

JOURNAL

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**RACHEL**  
WILKINS-THURMAN '09  
**GUIDING THE**  
**GRID**





# [CONTENTS]

# 30

## FEATURES

### 18

**BETH PHALEN '85**

DATA WARRIOR

BY AMY CRAWFORD | PHOTOGRAPHY MATT FURMAN

### 24

**LISA LEE '08**

LAW OF THE LAB

BY KATE SILVER | ILLUSTRATION MATHEW MILLER

### 30

[COVER*story*]

**RACHEL WILKINS-THURMAN '09**

GUIDING THE GRID

BY JOAN KILLOUGH-MILLER | PHOTOGRAPHY MATT FURMAN

### 36

**CHRYS DEMETRY '88**

THE SCIENCE OF TEACHING

BY MICHAEL DORSEY | PHOTOGRAPHY PAT O'CONNOR



36



18

## DEPARTMENTS

02

### LETTERS TO THE EDITOR

THIS PAGE DOESN'T EXIST UNLESS YOU TAKE A MOMENT TO WRITE AN EMAIL TO [WPIJOURNAL@WPI.EDU](mailto:WPIJOURNAL@WPI.EDU) AND TELL US HOW WE'RE DOING —PLEASE GET TYPING!!

03

### A CONVERSATION WITH THE PRESIDENT

LAURIE LESHIN TALKS WITH GEOFF PFEIFER

05

### GLOBAL IMPACT

A DIFFERENT WORLD AT THE SANTA FE PROJECT CENTER

06

### WT

THE LATEST IN UNIVERSITY NEWS, RESEARCH, AND COMMENDATIONS

15

### WPI INSIDER

ANNIE HUGHES '21 SPREADS HAPPINESS AROUND CAMPUS

28

### TURNING POINT

MORT GUTMAN '65 IMPARTS HIS LOVE OF AVIATION TO A NEW GENERATION

42

### FACULTY SNAPSHOT

JOHN MCNEILL, INTERIM DEAN OF ENGINEERING

44

### OVER EARLE BRIDGE

ALUMNI WEEKEND, A NEW TRUSTEE, AND AN EVENING OF GRATITUDE AWAIT YOU ON THESE PAGES

50

### WPI LEGACY

FOR THE SCOTT FAMILY, IT'S ALL ABOUT A DEEP-ROOTED FAMILY CONNECTION

54

### DONOR IMPACT

THE GENEROSITY OF MIKE ABRAMS '77 CREATES FIRST ALUMNI CENTER

56

### CLASS NOTES

WHETHER YOU ARE CELEBRATING THE 40TH YEAR AT YOUR COMPANY, YOU JUST LANDED A NEW JOB, OR YOU TOOK A MEMORABLE HIKE IN YOUR OWN NEIGHBORHOOD, SEND YOUR CLASS NOTE (AND A PHOTO) TO [CLASSNOTES@WPI.EDU](mailto:CLASSNOTES@WPI.EDU), AND YOU MIGHT SEE IT IN OUR FALL ISSUE!

64

### COMPLETED CAREERS

IN MEMORY OF ALUMNI, FACULTY, AND OTHER MEMBERS OF THE WPI COMMUNITY

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**With sad but grateful hearts, we bid farewell to longtime WPI Journal team member Michael Dorsey, who retires in June.** For every quandary that arose in our office, there was a simple fix: “Ask Mike.” Whether it was for ethical guidance, a vintage photo, or a far-fetched fact (“Who was that guy who invented that thing that does I-don’t-remember-what?”)—he knew. And his enthusiasm always inspired us to learn more.

Over three and a half decades, “MWD” made WPI’s light shine, never seeking a single lumen of recognition for himself. He embraced science and technology. And life. He not only trumpeted WPI’s stellar research—he understood it. He got the story, no matter how complex, and he told it, in astonishingly clear, comprehensible prose—in print and online—capitalizing on new media as quickly as they emerged. True to plan, he stepped up for special projects, all while herding WPI *Journal* through numerous transformations. He was an undetectable force, underpinning the quality you expect on these pages.

None of the above was incompatible with being fun to work with. We will miss our generous, warm-hearted colleague, whose sly humor lurked beneath a gentle demeanor.

Qapla’, good friend. Live long and prosper. And keep in touch.



PHOTO PAT O’CONNOR

MICHAEL DORSEY

#### TAYLOR MADE

I wanted to thank you for sending the *WPI Journal*. How pleased I am to see what an excellent publication it has grown to be. It brings back memories of when my dad (Herbert Taylor, Class of 1912) started the *Journal*, modest as it was, a one-man production. I can still hear my mother saying, “Don’t bother Daddy, he’s working on the *Journal*.” (At 97, my memory is still pretty good.)

If you can spare another copy, my younger sister, Nancy Ganyard, would also enjoy it.

– Jayne T. (Taylor) MacLean

**EDITOR’S NOTE:** Herbert Foster Taylor, Class of 1912, was the first full-time Secretary-Treasurer of the WPI Alumni Association. In 1918 the Alumni Association took over the financially challenged magazine. Taylor was also author of *Seventy Years of the Worcester Polytechnic Institute* (copyright 1937). The Herbert F. Taylor Alumni Award for Distinguished Service to WPI bears his name.



EDITOR DOREEN MANNING WITH TURNING POINT’S MORT GUTMAN ’65 AT THE NEW ENGLAND AIR MUSEUM, WINDSOR LOCKS, CONN.

*Letters to the editor may be altered for length, clarity, and accuracy. We ask that letters offer the reader’s opinion without rancor. Letters that mock or insult will not be published. Opinions expressed do not necessarily reflect the views of WPI. Send your letters to [wpijournal@wpi.edu](mailto:wpijournal@wpi.edu).*



**PRESIDENT LAURIE LESHIN TALKS WITH GEOFF PFEIFER, ASSOCIATE TEACHING PROFESSOR OF PHILOSOPHY AND INTERNATIONAL AND GLOBAL STUDIES.**



PHOTO MATTHEW BURGOS

**LL** Geoff, you teach our first-year project course, Great Problems Seminar, which is still relatively new at WPI. What's it like to do project work with students who are fresh into WPI?

**GP** It's a lot of fun. They come in, they're excited, and nervous because they hear about the program and they hear it's a lot of work. But they're a great group to work with.

**LL** And what kind of GPS classes are you teaching?

**GP** I teach one called Livable Cities, which deals with issues of urbanization, from things like climate change to gentrification to greening cities. I also teach one on energy issues called Power the World.

**LL** And the students each do a project right?

**GP** Yes, they work in teams of three to five. It's a two-term course. Second term they choose a topic within the umbrella of the larger course and work on that for seven weeks, learning about the issues involved

with the problem they are dealing with and come up with some proposals for solutions.

**LL** It's a great exposure to WPI's project-based curriculum right when they come in the door.

**GP** Absolutely.

**LL** As we are diversifying our campus—more women, more students of color—we've been thinking a lot more about the dynamics of inclusion within team-based projects, and I know you've been doing some research there. Tell me about the project you're working on.

**GP** This is a project I've been involved in for about three years now with Professor Lisa Stoddard. She and I, a few years ago, were looking at some data that we were getting in the GPS program around minoritized students leaving WPI at a slightly higher rate after taking our classes than in other programs. We wanted to figure out what was going on, and we started thinking more in detail about the experiences of women on

teams on campus, students of color on the campus, and other historically minoritized populations. We were seeing issues of stereotyping and bias and how that works on teams and how that affects these students. We've been working for the last few years to develop tools and methods to help students be better at working on teams, and also help our students confront those issues, think about them, and realize they exist.

**LL** Give some specific examples of the kind of interventions that you've done in your classes and what you've seen as a result.

**GP** We've been developing an asset-based educational approach to getting students to think about their own and others' skills and experiences. We have our students in the beginning of the semester map their own assets to think about what kind of skills, experience, strengths, and backgrounds they bring into our classrooms. Then when they get into project teams, they share those, and start to see how everybody on the team brings a set of skills, and it can break down some of the stereotyping

and biases. We also have a Davis Educational Foundation grant that is, in part, helping us expand this work to programs throughout WPI.

**LL** And, of course, this is going to serve them later in life, because as soon as they leave here they are going to be working in diverse teams out in the real world. It's yet another great set of skills that WPI is helping to equip our students with that will serve them well in long run.

**GP** Right. We hope that it also gives them some tools and ways of talking and thinking that they can bring into industry where these same types of stereotypes, these same of types of biases exist, and maybe they can start working on changing the culture.

**LL** Congratulations on the great work. Thanks for contributing to making WPI a more inclusive place.

**GP** Thank you.

*To see a video of this interview in its entirety, and to learn more about Geoff's work, visit [wpi.edu/news/wpjournal](http://wpi.edu/news/wpjournal).*





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# SANTA FE

[GLOBALimpact]

ILLUSTRATION JONATHAN REINFURT



While most of WPI's project centers offer opportunities for students

to conduct project work in far-flung locations throughout the world, IQP students in Santa Fe, N.M., get to experience other cultures without leaving the country.

"It's like going to a different world," says Santa Fe Project Center director Fabio Carrera. "And one that most people don't get to visit."

Some of the projects focus on New Mexican pueblos—each a sovereign nation with its own language, customs, and rituals.

Carrera helped establish the Santa Fe Project Center in 2009, partnering with local sponsors who are deeply rooted in the Native American community. Sponsors collaborate with WPI faculty and students to tackle real problems that the partner organization would like to solve; they serve as mentors, as well as liaisons and cultural translators for the students.

"It's a privilege," says Carrera. "It's very hard to work with native

communities. Just the fact that we do projects with them is already kind of an achievement in itself."

Last fall, Noah Budris '20 and his four teammates worked with the Indigenous Design + Planning Institute (iD+Pi) at the School of Architecture and Planning, University of New Mexico. They were tasked with researching the history of the architecture of Pueblo tribes and designing an interactive museum exhibit. Their goal was to show how the culture of the Pueblo people has both influenced local building styles and evolved over time.

The group worked with light detection and ranging (LiDAR) technology data to create a 3D sculpture of a mission building in Zuni Pueblo. Though the students spent a lot of time in front of computer screens processing and cleaning raw data, a trip to Zuni Pueblo brought the project to life for them, Budris says. They were allowed inside the crumbling mission, a building off limits to even the local community.

"Being some of the few people allowed to go in the buildings and learn from the local people about the history and how it impacts

their society definitely made the project more meaningful," Budris says.

While these teammates were immersed in 600-year-old architecture, others stayed very much in the present, analyzing highway closures to prepare for the advent of autonomous vehicles, using the Internet of Things to update a wastewater treatment plant's controls, and working alongside avant-garde artists to create an immersive video game for the House of Eternal Return, an immersive exhibition space with interactive storytelling, funded by George R. R. Martin, of *Game of Thrones* fame.

The eclectic Santa Fe cultural scene is a draw for WPI students who have a strong interest in both the arts and technology, says project center advisor Lauren Mathews. A new partnership with the arts and entertainment collective Meow Wolf promises IQP students opportunities to bridge the two disciplines to create immersive and interactive experiences.

Griffen Spincken '20 admits he struggled to understand Meow Wolf's niche in creative tourism

while prepping for last fall's IQP. It wasn't until he arrived and delved into the project that it started to make sense. His three-person team shared a vast work space with other artists while designing and creating a video game that reflects Meow Wolf's aesthetic.

"It was just amazing to see these skilled people and these exhibits evolving around us."

They built the game out of wood and plexiglass, incorporating 1.2-inch guitar amp jacks that create various scenarios when connected in different sequences. The game can stand alone or be incorporated into an existing exhibit.

"The beginning of the project was a little bit stressful," Spincken says, "because the guidelines were unstructured and I wasn't sure exactly what I was getting into. But by the end of the project I was very proud to have worked with these people and to produce a physical deliverable. Our team worked hard for seven weeks to accomplish this, and to receive gratification from people in that field was truly a great experience."

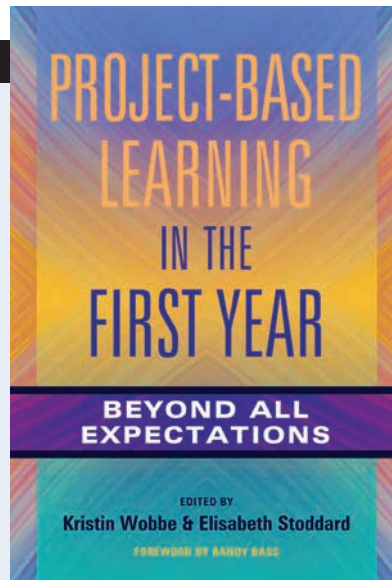
—Sharron Kahn Luttrell

## PROJECT-BASED LEARNING

Since 2007 WPI has offered first-year students an opportunity to launch right into project-based education through the Great Problems Seminar (GPS), an optional two-course introduction to research and project work that explores complex themes at the intersection of society and science.

*Project-Based Learning in the First Year: Beyond All Expectations* (Stylus Publishing LLC) is a new book that lays out how to develop a GPS-like curriculum, build projects, engage faculty, and incorporate projects into the first-year experience.

Co-edited by Kris Wobbe, associate dean of undergraduate studies and professor of chemistry and biochemistry, and Lisa Stoddard, assistant teaching professor of undergraduate studies, the book also includes the insights and experiences of more than 20 WPI faculty members who have co-taught GPS courses. More than 2,500 students have completed more than 500 different projects in the GPS.



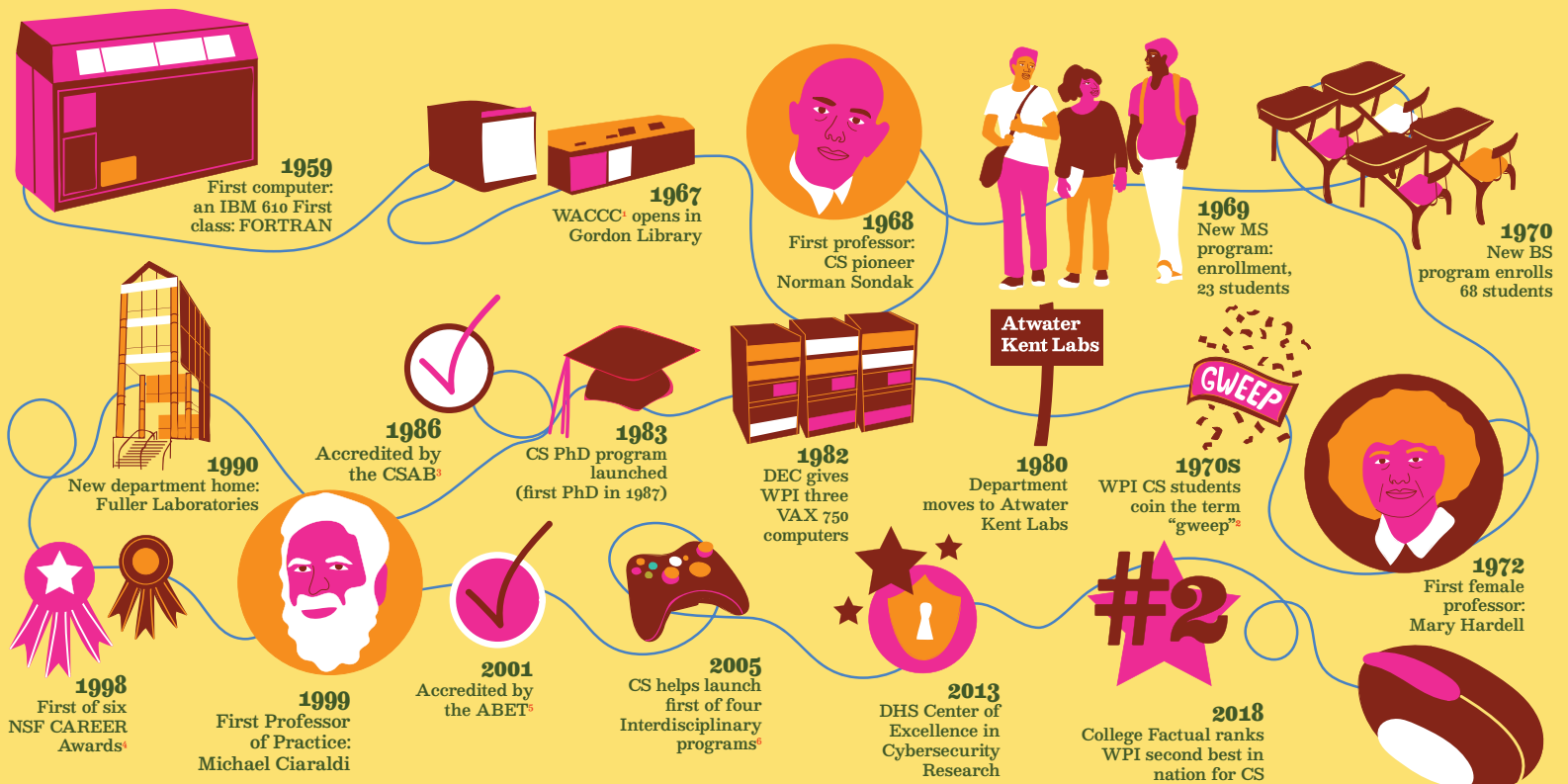
Wobbe says, “At many universities, first-year students have to complete general education requirements before they get any hands-on experiences, and that can be frustrating. At WPI, we give students an opportunity to dive right in.”

While presenting programs on the Great Problems Seminar at conferences, Stoddard says, “people who attended our sessions wanted to know ... how to make it happen on their own campuses. This book shows them how.”

The book is another proof point that WPI has become a valued source for academics and administrators from around the world looking to implement project-based learning on their own campuses. Through its Center for Project-Based Learning, WPI

provides consulting services, workshops, and seminars to help universities improve or enhance their existing curricula with project-based programs.

## HALF A CENTURY OF CS



1 Worcester Area College Computation Center, later known as CCC (Computing and Communications Center)

2 To hack, usually at night: “He’s a hard-core gweep, mumbles code in his sleep.”

3 Computing Sciences Accreditation Board

4 George Heineman (followed by Kathi Fisler, 2002; Neil Heffernan, 2005; Dmitry Korin, 2009; Kyumin Lee, 2017; Craig Shue, 2017)

5 Accreditation Board for Engineering and Technology

6 Interactive Media & Game Development (2005); Robotics Engineering (2007); Bioinformatics & Computational Biology (2011); Data Science (2014)



## MENTORS TO WOMEN

The path wasn't always smooth for female students in the decade or so after WPI opened its doors to women in 1968. Ask "Who got you through?" and three names always rise to the top. As WPI approaches a 50-50 gender balance in its second half-century as a coed institution, *WPI Journal* pays tribute to three men who supported change by supporting women.



