentives for Giving Day donors looking to maximize the impacts of their gifts on Illinois Tech.

- We kicked off the day bright and early with the **Tech Yeah! I'll Give Challenge,** which unlocked $100,000 when we reached 400 gifts.
- Carter Eckert (CHE '64) and an anonymous donor then teamed up to issue the **Carter Eckert '64 Challenge,** which unlocked $150,000 when we added another 200 gifts.
- The **Alumni Trustee Scholarship Match**—issued by alumni trustees Bob Cornog (MET '61), David Crowell (ARCH '79), Mike Galvin (LAW '78), Ed Kaplan (ME '65), Jeff Karp (CE '79), Paul McCoy (EE '72), Anita Nagler (LAW '80), Adrian Nemcek (EE '70), and Carl Spetzler (CHE '63, M.B.A '65, Ph.D. BE '68)—added $200 to college scholarship funds for every alumni donation of $25 or more, up to $197,500.

The Student Gift Committee launched its 2017 project on Giving Day—a newly created Hawks 4 Hawks Hardship Fund, which assists fellow students who are facing crisis financial situations that could prevent them from completing their degrees. On November 15, the committee raised $8,682 for this initiative, with 116 students making gifts!

So what can we gather from the results of Giving Day 2016? That Illinois Tech alumni, students, faculty, staff, and friends are more generous than ever. **TECH YEAH!**



In Her Own Words

Vida Winans, director of Illinois Tech's Computer Discovery Camp for Middle School Girls, describes the evolution of the camp, which has doubled in enrollment since it was founded in 2010 and is now so popular that it has a waiting list.

I had been teaching computer science at Illinois Tech, and most of the students in my classes were male. Even now, it's only about 24 percent women. As a member of the American Association of University Women, I also knew that a lot of girls turn away from math and science in middle school. So when Cindy Hood [associate professor of computer science and engineering] asked me what I'd like to do with a National Science Foundation grant, I knew I wanted to target middle school girls, to increase their interest and get them to the point to where they could say, "I can do it."

When I first started the camp and was researching an age-appropriate curriculum, not a lot of materials were designed for girls of this age. In the past seven years, there has been an explosion on the web of materials to get students involved in science. At first they had no clue about binary or coding, and now girls have already been exposed through school. We are seeing a much more sophisticated level of preparation of the students coming in.

One of my students who started when she was in seventh grade has been helping me with the camp for the last several summers. She is now applying to colleges and thinking of combining computer science with medicine. Some of these girls now feel comfortable enough with computer science that they want to make it their career choice.

The projects are hands on. We use LEGO Mindstorms robot kits. Studies show that girls lag behind male counterparts in spatial ability. So the LEGO robots, which they have to build, make girls think about how things are positioned and strengthen their spatial skills. Sometimes we program robots to gather data or we use sensors to put robots through a maze. This summer we'll build robots that can dance. We are also going to work with e-textiles, to make wearable, customized clothes. One day this will be mainstream—wearables, sensors, microprocessors—so I try to keep things current, because by the time these girls launch their careers it will be old hat.

I've had parents ask, "Can I come and join in?" It's a lot of fun.

One thing I hear from the parents is that the girls go back to their schools and are much more confident because they have done tech. For the girls, it's a great social bonding experience to find other girls who enjoy being techy. Often girls think at school that they can't be excited about tech because their friends aren't into it.

I hope girls who attend our camp will feel that they can, if they choose, do tech—whether that is engineering, computer science, or anything related to those fields—because I think that's their biggest fear, that they can't be good at it.

As a culture, as a society, we are teaching students more about computational thinking, trying to get them to learn it beginning in elementary school. Seeing that evolution has been exciting for me, and I hope we continue to encourage not just the girls but all students to try tech. That push is so important.

—As told to Chelsea Kalberloh Jackson

MORE ONLINE
WTTW *Chicago Tonight*, "STEM Summer Camp Opens Minds, Broadens Opportunities for Young Girls": http://chicagotonight.wttw.com/2016/09/01/stem-summer-camp-opens-minds-broadens-opportunities-young-girls

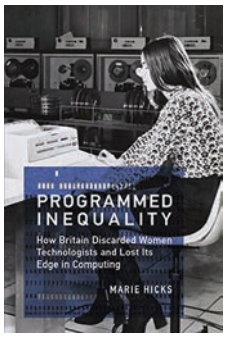
PHOTO: COURTESY OF VIDA WINANS

Recently Published

A selection of books by women faculty members of Illinois Tech*

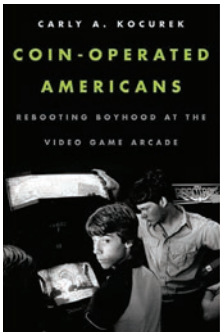
Felice Batlan
Professor of Law
Women and Justice for the Poor: A History of Legal Aid, 1863–1945 (Cambridge University Press, 2015)

Batlan offers a historical review of the development of legal aid in the United States and the significant and unknown role that women played as both providers and clients of legal aid. This book was awarded the 2016 J. Willard Hurst Award, which honors the best work in socio-legal history.



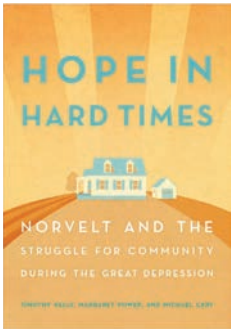
Marie Hicks
Assistant Professor of History
Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing (MIT Press, 2017)

In her historical investigation, Hicks explores how Britain fell from the position of electronic computing powerhouse to that of non-player due to systematic gender discrimination.



Carly Kocurek
Assistant Professor of Digital Humanities and Media Studies
Coin-Operated Americans: Rebooting Boyhood at the Video Game Arcade (Minneapolis: University of Minnesota Press, 2015)

Kocurek's book studies the early rise of video game arcades in the United States and their influence on gaming culture and gamer identity [*see feature, pages 15–17*].



Margaret Power
Chair of the Department of Humanities, Professor of History
Hope in Hard Times: Norvelt and the Struggle for Community During the Great Depression (co-author) (University Park: Penn State University Press, 2016)

In this book Power and her collaborators chronicle the New Deal-era establishment of Norvelt, Pennsylvania, and demonstrate the role government programs can play in improving people's lives.

**Does not include course books or works as editor*

Options for Orphan Patients

Amyotrophic lateral sclerosis (ALS)—Lou Gehrig's disease—a progressive neurodegenerative disease that claimed the life of iconic New York Yankees baseball player Gehrig in 1941, may now be part of the standard health care lexicon. But ALS is considered a rare condition, one of more than 6,000 "orphan diseases," defined by the United States Food and Drug Administration as conditions that affect fewer than 200,000 people across the country. Biology doctoral candidate Adriana Mañas Núñez (M.A.S. BENG '14) and the six other co-founders of the Illinois Tech startup Great Lakes Neuroscience (GLN) are working to give some of these patients hope by developing a drug for ALS and a second orphan disease, primary progressive multiple sclerosis.

In 2014 Mañas Núñez, along with Sai Prashant Boy Reddy (M.B.A. '15), Devon Nobles (M.B.A. '15), Christian Osswald (BME '10, Ph.D. '15), Siddhartha Pidhadia (M.B.A. '15), Rama Sashank (Ph.D. BIOL '16), and Tiwalade Sobayo (M.A.S. CHE '09, Ph.D. BME '16) entered the Neuro Startup Challenge, a competition sponsored by the National Institutes of Health in collaboration with the Center for Advancing Innovation, to develop a business plan to commercialize a number of inventions conceived and developed through NIH. The Illinois Tech team selected TP5, a patented synthetic peptide drug that has shown promise in the treatment of Alzheimer's disease. Led by advisor Raja Krishnan, the team became a finalist in the competition and was inspired to continue its work on TP5 by incorporating GLN in 2015.

"Most of us joined with the thought that this would be a good exercise; none of us were expecting that it would go this far," says Mañas Núñez, who came to Illinois Tech from Universidad Politécnica de Madrid and has been working on projects focused on cell death with cancer researcher Jialing Xiang, professor of biology. "Now we're working to bring our treatment to the clinical-trial stage and to help these people who have no options."

The startup has an exclusive commercialization license agreement with the NIH for the use of TP5 in multiple sclerosis, ALS, and 13 other related motor deficit-associated diseases. Funding is nearly completed for the first preclinical study phase, and Mañas Núñez says that if all goes well, GNL anticipates conducting human clinical trials in 2019. —*Marcia Faye*

MORE ONLINE
Great Lakes Neuroscience: www.greatlakesneuroscience.com
Neuro Startup Challenge: www.neurostartupchallenge.org

Illinois Tech Headliners

"I WENT FROM THUMB TO INDEX FINGER. IT'S A MUCH MORE FLUID MOTION WITH THE INDEX FINGER."

Jack Paleczny (LAW 2nd year), in the *Chicago Tribune*, explaining his hand-to-buzzer strategy as a contestant on the television game show *Jeopardy!*

"History is less about what gets let into the narrative, what you choose to put in the history books, and more about what you decide to cut out."

Marie Hicks, assistant professor of history, interviewed in *ChicagoInno* about her new course, Women in Computing History

"There is some evidence that if you know someone is driving and will be distracted that you should be liable."

Chicago-Kent College of Law Dean **Harold Krent** in an interview on CBS 2 Chicago about legal implications associated with texting

"PROGRESS IS OFTEN MADE BY ASKING THE QUESTIONS WE THINK WE ALREADY KNOW THE ANSWER TO."

Daniel Kaplan, professor of physics, one of several experts contemplating antigravity in *New Scientist*

"Ride sharing and ride hailing happened almost overnight, over the course of a year or two. Municipal planning happens in much longer cycles. We have to move faster in order to leverage these opportunities. It will require a lot of imagination."

Associate Professor of Architecture **Marshall Brown** in *Crain's Chicago Business*, discussing how the rise of Uber and driverless cars might affect the parking industry

Engineering Her Future

Even the warm climate of California couldn't convince **Roxanne Myers** (ARCE '16, M.E. STE 5th year) to stay there for her education when she learned that Illinois Tech would offer her the opportunity to earn an undergraduate degree in architectural engineering and qualify for a slot on the women's varsity soccer team. Myers kicked her first recreational ball at age 6, joined a competitive soccer club two years later, played all through high school, and then came to Illinois Tech on a Camras Scholarship. She went on to achieve numerous athletics honors and school records by the time she played her last game with the Scarlet Hawks in 2016, including USCAA First Team All-American status, USCAA National All-Academic Team status, and the Ed Glancy Female Athlete of the Year.

Still active in a Chicago-based Saturday soccer league, Myers interns as a mechanical and electrical engineer with the firm dbHMS.

"My dad studied mechanical engineering at UCLA, my mom studied chemical engineering at UCSB [University of California, Santa Barbara], and a younger sister is studying biomedical engineering,"Myers says. "She and I are going for it! We're taking the women in STEM concept as far as we can!"

Myers says that even though Chicago's architecture offers a veritable palette of buildings for structural engineers, she is open to exploring different cities and opportunities that may come her way as May Commencement approaches.

"I'm working toward going into low-rise custom-home structural design," she explains. "Between my first and second years at Illinois Tech, I was a project engineer at MG Partners, a company that builds luxury homes in Los Angeles. All of the homes the company worked on were so different in style. I like that variability in design and the challenges that presents." —*Marcia Faye*

Match Point Bound

Erik Scanlan, new coach of the Scarlet Hawks men's and women's tennis teams, proudly admits to being a racketeer—and he came to Illinois Tech to recruit new players to his game. After all, he is among the third generation of his family to excel at tennis.

Games played with his grandfather sparked Scanlan's interest in the sport, which grew into a passion by the time he entered the University of Wisconsin-Whitewater as an undergraduate. Considered to be one of the region's strongest NCAA Division III players, he was a four-year letter winner, two-time team captain, and NCAA Athletic All-American honoree in 2010–11. Scanlan also was an instructor at several clubs in Illinois and Wisconsin, and came to Illinois Tech via Carthage College, where he served as a graduate assistant coach. Now he is anxious to add head coach and program developer to his résumé as he helps to grow Illinois Tech's NCAA-level tennis teams.