### BERNIE BROWN

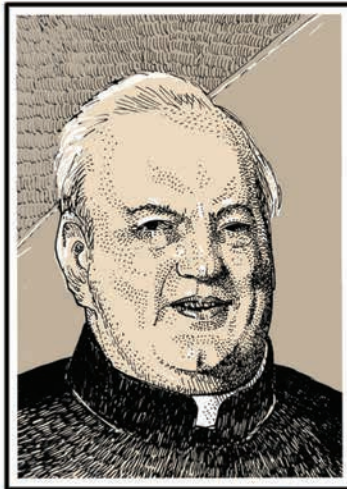
*He had it all – and he shared it generously*

Our first semester living on campus was so traumatic that we started looking for some other school to attend. When Dean Brown heard this, he gathered all the girls for a meeting, and we gave him our lists of grievances. There were enough to fill a book! We had urinals and gang showers in the dorm, and a severe lack of mirrors. In the other buildings the ladies rooms were locked and for the use of staff only. He got us access to bathrooms! And the swimming pool! He spoke to groups of students, faculty, and staff and discussed their attitudes toward the female students, and kept checking with us to see that things began to improve. Through my entire time at WPI, Dean Brown was always ready to help.

–Lorri Lind Caruso Byrne '73

Always sensitive to the logistical needs of females on campus. Surprised us at our 25th Reunion with a flower arrangement in a rented urinal! (He couldn't find the one he had saved from Riley Hall).

– Ginny Giordano FitzPatrick '75



### FATHER PETE SCANLON

*A father in more ways than one*

He stepped up and tried to do whatever he could to ease the transition for the women by opening the Religious Center to provide a place to gather for cooking and sharing home-cooked meals, offering referrals for doctors and first-class transportation around the city when needed, and supplying all manner of sage advice. He took some of the WPI women to mixers at Holy Cross where they might meet "nice boys" with whom they were not in academic competition. He was a larger-than-life presence with a big heart, big enough to share in myriad relationships.

–Anne McPartland Dodd '75



### JOHN VAN ALSTYNE

*Dear Abby for the student body*

For me, van A was an amazing, compassionate, fatherly force in my life. He was a confidante, a friend, and so much more. He gave personal attention to any student who sought him out, and helped us navigate whatever hurdles we encountered. From baked cookies to personal notes of support or congratulations, he always made us feel cared for and loved. As testament to his impact, hundreds of alumni kept in touch with him, and treasure the uniquely handwritten letters and cards we received over the years. I carry with me the many lessons I learned at van A's side. In my mind's eye, I still see his familiar figure – tall and wind-blown – striding across campus with a friendly word for all.

– Paula Fragassi Delaney '75

## QUOTABLE

## 5 – 4 – 3 – 2 – 1 – LIFTOFF!

—President Laurie Leshin at Commencement, sending off the Class of 2019 with a NASA countdown, just as she welcomed them four years ago.

## MAKING SPACE —Allison Racicot

The Makerspace within the Foisie Innovation Studio is a bustling hotbed of activity and new ideas, limited only by the users' imaginations. With a packed schedule of workshops and activities, there'll be no shortage of ideas anytime soon.

Need a custom piece for a cosplay or LARPing session? Sign up for the leatherworking course. Looking to create a creature of your own? Join the workshop on sculpting and

casting monsters. The workshops also blend high-tech crafts with some of the classics—for example, students can learn the basics of Arduino to build mechatronic projects one week, then sign up for a sewing class the next.

Makerspace interim director Erica Stults, who teaches the majority of workshops herself, explains, "We select workshops based on a variety of criteria, from student requests to

instructor availability and observations of what work we see students doing in the space."

After completing a class, what's next? The soldering workshop could help you choose. Attendees can create their own coin-tossing device—the perfect thing to help them decide between a workshop on prototyping or one on building foam miniatures.

There's the option of taking both, of course. They won't stop you.



PHOTO: PAT O'CONNOR



## HANGING UP HER MANY HATS

—Michael Dorsey

The 2018-19 academic year was a busy one for faculty retirements. There was the second woman to become a full professor at WPI. There was the professor whose far-ranging interests included performing in WPI theatre productions and flying helicopters. There was the sought-after public speaker renowned for her inspirational talks to organizations near and far.

Actually, all of those achievements and many more were recorded by one individual, **Helen Vassallo**, who concluded 36 and a half years as a full-time faculty member in December. Vassallo's arrival at WPI in 1982 was the demarcation point between two eras in her career. The first was rooted in the life sciences. With a BS in biology and an MS in pharmacology from Tufts University, she taught at Brandeis, Clark, Tufts, and WPI before joining Astra Pharmaceutical (now AstraZeneca) in Westborough, where she rose to become director of scientific and professional communication.

While at Astra she earned a PhD in physiology at Tufts and an MBA at WPI. The Institute was looking for a faculty member with street smarts for its Management Department, so they hired her (even though she told her recruiters that what she really had were "street dumbs"). She earned the Harry Stoddard Professorship and headed the department for five years. Active in faculty governance, she was the first woman elected Secretary of the Faculty and was a longtime parliamentarian at faculty meetings.

She chaired or served on three commissions on the state of women, two at WPI and one for the City of Worcester. She was the advisor to Phi Sigma Sigma sorority and to first-year women students, and is beloved by generations of alumnae. She was active in many community organizations, including the Girl Scouts. Worcester recognized her with its Woman of Consequence Award, and WPI with the Board of Trustees' Award for Outstanding Teaching and the Goat's Head Lifetime Commitment Award.

These and so many other milestones were on the minds of the faculty when they surprised Vassallo with testimonials and a cake at her last faculty meeting, lauding her, in the words of one colleague, as "a model for what we all should aspire to."



## A GLOBAL ALGORITHM –Meredith Fidrocki

Doing an IQP at one of WPI's 50-plus project centers is becoming a popular choice. By 2016 an average of 700 students were applying for the program. The Global Projects for All initiative included in WPI's Strategic Plan sends even more students to centers around the world. Growth is great, but the process of placing students was becoming increasingly complex and overburdened, with students potentially matched with centers of low interest to themselves.

"Over the last few years, we'd have 50–100 students on a waiting list at the end of the selection process," says Anne Ogilvie, executive director of the Global Projects Program.

An MQP advised by associate professor Andy Trapp streamlined the process. Working with Ogilvie and IGSD program coordinator

Deborah Fusaro, the project team – Camila Dias, Lin Jiang, and Elizabeth Karpinski of the Class of 2017 – developed an algorithm to help inform student placement, embedded in a decision support tool. Data science PhD student Pitchaya Wiratchotisation and visiting instructor Hoda Atef Yekta conducted simulations to test hypothetical scenarios and ensure the tool would work properly.

This year the algorithm was fully launched. The result? One hundred percent of this year's juniors who were qualified to do off-campus projects were placed at centers they ranked "very interested." Ogilvie says this is the first year with no wait list. "It was amazing to see this work so quickly," she notes. "It's a very WPI solution to a WPI problem."

## A NEW KIND OF THINKING CAP –Colleen Wamback

Is a student who's paused while using an online tutoring program frustrated by a tricky math problem – or just deep in thought? Knowing the answer could provide insights into when and how learning occurs and help teachers and technology developers create adaptive interventions for more personalized learning in intelligent learning systems. A research team led by computer scientist Erin Solovey is working to develop a system that merges computer science with neuroscience to detect a student's

emotional state. Through a collaborative \$1 million grant from the National Science Foundation, the team employs noninvasive external sensors attached to a "thinking cap" to measure brain waves of students using an online tutoring program. The brain data is compared with "log data" that shows what actions students take, moment by moment, enabling the researchers to see whether a student is thinking deeply about the problem or if his or her mind is wandering.



## 50 YEARS OF HENDRIX –Michael Dorsey

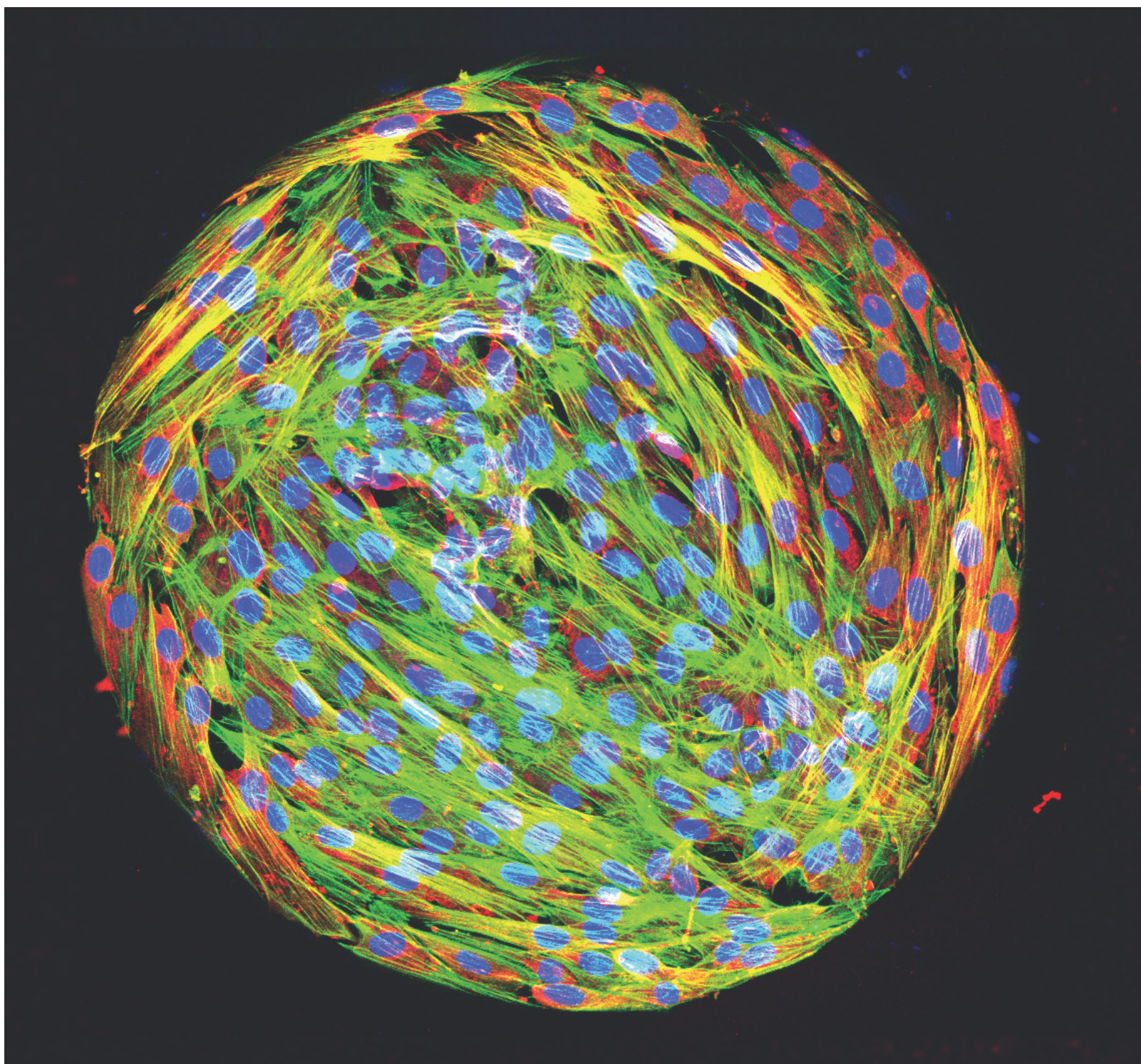
It's been a half century since Jimi Hendrix and Gypsy Sun and Rainbows took the stage in the early morning light of Aug. 18, 1969, to close out the Woodstock Music Festival. For **Joel Brattin**, a professor of English whose scholarship encompasses Hendrix and Victorian novelist Charles Dickens, the two-hour set is as awe-inspiring today as it must have seemed to the 200,000 or so weary concertgoers who stuck around to see it. He has documented every foot of film available of Hendrix's Woodstock performance and synced the footage that best showcases the guitarist's mind-boggling fretwork with the set's complete soundboard.

Brattin, who has performed the same painstaking work for other historic Hendrix shows, has thought a lot about the significance of the Woodstock appearance. It occurred at a time of transition for Hendrix, he says. Hendrix's long-term band, The Experience, had broken up, and he'd yet to form his next big

group, Band of Gypsies. Gypsy Sun and Rainbows was formed just for the Woodstock show, and its rehearsals were disasters. "After listening to those tapes, you would not have guessed that the Woodstock performance would be so good," Brattin says.

It was the first Hendrix band with a significant number of black musicians, including bassist Billy Cox and guitarist Larry Lee, with whom Hendrix had performed early in his career. Lee's appearance was especially interesting, since this was the only Hendrix band with two guitarists. The set is best remembered for Hendrix's performance of *The Star Spangled Banner*, which was part of a half-hour medley that included hits like *Purple Haze*. It was far from the only time he improvised on the National Anthem; there are over 50 live recordings of the song, 28 made before Woodstock. But it was among the best, Brattin says. "And, certainly, no other version is so iconic."





## THE CIRCLE OF LIFE, AND DEATH, FOR CELLS —*Sharon Gaudin*

Death is an essential part of life for most of the tissues in our bodies. Tissues are renewed or repaired through the twin processes of cell death and cell division. In fact, when something interrupts cell death, things go wrong. Instead of well-organized tissues, you get clusters of cells, like this one. This process is associated with cancer, heart disease, and other disorders.

**Kris Billiar**, head of WPI's biomedical engineering department, uses precisely engineered models of cell clusters to explore the role that mechanical stimuli, or lack of it, plays in normal cell death and in the formation of cell clusters. The research could point toward new ways to keep tissues healthy and diseases in check.





**REFUGEE ARTS** —Allison Racicot

Worcester is home to one of the biggest refugee populations in the state, and thanks to the partnership between a team of three WPI students and a local nonprofit, it's now easier than ever for the newcomers to keep their artistic culture and traditions intact.

Last summer **Andrew Jalbert**, **Haozhe (Percy) Jiang**, and **Jingyi (Betty) Liao**, Class of '20, collaborated on their project, "Helping Local Refugee Artisans," which seamlessly blends technology with the arts in a way that's creative, practical, and undoubtedly WPI.

The project sponsor, Refugee Artisans of Worcester (RAW), was founded in 2010 by Joan Kariko and Ellen Ferrante with a twofold purpose. Many of the artisans who arrive in Worcester see crafting as an invaluable connection to their home countries; RAW gives them the chance to continue crafting, allowing them to preserve their culture and identity while offering them the opportunity to earn money.

More than 30 artisans representing 12 countries are currently part of the organization. Many of them are weavers, but the looms donated to RAW weren't necessarily suitable for them. Some were too heavy, too complicated, too cumbersome. That's where WPI stepped in.

Through interviews, observations, and home visits, the students were able to adapt four of RAW's looms, customizing them to better suit the needs and preferences of the artisans. They made them more accommodating to the weavers' heights, as well as collapsible and portable to allow for them to be carried up stairs and through hallways. They also created an instructional video covering basic maintenance and repair of the looms. A future collaboration between WPI and RAW is in the works—professor of humanities and arts Lance Schachterle and a group of students are working with Susan Rodgers, professor emerita of anthropology at Holy Cross, to create a digital contribution for RAW's gallery show at the Worcester Center for Crafts in 2020.

## QUESTIONING AN OLD PREJUDICE —Joan Killough-Miller

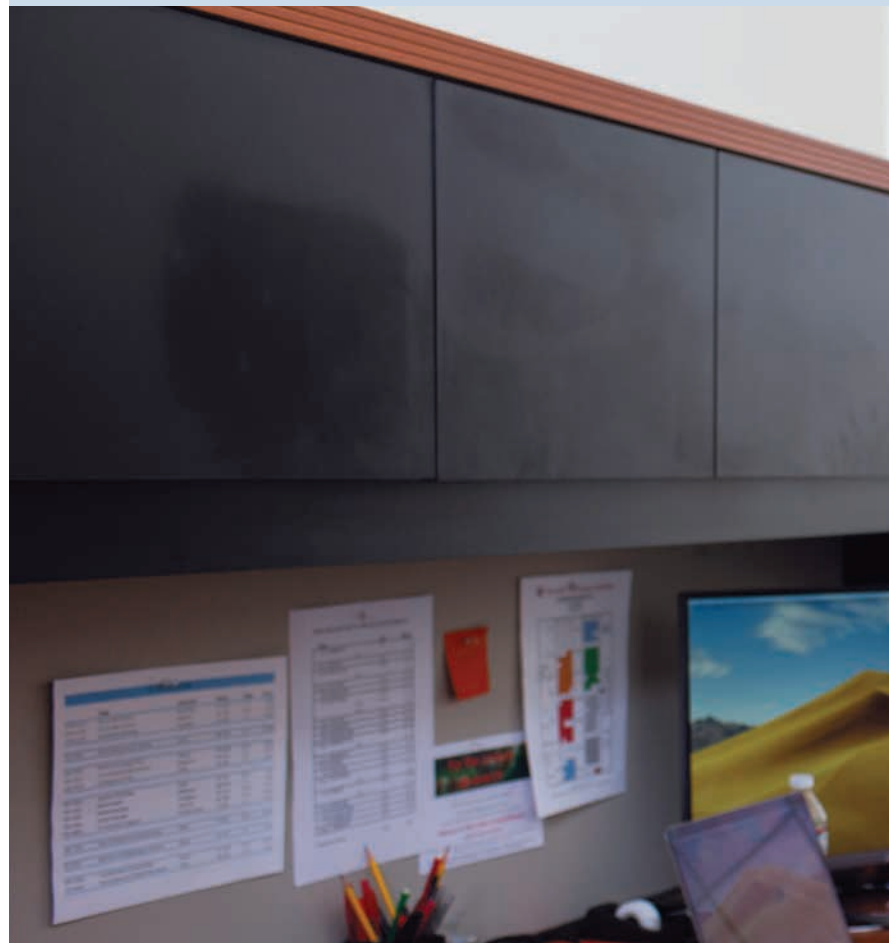
**ANGELA INCOLLINGO RODRIGUEZ** joined WPI in the fall of 2018 as an assistant professor of psychology and global health. Her research focuses on weight-based stigma—a type of bias or discrimination that affects both men and women. In fact, she has found that just being perceived as fat can impact one's physical and emotional well-being. In her previous research at UCLA, she observed negative psychological effects in people of normal weight when they were told that their body size and shape disqualified them from a fictitious study on shopping preferences. (The control group was rejected because "the study was full.")

She also has had subjects take a walk in a fat suit. They reported feelings of anger, anxiety, and depressed mood. When offered snacks, they consumed significantly greater quantities of high-calorie food than control subjects—which

suggests that "fat shaming" backfires, and may even lead to obesity. At WPI Rodriguez is pioneering research on weight stigma in pregnant and postpartum women. The negative health impacts can include increased weight gain, longer retention of "baby fat," and increased incidence of depressive symptoms. She shared some insights on her work with *WPI Journal*.

### What drew you to this research?

I began researching dieting behavior because I encountered so many people around me trying to diet. What I saw, time and time again, is that successful dieting is really hard, and keeping the weight off usually doesn't happen. And it turns out that a lot of dieting behaviors aren't necessarily healthy for us. That made me wonder, why are people still so desperate to lose weight? This is what turned me toward investigating weight stigma,





because society is extremely harsh toward individuals who are seen as heavy, even when weight gain happens naturally during pregnancy.

#### **What's the focus of WPI's SEED Lab?**

My specific interests lie in stigma, eating behavior, and endocrinology dynamic, which I study in various combinations. My main goal in the Stigma, Eating, and Endocrinology Dynamics (SEED) Lab is to understand health at the level of the whole person – integrating psychology with physiology with social factors. I plan to continue investigating weight stigma, especially in the context of pregnancy and through looking at psychological and physiological stress processes. I plan to continue investigating how social and psychological factors – not just how hungry we feel – influence our eating behavior.

#### **You speak of weight-based stigma as a social justice issue, comparable to racial prejudice—can you elaborate on that?**

We see so many horrible instances of weight stigma in everyday life, and there is almost no policy level protection for the weight domain like there is for other domains. If comparable comments were to be made about race or gender or sexual orientation, they'd be seen as totally unacceptable. Yet, weight stigma is often seen as “funny.”

#### **One of your studies showed that spending time in a fat suit actually increased the wearer's anti-fat attitudes. What would it take to effect change?**

In general, I think we need more realistic and accepting representation of heavy individuals in the media. We also need policy-level protection for the weight domain (basically, it should be illegal to

discriminate against people based on their weight just as it is illegal to discriminate against them based on their race); for schools and communities to have zero tolerance for weight-based bullying; and for the healthcare domain in particular to be very sensitive in how heavy patients are treated, even when weight is relevant to the conversation.

This type of message needs to keep coming from people we look up to and admire. There are some celebrities who are promoting size acceptance and shifting what we see as the standard of beauty. Some stores are starting to use heavier models in their ads to normalize heavier bodies, and there are songs like “All About That Bass” that have a positive message about weight. There are also a lot of really fantastic researchers out there who are pursuing this topic, people who are my personal role models.

## **AMPING UP INNOVATION**

—Jessica Messier

The corridors of Daniels Hall typically echo with the chitchat of first-year students and administrators. But the building sounds a little different these days. Now, the digital twang of electric guitar rises above the hubbub, and you can almost hear the turning of mental wheels as students tackle problems. It's all because the residence hall is home to the new Electric Guitar Innovation Lab (EGIL).

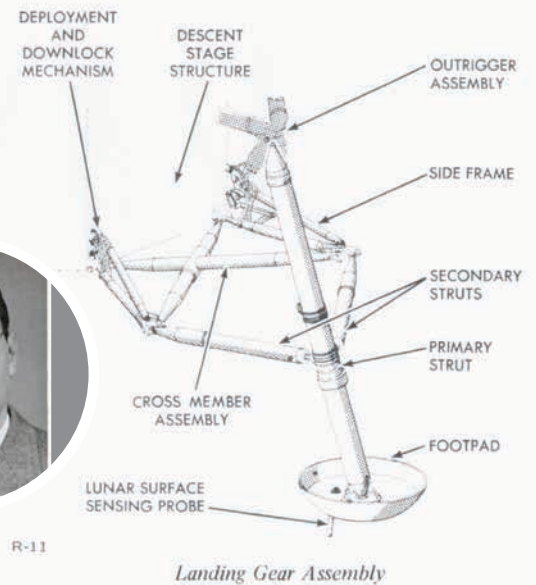
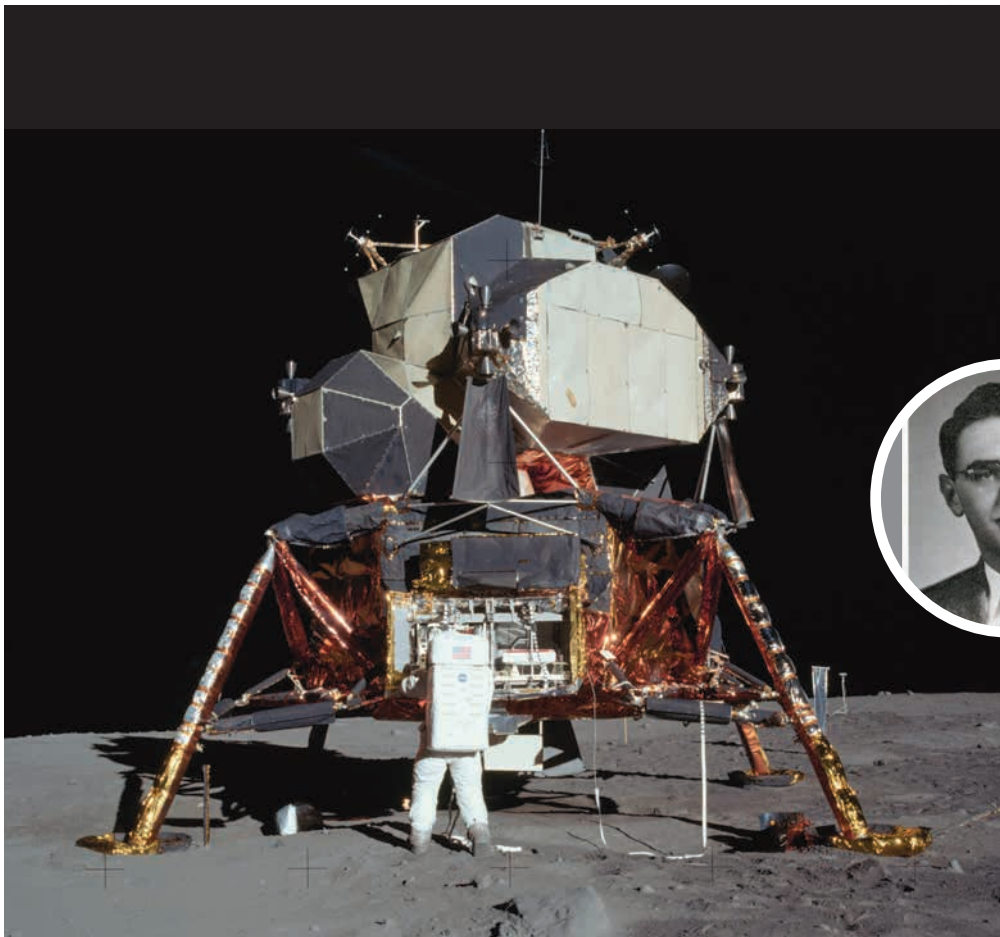
Started by V.J. Manzo, associate professor of music, the lab is dedicated to research, innovation, and education related to the electric guitar and its various accessories, including the design and modification of instruments, amplifiers, pickups, and effects processors. Students working in the lab address real-world issues that guitarists face while performing on stage and working in the studio.

One recent project had a team of students working with Manzo to convert a six-string Parker Fly electric guitar into a 12-string instrument. The work entailed CAD/CAM design and fabrication of new parts, a variety of tests and calculations, and modifications and installations to an existing Parker Fly guitar. The result was the world's first Parker Fly 12-string, which is playable. Details of the team's step-by-step engineering process can be found at [guitar.wpi.edu](http://guitar.wpi.edu).

Manzo says one of the best things about the lab is that anyone can join it. “I don't refuse anyone,” he says. “Even people who don't know anything about guitars. Anyone who is interested in the field is welcome. If they have a passion for it, they will find a way to connect their field of study to it.”



PHOTO MATT HEALEY



## ASK THE ARCHIVIST

**Q.** With the 50th Anniversary of the Apollo 11 moon landing so much in the news, I was wondering if the Archives had anything related to the mission?

**A.** When the Apollo 11 lunar module *Eagle* touched down on the Sea of Tranquility on July 20, 1969, it rested on legs designed by **Allan Glazer '47**.

Born in Worcester in 1926, Glazer enrolled at WPI in 1944 when he was unable to secure a spot in the armed services owing to poor eyesight. After graduating with a degree in mechanical engineering, he worked for Bell Laboratories in New Jersey before returning to Worcester to join Hollow Boring,

a machine shop. While there he discovered a precision machining technique that led to his decision to start his own company, Honematic Machine Corporation, in 1956.

That same year, Grumman Aircraft Engineering chose Honematic to construct the four primary struts, or legs, for the lunar module. They made them from a lightweight 7178 aluminum alloy and used abrasive tools to produce a precision finish that met NASA's strict standards. Standing 69" tall, with a diameter that ranged from 6.25" at the bottom to 5.5" at the top, the struts cushioned the spacecraft during landing, kept it stable on the lunar surface, and supported the descent stage as the

ascent stage rocketed away to rejoin the command module in orbit. Though Neil Armstrong famously reported taking a "small step" onto the moon, Glazer later shared that it was a bit of a leap. The landing was smoother than anticipated so the lunar legs did not fully compress as engineered. Honematic outfitted all six Apollo lunar landing missions, which means 24 of Glazer's legs remain on the moon. In 1992 the Glazer family donated a prototype of the leg to the WPI Archives, where it remains part of Manuscript Collection #67: The Allan Glazer Collection.

While not represented in the Archives, other alumni made contributions to Apollo. Working at David Clark Co. in Worcester,

Joseph Ruseckas '65 directed the development of the headsets worn by the astronauts, and Robert Rodier '51 at North American Aviation designed the parachutes that lowered the command modules to safe splashdowns. And of course Neil and Buzz Aldrin might never have walked on the Moon if Robert Goddard '08 hadn't pioneered the liquid-fueled rocket technology that got the Saturn V off the pad.

*Arthur Carlson, assistant director of Archives & Special Collections at the George C. Gordon Library, would be glad to answer questions you may have regarding curious facts and figures about WPI wonders. Send your inquiry to [archives@wpi.edu](mailto:archives@wpi.edu).*





## SEEKING EQUITY IN FACULTY ADVANCEMENT —*Jessica Messier*

FROM LEFT, DEMETRY, LONG LINGO, SKORINKO, ROBERTS, FARNY

Studies have shown that women faculty members don't advance as quickly as their male counterparts.

A team of researchers has set out to learn why that gender gap exists at WPI, and what can be done to correct it. With a \$1 million ADVANCE grant from the National Science Foundation, they will examine WPI's faculty promotion processes, pinpoint areas of bias that may be impacting female faculty members, and seek to implement more equitable policies and practices. The grant,

part of an NSF program that aims to boost women's participation and advancement in STEM careers, is indicative of an overall movement in higher ed to recruit, develop, and retain more diverse and gender-balanced faculties.

Brought together by a shared determination to see more women occupy higher ranks on campus, the multidisciplinary ADVANCE team includes **Jeanine Skorinko**, associate professor of psychology and director of WPI's Psychological Science Program;

**Chrysanthe Demetry**, associate professor of mechanical engineering and director of WPI's Morgan Teaching and Learning Center; **Natalie Farny**, associate teaching professor of biology and biotechnology and associate director of the Morgan Teaching and Learning Center; **Elizabeth Long Lingo**, assistant professor in the Foisie Business School; and **Susan Roberts**, professor and head of the Chemical Engineering Department.

The ADVANCE team hopes to

share their results with other universities, especially as higher ed moves toward creating a more equitable culture for all.

"With the NSF award, we see the opportunity for WPI to develop a national model for advancing more equitable promotion policies for all faculty," says Lingo. "This is especially relevant for other STEM-focused institutions and colleges embracing innovative, project-based curricula where similar challenges likely exist."

# Join these WPI Fund supporters in making an impact on students and faculty!

Through their Senior Class Gift Campaign, over 50 percent of the Class of 2019 rose to the challenge to support the new Global Lab in the Foisie Innovation Studio. These funds will launch the first IQP team out of this space in the upcoming academic year and set the foundation for an on-campus project center site. The Class of 2019 gift was matched by Trustee Emeritus Win Priem '59, bringing the total to \$45,225. Win and his wife, Susan, also have recently made a generous commitment to WPI to endow the Susan S. and Windle B. Priem '59 Senior Class Gift Challenge to inspire generations of students to give back to the university.

Join the Class of 2019 and the Priems—help shape tomorrow's great minds that are changing the world.

Empower engineers and scientists to solve problems no one person can solve alone.

Make your gift to the WPI Fund today and join the Class of 2019 in supporting WPI's strategic initiatives.



"We have seen and experienced firsthand the impact your support has on students and faculty, and it motivated us to give to WPI. We now look forward to becoming part of WPI's long and proud tradition of philanthropy as alumni."

—Lucas Mancinelli '19 and Rosie McCarthy '19  
Class of 2019 Senior Gift Chairs

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# WPI





In 2016 Woodbury, N.J., high school senior **Annie Hughes '21** was looking for a way to spread happiness. She decided to create miniature squares with happy-themed sayings and hand them out, hoping to brighten someone's day.

Continuing the good vibes, Hughes brought her Happiness Campaign to WPI, wishing to have an impact on her new community. Now heading into her junior year, she has partnered with 10 campus organizations to share her squares of positivity—student clubs, Greek Life houses, the Athletics Department, and even flying solo for a finals week corkboard of Happy Squares in the Rubin Campus Center.

“The growth in the past year is just a testament to the big impact that small acts of kindness can have,” she says. With a grant through the WPI Tinkerbox program, which aims to provide funding and resources to student start-ups, she has plans to bring the spirit of the Happiness Campaign to even more members of campus in the coming year.

Visiting campus just three weeks before the application deadline, she recalls seeing the Quad filled with students playing and studying, talking, laughing, and—most important—smiling. “WPI is a community filled with uplifting people with brilliant minds and countless opportunities,” she says. “I chose WPI because I knew right away that my four years as an undergraduate would help shape me into the best possible version of myself.”

Both her parents worked as space systems engineers for Lockheed Martin, inspiring their

children to pursue studies in STEM fields. While researching majors, and ultimately potential careers, Hughes says she found the medical applications of biotech to be the most fascinating; she chose biomedical engineering as her major.

She feels it will provide the opportunity to problem solve and directly help people through new areas of research. “This field is the best of both worlds, if you ask me.”

While balancing Varsity Swim Team, Community Advising, the Happiness Campaign, and her studies hasn't been easy, she says the endless support of the WPI community has been key. “I have so many incredible mentors, advisors, friends, and teammates who help me pursue my mission to inspire positive thinking by directly impacting the lives of others,” she explains. “The Happiness Campaign is much more than just the face behind it, and the reason for its success and growth is the wonderful people that help me promote the message.”

When asked where she's headed after graduation, Hughes gives a simple, honest—and not surprising—answer: “I hope to be headed in a direction that makes me happy.” Not entirely sure what her dream job may be, she says she knows it will somehow incorporate an aspect of helping others. “Some days it's neural engineering, other days it's medical school—but I know that every door I open here at WPI sets me on an even better path toward the extraordinary future that awaits.”

#### HONORABLE MENTIONS

COMMUNITY ADVISOR • WPI TINKERBOX • WOMEN'S VARSITY SWIMMING • NEWMAC SWIMMING ACADEMIC ALL-CONFERENCE  
STUDENT SUPPORT NETWORK • NEWMAN CLUB • BIOMEDICAL ENGINEERING SOCIETY







BETH PHALEN '85

WARRIOR

data

BY AMY CRAWFORD | PHOTOGRAPHY MATT FURMAN

# W

hen Beth Phalen arrived at WPI as a freshman computer science major in the fall of 1981, “data protection” meant a strong rubber band.

“My first semester, we still used punch cards,” she explains, “We had to go down to WACCC [Worcester Area College Computation Center in Gordon Library] – and I remember late at night or early in the morning leaving with my punch cards, with a rubber band wrapped around them to keep them in the right order. You’d hand that stack in and they would run it through the system. You would get the output on paper, and you’d review it, and then you would have to update the cards.”

Phalen laughs as she thinks about how technology has changed. She and her classmates once worried about accidentally disarranging their punch cards before their programs could be run on the IBM mainframe. Today, she is president and general manager of the data protection division at Dell EMC, the multinational information technology corporation headquartered in Hopkinton, Mass. She and her customers around the globe now have far more complex concerns.

“The way I talk about it is, it’s our responsibility to make sure that customers – corporations all the way down to the small- to medium-sized businesses – can access their data no matter what happens,” she says. “And their needs are really changing. The amount of data is growing exponentially. Meanwhile, businesses are becoming more and more dependent on that data – its importance is also increasing exponentially.”

She took on this high-stakes



leadership position in 2016 and now oversees a global team of 1,700, from software engineers to salespeople, who create and market software and hardware that help companies archive, back up, and recover their data. This career trajectory has brought her a long way from shuffling punch cards, but her current role makes sense to friends she bonded with during late nights at WACCC.

“Beth is modest about it, but when you look at the leadership of most big companies, you don’t see a lot of women engineers, so that is a big deal,” says Mary Foley Walsh ’85, a fellow computer science major. “Still, it doesn’t surprise me. She is a really good listener, she’s optimistic – I look at her at Dell EMC and

I think, ‘wouldn’t anyone like to work for someone like that?’”

Phalen’s days at Dell EMC begin early, so she can teleconference with team members in India or Israel. Meetings and video calls with engineers may follow, as she checks in on different projects and works to understand the division’s current challenges.

“We’re doing a massive amount of transformation right now,” she says, explaining that Dell EMC’s data protection division is currently changing its approach to software development, moving from a traditional “waterfall” style – in which development begins with a planning stage and continues step-by-step to a final stabilization phase – to the cutting-edge Scrum and

Agile method, in which software engineers work together in short “sprints” to complete small batches of functioning code, which can be shipped to customers more quickly. “Scrum always keeps the customer in mind,” she says.

Accomplishing such a radical shift means encouraging her team to embrace a new mindset, a change that sometimes can prove difficult for employees of large, established corporations. “Part of my role is making sure I’m doing everything I can to knock down impediments,” she says, “while also challenging my team and encouraging them to think about things in the right way to make progress.”

Phalen is also the face of the data protection division, which means





communicating with customers around the world, many of whom are undergoing their own transformations. One multinational software company, for example, was seeing its data double in volume every year. It made sense to move from traditional on-premises data storage to a more modern cloud infrastructure, but the company needed Dell EMC to help with the shift, which required also modernizing how it protected that data. Smaller businesses, meanwhile, are eliminating dedicated data protection positions, dividing the responsibility among multiple people—who now need access to more user-friendly tools.