"I want to build a winning program. Far more importantly, however, is that I would like to build a successful program," says Scanlan, in anticipation of the program's inaugural 2017–18 season. "I define success not on a team's record but on how much our athletes grow—as players, as students, and above all else, as people. I want my program to be defined as one where student-athletes learn about the physical and mental traits that influence their tennis game, what it means to be NCAA athletes, how to push themselves to new heights both physically and mentally, and how to effectively manage their time."—*Marcia Faye*

USCAA Competitors

Members of the 2016 Scarlet Hawks women's volleyball team are not likely to forget the road trip they took to Virginia Beach, Virginia, last November. For the first time in program history, Illinois Tech women's volleyball qualified for the USCAA National Championships. Even though Florida College won the championship for the third consecutive year, the sixth-seed Scarlet Hawks went all the way to the quarterfinals, losing to fifth-seed Rochester College by a score of 3 to 1. Members of the women's cross country team also competed in the national championships and gave solid performances in the event. —*Marcia Faye*

MORE ONLINE: illinoistechathletics.com

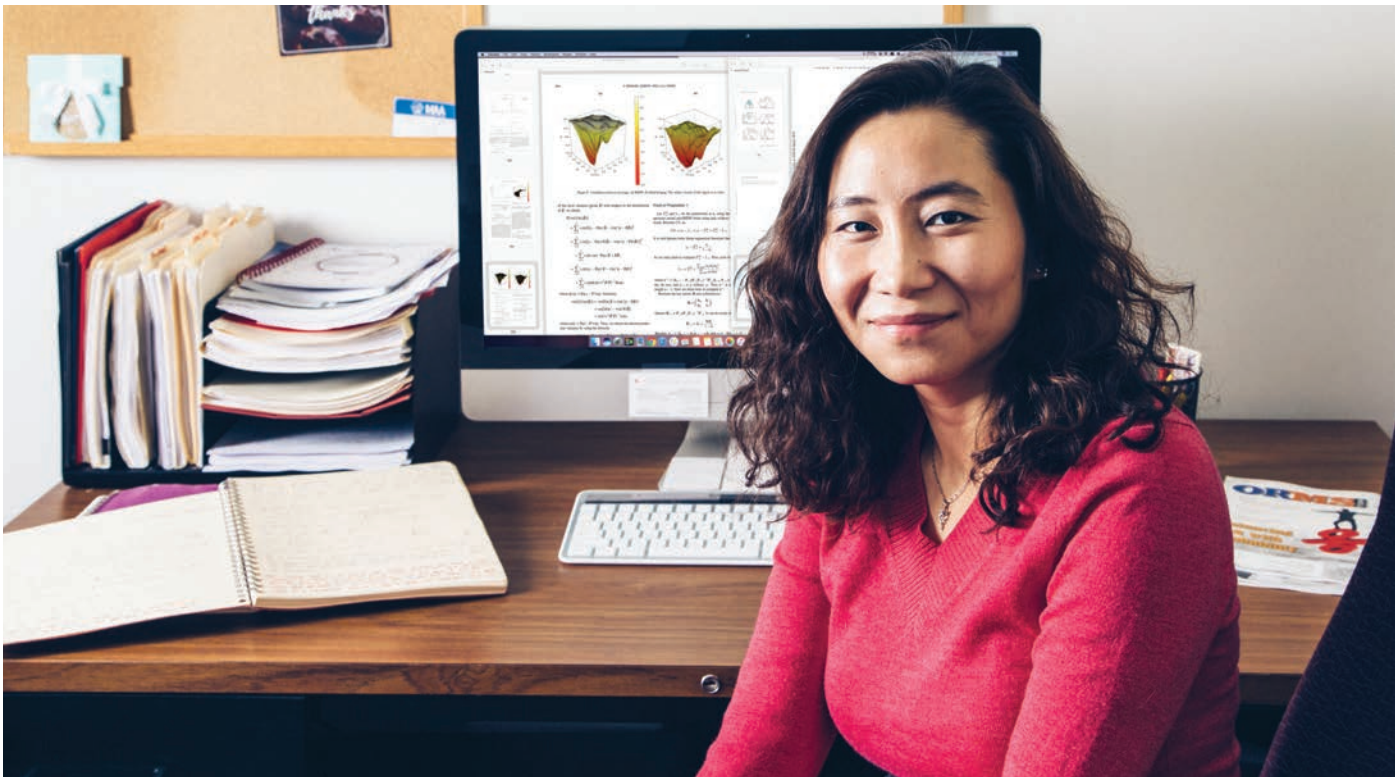


PHOTO: MICHAEL GOSS

Certain Direction in an Uncertain World

Like an invisible yet masterful weaver, Illinois Tech Associate Professor of Applied Mathematics Lulu Kang quietly works behind the scenes to enable scientists and engineers to design and build the best systems possible. As a statistician, she develops efficient data-collection and data-analysis methodologies and theories to create statistical models for complicated engineering and scientific systems.

Government agencies and industry partners alike have funded Kang's research in this area since 2011. She is currently one of three principal investigators on a $117,888 grant from the National Science Foundation to study and improve four different systems—organ transplantation, semiconductor wafer production, thermal spray coating, and crystal growth processes. These systems are defined as quantitative-qualitative (Q-Q) systems, since the data collected are of both types. For instance, the quality of a product can be categorized to be "good" or "bad," while many other quantitative measurements are also collected to characterize the product's quality. ¶ "We can control, optimize, and monitor such systems," says Kang. "To achieve that we collect data from the system and develop a surrogate statistical model for our analysis schemes." ¶ The first benefit of this model is that it allows her to determine how her team will collect data in order to solve a problem. "The second," she says, "is that when we collect the data, it is very rigorous and has less noise." ¶ When data is collected in a way that minimizes noise (variations such as environmental fluctuations and process variability), the resulting model is more precise. "A computer simulation is deterministic, so every time you choose a data setup or setting for operational parameters, you will always get the same response," she says. ¶ When the project concludes later this year, Kang anticipates that the team will have developed a best practices framework for the modeling and quality improvement of Q-Q systems. As associate director of Illinois Tech's Master of Data Science program, she also notes that case studies from the project will be useful as training aids for students. ¶ Another area of Kang's research is on uncertainty quantification, the science of quantifying and examining uncertainty in computational simulation systems. Kang develops statistical surrogate models from the computer simulations she and her collaborators construct. Such surrogate models allow investigators to quickly understand a system's strengths and weaknesses, generate more simulation results with cheaper costs, and achieve more efficient optimization of the system. ¶ Looking beyond the NSF grant, Kang would like to apply her methodologies and theories honed in biomedicine and engineering to big-data sets, which is an area that presents new challenges. While in theory larger sets of data may provide a more accurate model of data, Kang notes that "data sets can be inherently biased. If you are extracting information from very big data sets, you have to make sure your sampling is reasonable and meaningful. Is it sufficient to build an accurate model? This is crucial in this age of big data." —*Jim Daley and Marcia Faye*

MORE ONLINE
Lulu Kang: http://math.iit.edu/~lkang2

PHOTO: ELENA ZHUKOVA

Protégé It Forward

Merjem Mededovic (BME 3rd year) [*left*] is one member of a research team in the Polymeric Biomaterials and Tissue Engineering Lab headed by Associate Professor **Georgia Papavasiliou** [*right*].

BY MARCIA FAYE

I come from a family of engineers, most of them electrical engineers—aunts, uncles, cousins. My mother was in computer science. They mentored me while I was in high school at New Trier and even while I was here in college," says Georgia Papavasiliou (CHE '96, Ph.D. '03), associate professor and director of the Polymeric Biomaterials and Tissue Engineering Lab at Illinois Tech. She is now continuing this tradition of mentored guidance within the academic and research communities she leads.

"We have a tiered mentoring system in my lab. I'll mentor the graduate students, who will then serve as mentors to the undergrads. I like to work with students for a while, so they are usually with me for more than one semester. I've had more than 30 undergraduates in my lab, some who have gone on to do research, pursue Ph.D.s, or enter medical school. My team has come together nicely," she says.

Papavasiliou, from Wilmette, Illinois, joined the Illinois Tech faculty as a senior lecturer in 2003, one year after completing both her Ph.D. at Illinois Tech and a postdoctoral internship at Johnson Polymer, and soon began to develop courses in biomedical engineering and to devote time to learning all of the laboratory techniques critical to successful tissue engineering projects. Johnson Polymer Professor Fouad Teymour, director of Illinois Tech's Center for Complex Systems and Dynamics, and Papavasiliou's doctoral thesis advisor, recalls her initiative and determination early on.

"What is impressive is that she would never need to perform these experiments herself in the future as an assistant professor, yet she understood instinctively that in order to mentor and supervise students who perform those tasks, she must have experienced them on her own first," he says. "I admire this approach to mentorship, where the mentor subjects herself a priori to the same environment the student will have to perform in."

"After being in Professor Papavasiliou's lab, I realize that there are a lot of health problems that are not so easily seen but are no less important."
—Merjem Mededovic (BME 3rd Year)

The current graduate students who Papavasiliou mentors are working with her, Teymour, and University of Chicago professor and gastrointestinal surgeon John Alverdy on a National Institutes of Health-funded project that focuses on post-surgical intestinal healing following colorectal anastomosis, the point of connection where a surgeon reattaches two sections of an intestine that has been severed for, say, the removal of a tumor. In nearly a quarter of such surgeries the anastomoses break down, causing the contents of the intestine to leak out, resulting in infections, post-surgical complications, and in some cases, death. The Illinois Tech team is exploring ways to transport potentially life-saving drugs to the site of the leak via an innovative nanoparticle system that it has developed. Nanoparticle systems can offer the advantage of highly stable drug delivery at the molecular level through various routes of administration.

"An oral formulation would be rapidly cleared from the kidneys and rapidly absorbed, so we need an approach to localize these compounds and provide sustained release for prolonged periods of time," says Papavasiliou.

Merjem Mededovic (BME 3rd year) has had opportunities to work in Papavasiliou's lab on other projects both as a volunteer and through the Armour College of Engineering Program for Undergraduate Research Education (PURE). Now in her second semester as a PURE student, she is one member of a team working on a research project funded through the American Heart Association. The group is exploring novel ways, through the use of nanoparticles and hydrogel scaffolds, to deliver substances that will stimulate the formation of new blood vessels for the treatment of ischemic cardiovascular disease. Mededovic says that the lab's tiered mentoring system and focus on innovative work to develop polymeric biomaterials for applications in tissue engineering and drug delivery have provided her with a whole new way of learning in addition to her coursework, as well as a new career direction.

A native of Sarajevo, Bosnia and Herzegovina, Mededovic considered becoming either a physician or prosthetic biomedical engineer after witnessing firsthand the many individuals whose lives had been impacted by civil war in her homeland. She is now considering a graduate program in biomedical engineering capped by an M.B.A. so that she can pursue leadership opportunities in the drug-delivery industry.

"After being in Professor Papavasiliou's lab, I realize that there are a lot of health problems that are not so easily seen but are no less important," Mededovic says, noting that the intimate "group mentoring" experience in the lab is helping her discover new skillsets and other ways she can contribute to making a difference in the world. She plans to stay in Papavasiliou's lab until she graduates and is especially looking forward to this summer and an external internship that Papavasiliou is helping to arrange to further broaden her research scope.

Whether counseling students after hours or seeking tailored learning opportunities for them to expand upon their developing interests, Papavasiliou sees it all as part of her students-first mindset. Mededovic has become a mentor to local high school students through Illinois Tech's Global Leaders Program. Papavasiliou has been recognized as an outstanding teacher two times, first as a teaching assistant during her doctoral studies, earning the W. M. Langdon Excellence in Chemical Engineering and the University Excellence in Teaching (assistant-level) awards, and later, as an assistant professor, with the University Excellence in Teaching Award in 2012 from Illinois Tech.

"I have chaired the Armour College teaching awards selection committee for many years, including the year [2012] Georgia was nominated for the top university honor. This is a very competitive level where the candidates are always outstanding, but the committee was unanimous in its decision to select Georgia. This was largely predicated on student feedback in the letters of support presented on her behalf," says Teymour. "Georgia's dedication and her untiring commitment to student success are the reasons that make her an outstanding teacher and mentor." ■

MORE ONLINE
Polymeric Biomaterials and Tissue Engineering Lab: http://mypages.iit.edu/~papavasiliou

Natural Path

By Marcia Faye

It does not require an algorithm to uncover the reasons behind Eunice Santos's career trajectory and her decision to come to Illinois Tech to chair the computer science department. Now the Ron Hochsprung Endowed Chair, chair of the Department of Computer Science, and professor of computer science at Illinois Tech, Santos, the daughter of an electrical engineer and a mathematics professor, recognized her innate capacity for STEM disciplines early in life. She graduated with bachelor's and master's degrees in computer science and math before earning her doctoral degree in computer science from the University of California, Berkeley.

Santos served on the faculties of Lehigh University and Virginia Polytechnic Institute and State University, and was selected to be a senior research fellow with the United States Department of Defense. She studied and helped to understand the behavior of certain groups implicated in global health and security, was a member of several senior technical advisory boards, and was also named to the Defense Science Study Group. Before coming to Illinois Tech, she served as professor and chair of the Department of Computer Science at the University of Texas at El Paso, which included her role as director of the U.S. Department of Homeland Security National Center for Border Security and Immigration.

"I was attracted to Illinois Tech computer science for its size and its strong history, leadership, and reputation," she says. "We have a great history of research and innovation in the department. We have more than 1,200 students who are next-generation leaders. Another great strength is our alumni and their leadership in the tech ecosystem—we are 5,000-strong just in Chicago. We are already seeding the tech ecosystem with our research and people. We want to build on that history, enabling even broader and deeper influence."

"We are already seeding the tech ecosystem with our research and people. We want to build on that history, enabling even broader and deeper influence."

—Eunice Santos

Plans include increasing research in cybersecurity, cloud computing, and data science, as well as continuing to strengthen pipeline projects to bring more diversity and first-generation college students into computing, such as the department's well-established computer discovery camp for middle-school girls [*see story on pages 4–5 of this issue*]. The department also will facilitate the role of computer science to advance research and innovation in other disciplines.

Illinois Tech Trustee Chris Gladwin, founder of the data-storage company Cleversafe, who donated $7.6 million to the university to further strengthen the computer science program, was on the committee that recruited Santos to Mies Campus.

"When I interviewed Eunice, I learned that many of the areas planned for future growth and research in computer science were areas where she was already an established expert," he says. "When I reflect on my many conversations with her, I realize that she's right in practically everything she says." One of the areas in which Santos is considered an authority is computational modeling, the use of computers to simulate and explore the behavior of complex systems ranging from disease to cybersecurity.