“There’s a big focus on simplifying everything that we deliver,” she

says. “All customers now expect their interfaces to be easy to use, and workflow to be automated.”

Her role requires a deep understanding of computer science and software engineering, as well as a facility with people and an intuitive sense of what customers and employees require to be successful. As it turns out, she first developed both sets of skills during her years at WPI.

She spent her early childhood in Holliston, Mass., where her father worked for a company that sold computers to WPI. He brought his daughter along when he visited campus—visits that stuck with her even after the family moved to New Jersey when she was in sixth grade. “That put WPI on my radar screen,”

she says. “And then, I really liked the WPI Plan. I liked Massachusetts. I liked the size of the school. I can remember being in New Jersey, trying to decide between WPI and another college, and looking through the brochure over and over again, and I was just drawn to WPI.”

A self-described “math kid” in high school, Phalen knew from the start that she wanted to major in computer science. “It was that or accounting, and computer science sounded a lot more interesting.” She was aware that her gender made her stand out, both at WACCC and on campus more generally. At the time, women represented less than a third of the student body, and the proportion in computer science was half that. And although

she never felt that male students or classmates treated her differently, she formed tight bonds with other women. “I think that was sort of a natural outcome of being so much in the minority,” she says. “But it really didn’t faze us. And I think because the industry was new then, it felt like it was new for everybody. In some ways it was easier, because we didn’t have the stereotype of the male tech worker yet; we didn’t have that burden.”

She recalls “comradery and community” when she thinks back to her days at WPI, which, she says, “turned out to be a really good fit for me. The project work was interesting and engaging, and it allowed me to just enjoy what I was doing, to think of it as not just something I needed to do to pass a class, but something I was learning for the longer term.”

She picked up programming languages like C, Lisp, and Pascal, which—like punch cards—quickly became obsolete, thanks to the swift pace of technological innovation. But it wouldn’t be these concrete skills that would serve her best once she entered the working world. “With software engineering, a lot of the logic and the approach—the ability to debug and diagnose problems, to think about things from the design level—applies no matter what language you’re using,” she explains. “And the experience of working in a team to complete projects is absolutely still relevant. That’s just foundational, and that hasn’t changed with technology.”

Outside the computer lab, Phalen also honed abilities that would help her climb the corporate ladder. Elected president of her sorority, Phi Sigma Sigma, and tapped for Skull, WPI’s honorary society, she learned to feel comfortable stepping into leadership roles. She also

learned to value her life outside work, whether it was taking part in clubs and activities, or hanging out with friends at the Goat's Head Pub in Sanford Riley Hall.

"I just remember a collaborative environment," she says. "And we had a lot of fun."

After graduation, she worked as a software engineer at Digital Equipment Corporation for 12 years. A stint as an architect for customer engagement at IBM followed, and she joined EMC in 1999, staying on after the Massachusetts company was acquired by Texas-based computer hardware giant Dell in 2016.

"When I came to EMC, I knew I really wanted to move more into management," she says. "I felt like I would make a bigger impact as a manager than as an individual contributor. I still love having conversations about software engineering, and I'm generally excited about it and enthusiastic about it, but I realized I was more and more interested in the dynamics of what makes an organization work, not just the technology."

A clear goal was a good start, but as Phalen soon realized, leadership is a skill like any other, and it requires study and practice. She began seeking out opportunities, forging connections across the organization and taking calculated risks, including volunteering to take charge of a bug-plagued storage virtualization product called Invista.

"It needed help, and the fact that I was willing to take that risk gave me more opportunities," she says. The solution turned out to be acquiring another company, whose technology replaced Invista. She then took on responsibility for bringing that company on board, which facilitated her continued rise within the company.

Along the way, Phalen watched other leaders in action, met with executive coaches, read business books, and worked to sharpen the

skills she knew she would need at the top—including what she refers to as "stubbornness"—explaining, "I've had to really get out there and make my point, and make sure people know that I'm going to get the job done, that the job is what's most important."

Having models to emulate made a difference—especially female executives, who were a rarer breed at the time she joined EMC. "There was one female vice president, and it was really helpful just to have a female executive visible," she says. Today, she hopes to be that role model for younger women, and when she travels to different Dell sites, she always makes a point of meeting with members of an internal group called Women in Action. "We've had 'Breakfast with Beth' or just conversations," she says. "I've talked with women in Chengdu, China; in Bengaluru, India; and in California, and had real dialogues."

As she travels the world, she's impressed by the similarities among young woman engineers who, no matter what culture they grew up in, hope to advance within a field that remains male-dominated. So many of their hopes and worries are the same. Work-life balance is a frequent concern, for example, as is developing assertiveness. Many have asked her how she gained the confidence to speak in front of crowds—like the 10,000 attendees at a recent Dell Technologies World conference.

"I tell people, I'm an introvert," Phalen says. "It's not something that comes naturally to me." But like everything else in life, whether learning to program on punch cards or steering a large organization through radical change, confidence is a skill that has to be honed. "It's about practice, setting goals, and finding opportunities. And once you do it, you might find out that it can be fun!" **J**

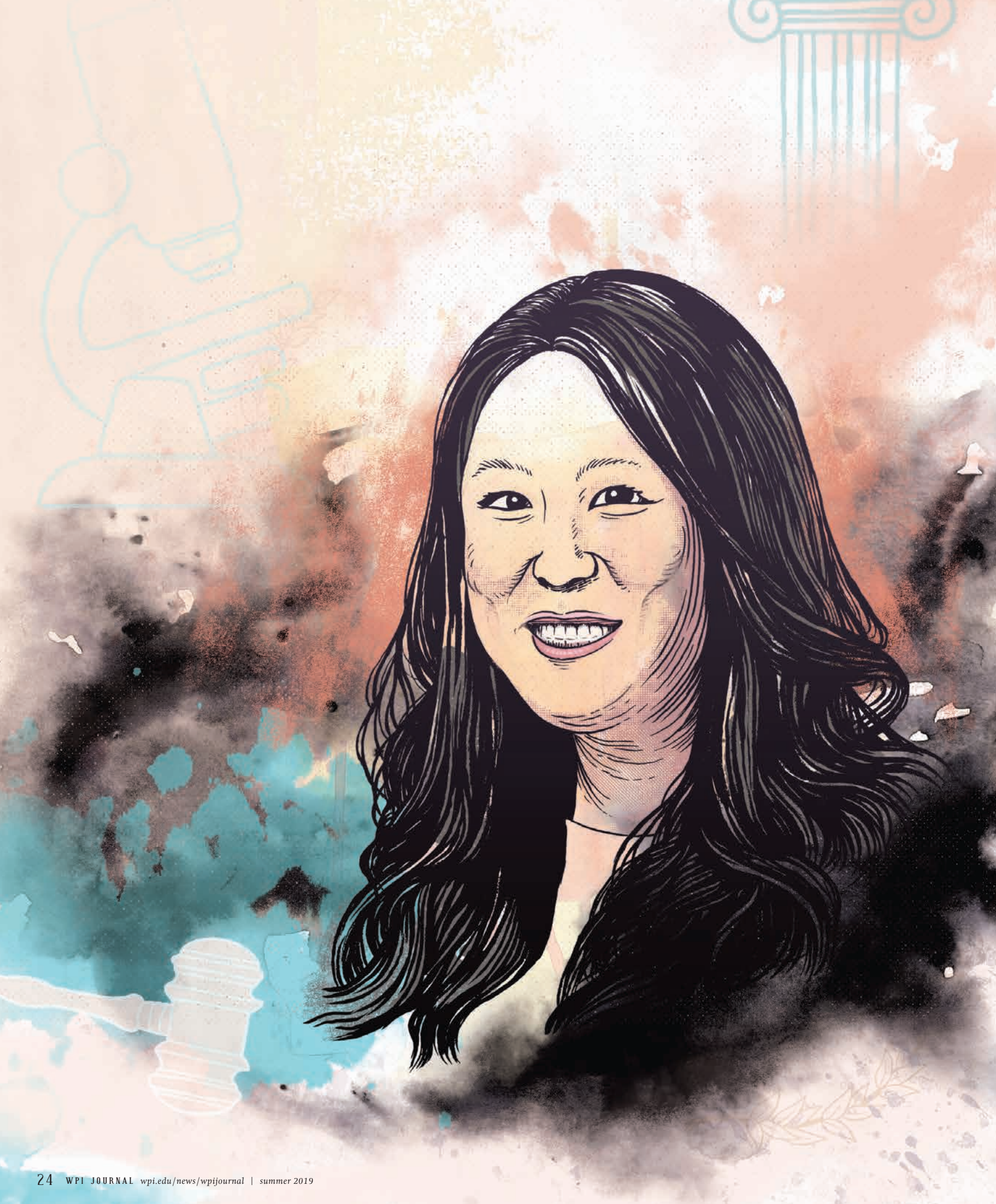






*Phalen at the Dell EMC campus in Hopkinton, Mass.*









# lisa lee '08

Lisa Lee always expected to become a doctor. It wasn't so much that *she* wanted to go into medicine, but that's what her parents wanted. Plus, she liked science and she was good at it. Her younger brother, her parents expected, would be a lawyer.

"Typical Asian parents," says Lee. "To be successful, you either become a doctor or a lawyer."

Then the plot twisted. While pursuing a graduate degree at WPI she took a class that opened her eyes to the intersection of science and law, forever altering her career path. Today she is a lawyer, not a doctor, but she does help people who are sick or injured. As an associate attorney in the Boston office of Andrus Wagstaff, a national mass tort law firm, she represents clients who were severely injured because pharmaceutical or medical device manufacturers placed profits before people. In that role she strives to effect long-term changes, including making high-powered healthcare companies more accountable, with the goal of saving people from unnecessary pain and suffering in the future.

## Law of the Lab

BY KATE SILVER | ILLUSTRATION MATHEW MILLER



“The lightbulb moment came during class when he talked about lawyers doing something related to science.”

## FINDING THE RIGHT CAREER CHEMISTRY

Lee was as surprised as anyone by her career pivot. To stand out from all of the biology majors applying to medical schools, she majored in chemistry, biochemistry, and molecular cell biology at UMass Amherst. But before applying, she did some soul searching. Was she really prepared to commit nearly a decade of her life to undergrad studies, medical school, residency, and internship?

“I needed a couple of years to decide if I really wanted to do that,” she says. “So, why not get a master’s in chemistry?”

The decision led her to WPI and that life-changing course, Medicinal Chemistry, taught by Professor James Dittami. It explored the discovery and development of therapeutic agents—such as drugs, biologics, and medical devices—from a pharmaceutical research and development perspective. It also delved into the drug approval process overseen by the Food and Drug Administration (FDA). In other words, it sat right at the intersection of healthcare and law.

“The lightbulb moment came during class when he talked about lawyers doing something related to science,” says Lee. “It’s different from medicine, but it was an

avenue I hadn’t considered. You have this stereotype in your head that science is as removed from law as you could get.”

Throughout the class, her interest grew. She spoke about it with Dittami, who, she recalls, helped open her eyes to the career possibilities out there. He continues to emphasize to students the importance that science can bring to law.

“I know of several attorneys who earned backgrounds in science and then applied that knowledge to the practice of law,” he says. “They are in high demand in firms dealing with food and drug law, which also encompasses the areas of biologics, medical devices, dietary supplements, etc. A detailed understanding of the science behind how these products work and a thorough knowledge of the regulatory framework are invaluable tools in fields including food and drug law, patent law, manufacturing, pharmacovigilance, and regulatory affairs. They are essential skills and their importance to matters concerning products regulated under the Food, Drug, and Cosmetic Act cannot be overemphasized.”

While at WPI, Lee was drawn to patent law. She envisioned a future where she would be part of a system of checks and balances that helps ensure that companies live

up to their legal obligations regarding their products. Her background in science could actually give her a leg up in law, and she would be able to complete law school more quickly than medical school. “Plus,” she says, “it was still an accepted profession to my parents.”

She received her MS in chemistry from WPI in 2008, and went on to earn a law degree at Northeastern University. After graduation her interests shifted from patent law, to how companies move forward with their intellectual property: in particular, their legal obligation to test and validate their patented products, and to monitor any complications that may arise from their use. She began working in mass torts, a type of law that involves many plaintiffs with different injuries who pursue litigation against one or more defendants under a common theory of liability. Today, in her job with Andrus Wagstaff, science regularly informs her work. “I represent patients who have been severely injured or [represent families of those] potentially even killed from the use of medical devices and pharmaceuticals,” she says.

## PROTECTING PATIENTS THROUGH LAW

One of the devices Lee has focused on is known as transvaginal

mesh. Made of polypropylene, the mesh is designed to treat urinary incontinence and weakened pelvic muscles. It is sometimes prescribed when a patient is diagnosed with stress urinary incontinence or pelvic organ prolapse, which occurs when the muscles that surround the pelvic organs, including the bladder and uterus, become weak or loose.

In April, the FDA ordered an immediate halt to sales of certain transvaginal mesh products. The order applies to products made of polypropylene mesh that were sold to help with anterior compartment prolapse. The FDA determined that the manufacturers failed to demonstrate reasonable assurance of safety and effectiveness, the premarket standard since the reclassification of the devices by the FDA in 2016.

Lee has worked on multimillion dollar settlements for more than 1,000 women injured by these devices. The mesh was originally approved by the FDA for hernia repair, but the manufacturers of the device sought out other uses to increase their profits. That’s where things started to go wrong, Lee says. Because the device had received FDA approval for a different though similar use (hernia repair), use in the vagina went through a less



stringent approval process, called a 510(k), which required no testing. (A documentary, *The Bleeding Edge*, on Netflix talks about this process and about this device).

The issue, Lee says, is that while the two uses may be similar, the biology of the two environments where the mesh is implanted – the abdomen vs. the vagina – is quite different. “The abdomen is very sterile,” she says. “The vagina is not. It is an acidic environment filled with bacteria, among other things.”

She says she’s seen an array of injuries caused by the mesh, attributable to the material’s pore size and its weight. In some cases, the polypropylene can stiffen to the point where it begins eroding the patient’s bowels. Often, surgery is required to repair the damage. In other cases, she says, the mesh has contracted and caused the urethra to close. That, too, results in surgery and the possibility of chronic pain.

“The transvaginal mesh litigation certainly put the spotlight on how inadequate the standard of substantial equivalence is for such medical devices,” she says, “but there are other defective medical devices still on the market with undoubtedly more to come. Sadly with our current system, issues with defective medical devices are being discovered after the damage has already been done. I hope that the American public becomes more informed about the FDA 510(k) process and demands change from our government. In the meantime, I continue to be committed in doing my part to represent people who are injured by these defective medical devices to make sure their voices are heard.”

Her science knowledge has helped her immeasurably in understanding causation, liability, and damages. For example, the mesh can be manufactured in a number of ways. Sometimes it’s machine

cut, other times it’s cut by laser. Different types of processing can affect the material’s integrity, leading to injuries. “The way the injury is related to the product is very science heavy, very medical heavy,” she says. “So with my background in science, the learning curve is a lot less steep for me.”

While her graduate work at WPI was mainly in inorganic chemistry, she read countless medical journal articles. That, too, has helped her in her work, whether it’s quickly processing information or understanding her client’s medical records.

### THE SCIENTIFIC METHOD

Kimberly Dougherty, a managing partner with Andrus Wagstaff and Lee’s boss, says that Lee’s science background, and her time spent at WPI, is especially helpful when speaking with potential expert witnesses. Dougherty remembers one such meeting where she and Lee spoke with a science professor who was a potential expert in a case. They talked with him about different materials – such as polypropylene – and how they impact the body. Dougherty walked away impressed with Lee’s expertise and her ability to guide the conversation. “It adds significant value to have someone who’s able to speak their language and able to understand what they’re talking about at a high level, and able to translate to others who may not understand the science as well,” she says. “I don’t know that there are a lot of firms that have that caliber of knowledge and scientific background that can add to the value of the cases like we do with Lisa.”

Dougherty says that in her line of work, with its healthcare focus, it’s not uncommon to meet lawyers who originally set out to be doctors. She believes that for people like Lee, it’s a path where they can make an impact in a different but important way. “She is an advo-

cate,” she says, “she is someone who believes in issues and is able to articulate them in a way that effects change.”

Beyond her knowledge of science, Lee has found that being able to think like a scientist has also been helpful in her law career. “Having that logical, deductive thinking process is useful as an attorney,” she says. “With science, it’s a lot of trial and error. You try something, it doesn’t work; you try something else, it doesn’t work. And with law, although it’s not black and white, I’ve found that the fact that you can come up with multiple solutions for a problem is kind of similar to that trial-and-error aspect of science.”

Lee admits that the day-to-day aspects of her job can be bitter-sweet, if not heartbreaking. “Whenever I’m able to get some type of compensation for my clients I’m happy,” she says. “That being said, I don’t think any amount of compensation is really enough for what these women have gone through. If you ask them, ‘would you rather go back to how you were before your surgery, or would you rather have \$10 million?’ they’d rather have their health back. It’s not something that you can really put a price on.”

Still, she knows she’s fighting for the greater good. “Maybe it’s willful ignorance – you want to close your eyes to it – but these huge companies ... their whole motto is they want to help people get better. But when they break it down, they’re in it to make money. I’m not saying making money is a bad thing. But you don’t do it to the detriment of people’s health,” she says.

Lisa Lee may never be able to cure the system. But through her work, she hopes that by keeping corporations accountable now and in the years and decades to come, she can help save people from suffering unnecessary harm. **J**



## Mort Gutman '65 ME

began taking flying lessons in his senior year at WPI and discovered a love of aviation. “It was just a half hour on Sundays from a local guy who’d been a WWII flight instructor—who didn’t even charge me,” he recalls.

Upon graduation Gutman enrolled in the Air Force, ending up at Plattsburgh AFB in upstate New York as a navigator B-52 radar navigator. It was there he wed his love, Marilynne—this year they’re celebrating their 51st year of marriage.

His next move came in 1970, when he received what he calls an all-expenses-paid trip to the Far East. “It was with a large tour group,” he quips, “and we all wore the same clothes.”

He served on a team flying B-52s out of Guam, Okinawa, and Thailand. With over 60 combat missions—a quarter of these as lead navigator—he rose to the rank of captain and instructor-navigator. “GPS wasn’t even a dream back then, and Guam, in particular, was a difficult navigation job. No mistakes were allowed while trying to find a small island in such a large ocean—while getting low on fuel.”

Back in civilian life, Gutman earned an MBA and worked in production management, sales, and marketing. Through it all, it was his service as volunteer firefighter, EMT, and paramedic that made him feel most alive. Eventually he sold his business and devoted himself to public service.

Along the way, he flew small planes as often as he could. “It really is quite lovely and challenging up there,” he muses. “And I maintained an interest in military aviation, trying to keep up with the latest developments.”

But when his knees demanded a break, he became a public safety dispatcher, answering 911 calls, dispatching police, fire, and EMS vehicles.

Now with retirement upon him, Gutman says he still yearns for aviation of any type. Three years ago, having seen an ad for the New England Air Museum in Windsor Locks, he went for a visit—and found his new home. He joined a group of 150 volunteers, starting out as a docent; he’s now a museum educator, helping elementary children discover the world of aviation through science and history.

With every class of 3rd to 8th graders who come through the Museum, Gutman says he witnesses quite a few students who connect with the science behind aviation in a new way. He can almost see the wheels spinning in their heads as he talks about drag and lift or the difference between steel and aluminum. “When that happens, I really feel good about it. After all, the whole program is for the school’s STEM curriculum, and to get the students excited about it.”

With an engineering degree, military and civilian flying backgrounds, and a continuing love of all things aviation, Gutman says he has a lot of knowledge to share and a desire to impart that love onto a new generation.

It seems this former bombardier has finally found his true calling—unexpectedly not in the skies, but in a hangar on the museum grounds.

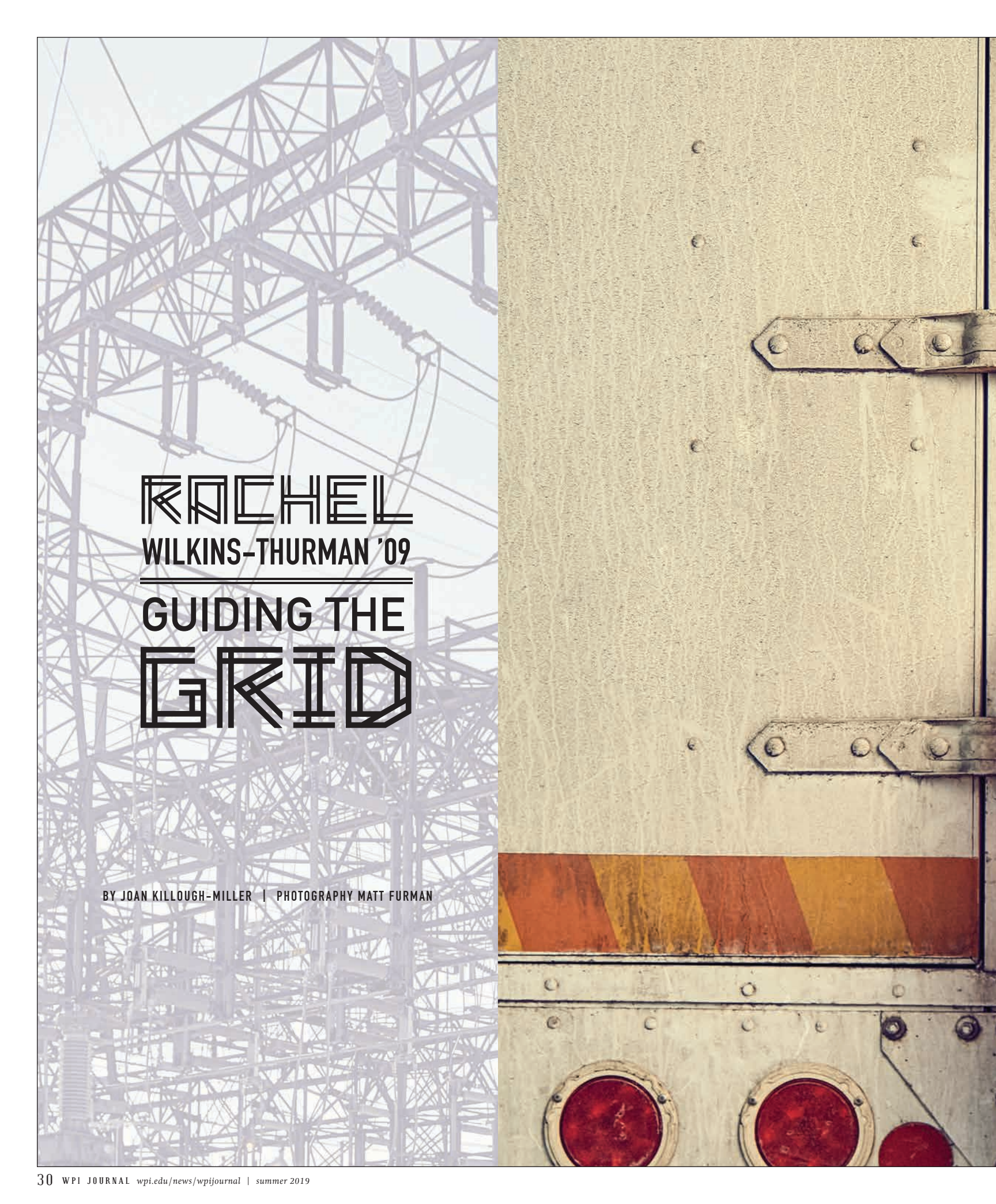
—Doreen Manning





Gutman at the New England Air Museum, Windsor Locks, Conn.





RACHEL  
WILKINS-THURMAN '09

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GUIDING THE  
GRID

BY JOAN KILLOUGH-MILLER | PHOTOGRAPHY MATT FURMAN







Like so many of WPI's best and brightest, Rachel Wilkins-Thurman was an inquisitive child who used her own two hands to investigate the world around her.

"I was always taking apart phones, radios, and electronics, just to see what goes on inside," she recalls. "I always had people tell me, 'You ask so many questions!'" It wasn't always a compliment. And her experiments weren't always appreciated. "When I was small I was able to take things apart, but I couldn't always put 'em back together," she confesses, with a hearty laugh.

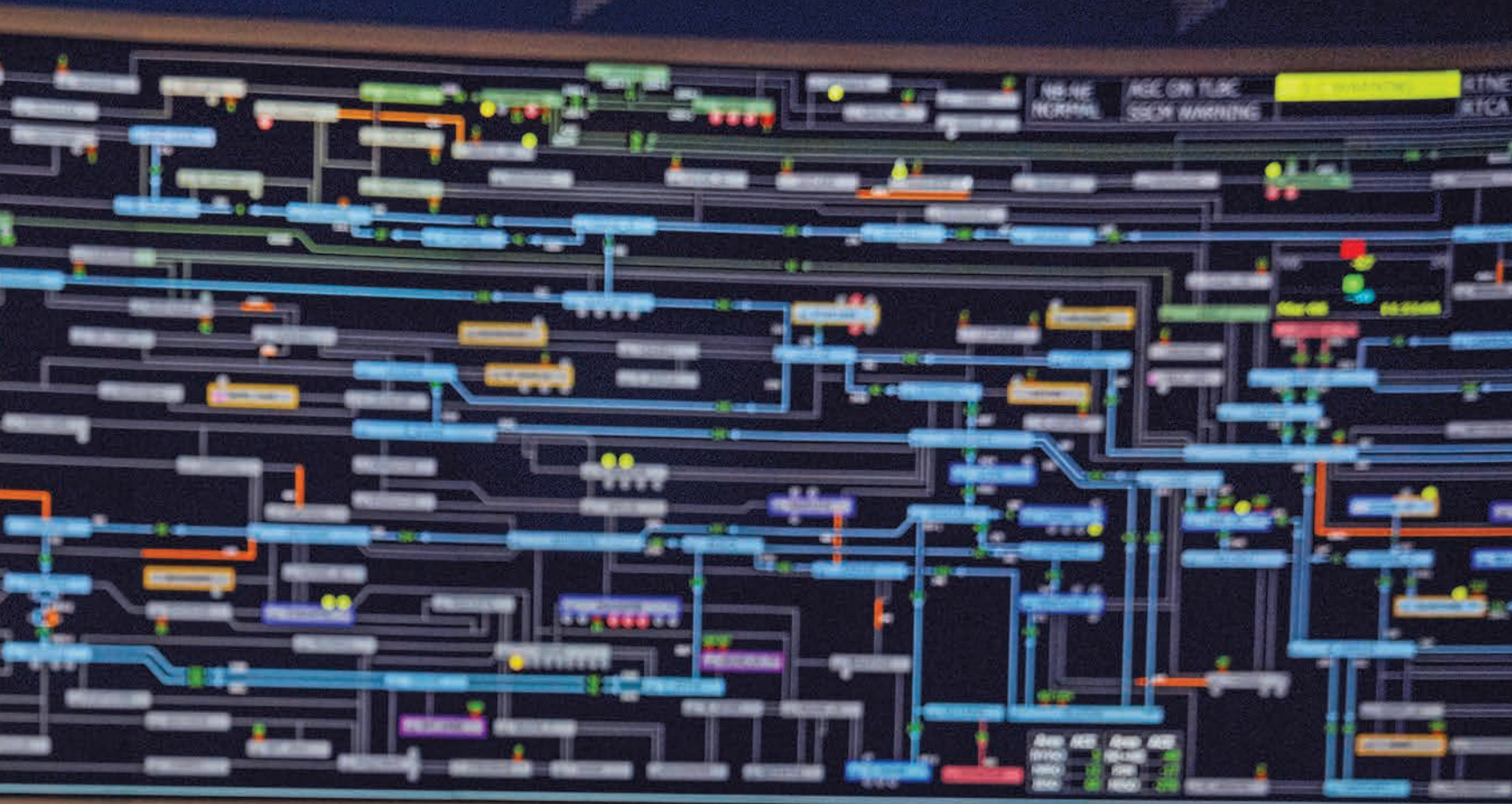
She wasn't one to sit back and wait for a fairy godmother to grant her wishes. When her mother locked up the household candy supply in a back room, Rachel got handy with her father's tools. "I didn't have the key, but I was able to unscrew the latch, and put everything back without anyone noticing, because the lock wasn't disturbed!" To this day, the memory amuses her.

When her parents wouldn't buy her Barbie's Dreamhouse, she built one herself. Cutting and folding cardboard, she constructed an elaborate abode for her dolls and furnished it with handcrafted couches and chairs. "On top of the house, I wanted a swimming pool. So I cut a hole in the roof to fit a bowl inside, and I filled it with water." Again, her mother did not appreciate her ingenuity. "She was like— '*What is this mess?*' And she took it away. But that creativity part of me has always been there."

Today Wilkins-Thurman applies that can-do mindset to the complexities of the 72,000-square-mile power grid that serves customers in New England. At any given moment, as we flip a light switch or power up our computers, a portion of that grid infrastructure is likely to be down for routine maintenance or repair. Her mission is to make sure the power is there when we demand it, and that we remain blissfully unaware of the challenges that had to be overcome to get it to us.







Wilkins-Thurman in the Control Room of ISO New England, Holyoke, Mass.



## MINDING THE GRID

A 2009 graduate of WPI's master's program in Power Systems Management, she has been with ISO New England for over a decade. (ISO is shorthand for independent system operators, who serve as neutral managers of a region's pooled electricity supply. New England's power grid was formed in the wake of the 1965 Northeast Blackout.) The not-for-profit company based in Holyoke, Mass., dubs itself "Guardian of the Grid." It doesn't make or sell electricity, but compares its function to an air traffic controller, keeping power flowing reliably through 9,000 miles of transmission lines across six states. In that analogy, Rachel would be one charged with scheduling time off for the pilots without leaving any passengers stranded.

With a GM mechanic father, and a mother who read meters for FirstEnergy, it might seem like the path to engineering and a career in the power industry would be obvious. It wasn't.

"Back then, I didn't know anything about engineering," she says. "Nobody talked to me about it, or told me it was even possible." Her earliest dream was to be a singer, in the Gospel tradition of The Clark Sisters. She performed in a trio with her sisters, Willette and Jessica, as The Wilkins Sisters. "I wrote most of the songs we sang," she recalls. "They helped with the arrangements."

She also loved being at her father's side as he rebuilt cars in the backyard, or did household repairs. "He'd be putting in a new transmission, or replacing a faucet," she says, "and I'd be passing him tools. Of us three sisters, I was the one who was always out there with Dad."

Her vocal talents took her to a performing arts program in high school, but that ended abruptly when her parents moved after her freshman year. In her new school, she was channeled into the

Computer and Electronic Technology vocational track. *She* wanted to study mechanical engineering, but despite her years of greasy-handed assistance, her father didn't think ME was a suitable field for a girl. Her mother thought computers might be a good outlet for her daughter's curiosity and creativity.

It was her mother's work in the energy industry that raised an awareness in Rachel of what it took

a few years. A co-op put her inside the transmission control center of FirstEnergy. An NSBE career fair led her to the management trainee program of NSTAR Electric in Boston. Her role there as supervisor of electric operations called for a master's degree. Fortunately, WPI had just launched a joint Power Management graduate program with NSTAR.

"We were in the process of put-

England; she rose to the position of lead outage coordinator in 2016.

## STERN BUT SWEET

On a midwinter Monday morning in February, just back from a week of site visits, Wilkins-Thurman graciously makes time in her busy schedule to sit down for an unhurried interview with *WPI Journal*. With one eye on an approaching



to keep the lights on, and what engineers did to make it happen. By the end of high school she was able to articulate a new life goal, spelled out beneath her yearbook picture: "... to be a successful electrical engineer."

In high school, she'd been one of a handful of girls in the computer track. In college, it didn't get much better. At the University of Akron she became active in the Society of Women Engineers and the National Society of Black Engineers (NSBE), which she served as president for

ting in a new energy system at NSTAR," she recalls. "My previous work with FirstEnergy gave me the background, and my WPI classes in power systems management helped me see how it all pulled together. It was awesome to understand the theory behind all that. Most colleges don't offer those concentrated classes."

At NSTAR she served as a liaison on many fronts, including compliance work with ISO New England. That relationship led to a job as senior outage coordinator at ISO New

snowstorm, she's already working out a backup plan for the *Journal's* photoshoot later in the week. That kind of front-end planning is second nature to her. She's not on call for storm duty—she put in her time on the front lines of emergency management in her previous positions with NSTAR and FirstEnergy. In her current position, she's looking ahead—sometimes as much as two years—to find the best way for generator and transmission line owners to accomplish necessary maintenance and repairs, as well as



new installations, without compromising the reliability of the system.

Thousands of outage requests pour into her work group every year. Using a schematic model of the entire regional grid, she can run computer simulations and analyze the effects of taking specified generators or transmission lines out of service at any given time. She compares it to a checkerboard, where you're always thinking

times over. "Our objective is to ensure that we can always cover for the planned situation, as well as the unplanned," she explains. "Cold snaps come, there's always the risk of a hurricane or a heatwave—or an unplanned outage of another line. Before we allow an outage request, we first have to make sure we'll be able to withstand two major contingencies, without overloading the lines that remain in service."

And then there's "congestion cost," which results when conditions on a transmission system don't allow for the most economic dispatch of electric energy to serve the consumer load. "This is important," Wilkins-Thurman says, "because this cost could ultimately be passed on to the rate payer, which includes me and you as consumers. We try to stagger things, the best we can, with the goal of balancing ca-

the line out of service).

There's a lot to consider—and Wilkins-Thurman knows it inside out, because she's been in their shoes. "Because of my work at FirstEnergy and NSTAR, I have an understanding of how things work at the local control center level. I understand what they go through, because I've been through it. That makes a distinct difference.

"The personal relationships are key," she elaborates. "You have to listen and understand where're they're coming from. You have to be friendly—and fair. If I have to say no—I want them to know it's nothing personal, it's just a business decision to maintain reliability. You have to have compassion. Because at the end of the day, they're just trying to do their jobs—and we're just trying to do ours."

To steer all parties toward a com-

the reporting process. Lead analyst Michael Zeoli, who worked with her on automating the reporting process, says he's enthusiastic about any opportunity to collaborate with her, calling her "fully engaged" and "meticulous when it comes to details."

"Because of the numerous locations from which data had to be retrieved, and the magnitude of data, the manual creation of these reports was very time-consuming," Zeoli says. The project also called for some unique coding, including accommodating for the number of days in certain weeks that fall in two different months. "Throughout the development process Rachel was willing and able to fully test any new code no matter how many other things she had on her plate at that particular time. The final product is a piece of software that

## “ NO BLACKOUTS GOING ON—THAT’S PRETTY GRATIFYING. ”

capacity and reliability, and reducing or eliminating congestion cost."

It's a complex balance, and a powerful role. "I have a right—and a responsibility—to approve or deny an outage request." That's where diplomacy comes in. "Even though ISO has final authority—sometimes it comes down to being able to say the right thing to get others to do the right thing." Sometimes it's possible for Wilkins-Thurman to guide companies to a creative workaround. "We'll ask questions and try to come up with ways to rope an unreasonable request back in." At times, a little time-shifting—moving the outage back or forward a day or two, breaking it into multiple segments, or piggybacking it onto some other scheduled maintenance—does the trick. Wilkins-Thurman might push for crews to work longer shifts to shorten the duration of an outage, or explore whether portions of the work can be done "live line" (without taking

mon goal, "You have to be really assertive," she says. "You have to be able to be *stern*, but [she lightens her voice] *sweet*." She follows that pronouncement with a hearty laugh. "There are only two women in our group—and I'm one of them. It's something we experienced starting in college. It's tough to be a woman and a minority in this particular field. But it's been a great experience."

Although her work is sometimes stressful, she's quick to point out the joys of her job.

"It's pretty gratifying to see something come to fruition—for example, when a new line goes into service—and know that I was part of that, I worked with them to make it happen." She thinks a moment then adds, "No blackouts going on—that's pretty gratifying."

In her decade at ISO New England, Wilkins-Thurman has helped bring about longer lead times on outage requests and greater automation of

has reduced the completion time of the report—from days to less than an hour—with complete accuracy." He notes that there have been discussions about publishing daily reports, rather than monthly.

During the February school vacation, Wilkins-Thurman brought her daughter to WPI for Introduce a Girl to Engineering Day. "Shayna had a blast playing with robots and creating her own balloon rocket," she says. "I do see the characteristics of an engineer in her. She has a memory like an elephant, and I can always see those wheels turning. Her dad, a computer engineer, plans to teach her some basic programming to see what she thinks of that. I can see her going into STEM, but she's only 8. I'm not trying to push my agenda."

Harking back to her own childhood, she says, "The earlier they get that exposure, the better. Exposure and environment is the biggest reason why I'm where I am today." **J**

several moves ahead, looking in all directions for potential pitfalls, and analyzing potential outcomes.

In addition to balancing seasonal demands (spring and fall are favorable for outages; winter and summer are prime heating and air-conditioning seasons in New England; and special days like Thanksgiving or Super Bowl Sunday are off the charts), she factors in an adequate operating capacity margin to cover unexpected events. ISO's operating procedure is to prepare for the worst-case scenario—two



# CHRYS DEMETRY '88



## THE SCIENCE OF TEACHING

A mechanical engineer and materials scientist, Chrysanthe Demetry spent many hours in the lab as an undergraduate, as a PhD candidate at MIT, and as a young faculty member at WPI exploring the properties of materials. But for much of her career, her focus has been a laboratory of a different kind: the classroom.