"At Illinois Tech we're looking at how different viewpoints are affecting cybersecurity risks—how people learn to trust and learn to become suspicious in the cyber world versus the real world. People become suspicious with very different markers and trust with very different markers," Santos explains in a telephone conversation from Washington, D.C., where she was attending a conference. "The dynamics are so very different in the cyber world versus the real world that if we don't get a handle on this, we won't truly understand the much more complicated cyber threat issues beyond somebody hacking in and stealing a bunch of credit card numbers."

Last year Santos was one of four invited experts to provide testimony on "Federal Efforts to Improve Cybersecurity" before the Subcommittee on Information Technology, part of the U.S. House Committee on Oversight and Government Reform.

She is also using computational modeling to analyze how humans respond, adapt, and react in various scenarios—for example, in pandemic outbreaks—and how organizations can better respond by better understanding the potential behavior of communities in such health crises.

"Human migration patterns will change significantly based on people's perceptions of the disease and its effects, how likely they are to get it, and whether they think they actually have it," says Santos. "Groups tend to react and think differently for social and cultural reasons, business dynamics, and the ways that they're interpreting information. What we're trying to do is come up with effective ways to model these many moving pieces."

Santos received the 2010 IEEE Technical Achievement Award for "pioneering contributions to computational social network systems" and was named to the *Crain's Chicago Business* "Tech 50" list during her second year at Illinois Tech.

"It's an exciting time to be in computer science," she says. "Illinois Tech is a school at the forefront of technology, and the computer science department is building on our strengths to advance innovation in technology and across many fields. We see ourselves as the nexus from which the driving forces of next-generation research in such areas as data science, computational medicine, science, law, and beyond are taking place." ■

MORE ONLINE
"Federal Efforts to Improve Cybersecurity": http://bit.ly/2j9OfG4
Technical Achievement Award: www.youtube.com/watch?v=t2JHbhYyoJc

Good Health by Design

Visitors to Illinois Tech's Mies Campus in the late 1960s may have noticed a young girl enthusiastically collecting rectangular pieces of stiff paper that were oftentimes strewn across the sidewalks and grassy areas. The paper was computer punch cards and the girl was Kim Erwin (M.Des. '94), whose father, Joseph, was on the biology faculty.

"I was absorbed by the patterns and textures created by the numbers and holes. Each card was different, and I used them as materials to build things or design art," says Erwin. One student, the late Barbara Herrington (DSGN '75), noticed her interest in the cards and invited Erwin to her room in Cunningham Hall to view models she had constructed for an Institute of Design course. "I asked what design was and she described it as 'problem solving.' I was hooked," recalls Erwin. "Barbara died young and suddenly, after a car accident, but not before convincing me that bold communication work can change how others experience new ideas."

Erwin would go on to serve as a consumer innovation consultant for more than a decade, earn a degree from ID, and then join the ID faculty as a visiting professor in 2006 before being named assistant professor three years later. In 2016 she founded ID's Center for Collaborative Healthcare Design (CFCHD), where she directs the efforts of various multidisciplinary teams in conceptualizing and testing novel concepts in health care delivery and disease management. The CFCHD works on multi-institution grant-funded projects, including a six-year, $4.5 million National Institutes of Health-funded endeavor to improve outcomes for adolescents and adults with sickle cell disease.

What are some of the challenges facing health care today that the Center for Collaborative Healthcare Design can work to overcome?

Widely accepted studies show that more than 80 percent of the factors that influence a patient's health outcomes are outside the reach of clinical practice. People live, die, thrive, or suffer based on what happens in their homes, schools, workplaces, and neighborhoods, and depending on the choices they make as individuals. The current health care system, however, is almost entirely centered on that 20 percent of factors that happen within its four walls. And even in the clinical sphere, the vast majority of proven innovation in medicine does not make it into widespread practice. This is often because it's too hard for doctors, nurses, and insurers to adapt their behaviors and systems. Genetics and computation are driving ever smarter, more precise medicine. The challenge is how to get proven, effective solutions into clinical practice and into everyday contexts.

Please describe one of the CFCHD's projects.

The CFCHD's first health care project, the CHICAGO Plan, is a three-year, multi-institution comparative effectiveness trial aimed at reducing emergency department visits for kids with uncontrolled asthma. It has just now concluded, and we should have definitive data by June. Our role in that work was to perform user interviews both to inform the study design and to develop discharge instructions that people can actually read and use. Working with the CHICAGO Plan research team, we designed a new discharge tool that promotes best-practice asthma guidelines in a form that helps ED staff deliver consistent and accurate instruction using language that average people can understand. This new tool won a national design award and was tested at six hospitals on Chicago's south and west sides. —*Marcia Faye*

MORE ONLINE
***IIT Magazine* Online Exclusive: Read the complete interview with Kim Erwin at magazine.iit.edu**
Center for Collaborative Healthcare Design: cfchd.org/index.html

PHOTO: MICHAEL GOSS

BY MARCIA FAYE ILLUSTRATIONS BY MAIMUNA VENZANT (TCOM '16)

TWO CAN PLAY THAT GAME

"I had saved up $2,000 in babysitting money to buy myself an Apple II Plus computer that I could use at home to program in assembly language, but my parents wouldn't let me buy it because they thought it would be a passing phase," says Dana Dominiak (M.S. CS '92, Ph.D. '01), recalling her early high school days in Lemont, Illinois. **If her parents only knew.**

In 1993 Dominiak co-founded the personal computer and video games company Webfoot Technologies, Inc., of which she now serves as president, and would go on to provide computer consulting services to clients ranging from NASA to Argonne National Laboratory through her business Automate the World, Inc. Late last year she visited her alma mater and met Carly Kocurek, author, assistant professor of digital humanities and media studies, and director of Illinois Tech's digital humanities program, to compare stories about their gamer experiences, to consider the state of gaming today, and to contemplate the gaming technology of what is to come.

"Ever since I've been into computers, I've always been the only woman in the room; I grew up that way and I'm very comfortable with it. I always joke that out of a class of 20, if there are five students who are women, that will seem weird to me," says the affable and laid-back Dominiak, assistant professor in the Computer and Mathematical Sciences Department of Lewis University. "I've been very lucky because everyone has always been very respectful and nice to me. On the other hand, I did know not to go online. There were certain things that I knew not to do because I didn't want to attract attention that was unwanted. But I was more interested in the technology instead of the social aspects."

Kocurek, who was one of three finalists for Illinois Tech's Nayar Prize I, is a cultural historian who specializes in the study of new media technologies and video gaming. She was addicted to her Atari 2600 and Game Boy consoles growing up, but turned to the social side of gaming as a graduate student, when she began to explore the intersections of gender, technology, and gaming. After conceptualizing and producing the internationally exhibited serious computer game

One Way to Overcome STEM-ophobia

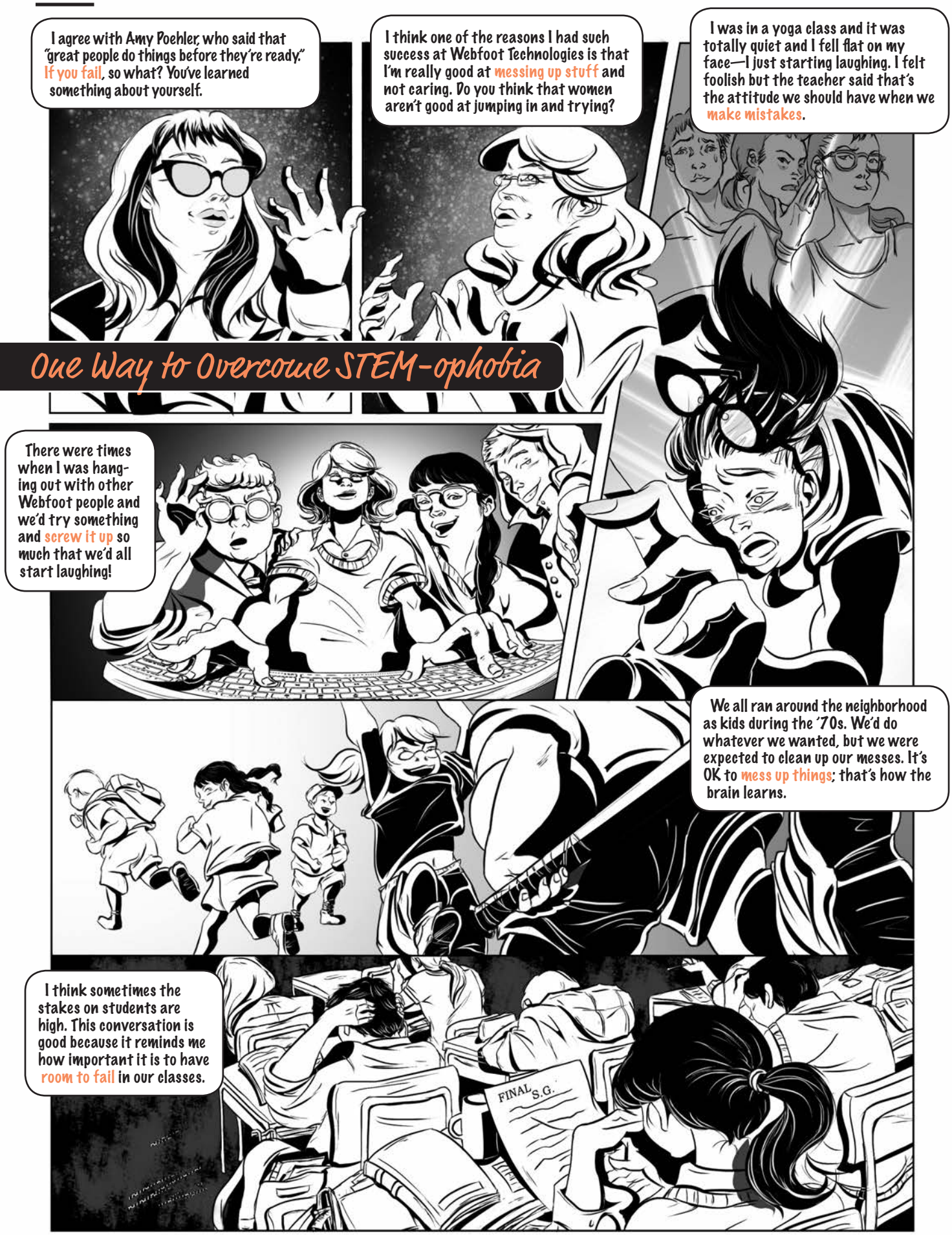


PHOTO: SCOTT BENBROOK

Illinois Tech Assistant Professor Carly Kocurek [*left*] and Dana Dominiak (M.S. CS '92, Ph.D. '01) discuss video gaming today.

Choice: Texas, which she created in 2014 to encourage dialogue about reproductive health care access issues, Kocurek and her controversial subject garnered attention that was not always welcome.

"I was so glad that I got only six hateful emails and 40 YouTube comments about how I was going to be murdered instead of thousands," recalls Kocurek, the green streaks in her hair the same shade as her retro cat-eye eyeglass frames. She takes a pragmatic approach to her continued online gaming presence. "My options are to deal with being uncomfortable and deal with being harassed with some regularity or to stop doing what I'm doing. It's a pretty real thing and happens at a lot of different levels. But there has been a lot of research done on gaming, and it's not just gender-based harassment. The second you're in a space that someone is not heavily moderating, there is risk. Some of it is the breakdown of accountability."

Dominiak concurs. "I really do think that people being anonymous online is a huge problem. You could harass somebody or make death threats, and you're right—there are literally no consequences. Could you imagine if life was like that?"

According to statistics published in spring 2016 by the Entertainment Software Association (ESA), playing computer and video games is part of normal life for 63 percent of households across the United States. And 31 percent of women age 18 or older represent the game-playing population, with boys age 18 or younger comprising 17 percent. Half of the top 10 selling video games (2015) received a Mature rating by the ESA and included *Call of Duty, Grand Theft Auto V,* and *Mortal Kombat X,* but the vast majority—89 percent—of games were rated for play by most everyone (including teens and children ages 10 or older). Smart phones and other mobile/wireless devices attracted 36 percent of the most frequent gamers, with 38 percent of them playing puzzle, board game, card game, and game show games, many comprising the casual game genre.

"We started making casual games before anyone seemed to notice that it was a legitimate genre," says Dominiak, whose company has produced old-school time-passers such as mahjong, crosswords, and hangman for platforms ranging from Nintendo and Windows/Mac OSX to mobile phones, and recently released the latest version of the *Hoyle Casino* card game. "Now they're dominating everything, in online stores and in regular retail, because people of different ages and backgrounds are playing, and not everyone likes to play the same game."

More and more game players, however, are dipping their fingers into the realm of virtual reality, with 55 percent of the most frequent players already familiar with the concept and 58 percent intending to play games utilizing this latest technology.

"Instead of having a headset over your eyes the hardware is going to plug into your brain. It's coming," says Dominiak. "There are already scientists who are able to project images through the optic nerve and into the brain."

Kocurek adds that she is interested in augmented reality, a technology that adds computer-generated sound, graphics, or video to a real-world environment to make for a more valuable user experience. Dominiak notes that such technology can have a disingenuous side, however. While VR incorporates the use of a headset, AR devices exist that mimic contact lenses.

"It's *Brave New World* of ethics stuff, right?" says Kocurek.