She is deeply interested in understanding and advancing the intertwined processes of teaching and learning. Whether she is trying out new approaches to engaging students in her own courses or helping other faculty members become better teachers, she takes a scientific approach to her work: hypothesizing, experimenting, synthesizing what she has learned, and then sharing that knowledge broadly.

BY MICHAEL DORSEY | PHOTOGRAPHY PAT O'CONNOR





## A CAREER CRYSTALLIZES

Demetry says she cannot remember a time when she was not interested in science. She found support for her budding curiosity at school and at home, particularly from her father, longtime WPI electrical engineering professor Jim Demetry. “When I started doing high school science projects, I got my dad’s help—in a good way!” she says. “He got me access to lab equipment and helped me think through my experiments.”

By the time she enrolled at WPI, her interests had crystallized around materials. “I loved thinking about and measuring the properties of materials,” she says, “and thinking through how different structural features might influence those properties. Of course, I also loved breaking stuff!”

She completed her MQP (Major Qualifying Project) on the processing properties of metal composites and her IQP (Interactive Qualifying Project) at the Washington, D.C., Project Center, where, sponsored by the National Society of Professional Engineers, her team developed recommendations for how the organization could increase understanding of engineering among high school students, teachers, and guidance counselors.

Demetry was accepted as a PhD candidate at MIT, where, as an Office of Naval Research Graduate Fellow, she worked with renowned materials scientist Yet-Ming Chiang on the properties of ultrafine-grained titanium dioxide. Her research earned her a graduate student award from the Materials Research Society.

She also completed a minor in higher education administration at the Harvard Graduate School of Education. “By my college years, I knew I wanted to be a professor,” she says, “and that I was interested not just in teaching and research, but in how institutions are run and led, and how they change.”

With her doctorate in hand, she applied for just one faculty position. “I wanted to teach at WPI because of its institutional values, which encourage close interactions between students and faculty,” she says. “But especially, I was drawn back by the IQP and the opportunity to work with students on projects.”

Demetry made quick and exceptional progress along the tenure track. She won a five-year CAREER Award, the National Science Foundation’s most prestigious honor for young faculty, to advance her work in ceramics. She earned the Norton Professorship, established six years earlier by a Worcester manufacturer with deep historical ties to the Institute. She won the Bradley Stoughton Award for Young Teachers from ASM and WPI’s Board of Trustees’ Award for Outstanding Teaching. (She was named the Carnegie Foundation for the Advancement of Teaching’s Massachusetts Professor of the Year in 2011.)

But amid an intense focus on teaching, research, and service, she also embarked on a journey that would take her deep into some of the most profound questions about education.

## FLIPPING THE CLASSROOM

One of the first courses she taught at WPI was Introduction to Materials Science. “I love that course,” she says. “In a way, it’s easy to teach because it’s not hard to get students interested in the fascinating world of material properties.”

Easy or not, Demetry almost immediately began wondering how she could do more to help her students learn. The standard “sage on the stage” model of classroom instruction has changed little in modern times, though a substantial body of research suggests that students learn more and gain greater confidence in their ability to use what they learn if they actively engage with ideas rather than pas-

sively absorb them from a lecture.

Starting with that premise, she turned Introduction to Materials Science into the central focus for her growing interest in challenging embedded assumptions about how instructors should teach and how students should learn. Once again, she’d found a venue where she could “break stuff,” only now she could put it back together differently to create a better outcome.

The start of her quest coincided with a campuswide initiative funded by the Davis Educational Foundation aimed at helping faculty introduce active and cooperative learning into their courses. “I started with very simple ways of breaking up lectures with informal collaborative learning activities,” she says, “and I gained confidence in that.” Demetry was also one of the first professors at WPI to use “clickers” to give students a way to answer questions, take polls, and provide feedback in real time.

But her attempts to get students to interact weren’t reaching everyone. “No matter what I did, about a third of the class would not engage with their classmates,” she says. “So I started introducing more structured team projects in class, which required everyone’s participation.”

The structured projects worked, so she next took aim at another component of the standard lecture course: the textbook. “By 2009 I was still using the textbook as the main learning resource,” she says. “I decided, instead, to make my own video lectures so students could more readily engage with the material before coming to class.

“Then, I stopped lecturing in class entirely, which freed up class time for applying the basic knowledge and ideas from the online lectures to interesting conceptual and application problems. These were higher-level and more complicated than what was in the lectures, and they used a strong element of





Behind Demetry, this WPI seal in Gordon Library is a gift of the Class of 2015.

## NEVER-ENDING REACH

Few Interactive Qualifying Projects (IQPs) have had the kind of positive long-term impact as one advised by Chrys Demetry and Denise Nicoletti, assistant professor of electrical and computer engineering, in 1995–96. Completed by juniors Stephanie Gagne, Robert Grelotti, Lisa Sundre, and Chi-Yan Tsang, the project provided the foundation for a remarkable summer program that has introduced hundreds of rising seventh-grade girls to engineering, a career they might have known little about otherwise.

The program, Camp Reach, traces its beginning to the day Demetry's father, ECE professor Jim Demetry, introduced her to Nicoletti, who two years earlier had become the first female tenure-track professor in his department. "He knew we would become quick friends because there were many fewer women on campus at that time."

Aware of the underrepresentation of women in engineering, they decide to work together to do something about it. The IQP was the first step. It recommended an immersion program that would not just show girls how engineers make the world better, but let them experience the engineering design process by completing projects addressing real needs for local community organizations. The IQP served as the framework for a successful proposal to the National Science Foundation.

With the NSF funds, Camp Reach was launched in 1997. Its early success led to corporate and foundation support, which helped keep the cost low for families after the NSF funds ran out. Nicoletti's death in a car accident on the first day of the 2002 program was a devastating blow, but other WPI administrators stepped forward to sustain the program, which is now enrolling students for its 22nd year.

Has it worked? A 2009 study co-authored by Demetry found that nearly 18 percent of Camp Reach participants intended to pursue an engineering major in college, as compared with 2.9 percent of a control group and a national average of 2.5 percent for women. Participants reported a greater sense of empowerment and self-esteem and higher enrollments in calculus, physics, and STEM activities in high school than non-participants. A follow-up study in 2017 found that participants also applied to WPI and enrolled at a greater rate than the control group.

Camp Reach received the Women in Engineering Program Award from the Women in Engineering Proactive Network (WEPAN) in 2003 and was honored by President Obama in 2011 with the Presidential Award for Excellence in Science, Mathematics, and Engineering mentoring. A 2014 honor was especially meaningful—that year at WPI's Faculty Convocation, Demetry received the Board of Trustees' Award for Service to Community; created in 2003, it is named in honor of Nicoletti. "That was a special moment," she says. "One of the reasons I am so committed to Camp Reach is Denise's legacy and trying to keep it alive."

team-based learning. In educational lingo, this is known as a flipped classroom.”

By having students watch a lecture—the traditional heart of a college course—on their own time and completing what would traditionally be homework in class, Demetry says she was able to better track what students were learning and what was causing them to struggle. And students seemed to appreciate the flipped model. “They really valued being able to collaborate with peers and to learn the material together.”

### TEACHING THE TEACHERS

Demetry’s work in educational innovation has gone well beyond that one course. She’s introduced innovations to WPI’s renowned Global Projects Program, including a framework for cross-national project advising that she developed as co-director of WPI’s Bangkok Project Center (she has advised at nine global centers since 1998), and she recently helped launch and direct WPI’s Grand Challenges Scholars Program. She has also shared what she has learned with colleagues on campus, and more widely through conference presentations and peer-reviewed publications (more than half of her 35 journal articles relate to undergraduate education).

In 2006 she was given an opportunity to magnify her impact on educational innovation at WPI when provost Carol Simpson invited her to become the director of the Center for Educational Development, Technology, and Assessment (CEDTA), which had been without a leader for more than a year. “I had benefitted greatly from the center,” she says, “and was concerned that it might disappear, so I accepted the offer.”

A few years later, WPI trustee Paul S. Morgan, former chairman of Morgan Construction Company and an alumnus of Harvard University, learned about Harvard’s Derek Bok Center for Teaching and Learning,

which teaches faculty members how to teach. He was surprised to learn that PhD candidates typically receive no formal training in something that may constitute a major element of their careers. “To his credit and our benefit,” Demetry says, “he was really intrigued by that.”

Learning that WPI had a similar center, Morgan decided to put CETDA on a firmer foundation and give it room to expand its mission by endowing it with a \$2.1 million gift. The result was the Morgan Center for Teaching and Learning, which Demetry has led since 2010. Like its predecessor, the Morgan Center is dedicated to helping WPI faculty members become more effective teachers and to encouraging the kind of experimentation and innovation she, herself, has undertaken over the years.

In addition to monthly “Food for Thought” programs, teaching consultations, mentoring programs, and the other services CEDTA had provided, the Morgan endowment enabled the center to offer Teaching Innovation Grants to help faculty pursue creative ideas and to introduce faculty learning communities.

“There will always be value in helping individual faculty members,” she says, “but you can have even more impact when you bring faculty together from across several disciplines who are thinking about similar issues in their teaching.”

Each year, faculty members submit potential themes for the next round of learning community grants, sometimes with surprising results. “A recent theme was visual communications,” Demetry says. “This wasn’t on our radar at all, but it turned out there was a lot of faculty interest in it.”

Once the theme is established, faculty members submit proposals. The winners receive funding for their individual projects, but are also assigned to interdisciplinary communities with which they meet

regularly to share ideas and experiences. “These are faculty members who hadn’t previously connected with each other, but who are brought together around an area of common interest. While pursuing their own ideas, they also generate institutional knowledge that other faculty members can use.”

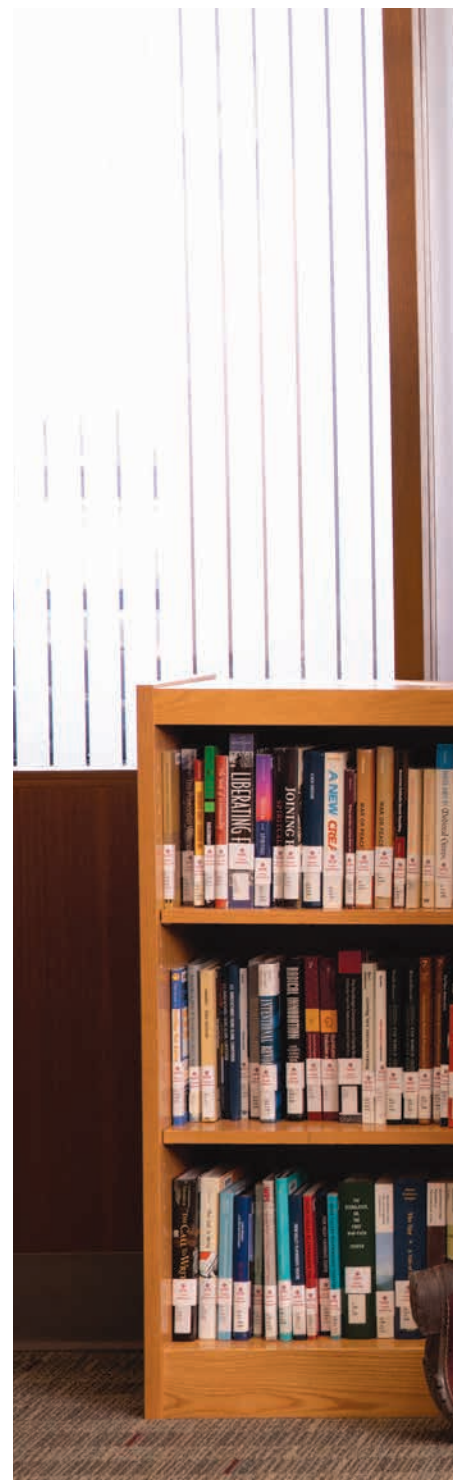
In recent years, WPI has provided funding to bring instructional designers to campus, which has enabled Demetry to redirect her energies.

“I’ve been directing faculty more and more to these experts and turning my attention to some more strategic and structural issues,” she says. “An example of that is classroom design—because our classrooms, until recently, have been pretty traditional and woefully out of line with our educational philosophy, in many ways.”

Building on the work of an IQP team, which explored the growing movement toward active learning, and collaborating with WPI’s Academic Technology Center, Demetry helped spearhead WPI’s first dedicated active learning classrooms in the new Foisie innovation Studio, as well as a redesign of Kinnicutt Hall in Salisbury Labs to better support joint work and discussions.

“We’ll probably always have some classic lecture halls,” she says, “but we’re making progress toward having classrooms that support the technologies and pedagogies that professors really want to use.”

With this new focus, Demetry has added a new dimension to her long quest to explore the science of teaching. Today, she is not just running experiments in the laboratory of the classroom, she is redesigning the laboratory itself. In the process she is emulating what she once said was her chief goal as a teacher and a project advisor: to help her students become lifelong learners. Put another way, she is demonstrating that the best teachers never stop being students. **J**



THE ADVANCE TEAM, FROM LEFT, ELIZABETH LONG LINGO, NATALIE FARNY, DEMETRY, AND JEANINE SKORINKO. NOT SHOWN, SUSAN ROBERTS.





## A FAIR PATH FOR ALL

“As a woman scientist, being a minority, being underrepresented was something I’ve taken for granted, or perhaps it was just something I stopped noticing,” Demetry says. “But some new data that pointed to discrepancies in satisfaction and success, and conversations with younger female colleagues, presented the problem in stark terms that I hadn’t fully realized.”

The problem is that at WPI and many other universities, women faculty members in STEM fields do not advance as quickly as their male colleagues. To better understand the barriers and biases that may hinder progress for women, an interdisciplinary team of women faculty members at WPI, including Demetry, successfully applied for a National Science Foundation ADVANCE grant to study the problem (see “Seeking Equity in Faculty Advancement,” page 15).

“We’re working to engage stakeholders and constituents across WPI in co-creating and interpreting new criteria for promotion,” Demetry says. “We’re interested in how all faculty will be supported to advance in their careers, and to do so in ways that go beyond traditional discovery research to include the full range of contributions that are so important to WPI, including development of project centers and the creation of new academic programs, or work

with outreach programs and community development. That wide range of impacts is what makes WPI such a great institution.

“And we want to make those pathways more visible and recognized and rewarded for all faculty,” she says. “There are many men who are engaged in work that isn’t being fully recognized and rewarded. So I view it more broadly than just a gender equity issue. What is good for women is good for the whole institution.”



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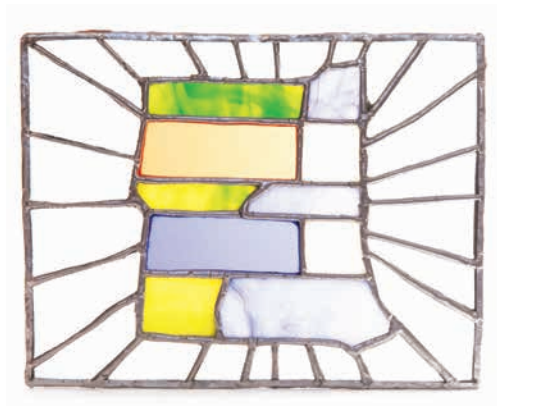
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5



6

## IN MY OFFICE

1. THESE ROCKS ARE FROM OBSERVATORIES IN NEW MEXICO AND HAWAII, WHERE I WORKED ON SYSTEMS FOR MY LAST “REAL WORLD” EMPLOYER, ADAPTIVE OPTICS ASSOCIATES. THE ONE WITH SPRAY PAINT IS ACTUALLY A PIECE CHIPPED OFF THE BERLIN WALL, GIVEN TO ME BY A CO-WORKER.

2. ALE-8-1 (PRONOUNCED “A LATE ONE”) IS TO EASTERN KENTUCKY AS POLAR BEVERAGES IS TO WORCESTER. EVERY OTHER SUMMER A GROUP OF ADULT LEADERS AND HIGH SCHOOL YOUTH FROM MY CHURCH SPEND A WEEK WITH THE APPALACHIAN SERVICE PROJECT. I KEEP THIS BOTTLE AS A REMINDER OF HOW DIFFICULT LIFE IS FOR PEOPLE WITH VERY LIMITED OPTIONS.

3. I CHUCKED THE INDUSTRY CAREER IN 1990, WENT BACK TO GRAD SCHOOL FOR MY PHD, AND BEGAN TEACHING AT WPI IN 1994. WINNING THE TRUSTEES’ OUTSTANDING TEACHING AWARD IN 1999 WAS A REAL HONOR AND A NICE CONFIRMATION THAT I’D MADE THE RIGHT CAREER CHOICE. MY COLLEAGUE, MENTOR, AND DEAR FRIEND PROFESSOR RICK VAZ WELCOMED ME TO THE RANKS OF TENURED FACULTY WITH THIS ECE TRADITION—A BOTTLE OF DOM PERIGNON.

4. IN THE OLD ALUMNI GYM WE HAD THE LUXURY OF A FACULTY/STAFF LOCKER ROOM WITH PERSONAL LOCKERS, AND IT WAS A GREAT WAY TO ENCOUNTER INTERESTING PEOPLE FROM DIFFERENT DEPARTMENTS. JUST BEFORE THE OLD GYM WAS DEMOLISHED, A COUPLE OF DEDICATED STAFFERS HELPED ME LIBERATE MY LOCKER AND CART IT ACROSS CAMPUS TO MY OFFICE, WHERE IT NOW HOLDS MY COMMENCEMENT REGALIA AT THE READY.

5. THE MOST DISTINCTIVE STUDENT GIFT I’VE RECEIVED IS THIS STAINED GLASS ARTWORK BY ECE STUDENT PETRA HARTMAN. IT ILLUSTRATES A CALIBRATION TECHNIQUE I DEVELOPED THAT SPLITS A MEASUREMENT TASK INTO TWO “PARTNER” BLOCKS THAT EACH VERIFY THE OTHER’S RESULT.

I LOVE THE WAY ROBERT FROST’S POETRY LIES ON THE FINE LINE OF LIFE’S DUALITIES: SUCCESS/FAILURE, LIGHT/DARKNESS, ISOLATION/CONNECTION. THE CALIBRATION TECHNIQUE—MY MOST SATISFYING SCHOLARLY ACHIEVEMENT—WAS SPARKED BY FROST’S POEM “NEW HAMPSHIRE,” WHICH NAMES VERMONT AND NEW HAMPSHIRE AS “THE TWO BEST STATES IN THE UNION.” I WAS INSPIRED BY FROST’S IMAGE OF TWO DIFFERENT BUT SUPPORTING PARTNERS. OUR PRESENTATION AT IEEE’S FLAGSHIP ISSCC CONFERENCE IN 2005 WON THE BEST PAPER AWARD. PETRA’S ART REMINDS ME HOW FORTUNATE WE ARE IN THE WPI COMMUNITY, WITH SO MANY TALENTED AND CARING PEOPLE.