"Yeah, we're going to start merging with the machines, too. We're not going to just be individuals; it's going to be us and something else—and then we're really not going to be human anymore," Dominiak adds.

While society at large is far from the dystopian civilization of the Aldous Huxley futuristic classic, Dominiak, the computer scientist, finds compelling technical reasons why students, especially women, should overcome fears that may be holding them back from making much-needed contributions to the Digital Age.

"Artificial intelligence, computers, virtual reality—these things are taking over planet Earth, and I mean, literally. We need programmers now more than ever. If women don't become developers or become involved in technology, they are putting themselves in peril," cautions Dominiak. "They are not in charge of their own destiny if they don't embrace technology and become a part of what is to come. Are we going to become a planet with robots that go around shooting the enemy? Or are we going to become a planet with robots that are benevolent and help each other? We should have a vote. But if we stay out of the field, we're not going to have a vote."

Kocurek, the historian, finds another reason, one that perhaps speaks to humankind on a deeper level. As part of the research she is doing on a book about Atari gaming pioneer Brenda Laurel, Kocurek had the chance to read Laurel's laboratory notes and could almost share in the emotions Laurel and her team conveyed on the development of the novel form of entertainment.

"There was such a sense of opportunity and that they could provide something that was transformative, not just because it was such fun, but because it gave people a sense of wonder and awe in doing something new," Kocurek explains. "I think there is something delicious about that." ■

MORE ONLINE

***IIT Magazine* Online Exclusive with graphic illustrator Maimuna Venzant (TCOM '16): magazine.iit.edu**
Entertainment Software Association: www.theesa.com

PHOTO: MICHAEL GOSS

Today's Special: Bioactives

BY CHELSEA KALBERLOH JACKSON

En route to the pharmacy aisle in your local supermarket, you'll likely walk right past an especially colorful area of the store that holds a medicine cabinet's worth of healing potential—the produce section.

The science behind why more strawberries or raspberries might mean fewer cholesterol-lowering statins or glucose-controlling medications is the focus of Illinois Tech's Clinical Nutrition Research Center.

"We're trying to keep people from needing medications using dietary approaches," says center director, Britt Burton-Freeman, sitting outside one of the metabolic kitchens where she and fellow center researchers prepare and serve test meals for study participants. The center studies bioactive compounds delivered through plant foods that target cells in the body responsible for inflammation, obesity, diabetes, and cardiovascular problems. Unlike essential nutrients, bioactive compounds are not required for life, but growing evidence indicates they are closely linked with improved health and disease risk reduction.

Many of the center's studies profile the biological qualities of red, blue, and purple fruits. These fruits contain a unique chemical signature of bioactive pigment compounds called anthocyanins, along with other phenolic compounds known for their antioxidant properties. However, the center's work has demonstrated that these compounds do much more than reduce oxidative stress in humans; they work to reduce inflammation and insulin resistance, both of which have roots in modern-day chronic diseases.

The center also has studied potatoes, grape seeds, and other produce [*see sidebar, page 20*]. Wild blueberries, the topic of a current study, illustrate how mind and body are interconnected through metabolic stress/balance. Blueberries are known for their effects on cognition in older adults, but research at Illinois Tech is analyzing earlier periods in life to study the relationship between metabolic abnormalities and inflammation in middle age and how they impact brain function. The role of wild blueberry bioactives in moderating these conditions could inform dietary approaches important for reducing age-related

This spring Illinois Tech's Clinical Nutrition Research Center is beginning a follow-up to a pilot study that showed favorable shifts in gut microbiota—the types that are associated with obesity- and metabolic-health status—as observed in young adults who ate red raspberries for four weeks. **Britt Burton-Freeman** [*left*] says emerging data supports the idea that gut microbiota imbalance contributes to a variety of health conditions such as obesity, diabetes, insulin resistance, chronic inflammation, cardiovascular disease, and neurodegenerative disorders, such as Alzheimer's disease. "We will dig deeper, exploring changes in the gut microbiota that may contribute to the health benefits we observe with berries and other plant foods," she says.

You Are What You Eat

Under the auspices of Illinois Tech's Institute for Food Safety and Health, the Clinical Nutrition Research Center conducts studies that aid in the development of food policy recommendations, including those for school lunch programs, and in the education of health professionals, agriculture groups, and government, some of which sponsor the center's studies. The center's location in Chicago offers access to a diverse pool of study participants, who receive more than good food and a paycheck for their services. "One of the beauties of these studies is that people get to see how their bodies respond to different foods that they consume," says Britt Burton-Freeman, center director, about the health benefits of fruits and vegetables.

The center studies a cornucopia of foods. Here are just a few of its findings during the past year:

Avocados
Their unique composition of fat and fiber may positively impact cardiovascular and metabolic health, and improve satiety, which can assist with obesity management.

Organic Labels
Believing that organic produce is superior to conventionally grown, low-income populations may avoid fresh produce altogether, indicating a need for better education and product labeling that emphasizes the importance of all produce as part of a healthy diet.

Grape Seed Extract
Polyphenols, complex components in grape seeds, are antioxidants and improve blood pressure regulation for people with high blood pressure. Not all "antioxidants" or grape seed extracts are the same, so knowing the chemistry and structural activity relationship is an important part of the center's science.

Strawberries
Eaten with a heavy meal, they helped to reduce oxidative stress and inflammation in the body; berries eaten before the meal may work even better, preparing cells to manage the impending metabolic-oxidative inflammatory stress. In future studies the center will further analyze the priming effect suggested by its studies.

cognitive impairments and even late-life Alzheimer's disease, which develops over decades starting in mid-life.

"We started thinking about how cognitive impairments might start early on, particularly as people start to gain weight and become pre-diabetic," says Burton-Freeman, who has a Ph.D. in nutritional biology and did her post-doctoral work in internal medicine. She also worked previously in the biotech industry and as a research professor at the University of California before joining Illinois Tech in 2007 and launching the center in 2008.

"If these unique compounds in wild blueberries can improve inflammation status and metabolic disturbances, especially how insulin works in the main body, we would expect improved brain function," she says. "Many people don't think about obesity or diabetes impacting their brain performance, but more and more we are finding they are linked."

This wild blueberry study—among 13 studies that Burton-Freeman and her fellow researchers will present at the Experimental Biology conference in Chicago this April—observed metabolic and cognitive performance benefits among the participants.

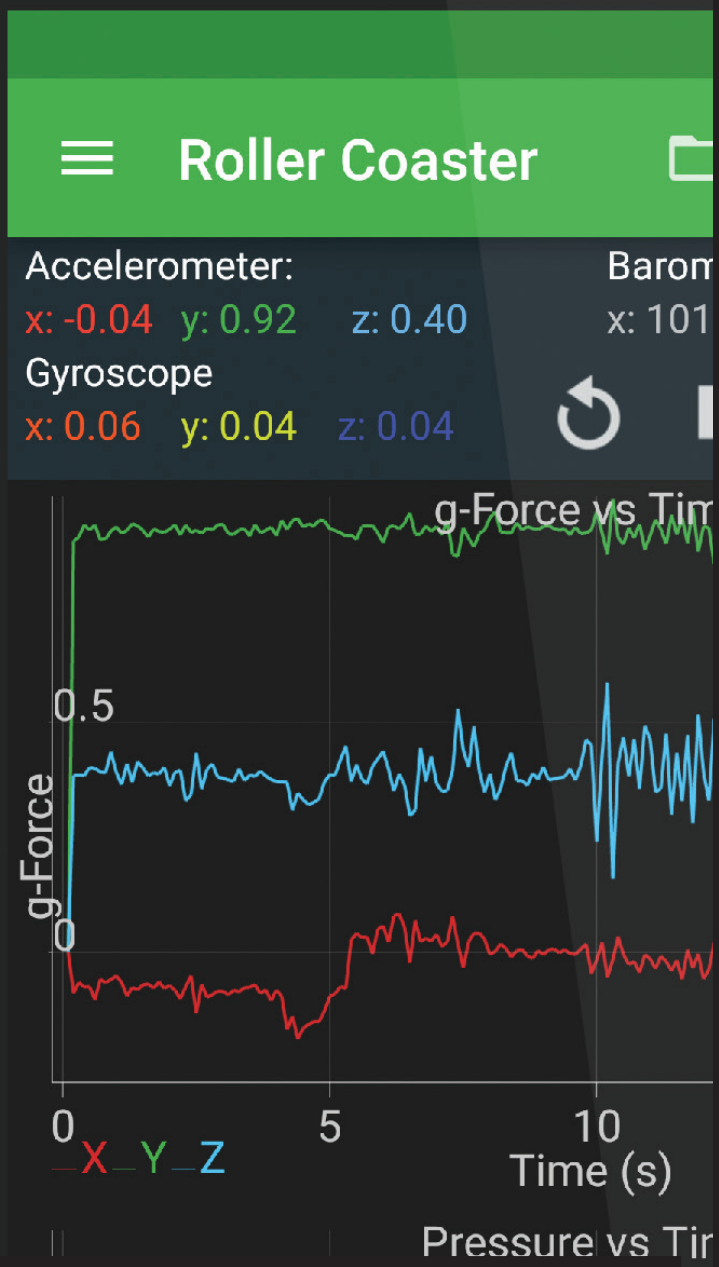
"It's an exciting time for food and health research: People want to know more about their food. They want to know what food to eat and how it does what it claims. Consumers are listening, and they are demanding quality scientific evidence," says Burton-Freeman. ■

MORE ONLINE
***U.S. News & World Report*, "The Downside of Going Organic," with Britt Burton-Freeman: http://health.usnews.com/health-news/blogs/eat-run/articles/2016-11-01/the-downside-of-going-organic**
Clinical Research Nutrition Center: https://www.ifsh.iit.edu/facilities/clinical-nutrition-research-center

From *g*-Force to *V*-Force

By Amanda Cleary Eastep

RENDERING: CHRYSTIAN VIEYRA



The high school student is safely strapped into the seat of the amusement park roller coaster. She selects the "Roller Coaster" mode in the Physics Toolbox Sensor Suite app, secures her smart phone in her pocket, and enjoys the ride as the car climbs slowly over the waiting crowd below, pauses dramatically at the top of the track, and then plunges downward. After the laughter subsides and her heart returns to its normal rate, the student checks her phone. The app has employed its various sensors to measure, collect, display, and record data, such as g-force.

Rebecca Vieyra (MSED '10), K–12 program manager at the American Association of Physics Teachers (AAPT), and her husband, Chrystian, a software engineer and Android and iOS app developer, created the Physics Toolbox mobile app. With its various sensors, including a g-force meter, linear accelerometer, gyroscope, barometer, and magnetometer, the toolbox has been used by students and professionals worldwide to measure everything from the acceleration of a playground swing to the noise levels near hospitals in Pune, India. The couple's brainchild, now more than three years old, grew out of the need for students in Vieyra's former high school physics class to solve a variety of assigned challenges. Although the app has more than a half-million users, it is free and generates no income for its creators.

"Despite the very happy fact that nearly 60 percent of our users are from engineering and technical fields such as the music and medical industries, I want people to recognize that this is an educational effort, and that I'm an educator at heart," says Vieyra.

A National Board-Certified teacher, Vieyra is a former Presidential Awardee for Excellence in Mathematics and Science Teaching and was honored in 2014–15 as a NASA Albert Einstein Distinguished Educator Fellow. At the AAPT, which supports all aspects of physics education, she writes and manages grant proposals, and as a representative on Capitol Hill, champions the value of STEM education to policymakers.

"Far too frequently students reject STEM because there is a lack of confidence in the subjects," says Vieyra, "perhaps because we sometimes, often unintentionally, treat science as external to the human endeavor and the personal experience."

On the Vieyra Software website, students can find lesson ideas relevant to high school and college-level STEM courses as well as help in answering science questions about common activities, such as "How does the normal force on my body change during an elevator ride?" Students, along with teachers and other professionals, often share YouTube videos and photos of their physics experiments on the toolbox's Twitter site.

"I firmly believe that when people become empowered by STEM—and not intimidated by it—they feel that they can tackle problems bigger than themselves," says Vieyra. "Having a STEM experience that is personal and not just in the context of an isolated laboratory room is essential for building that confidence." ■

MORE ONLINE
Physics Toolbox: www.vieyrasoftware.net

Graphic of the Physics Toolbox Sensor Suite app as it appears on a smart phone

Roy Grundy
(IE '52), Seattle, and his wife, Priscilla, met with United States Navy Lieutenant Junior Grade Juan Pablo Vielma (CIS '14) for lunch in the wardroom of the *USS John C. Stennis* aircraft carrier at Bremerton, Washington. Vielma also gave the couple a tour of the ship.

CLASS NOTES

1950s

Alfred Pilz
(IE '53), Ligonier, Penn., after serving as president and chief executive officer of several medium-sized companies, founded and continues to head the retirement hobby business Greenway Products.

Oliver Saffir
(EE '58), Palo Alto, Calif., worked in the aerospace industry while earning a Master of Science in Electrical Engineering. He then entered the commercial industry, working on integrated circuit design. Saffir started a Silicon Valley company in high-speed digital and analog-to-digital conversion. He consulted professionally before retiring and now enjoys life as a grandfather and great-grandfather.

1960s

Michael Retsky
(PHYS '61), Trumbull, Conn., earned a Ph.D. in physics from the University of Chicago in 1974 under Albert Crewe. While working at HP in Colorado Springs, Retsky made a career change into cancer research and took a position as professor of biology at the University of Colorado. With colleagues he devised an inexpensive nontoxic method to prevent relapses in breast cancer; he is editing a book on this subject to be published by *Nature*. Retsky has been married for 55 years to the person he dated while a student at Illinois Tech.

Roger Cooper
(M.S. MATH '63, Ph.D. '69), Menlo Park, Calif., has a graduate-level background in experimental psychology in addition to mathematics.

Robert Gordon
(ARCH '63, M.S. CRP '67), Chicago, is an architect, designer, and adjunct faculty member at Columbia College Chicago. He presented a paper and slides at the historic first conference held on the resurgence of hand drawing in design. Gordon's paper demonstrated ways that systematic sketching through SketchBook are intrinsic to the design process. He also shared architectural and urban design case studies that compared preliminary sketches to the completed design.

Bhakta Rath
(Ph.D. MET '63), Washington, D.C., associate director of research at the U.S. Naval Research Laboratory, was awarded the Medal for the Advancement of Research by the Board of Trustees of the American Society for Metals [International].

George Bradburn
(ARCH '65), Nîmes, France, worked for many years in Berlin and now lives in the south of France. He hopes to see old friends at the Illinois Tech Global Alumni Gathering in Paris this summer.

Ernest Bitten
(ME '66), Richland, Wash., U.S. Navy Captain (Ret.), obtained graduate degrees in ocean engineering and business administration. Bitten, also retired from the Hanford Site, where he served as a nuclear project manager, is an adjunct professor in the mathematics and business departments at Washington State University. He flies and maintains his own aircraft, and is a licensed commercial pilot, certified flight instructor, and certified light sport aircraft mechanic. Bitten is married and has seven grandchildren.

Kenneth Bobbe
(ME '66, M.B.A. '76), Inverness, Ill., was recruited out of school by Uarco Inc. and worked his way up until the company was bought out 32 years later. He then worked at the new company until 2000, when he retired. Bobbe and his wife celebrated their 50th anniversary, and have two children and four grandchildren. The couple has continued to learn over the years, taking part in the Institute for Continued Learning at Roosevelt University, of which Bobbe was president for two years.

Theodore Bohigian
(Ph.D. CHEM '66), Lincolnwood, Ill., spent his career doing industrial chemical research at corporations such as Amoco Chemicals Corporation and Bell Labs. He and his wife, Diane, recently celebrated their 50th wedding anniversary. Bohigian has two daughters and is very active in his church.

Bernard Brady
(CHE '66, M.S. CHE '69), Tumwater, Wash., taught at Oregon State University and has worked in various areas of engineering, such as chemical research, freeze-dried food research and production, fruit juice production, water treatment, and air quality. He has a daughter, a son, and five grandchildren. Brady enjoys hiking and beekeeping.

James Brown
(EE '66), Long Grove, Ill., retired from Honeywell after 34 years. He helped develop and promote life safety products in fire and security, and was responsible for setting up Honeywell's Life Safety Division throughout Asia. Brown and his wife, Donna, have been married for 50 years and have two children and four grandchildren. They enjoy traveling the world, playing golf, and most of all, babysitting the grandkids.

Margaret Cekis (née Sheridan)
(SW '66), Johns Creek, Ga., spent her career as a technical writer working at various laboratories. She enjoys sewing, crafting, reading, and studying how technology is changing.

Thomas Chilis
(EE '66), Lincolnshire, Ill., received a medical degree from the University of Illinois College of Medicine and spent his career as a pathologist. After acquiring a new family by marriage only three years ago, he is happy to have become a grandfather for the first time.

Phyllis Chillingworth
(DSGN '66), New York, received degrees in fine arts from Yale University and spent a career in design, including founding three different firms and designing the logo for Ellis Island. In 2009 Chillingworth left design for painting. She has had three solo shows in New York City and is painting for a fourth. She is active in nonprofit work, including the support of female veterans.

David Christof
(ME '66), Sabula, Iowa, served in Vietnam and spent his career traveling the country building above-ground storage tanks; he also owned his own company in Vietnam and had four offices and 150 employees. He and his wife, Bernadette, have been married for 47 years and have three children. Christof still owns his first car, a 1951 Ford Coupe, and loves restoring old automobiles.

James Foley
(ME '66), Harrison, N.Y., was employed at the same company since graduation, spending 46 years at Ingersoll-Rand/Dresser-Rand in New York, working in sales and marketing in the oil and gas, petrochemical, and utility markets. He is a two-time cancer survivor, having overcome both prostate and pancreatic cancers, and is involved in various advocacy efforts, including marching on Capitol Hill on National Pancreatic Cancer Advocacy Day. He says his greatest accomplishment is his family, including his wife, Susan, of 49 years, whom he dated as a student at Illinois Tech. The couple has three daughters and seven grandchildren.

James Freiband
(PSYC '66), Highland Mills, N.Y., completed two tours with the U.S. Navy in Vietnam, went on to graduate school at New York University, and spent his career as a municipal engineer and planner before becoming president of PPBS Inc. Engineering and Planning Consultants. He and his wife celebrated their 50th wedding anniversary in 2016 and have two children. Freiband works over the winter as a professional snowboard instructor and has completed 85 marathons.

Gerald Gruenbaum
(EE '66, M.S. '71), Sunrise, Fla., enjoyed a long career as an engineer, during which he received the first-ever Purchasing Manager Excellence Award from Motorola. Now retired, he is a certified instructor in computer skills for adults and enjoys music and ham radio. Gruenbaum is married and has three children, four grandchildren, and two great-grandchildren.

John Haley
(ARCH '66), Chicago, worked for Ludwig Mies van der Rohe after graduation. When Mies died in 1969, Haley worked at Skidmore, Owings, and Merrill, and then joined the former Stanley Tigerman and Associates Ltd. In 1975 he started his own

practice. Haley is married and had three children and six grandchildren.

Naoyasu Iino
(M.S. EE '66), Flanders, N.J., spent his career as a consumer electronics design engineer and quality assurance engineer in the field of home electronics. He and his wife, Mitsy, raised two children in the Chicago area before moving to New Jersey more than 30 years ago. The couple has six grandchildren and is enjoying the retired life.

Michael King
(CHEM '66), Washington, D.C., received a Ph.D. from Harvard University and was mentored by Nobel Laureate R. B. Woodward. He became an assistant professor of chemistry at New York University before transferring to George Washington University in 1973, where he has served as chair of the chemistry department for years. King has won numerous awards for his service at George Washington University, including the George Washington Prize in 2011, the university's highest honor.

Robert Lyczkowski
(M.S. GE '66, Ph.D. GT '70), Darien, Ill., worked for Goodyear Atomic Corporation, the Aerojet Nuclear Company, Energy Incorporated, Lawrence Livermore National Laboratory, the Institute of Gas Technology, and Argonne National Laboratory. He is an avid collector of classical music records, CDs, and videos, and enjoys gardening. Lyczkowski established the Dimitri Gidaspow Endowed Fellowship Fund at Illinois Tech.

James Muraski
(MET '66), Chicago, earned his M.B.A. from Loyola University and worked as a metallurgist and in management for several organizations; he also was instrumental in expanding companies into China. He and his wife, Kay, whom he met at Illinois Tech, have three children, eight grandchildren, and six great-grandchildren. Muraski enjoys reading about history, spirituality, and business, and is active in his church.

Robert Nussbaum
(IE '66), Chicago, earned an M.B.A. and became a management consultant on the way to his position as a chief financial officer. He has also written materials published by the federal government. Nussbaum enjoys playing bridge, fishing, and shooting.

Lewis Piggott
(IE '66), Franklin, N.C., was employed as an industrial engineer specializing in supply chain management for a variety of firms, including Johnson & Johnson and KPMG, and led supply chain redesign projects for companies such as Michelin and Unilever. He then ran his own firm for three years before he retired in 2000 at the age of 56. He and Sue, his wife of 43 years, enjoy traveling, attending antique auctions, and collecting silver and original art. He also enjoys golf but says he is not very good at it.

Conrad Rendina
(EE '66), Woodridge, Ill., worked as an engineering manager at Motorola, Technitron Industries, and several other electrical engineering companies. He is married and has five children. Rendina likes to ski and golf, and is active in his church.

James Rohrbacher
(ME '66), Downers Grove, Ill., started his career working on farm tractors at the International Harvester Company, later worked for the food industry, and then was self-employed in the liquefied and industrial gases industry. He has been retired for 16 years. Rohrbacher enjoys ballroom dancing and even volunteered to be a ballroom dance teacher at Illinois Tech. He held patents on a pizza sauce applicator for mass producing pizzas and on a machine to mass produce crepes.

Donald Rowe
(DSGN '66), Olivet, Mich., received an M.F.A. from the University of Hartford and was an art professor at Olivet College for 45 years. Rowe continues to produce art, paintings, prints, and drawings, working daily in his studio. His wife, **Susan Rowe (née Sobczak)** (DSGN '66), has enjoyed a career in graphic design and now volunteers in their small community. Their daughter, Jessica, graduated with an M.F.A.

Patrick Schrickel
(CHE '66), Green Bay, Wis., was employed for 40 years by Wisconsin Public Service, from which he retired as president and chief operating officer. He has been a longtime volunteer, contributor, and disaster response leader with Habitat for Humanity. Schrickel is also a supporter of Trees for Tomorrow, a natural resource education center in Eagle River, and has served as a math and reading tutor in schools.

Michael Slifka
(FPE '66), Middleton, Wis., has been a government official with the U.S. General Services Administration, the National Bureau of Standards, and the veterans administration. He has spent most of his career in fire protection engineering, including forensic consulting on large loss of life fires. Slifka consulted on the fire protection design for the second McCormick Place and Water Tower Place in Chicago, and the National Air and Space Museum in Washington, D.C.

Francis Wodarczyk
(CHEM '66), Springfield, Va., retired from the National Science Foundation three years ago. He enjoys hiking, biking, traveling, and volunteering for environmental groups.

Victor Yipp
(MATH '66), Oak Park, Ill., early in his career, was a computer programmer and worked at NASA on Project Apollo. He earned a law degree and was an Illinois assistant attorney general for a few years, defending state prison wardens when they were sued for violations of civil rights. Late in life Yipp received an M.F.A. in creative writing, and his passion for fiction writing led him to win a local short-fiction contest. He and his wife, Iris, have one child and four grandchildren. Yipp says that his claim to fame was winning a car, trip, and cash on *Wheel of Fortune* in 1996.

Ronald Yoshino
(ME '66), Indian Head Park, Ill., worked for 39 years at General Motors Electro-Motive Division designing locomotives. He now enjoys playing tennis and golf, traveling, and reading.

Frank Dougherty
(CHEM '67), Clovis, Calif., retired from ABB's Ventyx Enterprise Software subsidiary. He is enjoying retirement by participating in the Osher Lifelong Learning Institute at Fresno State University.

Jerome Zis
(M.S. EE '67), Saratoga, Calif., retired from a successful career in the semiconductor industry, where his last postion was as director of precision amplifiers at Analog Devices, Inc. He now plays in several bands and repairs musical instruments.

Deepak Bammi
(M.S. IE '68, Ph.D. '72), Barrington, Ill., won a leadership award for 35 years of exemplary application of management science from the Institute for Operations Research and the Management Sciences. His dissertation on optimal police patrol beats was implemented by the Netherlands Ministry of the Interior and Kingdom Relations in all 23 major cities in that country. Bammi merged the fields of multiple objective mathematical programming and urban planning to develop a long-range land use plan for DuPage County, Illinois. At Inter North, Inc. his team developed risk-analysis models for top management. Bammi retired from FedEx, where he developed innovative facility location models. He is now the president of Research, Optimization and Logistics, Inc. In his spare time, Bammi is writing a series of children's books and a travel book.

Laurence Kozlicki
(LAW '69), Inverness, Ill., was inducted into the Chicago Area Entrepreneurship Hall of Fame. One of his current companies was awarded the Blue Chip Enterprise Award, co-sponsored by Mass Mutual, *Business Week* magazine, and the U.S. Chamber of Commerce.