6. I’VE PLAYED GOLF SINCE AGE 5 WITH MODERATE SUCCESS ON THE AMATEUR CIRCUIT. MY BIGGEST THRILL WAS WINNING THE FATHER-SON TOURNAMENT AT MY DAD’S CLUB THE YEAR HE TURNED 70. IT WAS ONE OF THOSE MAGICAL DAYS WHERE EVERYTHING WENT RIGHT, AND TO SHARE IT WITH HIM WAS EXTRA SPECIAL. HE PASSED AWAY IN 2015 AT AGE 80—BUT I STILL THINK OF HIM EVERY DAY.





PHOTOS PAT O'CONNOR

# John A. McNeill

INTERIM DEAN OF ENGINEERING



 *These results are typical at WPI.*

**\$69,219** average starting salary  
*(Class of 2018)*



**#15** colleges with the best return  
on investment *(Forbes)*

**450+** employers recruit on campus  
each year



**Top 50** colleges that launch careers  
*(The Princeton Review)*



Discover our formula for success  
 [wpi.edu/+results](http://wpi.edu/+results)

The education you get here is *anything but.*





## Upcoming Events Hosted by The Women of WPI:

### WPI Family Day at Roger Williams Park Zoo

Providence, RI | August 18, 2019  
(Watch your email for event details!)

### The Women of WPI Leadership Conference

On Campus | November 2, 2019  
Information & Registration - Summer 2019

#### Inquiries?

alumni-office@wpi.edu | 508.831.5600

OVER  
[EARLEbridge]



**FROM THE DESK OF  
MARK MACAULAY '89, '94 MS**

*Alumni Association President*

#### TO DO—

**Check out all the fun that happened during Alumni Weekend 2019**—[wpi.edu/+alumniweekend](http://wpi.edu/+alumniweekend)

**Make your gift to the WPI Fund**—[wpi.edu/+give](http://wpi.edu/+give)

**Visit the Alumni Center at Higgins House** the next time you're on campus (see page 54)

#### CONGRATS—

**to The Women of WPI and the Women's Impact Network** on a successful celebration of women and advocacy in April

**to the Alumni Association Award recipients** who were honored during Alumni Weekend (see page 46)

**to our newest alumni—the Class of 2019**—who joined our ranks in May

#### COMING SOON—

**Homecoming**—October 4–5

**Hall of Luminaries, the WPI community's most inspiring event**—October 4

**Many more events, activities, and opportunities for involvement**—[wpi.edu/+techconnect](http://wpi.edu/+techconnect)

#### THREE THINGS ALL GREAT ALUMNI DO

**GIVE** to the WPI Fund

**GO** to events

**GET** involved with WPI

[wpi.edu/+alumni](http://wpi.edu/+alumni)   [wpi.edu/+give](http://wpi.edu/+give)

# *Congratulations*

2019 ALUMNI ASSOCIATION AWARD RECIPIENTS

Recognized for their remarkable professional achievements and service to the university, these alumni bring pride to the entire WPI community. They were celebrated by their classmates, family, and friends during Alumni Weekend, May 30–June 2.

**ROBERT H. GODDARD ALUMNI AWARD**  
for Outstanding Professional Achievement

Debora Jackson '89 MSM, '00 MENG

Anthony Leketa '69

Stephen Legomsky '69

Robert Peura '64

Stephen Rusckowski '79

Richard Schneider '79

**HERBERT F. TAYLOR ALUMNI AWARD**  
for Distinguished Service to WPI

Jennifer (Shiel) Wyse '94

**ICHABOD WASHBURN YOUNG ALUMNI AWARD**  
for Professional Achievement

Joseph Bush '04

Aswin Phlaphongphanich '99

**WPI AWARD**  
for Distinguished Service

Robert Tupper



## Meet Trustee Woody Bradford '89

Linwood “Woody” Bradford is chairman and CEO of Conning & Company. He is also a newly elected member of the WPI Board of Trustees. The *WPI Journal* recently caught up with Bradford to ask him about his view of his alma mater now as a top volunteer.

### What lessons from your WPI education have stuck with you?

I've told a number of folks the most important thing I learned at WPI was the importance of questioning answers and not just answering questions. WPI taught me the value of thinking about what was happening, and why it was happening, to really get to the root cause or issue underneath a problem or statement or assertion. This helped me be more successful as a chemist, as a management consultant, and as the CEO of a global investment management firm.

### How have you stayed engaged with WPI over the years?

When I first graduated, it was mostly following football (since I played) and also staying in contact with my fraternity brothers. As often happens, getting married and having children and working hard to advance professionally kept me very busy and I lost touch with the school. In 2014 I was (to my surprise) honored with a Goddard Award, and was reintroduced to WPI, and I was also profiled in the *WPI Journal* for one of my great passions, the Greater Boston Food Bank. I began to spend more time learning more about the progress WPI was making, and was also very impressed by its new president, Laurie Leshin (not so new anymore!). So I started to get more involved, and I continue to do so, now as a trustee.

### How have you seen WPI evolve over the years?

Evolve is the key word, I think. WPI, for a school its size, has carved out an impressive position in the increasingly competitive higher education arena and has differentiated itself from other schools. It has stayed true to the STEM mission in one sense but also has evolved with changes in industry and technology—think robotics. And with the Fourth Industrial Revolution upon us, WPI is once again charting a course to evolve and position itself for the future.

### What are some changes at WPI you are most proud of?

Continued focus on the mission and commitment to project-based learning—and attracting/retaining/motivating high-quality educators.

### As a trustee, how can you help influence the university's culture and direction?

I am deeply involved in the investment and capital markets around the world. This gives me a bird's-eye view into many industries that are being disrupted and are undergoing transformation. Higher education is no different, and I feel it is critical that WPI think long and hard about the challenges that will come to higher education institutions over the coming years, and develop and execute a plan to respond. As an investor, I also hope to make valuable contributions to the Investment Committee that oversees the university endowment.

### What are your hopes for WPI students today?

I hope the university develops well-rounded, thoughtful, and focused individuals who can go into the world and be successful, personally and professionally, and who can make a difference in the lives of people around them.

# HELPING

WPI Make a Difference in the World



PHOTO KATHLEEN DOOHER



**WPI's inaugural Evening of Gratitude** (formerly known as the annual Scholarship Dinner) continues a long-standing tradition of demonstrating appreciation to its donors. This year the guest list grew beyond scholarships to include professorships, fellowships to global projects, research, and facilities that packed the elegantly dressed Rubin Campus Center Odeum.

Following a campus update from President Laurie Leshin, Humanities and Arts department head Kristin Boudreau addressed guests with a powerful description of how the Paris Fletcher Distinguished Professorship in the Humanities has positively impacted her work, the HUA curriculum, and the student experience at WPI.

Matthew Jankowski '20, recipient of an academic scholarship, a global travel scholarship, and a research fellowship, earned a standing ovation with his message of gratitude to donors for allowing him to play his role in the fight against cancer. Following dinner, John "Jack" Cunic '68 ('71 MS) described the positive impact donor support has made on his life, as he spun tales from his "Worcester townie" beginnings, to his distinguished career as one of the world's top-most innovators in air pollution control equipment.

As a recipient of the John R. Black Endowed Scholarship, Rachel Peterson '19, whose father is currently on active duty in Kuwait, says she was especially grateful for the impact donor support had on her entire family. "I left the financial aid meeting feeling numb and shocked," she shared, "... overwhelmed that someone, somewhere, saw a student in need and lent a helping hand."



## Alumni Benefits & Resources

**You always have a home...  
on the Hill or in the Seaport**

### Introducing the Alumni Center at Higgins House

*The Alumni Center offers you*

Hoteling space for work or email

Informal meeting space

Hot coffee and ample WiFi

Access to The Quorum (faculty/staff coffee shop), open during the academic year

### WPI Seaport

*Utilize WPI Seaport for*

Business meetings

Work in between meetings

A hub for your start-up company

**More at [wpi.edu/+alumnibenefits](http://wpi.edu/+alumnibenefits)**

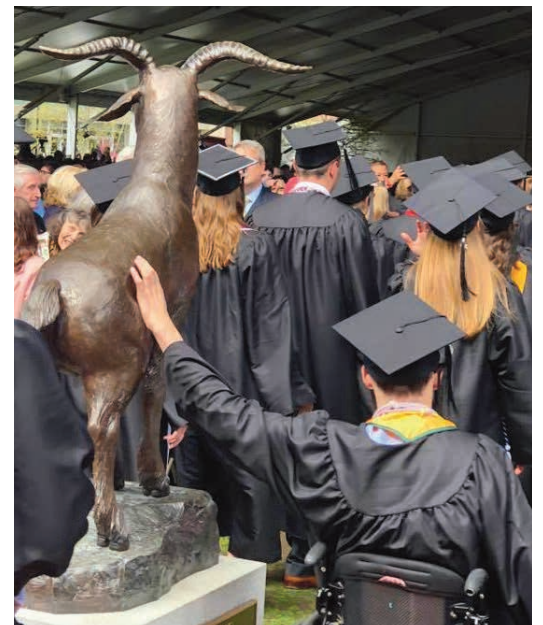




# Commencement 2019

At the 2019 Commencement ceremonies on May 9 and 11, more than 1,000\* graduate and undergraduate students took their final walk as students over Earle Bridge to receive their bachelor's, master's, or doctoral degrees.

Freeman Hrabowski III, president of the University of Maryland, Baltimore County, was the speaker at the graduate Commencement; Ellen Stofan, director of the National Air and Space Museum, spoke at the undergraduate ceremony.



\*A TOTAL OF 1,871 GRADUATED IN 2019





PHOTO PAT O'CONNOR

Scott family at Higgins House



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# *the* Scott family *legacy*

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## ONE FAMILY, FIVE DISTINCT MARKS ON WPI

**Kenneth Scott '48, '54 (MS ME)** made an indelible mark on Worcester Polytechnic Institute during his decades-long tenure as a professor of mechanical engineering. He established the Instructional Media Center and the Computer-aided Design Laboratory. He was instrumental in developing individually paced instruction and was recognized with awards for excellence. In 1971, Professor Scott was the first faculty member to be named the George I. Alden Professor of Engineering at WPI. But for at least four WPI alumni, Scott's most consequential contribution was engineering the introduction between his son, **Kenneth Scott Jr. '76**, and **Jayne (Franciose) Scott '78, '80 (MS BE), '93 (ME BE)**. The couple married in 1990 – their two children, **David Scott '15, '16 (MS FPE)** and **Julia Scott '17**, earned their degrees at WPI as well.

The family's first link to WPI was forged in the early 1940s, when Ken Sr. enrolled as a mechanical engineering student. He stayed until his retirement in 1999, leaving only to serve a two-year stint in Europe during World War II. He passed away in 2008.

Ken Jr. grew up at WPI, exploring its nooks and crannies, playing with analog computer parts, and helping his father in the lab on weekends. It was a given that he would study there. "WPI has always been like home to me," says Ken, who later earned an MBA from RPI. He was active in the WPI organization Lens and Lights but somehow never crossed paths with Jayne, despite her being a fellow mechanical engineering major who performed in theatre productions.

Jayne arrived at WPI straight from her junior year in high school. Her plan was to study for a year then transfer elsewhere to pursue music. She ended up staying, earning her undergraduate degree in three years. She was a founding member of WPI's Women's Chorale; she played on the fencing team and was active in the student-led theatre organization Masque. She worked for Professor Scott while pursuing her master's degree in biomedical engineering.

After stints in New York at Estée Lauder, and then at the Hospital for Special Surgery, she returned to WPI to continue her education and to teach. That's when Professor Scott encouraged her to look up his son, who was living in Connecticut and working for Electric Boat.

It wasn't until they were planning their wedding three years later that Ken and Jayne realized they had WPI friends in common. He is

philosophical about their delayed meeting. "It's strange that I didn't know her on campus, so I kind of believe in fate. It would have been too early to meet then."

The couple settled in Mystic, Connecticut, to raise a family. Jayne earned a second master's degree from WPI and was a visiting lecturer at the U.S. Coast Guard Academy. She is now a school teacher and is active on the WPI Alumni Association Board.

The whole family would drive north for alumni events at WPI – David didn't think seriously about going there until he was applying to colleges. For him, WPI stood out for its diverse engineering programs. As a student, when he went to the basement of Riley Hall, he would imagine his parents at the Goat's Head Pub. He would look at the plaque in Higgins Labs etched with his grandfather's name as interim head of the Mechanical Engineering Department. (Julia did that too.) But he made WPI his own. He played intramural soccer and served as vice president of fellowship for the service fraternity Alpha Phi Omega. In 2012 he represented WPI in "Worcester Got Talent," winning the competition as a singer/songwriter/guitarist with two original songs. David still writes and performs music with the goal to inspire others. His IQP with a fire brigade in Australia led him to earn a master's in fire protection engineering. He is now a fire protection engineer at EPM in Framingham, Mass.

Julia was accepted at 11 colleges, but WPI always stood out to her. She chose WPI for its environmental engineering program, its music minor (she plays piano and sings), and the opportunity to complete a term abroad. At her baccalaureate ceremony, she performed an original composition and dedicated it to her grandfather. Like her brother, she looked for signs of her parents and grandfather, but she carved out her own niche. She pledged Alpha Xi Delta, was a member of the WPI Dance Team, was an Admissions Associate, and sang and played piano at Catholic Mass most Sundays. Since earning her degree, Julia has worked as an environmental engineer at Haley and Aldrich in New Hampshire and is involved with Engineers Without Borders.

"That's the thing I'm really proud of – that we all went to WPI and left our own different marks on WPI," she says. "It unites us as a family."

–Sharron Kahn Luttrell



# Alumni Weekend 2019

Whether it's been five years or 50 since you last visited the campus, Alumni Weekend is always filled with memories, laughter, and fun for the whole family. During this year's celebration (May 30–June 1), we captured a few alumni during the festivities. Don't miss the fun next year – stay connected at [wpi.edu/alumni](http://wpi.edu/alumni).

1. Trustee Rev. Debora Jackson '89 MS, with son, Jadon Thomas, and mother, Carolyn Jackson
2. Diane (McConnell) Cormier '79, Albert Cormier '79
3. Alison Gotkin '89, Leslie Spiars '89, Heidi Hirsbrunner '89
4. Tom Kee '54
5. Alison LeFlore '09, Kate Boulanger '09
6. Sharon Whyte Hill '89, Jodi (Medeiros) McLane '89, Heidi Ferre '89
7. Krista (Dietz) Forti '09, Alex Forti '09, '10 MS
8. Raj Patel '14, Veronica Goldsmith '14
9. Tom Walker '14, '20 MBA
10. Mo Silvestris '64, Janet and Anthony Trippi '64
11. Davianna Vasconcelos '19, Karina Naras '19









## MIKE ABRAMS '77

strikes one as a person who believes in possibilities. It's one of the reasons he ended up at WPI.

Abrams had dreamed of a career in science or engineering since childhood. His parents said he could go to college wherever he could get enough funding to supplement family finances to attend. But he wanted something with more possibilities—more potential. Someplace where he could choose his own path.

“The WPI Plan was why I chose to go to WPI, and it did not disappoint,” he says. “You learned how to learn, and you weren't intimidated by things you didn't know.”

When the mathematical sciences major wasn't in class, studying, or with friends, he was working to help pay for his education, which was partly funded by his parents and partly by scholarships. The rest he financed with part-time jobs during the school year and full-time summer employment.

After graduating from WPI (with high distinction) and marrying Nancy, his high-school sweetheart, Abrams continued to follow the threads of possibility. Never afraid to try something new and see where it might lead, he began his career with a brief stint in sewing machine repair and eventually found his way to becoming an electrical engineer in the oil and gas instrumentation industry. Along the way, he earned an associate's degree in electronics engineering and then a master's degree in electrical engineering. Before retiring, he had become an independent consultant in the oil and gas industry.

Through all that time—even living far from the Hill—Abrams carried a fondness for WPI and for Worcester. “The university became a part of me,” he says.

He has stayed connected to WPI over the years by attending his class reunions and volunteering for the university in various capacities. He served on the Alumni Association Board of Directors from 2011 to 2015, and then as treasurer of the Association for two years.

Abrams has also given back financially, donating almost every year since graduation; he and Nancy are members of the President's Circle,

WPI's leadership annual donors.

“I couldn't have come to WPI without scholarships and loans,” he recalls. “I know it has influenced my giving to WPI over the years.”

Recently, when traveling back to campus for meetings and other activities, Abrams noticed a lack of space for alumni to work, meet colleagues, and generally organize their day while visiting the campus. He also recalled the less-than-optimal video conferencing for the Alumni Association Board meetings. He noticed, and wanted to do something about it. He saw great possibilities in Higgins House.

“What better place for an Alumni Center, and what a great thing for WPI to have,” says Abrams.

Mike and Nancy recently made a commitment to renovate and update this iconic WPI building into the Alumni Center at Higgins House, which was celebrated during Alumni Weekend. Now upon entering through the ornately carved wooden doors, alumni will find easy access to a campus phone and a display of the day's campus events, among other resources. The traditional library has been brought into the 21st century as a virtual meeting room with a focus on remote conferencing, making it ideal for Alumni Association Board of Directors meetings.

Thanks to a gift from the Alumni Association that was inspired by the Abrams' support, the conference room upstairs has been converted into an Alumni Lounge, featuring ample seating and work spaces, easy Wi-Fi access, plenty of outlets for using and charging digital devices, and books written about WPI and by WPI faculty and staff. The renovation also includes refurbishing the Great Hall, which is used throughout the year for such alumni events as Tech Old Timers, Alumni Weekend, and Homecoming, as well as many other campus events.

For the university, the overall aim of the project is to improve the alumni experience on campus, and honor the value placed upon the alumni relationship. For Abrams, the renovation goes beyond just a new look.

“It will be a home, a place to be comfortable on campus,” he says. “It will be beneficial to everyone.”

— Judy Jaeger

FROM HIDDEN DOORS TO RECURRING DESIGN MOTIF, THERE'S MORE THAN MEETS THE EYE AT HIGGINS HOUSE. GO BEHIND THE SCENES IN THE DAILY HERD: [WPI.EDU/+SECRET/HIGGINS](http://WPI.EDU/+SECRET/HIGGINS).