1970s

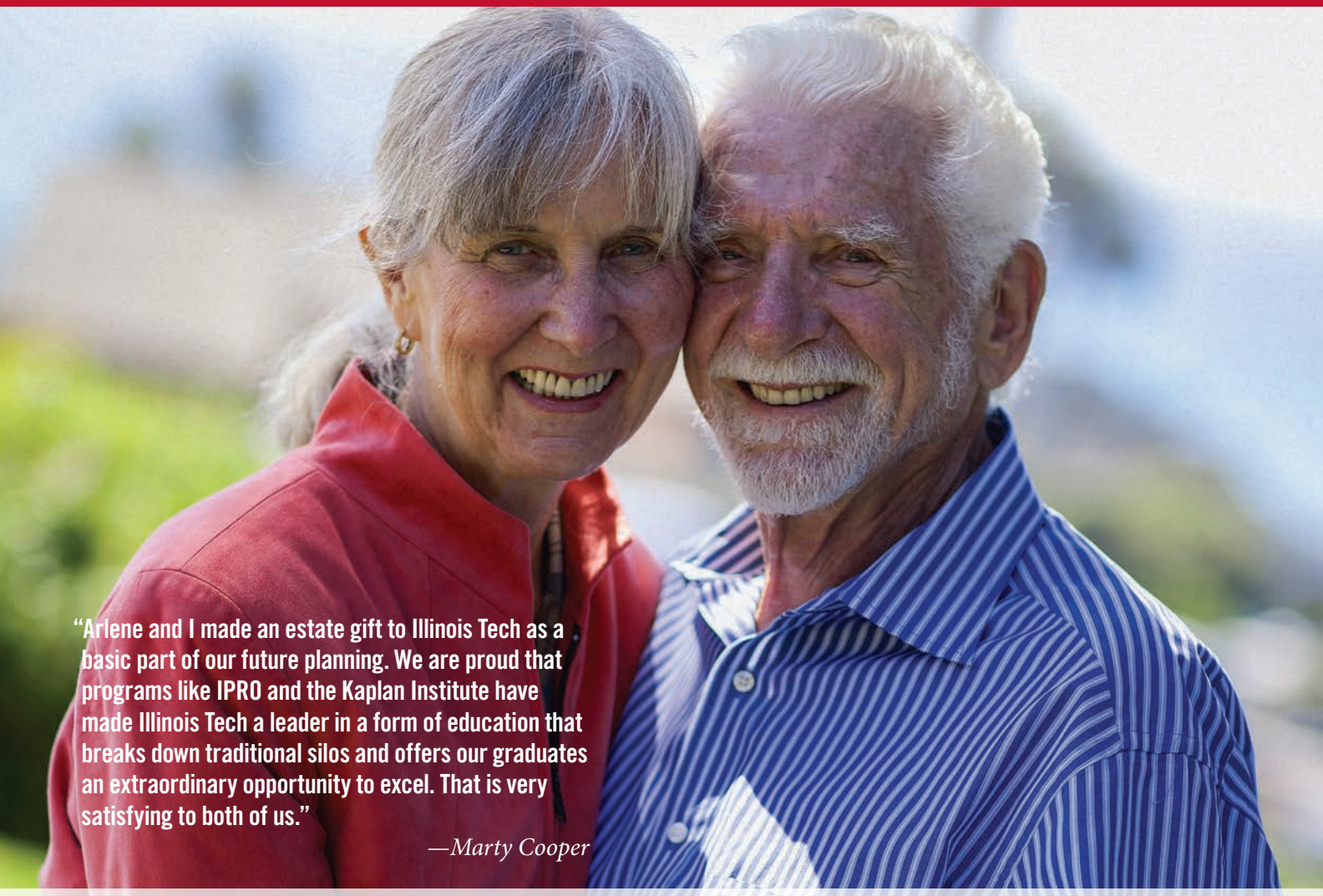
Richard Burd
(M.S. DSGN '70), Bridgman, Mich., visited the Bauhaus Museum in Germany in January 2016 and the Moholy-Nagy: Future Present exhibit at the Art Institute of Chicago, and found both to be inspirational.

Manu Vora
(M.S. CHE '70, Ph.D. '75), Naperville, Ill., was appointed as a Fulbright Specialist by the U.S. Department of State Bureau of Educational and Cultural Affairs. He and a team he led from the Quality Council of India received the D. L. Shah Silver Quality Award for the ASQ India Leadership Excellence Series. Vora also taught the course Project Management for Organizational Excellence at the Indian Institute of Technology, Varanasi, India.

William Schiemann
(PSYC '71, M.B.A. '73), Lebanon, N.J., is chief executive officer of Metrus Group and is a thought leader, author, and keynote speaker in the human resources field. His latest book, *Fulfilled! Critical Choices: Work, Home, Life*, teaches individuals to think about life fulfillment in a holistic fashion, using principles and

Edward Generazio
(M.S. PHYS '79), Yorktown, Va., program manager for NASA's Office of Safety and Mission Assurance Nondestructive Evaluation [*center*], was awarded the NASA Distinguished Service Medal for his exemplary work in nondestructive evaluation. He also developed and patented a new electric-field imaging technology. Generazio's sensor made imaging these fields possible for the first time.

“Father of the Cell Phone” Creates Legacy



“Arlene and I made an estate gift to Illinois Tech as a basic part of our future planning. We are proud that programs like IPRO and the Kaplan Institute have made Illinois Tech a leader in a form of education that breaks down traditional silos and offers our graduates an extraordinary opportunity to excel. That is very satisfying to both of us.”

—Marty Cooper

In 1973 Marty Cooper (EE ’50, M.S. EE ’57) invented the cell phone while leading a team of engineers at Motorola. Cooper credits his success to the practical, industry-focused education he received at Illinois Tech. In 2013 he received the Charles Stark Draper Prize for Engineering from the National Academy of Engineering for “pioneering contributions to the world’s first cellular telephone networks, systems, and standards,” and in 2015 he was inducted into the Illinois Tech Hall of Fame.

In 2012 he and his wife and business partner, Arlene Harris, made a $1 million estate commitment to support the Ed Kaplan Family Institute for Innovation and Tech Entrepreneurship.

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.**
- **Reduce any potential estate tax.**
- **Retain control of your assets during your lifetime by directing your 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 to learn how you can benefit from these giving methods and more. Contact Dean Regenovich, Office of Gift Planning, at dregenovich@iit.edu or 312.567.5018.

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

Gunsaulus | SOCIETY

tools that have been proven to work in business and organizational psychology.

Kenneth Carlozzi
(MATH '72), Hilton Head, S.C., had a longtime career at Boeing, serving as lead database designer for technical and management information systems for NASA's Space Station Program and as manager of information systems development at Naval Air Warfare Center China Lake. Carlozzi was employed as a systems engineer and an enterprise architect the last 14 years of his career before retiring in 2014.

Paul Clements
(M.S. PSYC '72, Ph.D. '78), Belleair Beach, Fla., recently retired from many years of full-time practice as a medical psychologist and psychiatric nurse practitioner. He continues to have a consultation practice serving nursing homes.

Frederica Darema (née Rogers)
(M.S. PHYS '72), Bethesda, Md., was appointed as director of the Mathematics, Information and Life Sciences Directorate of the Air Force Office of Scientific Research. [*Read more about Darema in the spring 2014 issue of* IIT Magazine *at http://bit.ly/2hf1rJf.*]

Dana Broach
(PSYC '74), Norman, Okla., was named to the editorial board of the *International Journal of Aviation Psychology*.

Ronald Painter
(ARCH '74), Santa Maria, Calif., has had extensive global architecture opportunities, working on projects in Bolivia, Honduras, Italy, Mexico, and Romania. His domestic work has extended from California to Maine. The varied projects included an airport, many office buildings, temples, hospitals, and more than 11,000 residences, mostly privatized military housing. Painter also had his own firm for 10 years.

Daniel Vukelich
(ENGL '76), Albuquerque, N.M., is the founding editor of *ABQ Free Press*, an alternative weekly serving Albuquerque and Santa Fe, which began publishing in 2014. Most recently he was editor of *Sun Country Golf*. A career journalist, Vukelich previously worked for 10 news organizations. His first newspaper was Illinois Tech's *TechNews*.

Brian Devitt
(BIOL '77), Philadelphia, and his wife, Dale Buddine, attended the commissioning of the *USS John P. Murtha* (LPD-26) at Penn's Landing in Philadelphia in 2016. After serving for seven years on active duty and 13 years as a reservist, Devitt retired in 1997.

Anthony Metoyer
(ME '77), Sammamish, Wash., director of operations and strategic development at Boeing, received the Black Engineer of the Year Award (2017) for Professional Achievement from the Career Communications Group. He is a member of the IIT Alumni Association Board of Directors.

Pinakin Patel
(M.S. CHE '77), Danbury, Conn., is director of advanced technology at FuelCell Energy, a company started by Illinois Tech alumni that has now grown to more than 600 employees with operations in the U.S., Europe, and Asia. Patel has worked in his field for 40 years, and has more than 30 patents and 200 publications and invited talks. He received a special recognition award from the U.S. Department of Energy for a demonstration of the world's first tri-generation system for fuel cell cars. Patel serves on the board of directors of the California Hydrogen Business Council. His latest innovation is the co-production of syn-gas plus power for stranded shale gas and for the petrochemical industry.

Jeffery Perl
(CHE '77, M.S. '79, Ph.D. '84), Lincolnwood, Ill., authored the book *Sustainability Engineering: A Design Guide for the Chemical Process Industry* (Springer Publishing, July 2016).

Russell Sinkler
(M.P.A. '77), Rosemount, Minn., provides executive sponsor support and client relationship management services to select large health care delivery systems in Illinois, Wisconsin, Oklahoma, Texas, and Louisiana.

Alan Druschitz
(MET '78, Ph.D. '82), Blacksburg, Va., was presented with the FEF/AFS Distinguished Professor Award at the 2016 Foundry Educational Foundation College-Industry Conference in Chicago.

Kazimer Ignarski
(CS '79), Orland Park, Ill., is co-author of the second edition of the book *Cubs By the Numbers*, which features a complete list of every Chicago Cubs Player (except one) who has worn a uniform number since the team began issuing them in 1932 as well as stories about players and managers.

1980s

Thomas Brisbin
(Ph.D. ENVE '80), Anaheim, Calif., is chief executive officer and chairman of the board of Willdan Group, Inc. He has served as Willdan's president and CEO since 2007.

Patrick Charbonneau
(M.B.A '80), South Barrington, Ill., retired from Navistar after 38 years. He held many executive roles and led the development of Green Diesel Technology, used in all modern low-emissions car and truck diesel engines in the U.S. and Europe today. Charbonneau now enjoys consulting, and traveling with his wife, Rosanna.

David Erhart
(CHE '80), Menlo Park, Calif., is senior director of reliability and testing at Tesla Motors.

Danuta Solecka-Urbikas
(M.S. ENVE '80), Chicago, wrote the book *My Sister's Mother*. A memoir of war, trauma, and survival, the book focuses on her mother and half-sister who were taken from their farm in Poland in 1940 and sent to Siberia to be slave laborers. Solecka-Urbikas also works as a real estate broker. She and her husband have three adult children.

Daniel Chow
(M.S. ENVE '82), Cupertino, Calif., is chief operating officer of Willdan Group, Inc. Prior to accepting the newly created position he

Bay Area Alumni Gathering Illinois Tech Trustee Chris Gladwin [*standing*] with Zahra Tashakorinia (M.Des. '12), Mark Radcliffe, and Alan Soucy, led a panel discussion in the Bay Area about successful startups.

Chicago Area Alumni Gathering Alumni gathered at the John T. Rettaliata Engineering Center on Mies Campus to hear from Miles Wernick, Motorola Endowed Chair Professor of Electrical and Computer Engineering and director of Illinois Tech's Medical Imaging Research Center.

Calamos Investiture John P. Calamos Sr. (ECON '63, M.B.A. '70) and his wife, Mae, celebrated the investiture of John F. O. Bilson [*seated*] as the John and Mae Calamos Stuart School of Business Dean Endowed Chair. Photo: Michael Goss

D.C. Alumni Gathering Alumni in Washington, D.C., heard College of Science Dean Russell Betts present "Science at IIT—News from the Front" before Jean-Francois Pombert, assistant professor of biology, [*back right*] presented "The Rise of Bioinformatics in the Personalized Genomics Era."

Campaign Close Dinner [*Left to right*] President Alan W. Cramb and his wife, Anna, joined Illinois Tech Regents Craig Duchossois and Ralph Wanger as well as Student Government Association President Hamze Sukkar (CE 4th year) at the Fueling Innovation campaign close dinner. Photo: Michael Goss

was president and chief executive officer of Willdan Engineering since 2008.

Karen Hubbard
(Ph.D. BIOL '82), West Orange, N.J., received the City College of New York's Presidential Award for Faculty Service.

Robert Theel
(ARCH '83), Chicago, chief architect and director of the Design & Construction Division for the Great Lakes Region of the U.S. General Services Administration, was a keynote speaker at the Construction Industry Conference held at Illinois Tech in November 2016. [*Read more about Theel in the fall 2016 issue of* IIT Magazine *at http://bit.ly/2hc5aql.*]

Prasad Kodukula
(Ph.D. ENVE '84), Chicago, an adjunct faculty member at Illinois Tech's Armour College of Engineering, received the 2016 Eric Jenett Project Management Excellence Award from the Project Management Institute.

John Swierk
(ARCH '84), Winnetka, Ill., is celebrating his 28th anniversary as founder and president of DDCA Architects, a Direct Design Ltd. company. He is licensed to practice architecture in 28 states and has a client base that includes national retail, restaurant, industrial, and manufacturing companies.

Ejaz Elahi
(M.S. CS '88), Naperville, Ill., is a managing director at BDO Consulting in the Healthcare Advisory Practice. For more than 17 years, he has advised health care organizations and gained comprehensive experience in growth strategy, mergers and acquisitions, capital markets, and restructuring.

Candace Wark
(Ph.D. ME '88), Chicago, professor at Illinois Tech's Armour College of Engineering, was a member of the panel that selected the winners of the 2016 Blue Man Group Art Competition, Daring to Live in Full Color, as the group celebrated its 25th anniversary in 2016. Wark and Shirley Nannini of Wind Flow Photography were winners of the 2013 competition. [*Read more about Wark in the summer 2015 issue of* IIT Magazine *at http://bit.ly/2hW07i0.*]

1990s

Robert Klaszky
(AE '92), Chesapeake, Va., U.S. Navy captain, recently commanded the forward-deployed Afloat Forward Staging Base *USS Ponce* (AFSB(I)-15). Klaszky serves on the staff at Military Sealift Command in Norfolk, Virginia, supervising fleet exercises and war gaming. He was selected for Major Command for his next assignment at Coastal Riverine Group TWO.

Shelly Scinto
(LAW '92), Chicago Ridge, Ill., has joined Ice Miller's as Of Counsel in the Municipal Finance Group. She has more than 15 years of experience in the municipal finance arena, having served as lead counsel on more than 250 underwritten and privately placed municipal bond transactions throughout the State of Illinois.

Timothy McJilton
(M.B.A. '93), Glenview, Ill., joined Chicago Real Estate Resources as an investment broker specializing in industrial, office, and multi-family real estate investments.

Christopher Monroe
(PS '93), Whitefield, Maine, is an associate at Verrill Dana LLP.

Michael Lee
(LAW '94), Vernon Hills, Ill., is an attorney at Howard & Howard, concentrating his practice in civil litigation, financial services, and labor and employment.

Rishi Bharadwaj
(EE '96, M.A.S. ECE '99, CER WIRE '99), Schaumburg, Ill., was promoted to senior vice president and general manager of PCTEL's Connected Solutions group. The role recognizes Bharadwaj's contributions and leadership of the company's antenna business, the development of its Beijing Design Center, its Tianjin manufacturing operation, and its sales growth in China.

Amanda Howland
(LAW '96), Lake Zurich, Ill., was elected to the Diversity Committee of the Association of Community College Trustees for a two-year term. Howland has had an extensive career as a teacher of behavior-disordered students, an elementary school administrator, and now as an attorney and mediator practicing in the areas of civil rights and constitutional law.

Sherry Knutson Vaughan
(LAW '96), Chicago, was elected a fellow of the International Society of Barristers. She has 20 years of experience in product liability and toxic tort cases, with an emphasis on defending pharmaceutical and medical device companies.

Lara Dreznick Shayne
(LAW '96), Chicago, was appointed by Governor Bruce Rauner to the Illinois Educational Labor Relations Board.

John Katsoudas
(PHYS '97, M.S. '04), Chicago, Illinois Tech senior research associate, co-founded AquaGrow Technologies with Elena Timofeeva, adjunct associate professor of chemistry. AquaGrow is a fully containerized aquaponics farm that uses local food waste as the energy source instead of electricity. It provides grid independence at a lower cost than typical indoor farms and mobility for use in food-poor areas.

Michael Hreczkosij
(PHYS '98), Bagdad, Fla., was deployed to Kabul, Afghanistan, to serve as the commander of the 538th Air Expeditionary Advisory Squadron. He is leading a team of air advisors tasked with training and advising the Afghan Air Force on mobility operations, and will hold this position until July 2017.

Jennifer Ashley
(LAW '99), Libertyville, Ill., received a 2016 Women of Distinction Award from the *Lake County Journal*. She joined Salvi, Schostok & Pritchard P.C. in 2012 and was named partner two years later. Ashley concentrates her practice in the area of personal injury. In addition, she is involved in many legal associations, including the Lake County Bar Association, Illinois State Bar Association, Illinois Trial Lawyers Association, and American Association for Justice.

Mark Frame
(M.S. PSYC '99, Ph.D. '03), Murfreesboro, Tenn., was promoted to professor in the Department of Psychology at Middle Tennessee State University.

2000s

Brian Gahan
(M.A.S. CHE '02), Cary, Ill., U.S. Air Force lieutenant colonel, assumed command of the recently activated 182d Medical Group Detachment 1 in Peoria. He previously served as the bioenvironmental engineering officer at the 126th Air Refueling Wing, Scott Air Force Base. Gahan and his wife, Cindy, have three children.

Cynthia Leos (née Goldberg)
(LAW '02), Albuquerque, N.M., won a contested primary election and a contested general election in 2016 for 2nd Judicial District Court Judge in Albuquerque. She assumed the criminal bench in January 2017.

Mark Haraburda
(M.S. FM '04), Chicago, is chief executive officer of Barchart.com Inc., a Chicago-based leading provider of financial market data and technology. Previously, he was Barchart's managing director of business development and sales. Haraburda also has worked for Bank One, the Chicago Board of Trade, and the Chicago Board of Options Exchange.

Amy Beribak
(PSYC '06), Watersmeet, Mich., earned a clinical doctorate in occupational therapy and passed the National Board for Certification in Occupational Therapy. She is a travel therapist with Delta Health Care and works in home health care in rural Michigan. Beribak is a regular presenter at various national occupational therapy conferences.

Erin Conway (née Woelker)
(LAW '07), Chicago, is a partner at Amin Talati Upadhye, LLP.

Benjamin Edlavitch
(LAW '07), Wilmette, Ill., has joined Westman, Champlin & Koehler, an intellectual property law firm in Minneapolis. Edlavitch is a member of the Illinois and Minnesota bars, and is registered to practice before the U.S. Patent and Trademark Office.

2010s

LaShon Anthony
(CER IT '10), Chicago, is celebrating her first anniversary as the community leader of her chapter, ABI Chicago, a women in tech group associated with the Anita Borg Institute. ABI's global mission is to advance women in technology through professional and leadership development, mentoring, and training.

Patrick Olechno
(CE '10, M.S. '12), Mt. Prospect, Ill., is an engineer at Raths, Raths & Johnson, Inc., a national engineering, architecture, and forensics consulting firm.

Omaditya Khanna
(CHE '11), Philadelphia, is a resident at Thomas Jefferson University Hospital.

Margaret Master
(LAW '12), Chicago, serves on the KIPP Colorado Advisory Board. She promotes the work of KIPP Colorado Schools students and teachers, coordinates mentorship programs for current students and alumni, participates in fundraising efforts, and hosts networking events to raise public awareness of the nonprofit organization. Master is an associate at the Denver office of Brownstein Hyatt Farber Schreck, LLP.

Nik Rokop
(M.D.M. '12), Chicago, was installed as the Coleman Foundation Clinical Associate Professor of Entrepreneurship at Illinois Tech. He supports student entrepreneurs and faculty who enhance experiential entrepreneurship education.

Michael Ward
(LAW '12), Chicago, is an associate at Bryan Cave LLP in the real estate and lending client service groups.

Wen Yao
(M.S. MCOM '12), Chicago, co-founded Powwful, a sports bra company inspired by well-known Chicago architecture and public art. Previously, Yao launched a fashion startup called Style Check-in, a curated personal styling service for petite women.

ALUMNI EVENTS

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

ILLINOIS TECH IS COMING YOUR WAY

This spring Illinois Tech is hitting the road to bring you a series of events featuring groundbreaking research by our innovative and exceptional faculty. We will be bringing these unique events to the following cities:

Bay Area
Chicago
Los Angeles Area
San Diego

Visit **alumni.iit.edu/events** for dates—and be sure to mark your calendars! Future events in a number of cities will be added to the calendar soon.

Global Alumni Gathering

Friday, June 30–Sunday, July 2, 2017
Paris

Join alumni from around the world at Illinois Institute of Technology's second Global Alumni Gathering—Global Challenges of the 21st Century. A who's who of alumni will speak about how our university community is addressing challenges in the areas of water, health, energy, and security. Come to learn and network, and explore the beautiful city of Paris. Visit **alumni.iit.edu/paris-2017** to learn more.

2017 Alumni Awards Luncheon

Friday, April 21, 2017
Hermann Hall, Mies Campus
Chicago

Plan to be on Mies Campus to help us celebrate our innovative and exceptional alumni at this annual special event. Visit **alumni.iit.edu/awards** for a list of winners and event details, and to register.

SAVE THE DATE!
Illinois Tech Homecoming, Spirit Day, and Reunion Weekend
Friday, September 15 and Saturday, September 16, 2017

ILLINOIS TECH ALUMNI ASSOCIATION

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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** 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** to join today.

SPOTLIGHT

Harmony Clauer-Salyers (CS, CE '12), San Antonio
Developer of the USAA Bank Voice-Guided Deposit

A year before Harmony Clauer-Salyers graduated from Illinois Tech, she interned with USAA Bank and has remained with the company, working on development of the web, mobile devices, and accessibility. The bank serves current and former United States military members and their families.

"I noticed that we had an increasing number of wounded warriors returning from duty without their eyesight plus a membership base that is older, which made for a fairly large population of individuals unable to use the check deposit feature that so many of us take for granted," says Clauer-Salyers, who spoke about her work during the College of Science Women in STEM Week 2016 event on Mies Campus.

Clauer-Salyers had an idea to create a voice-guided cross-platform tool that enables visually impaired clients to deposit checks on their own. As part of a USAA staff coding competition, she led a team that built the winning Deposit@Mobile prototype, which was further refined and is now part of USAA's suite of banking apps.

"Mobile devices have really become an assistive technology," she adds, noting that smart phones have now joined magnified screen readers and braille-imprinted keyboards as ways to improve the quality of life for the visually impaired. *—Marcia Faye*

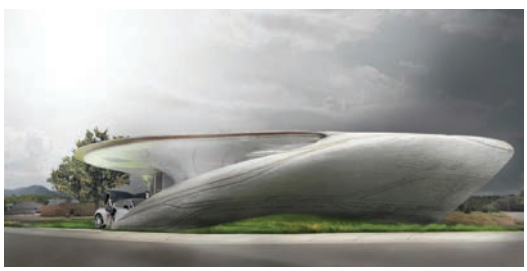
Elyse Doll
(PSYC '13), Chicago, is a graduate student at Northern Illinois University. She is studying school psychology and received a federal grant to address and prevent school-age bullying.

Bhavna Hosakere
(EE '13), London, moved from New York City to London with her husband for a professional opportunity with the strategy and business transformation team at The Hackett Group, Inc.

Samantha Lloyd
(LAW '13), Chicago, was made partner at RC Immigration Group LLC in 2016. She practices in a range of areas relating solely to immigration.

Christopher Riley
(LAW '13), Chicago, joined McDonald Hopkins LLC, a business advisory and advocacy law firm, as an associate in the business department. Prior to joining McDonald Hopkins, Riley was an associate attorney at Lowis & Gellen LLP.

Joanna Weir
(PSYC '13, CER PSYR '15, M.S. REHA '15), Chicago, is a vocational specialist with



Daniel Craven
(ARCH '13), Maquoketa, Iowa, and his team at Urban Architecture Studio, in Chicago, won first prize in a competition to conceive the world's first freeform 3-D printed house. Planning phases will take place in Chattanooga, Tennessee, with printing set to begin sometime this year.

Campaign Close Campus Celebration At the Fueling Innovation campus celebration, [*left to right*] Provost Frances Bronet, Institutional Advancement Vice President Betsy Hughes, and President Alan W. Cramb prove that Illinois Tech's future is so bright, they have to wear shades.

Nayar Prize Lunch [*Left to right*] Madhavan Nayar (M.S. IE '68), Provost Frances Bronet, Ramon Nayar, and President Alan W. Cramb joined the Nayar Prize II finalists for lunch.

London Alumni Gathering Alumni from several countries gathered in London to hear the latest Illinois Tech news from President Alan W. Cramb [*third from right*].

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

Helping Hand Center and works for the nationwide program Project SEARCH at Brookfield Zoo. She supervises 10 adults with various disabilities who are learning new job skills during their zoo internships. Weir also assists with the transition of the adults to their jobs in the community.

James Pierog-Sheehan (CHE '14), St. Charles, Ill., was awarded third place at the sixth annual Industrial and Engineering Chemistry Division Graduate Award Symposium for his talk "Product Formation and Kinetics from the Fast Hydrothermal Liquefaction of Soy Protein Isolate." The symposium was held during the 252nd American Chemical Society National Meeting in Philadelphia.

Pu Chen (M.S. FIN '15), Chicago, is founder of the lunch delivery startup Chowbus, located in the Merchandise Mart.

Kun Li (Ph.D. MSC '15), Hammond, Ind., assistant professor of finance at Beijing Normal University, received the Outstanding Young Faculty Research Grant. The grant supports promising and outstanding scholars and professionals under 35 with funding from the Government of Beijing and Organization Department of the Communist Party of China. Li is the first IIlinois Tech alumnus to receive this award.

Brian Farci (ARCH '16), West Linn, Ore., moved to Portland, Oregon, and joined a collaborative team designing retail environments for Nike's pinnacle North American retail locations. Notable projects include retail executions for the Olympics 2016 and Tech Pack, and the opening of new Nike stores in New York City's Soho neighborhood and Miami.

Shyamoli Gramopadhye (M.A.S. FST '16), Springfield, Mo., is enjoying her first job as a food technologist and also her latest adventure as a food blogger for FoodGrads.com.

CHAPTER NEWS

Alumni Board 101: *How to Get Involved*

If you're looking for a way to get more involved with your alma mater this year, look no further! It can be as easy as following the Alumni Association on social media, or attending alumni gatherings in your area, or simply remembering **AP³: Admissions, Pride, Placement, Participation.** AP³ is the new mantra of the Alumni Association Board of Directors, and they're making it their mission to get the entire Illinois Tech alumni population on board.

From an **admissions** standpoint, alumni can volunteer to represent the university at college fairs. "Having alumni around the country doing this, we've gotten more traction with our recruiting pipeline, and we're getting kids from areas we weren't before," says Andrea Berry (CS '84), chair of the Alumni Association Board of Directors. Alumni can also write letters or postcards to prospective students, building connections and welcoming them to the Illinois Tech family. "Sometimes that letter can be the decision maker for welcoming and encouraging them to join the Illinois Tech family," Berry says.

"Pride is an easy one," Berry says. "Buy a hat from the bookstore or get an alumni license plate holder. Represent your alma mater. With more than 75,000 alumni, think of the impact we could have if we all wore Illinois Tech swag!" Sharing good news, career advancement, and professional development with your peers is showing pride in your alma mater—don't be afraid to brag a little about your own accomplishments by submitting a class note at **alumni.iit.edu/class-notes**!

Many young alumni have asked for help in their careers, and the Alumni Board has heard their call. The board's Career and Professional Development Committee leads the Hawk Talk series of webinars and workshops to help with **placement** and career development. Alumni can help in this area by hiring fellow alumni or giving an internship to a current student. Remember, the services of the Career Services Office are yours for life, so don't be afraid to use them.

"Participation is literally just that—participate!" Berry says. "Attend a local chapter event, check out the website, sign up for a free webinar, update your phone number and address, make a gift, use the online directory to contact classmates, refer a student—take advantage of the resources that are out there for us."

Ultimately, Berry believes the simplest way to get involved is just to talk about Illinois Tech. "Tell your Illinois Tech story to someone," she says. "We do a lot of our own marketing of the university just as alumni, and we have the power to get people around the world excited about Illinois Tech."

AP³ @ ILLINOIS TECH
- Admissions
- Pride
- Placement
- Participation

Visit **alumni.iit.edu/get-involved** for more ways to engage with your alma mater, and follow university social media accounts at **web.iit.edu/directory/social-media** to share stories, current press, and university updates.

PASSINGS

Alumni
Charles Condes
ME '42
Harwood Heights, Ill.

Corinne Bieber
HE '44
Davenport, Iowa

Arthur Uhlir
CHE '45, M.S. '48
Weston, Mass.

Robert Durham
ME '46
Canyon Country, Calif.

Frank Allseits
CHE '48
Palatine, Ill.

Margaret Stepanek
HE '48
Henderson, Nev.

John Doering
ME '49
San Mateo, Calif.

Harris Levee
(ME '49), Gaithersburg, Md., worked on the Manhattan Project in various capacities—as an engineer and as a team member responsible for both ensuring project secrecy and obtaining patent rights from scientists such as Enrico Fermi and Leo Szilard. After the project ended, Levee supervised the construction of the *USS Nautilus* nuclear-powered submarine and several coal-fired, electric-generating stations in India. He then became vice president of Norair Engineering, Inc. before forming his own company, Halco Engineering, Inc. Read a 2015 *IIT Magazine* feature on Levee at https://magazine.iit.edu/spring-2015/highly-charged-life.

Robert Blumenthal
ME '50
Glenview, Ill.

Marvin Cohn
EE '50, M.S. '53
Boca Raton, Fla.

Richard Rosback
ME '50
South Bend, Ind.

Kenneth Fulton
EE '51
Oak Park, Ill.

Walter Fleischer
EE '51
Aurora, Colo.

Phillip Goodrich
EE '51
Morris, Ill.

Stanley Hutchison
LL.B. '51
Scottsdale, Ariz.

Raymond Wilke
CE '51, M.S. BE '60
Barrington, Ill.

Yoshiaki Amino
ME '52
Evanston, Ill.

Robert Brody
LAW '53
Lincolnwood, Ill.

Irving Gottesman
(PSYC '53), Edina, Minn., was considered a pioneer in the field of behavioral genetics. Along with a colleague, he conducted a seminal study of schizophrenia in British twins in the 1960s. The study provided compelling evidence of a genetic component in the illness and provided valuable insight into the relationship between genetics and environmental factors, and its affect on human behavior. Raymond F. Johnson (ARCH '53) sent word to *IIT Magazine* about his "dearest old friend of 68 years" and this memory: "We met in 1948 on the track team. By 1954 I was on the ground in Korea and Irving was on a ship in Korean waters. Finally home, we began lives in our own professions but always stayed in touch."

Otto Harling
(PHYS '53), Hingham, Mass., had a longtime career at Massachusetts Institute of Technology. He was a professor emeritus of nuclear engineering and served as director of the MIT Nuclear Reactor Lab from 1976–1996. Harling made numerous contributions to physics research and ensured that nuclear engineers and scientists at MIT had stimulating educational opportunities.

Harold Lindahl
M.S. CHE '53, Ph.D. '56
Riverside, Ill.

William Meyer
LL.B. '53
Fort Lauderdale, Fla.

Carl Olson
FPE '53
Chicago

John Smetana
CE '53
Greenville, S.C.

Frank Caldwell
M.S. ME '54
West Carrollton, Ohio

Ronald Colaric
CHEM '54
Joliet, Ill.

William Isley
M.S. GT '54
Bowie, Md.

Ralph Daehn
ME '55, MET '68
Clancy, Mont.

William Meyers
EE '55
Sun Lakes, Ariz.

Martin Fohrman
CE '56
Walnut Creek, Calif.

Jerry Pollak
ARCH '56
Van Nuys, Calif.

Felix Satikas
CHE '56
Winter Springs, Fla.

Lambros Pappas
ME '57, M.S. '59
Glenview, Ill.

Clyde McKerlie
ME '59
Palatine, Ill.

Roy Mondike
LAW '60
Sutherlin, Ore.

Ralph Murphy
IE '60
Berwyn, Penn.

Ernest Selig
(M.S. MECH '60, Ph.D. CE '64), Pelham, Mass., made numerous and pioneering contributions to engineering since his days as an Illinois Tech graduate student. As part of a group headed by Keith McKee (CE '50, M.S. '56, Ph.D. '62) at IIT Research Institute, Selig and his colleagues worked on soil technology projects that included determining the source of a ground shift that occurred during the construction of Chicago's John Hancock Center. Over the course of his career, Selig also worked on projects focused on the United States Air Force C-5A transport plane, bomb shelters, moon dust, and railroad beds.

William Kaulfuss
M.S. DSGN '62
Northfield, Ill.

Robert Knudsen
CHE '62
Chester Springs, Penn.

Paul Verson
MATH '63
Florissant, Mo.

George Kriz
IE '64
Neenah, Wis.

John Waeltz
ME '64
Belleville, Ill.

Albert Beaver
LL.B. '65
De Pere, Wis.

Harvey Meyers
LAW '65
Marengo, Ill.

Robert Nielsen
FPE '65
Oak Forest, Ill.

David Ballard
ME '66
Plymouth, Wis.

Leonard Franklin
MATH '66
Stuart, Fla.

Charles Kindregan
LAW '66
Boston

Thomas Rajkovich
M.S. DSGN '69
Griffith, Ind.

Paul Nees
BE '70
Crete, Ill.

John Fitzgerald
Ph.D. CHEM '72
Thornton, Colo.

Robert Haskins
M.S. IE '73
Woodstock, Ill.

Jerry Goldberg
LAW '76
Lake Bluff, Ill.

James Adinamis
LAW '83
Chicago

James Marth
ME '83
Buffalo Grove, Ill.

Cihijuia Wu
Ph.D. CS '96
San Jose, Calif.

Cynthia Sherman
LAW '97
Bay Minette, Ala.

Hayley Carlton
M.S. MCOM '03
Chicago

Emily Armstrong (née Frederick)
LAW '08
Worthington, Ohio

Emeritus Faculty

Howard Rubin
College of Science Emeritus Professor of Physics, River Forest, Ill., explored neutrino oscillations and participated in Fermilab's Main Injector Neutrino Oscillation Search (MINOS) experiment. He was also a member of the international collaboration known as Double Chooz, which utilized reactors of the Chooz [France] Nuclear Power Plant as a source of neutrinos.

IIT Magazine
ONLINE-ONLY CONTENT

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Joanne Gucwa (CHEM '68), author of the *BioFables* series of nature-inspired science-education novels for youth

Emily Miao (LAW '97), whose background in science and intellectual property law provides her with opportunities to represent clients in fields ranging from nanotechnology and biotechnology to medical devices and chemical/food processing

IIT Magazine feature story "Two Can Play That Game" illustrator **Maimuna Venzant** (TCOM '16), who is a graduate student at Savanna College of Art and Design

Old Faithful geyser in Yellowstone National Park, the subject of alumna Joanne Gucwa's book *Old Faithful Uncovers a Mystery*

Emily Miao

Maimuna Venzant

PHOTO: COURTESY OF IIT ARCHIVES

Martha Evens [*bottom right*] and other faculty members from Illinois Tech's Department of Computer Science in a photo from the 1976 yearbook *Integral*

Inspiring in Any Language

MARTHA EVENS WAS BORN ON JANUARY 1, A DAY THAT traditionally symbolizes hope, dreams, and new ways of thinking. It is an apt birthdate for Evens, who would go on to make seminal contributions in computer science and to mentor more than 100 doctoral students since joining the Illinois Tech faculty. While her work in natural language processing and intelligent tutoring systems is considered significant, she perhaps is equally recognized for the role she played in the lives of her students, many whom have gone on to become notable faculty members, finance leaders, chief technology officers, and even university presidents.

"Martha is very well known as someone who put her heart into being there to help students; she's very much loved," says Eunice Santos, Ron Hochsprung Endowed Chair, chair of the Department of Computer Science, and professor of computer science at Illinois Tech. "She's also an incredibly humble person," Santos adds. "You'll learn more about what Martha's done from everybody else than you will from her."

In a phone conversation from the Evanston, Illinois, home she shares with her husband, Len, Evens recalls that languages and computers filled her life from an early age. The daughter of an attorney and an architect, both educated at Harvard University, Evens was proficient in French and Latin by the time she enrolled at Bryn Mawr College, where she learned German and Greek, and graduated with a mathematics major and a Greek minor. She completed a year in Paris as a Fulbright Scholar and shortly before she graduated with a master's in mathematics from Harvard, her husband-to-be told her about an opening for a mathematician at the Massachusetts Institute of Technology Lincoln Laboratory working for artificial intelligence pioneer Oliver Selfridge. She worked on the first spelling correction program at Lincoln Lab for two summers before undertaking a series of moves as her husband accepted faculty positions at the University of Chicago and the University of California, Berkeley, before accepting a permanent position at Northwestern University.

"My husband is a mathematician. But he knows a lot about computer science, partly because when I was getting my Ph.D. in computer science, if I knew something, he had to know more," says Evens, with a laugh. At Berkeley she collaborated with a group of linguists and wrote a program to parse sentences in Mandarin Chinese. In 1975 her turn to become a faculty member arrived as she began teaching at Illinois Tech one week after defending her doctoral thesis at Northwestern University.

At Illinois Tech Evens did her most influential work, exploring how computers process and understand human language. In 1984 she was president of the Association for Computational Linguistics, an organization of people across the globe interested in natural language processing. She had a pivotal role in developing IITLEX, a lexical database useful in supporting various computer programs and individuals of varying linguistic backgrounds. When her student Ibrahim Al-Kharashi told her that his homeland of Saudi Arabia needed information-retrieval experts, she worked with him to form the Arabic Language Processing Laboratory at IIT, which was active in the 1990s. Evens also received funding for 12 years from the United States Office of Naval Research to build CIRCSIM-Tutor, an intelligent tutoring system using natural language dialogue. The program, created for Rush Medical College cardiovascular physiology students, went through several iterations beginning in 1988 before funding for it ended in 2006.

At 82, she is now an emerita professor and continues to referee journal papers on natural language processing. Evens will be recognized later this year with the inaugural Martha W. Evens Endowed Lecture.

"My colleagues and the IIT staff have been tremendously supportive, and my students have been wonderful," she says. "I was very lucky to have been offered a job at IIT." —*Marcia Faye*

MORE ONLINE
"CIRCSIM-Tutor": www.cs.iit.edu/~circsim/documents/mwemai01.pdf

An alumni/admissions event held at the Google Campus in Mountainview, California.

TIME AND TALENT— IT'S THE BEST GIFT YOU CAN GIVE

Illinois Tech alumni and friends understand the significant contributions that their alma mater has made to their professional and personal lives. Your unique experiences and familiarity with the university make you an ideal person to **share your Illinois Tech story** with prospective students and their families.

Join Illinois Tech in recruiting future students. You can contribute in a variety of ways:

- Participate at alumni/prospective student gatherings
- Attend high school college fairs
- Write notes on postcards to prospective students
- Much more

Be a part of our growing admission ambassador program, both domestically and globally, and make a difference in the lives of future students by connecting them with Illinois Tech.

At this time we are especially in need of volunteers in:

To learn more about our volunteer **Illinois Tech Admission Ambassador Program**, please visit **http://admissions.iit.edu/undergraduate/alumni** and sign up today!

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GLOBAL ALUMNI GATHERING: PARIS
JUNE 30–JULY 2, 2017

Mark your calendars to join the Alumni Association in Paris for the second Global Alumni Gathering on June 30–July 2, 2017. Under the theme "Global Challenges of the 21st Century," a series of panel discussions will focus on the areas of water, health, energy, and security.

Hear from keynote speaker **Michael J. Graff (CHE '77)**, chairman and chief executive officer of American Air Liquide Holdings, along with a who's who of alumni, faculty, and industry experts. Networking, sightseeing, and a dinner cruise on the River Seine sponsored by Air Liquide are just a few of the exciting events on the agenda.

Visit **alumni.iit.edu/paris-2017** for detailed information about the program, speakers, registration, and hotel accommodations. The deadline to register is June 23, 2016.

Become a sponsor and put your name in front of more than 75,000 Illinois Tech alumni!
Visit **alumni.iit.edu/global-gathering-2017-sponsorship-opportunities** for detailed information.

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