# GENEROSITY

## CREATES FIRST ALUMNI CENTER

*Abrams at Higgins House*

PHOTO KATHLEEN DOOHER



## 1962

**Michael Davis** writes, “Rona and I recently returned from a two-week trip to Vietnam and Cambodia. We were joined by **Ron Pokraka '60** and his wife, Claire. We are currently escaping the harsh winters in Sarasota, Fla., and have plans to meet up with **Bill Firla '60** for a Red Sox spring training game and the Alden Society Sarasota get-together to view WPI’s Dickens Collection. Life is good!”

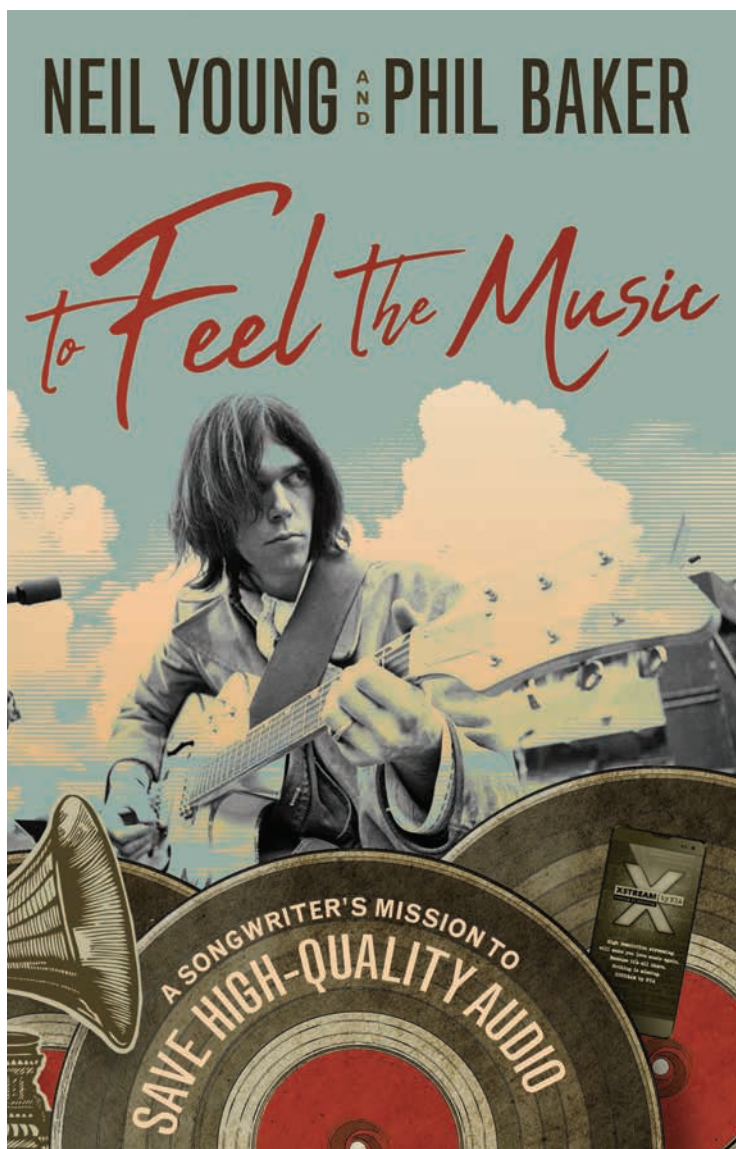
## 1963

**George “Spider” Vittas** reports that he is continuing consulting work for DFW International Airport and American Airlines during retirement. He lives in Bedford, Texas, on the Fort Worth side of the airport. “I enjoy meetings with fellow alumni **Pat Moran '65**, and **Pete Fenner '64**. **Stan Szymanski '64**, recently joined the group for lunch while revisiting the Dallas/Fort Worth area after suffering the loss of his wife, Betsy. Pete also lives in Dallas, while Stan has been missed after relocating to the Niagara Falls area. The group has been meeting periodically for a number of years with occasional outings to Dallas Stars and Texas Rangers games. (Life is good in Texas.)

“I joined the Alumni Association Board of Directors several years ago and is quite pleased and I am impressed with the work accomplished by the board in planning the improvement of Higgins House to serve officially as Alumni Association headquarters and visitors center.” (See page 54.) In the photo, at a recent gathering of our D/FW group are (from left) Pat, George, Stan, and Pete.

## 1965

**Phil Baker** writes, “I recently co-authored a new book with legendary rock star Neil Young, called *To Feel the Music*, that’s due out in September. It’s the story of Neil’s quest to improve the quality of sound in the age of digital, as well as the story of our work together developing new products. I live in Solana Beach, Calif., with my wife, Jane, and continue to work with Neil on numerous technology projects, including his amazing NeilYoungArchives.com website.” Phil’s previous work with Young on the Pono high fidelity music player was featured in the Summer 2014 issue of the *WPI Journal*.



**Mort Gutman** serves as a docent at the New England Air Museum in Windsor Locks, Conn. He writes, “As a former Air Force B-52 navigator, bombardier, and instructor navigator – as well as a private pilot – I love aviation in any form, large and small. During the school year, I go in once or twice a week to team-teach elementary school classes in the basics of the science of flight. We touch upon Bernoulli and Newton, give a guided tour of the museum, and help the kids build small airplanes that they ‘test fly.’ We have over 60 planes on indoor display, and about 12 more outdoors. Unlike some other museums, we allow visitors to actually touch and climb into many of our planes, and we have about a half-dozen ‘Open Cockpit’ days during the year.”

Mort invites others with an interest in aviation to apply as volunteers. “We also have volunteer restorers who work their magic preparing planes, some of which start out as real wrecks, to ultimately go on display in the museum. Many of our volunteers are retirees from Connecticut’s rich aviation history, including Pratt & Whitney, Sikorski, Kaman, and others.” (Read all about it on page 28.)

## 1968

**Frank Adesso** writes, “After 40 years at the Los Alamos National Laboratory, 35 of them in the Theoretical Division, I decided to retire in January 2018. Two weeks later I became bored and returned to the lab part-time. Currently, I am working with a combined theoretical/experimental team that is concerned with the high-rate deformation of organic, single-crystals of energetic materials. The research includes anisotropic, nonlinear elasticity; plastic slip; phase transformations; and brittle failure. Future concerns will consider twinning. I remain grateful for my undergraduate education at WPI and for the friendship of my brothers at LCA.”

## 1969

**Larry Katzman** writes, “The alumni brothers of AEPi fraternity have been getting together for almost 40 years now on a regular basis. Initially the gatherings were in the Boston area but more recently they have migrated to Florida. This year 16 AEPi alumni from the classes of 1968, 1969, and 1970 met in the



Sarasota area to reunite and reminisce about the passing years and adventures, particularly at WPI. To our delight the recollections remain strong (although much more embellished and seemingly more interesting than reality). The bond and friendship is everlasting and the memories meaningful.

“Our weekend included kayaking, biking, a trip to the circus, golf, and several dinners, but no food fights. The motley gang of 2019 participants included **Neil Glickstein '69, Gregg Pollack '69, Jack Siegel '68, Stan Goldman '69, Gerry Axelrod '69, Butch Lofchie '68, Neil Hodes '70, Larry Katzman '69, Pete Saltz '68, Skip Palter '70, Steve Phillips '69, Steve Legomsky '69, Henry Block '70, Rich Furman '69, Gary Leventhal '69, and Steve Udell '70.**”

## 1970

**Lou Pepi**, who left WPI after his freshman year and was drafted, has published a book on his experience serving in Vietnam. *My Brothers Have My Back* (McFarland Press) takes readers inside the 1969 “November Battle” at the Vietnamese Demilitarized Zone, which *Time* magazine called the “largest battle of the year.” Lou was with Alpha Company when the Americans were attacked from three sides by 1,500 NVA soldiers.

An article in the *Worcester Telegram & Gazette* last year described his extensive research, which included multiple trips to the National Archives and emotional interviews with the 50 of the “brothers” who fought beside him. After the tears came healing, he relates, as the book “morphed into a testament to their courage and sacrifice.” Lou lives in West Boylston, Mass., with his wife, Pat, and is retired from a career as a residential contractor and building inspector. *My Brothers Have My Back* is available on Amazon or through the publisher at [mcfarlandbooks.com](http://mcfarlandbooks.com).

## 1973

On Nov. 25, 2018, **Mark Richards** was ordained as a Unitarian Universalist minister by the First Parish in Concord, Mass. Mark completed his master of divinity degree at Andover Newton Theological Seminary in 2010. He and his wife, Christina, live in Egg Harbor, Wisc.

## 1974

**Hirant “Ron” Rakijian** writes, “As a proud WPI alumnus and mechanical engineer who has been working for The Aerospace Corporation since 1985, and as a senior project engineer and GPS mission Los Angeles Operations Support System (OSS) lead for the company’s space systems navigation division since 1992, after many years of hard work, tests, and rehearsals, last December we successfully launched the first brand new block of GPS III satellite, and also for the first time on SpaceX’s Falcon 9 launch vehicle. Previous blocks of the GPS satellites launched on Delta II and IV, and Atlas V launch vehicles.” Ron reports that the new vehicle, named Vespucci, has a nominal SOH (state of health)—that is, functionality as expected and predicted, and that all systems are code green—operating within specified limits.

## 1975

**Ron Simmons** writes, “I haven’t submitted a class note before, although I have thought about it several times in the past, and they are always the first thing I read when I get my copy of the *WPI Journal*. So here goes. I am principal engineer for mechanical and structural analysis at Puget Sound Naval Shipyard in Bremerton, Wash. I also teach finite element analysis to the Naval community. I keep looking at retirement but then a new and exciting project seems to pop up and I’m off designing and analyzing again. Somehow I can’t let go of the fun in engineering. I blame WPI for this ... Thank you!”

## 1976

GZA GeoEnvironmental named **Richard Allen** as an outside advisor to the board. He is a former chief operating officer of Stantec Inc., and has 17 years’ experience as an attorney at the Boston law firm of Gadsby Hannah, where he became a partner and later served as chairman of the design and construction law practice.

**James Hall** was named to the South Shore Habitat for Humanity’s board of directors. He is senior vice president of Ipsos Healthcare. He and his wife, Laurie, live in Scituate, Mass.

**Paul Kalenian** writes of the inspiration of his father, the late **Aram Kalenian '33**, who achieved 48 patents before his early death in 1948. “I applied for my first patent that same year. At 21, I started a business in industrial biomass combustion. With the help of my wife, Cathy, we established, built, and sold three Central Massachusetts-based businesses, as our careers evolved from biomass combustion, to high-pressure coffee extraction, and, most recently, a Boston-based environmentally focused coffee pod startup with 24 patents applied for and 14 issued to date.

“Retirement bought us to Santa Fe, N.M., where I still use my father’s lathe milling machine, and hand tools. He taught me to use them when I was in third grade, and now they are busy every day, helping me build a very lightweight, rear mid-engine, open-wheel sports car from absolute scratch. The turbo DOHC 4 with transaxle is from GM, and everything else is custom water jet cut from 6061 aluminum, machined and TIG-welded into a monocoque/ bulkhead chassis weighing in at 1100# and running 74 HP. It’s built like a lightweight airplane, will have a Dacron body, and should be on the road this spring.

“I return each fall to WPI to oversee a recipient of the Kalenian Award for Entrepreneurship, set up by my mother in my father’s honor. Invention, patents, and entrepreneurship bond our family to WPI.”

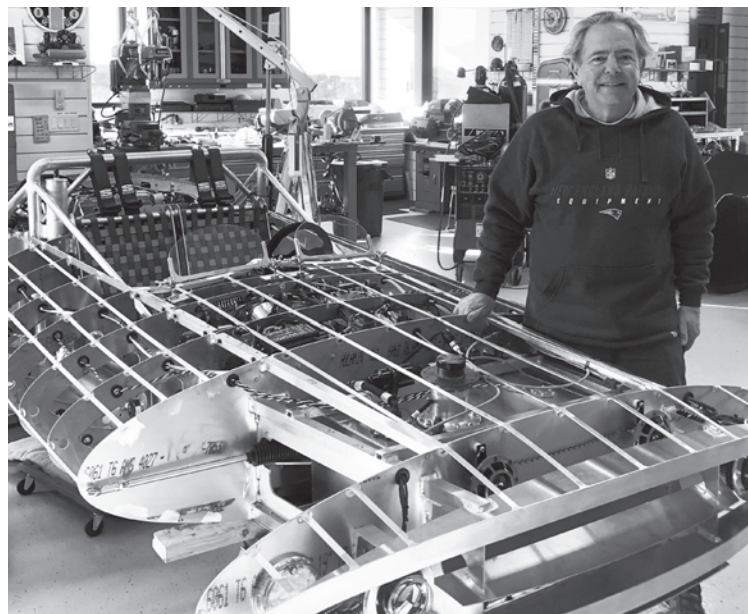
## 1977

**Bruce Minsky’s** quest to build his dream house was featured in the *Houston Chronicle*. It included an amusing account of how the radiation oncologist met his wife, Connie Kissinger, on a flight to Honolulu. (His specialty in rectal cancer makes a terrible pick-up line, he acknowledges, but he used it anyway.) The couple worked with architects for a year to design a “minimalist, internally focused home unlike any other,” according to the article. Thanks to classmate **Mike Abrams**, who lives in the same neighborhood, for sharing the story. For more about Mike, see page 54.

## 1979

**Peter Kujawski** was named president of LEID Products. He joined the company as vice president of business development in early 2018. LEID stands for Law Enforcement Intelligent Devices, and the company manufactures biometric asset storage protection and control systems for police departments, library books, medical supplies, and other assets.

**Bill Tetreault** sends his first-ever update to WPI. “After a 39-year career in industry, I took an early retirement package and am thoroughly enjoying being at home with my wife, Toni, and spending time with the grandkids, amongst our other activities. My





## [ CLASSnotes ]

career spanned the globe in a variety of operational and consulting roles, so we were able to visit many beautiful places around the world. We've been living in Texas for the last 20 years and, fortunately, three of our four children and their children live nearby."

### 1980

**Rich Coleman** has returned to upstate South Carolina, after living for many years in Colorado. He is continuing his work in medical information systems as a senior software engineer with Smith Technologies, a manufacturer of pharmacy systems.

### 1982

**Brian Renstrom** has been with the accounting firm BlumShapiro since 2005. In a *Boston Business Journal* profile, he said he'd figured on a career as a factory engineer, but an offer from Arthur Andersen after graduation brought him into the management field. In 2016 he became BlumShapiro's managing partner for Massachusetts.

### 1983

**Da-Quan "DQ" Li (MS EE)** is director of product management for FTTx at DZS. Prior to joining the firm, he worked at Ikanos Communications, Calix, Motorola, and Lucent Technologies.

### 1984

**Daniel Farrar** was appointed executive vice president and general manager of Mitel's UCaaS business unit, based in Sunnyvale, Calif. He brings more than 25 years of corporate management and strategic development experience with software vendors, private equity firms, and Fortune 500 companies—most recently Switchfly, where he served as CEO. He holds an MBA from Harvard.

### 1985

**Blair Hawley** joined BIC Graphic North America in the newly created role of chief operating officer. He will lead all operations and support functions, including manufacturing, customer service, procurement, inventory, planning, supply chain, and logistics.

**David Mahoney** writes, "On February 1, 2019, I was awarded a PhD degree

in electrical engineering from the University of Massachusetts Lowell. I design antennas and related products for BAE Systems in Hudson, N.H."

### 1988

**George Aghjayan** continues to write for *The Armenian Weekly*. In a recent column, "What's in a National Anthem," he weighed in on the significance of national symbols. George devotes himself to Armenian-related research and serves as director of the Armenian Historical Archives and as chair of the Armenian Revolutionary Federation (ARF) Central Committee of the Eastern United States.

**Karen Valentine Anderson** celebrated her 30th year at Raytheon in Andover, Mass., where she holds the post of senior mechanical engineer. "I work with leading-edge technology on the next generation of THAAD radars," she writes. "I hope to switch gears and teach high school math prior to my retirement."

Former WPI wrestler and head coach **Steve Hall** was inducted into the New England Wrestling Association (NEWA) Hall of Fame in January. His 35-year career began as assistant coach under Phil Grebinar, and he's now back on the WPI bench as an assistant under **Matt Oney '90**. In addition to membership in WPI's Hall of Fame, he holds two U.S. patents and is known globally as an expert in surface mount technology process development. Steve is retired from a career in electronics manufacturing automation and as president of EKRA America.

**Sue (Giroux) Sontgerath** was featured in WPI's *Daily Herd* with a story called "Building the STEM Pipeline to Make a Difference." She recounted her path from an engineering career back to her alma mater, where she now holds her dream job—serving as director for WPI's pre-collegiate outreach programs, including Frontiers, Camp Reach, and Girls Who Code. On not being an engineer, she said, "I've seen the value of an engineering degree in my own life. It's a foundation of engineering, of creativity, and of problem solving. The way you learn to look at problems and learn to solve those problems is a foundation that's transferable to anything. If engineering isn't the end goal, it's a strong jumping-off point for many things. I think anyone can benefit from that."





## 1991

**Tom Bartolomei** now holds the post of president and chief executive officer at NAES Corp., where he was previously chief operating officer and president. Before joining NAES in 2014, he held senior and executive level positions at ABB, Alstom Power, and Burns & Roe Enterprises.

**James Fortin** was promoted to principal at Harriman, where he serves as a structural engineer. He and his family live in Lewiston, Maine.

## 1992

**Gene Goldman** is chief investment officer and director of research at Cetera Investment Management. He has more than 24 years of experience, most recently as a vice president and market strategist with LPL Financial. Prior to joining LPL in 1996, he spent two years at Liberty Financial, where he was a mutual fund product analyst within the Research Department. He earned his MBA with a concentration in finance from Northeastern University.

## 1993

**John Lauffer** reports, "Have been married for 18 years, have a 15-year old son, and am currently employed by Schneider Electric as an engineering manager in the Secure Power division, working on prefabricated data center projects."

## 1995

**Tom Dube** was named vice president at Bowdoin Construction Corp., Needham Heights, Mass.

## 1997

**Peter Harrod ('99 MS FPE)** is a principal at Code Red Consultants, a fire and life safety firm in Southborough, Mass., that boasts 25 WPI grads of its 28 employees, at last count. The firm is six years old and growing.

## 1998

**Janel Lanphere** was the Women's Masters National Champion in the USATF Trail Marathon Championship in 2018, finishing the Moab Trail Marathon, in 5:00:58. This result not only placed Janel first in the 40-44 age group category, but

also first among all women's masters athletes. Janel ran cross country and track at WPI, and was co-captain of the cross country team in her senior year. She plans to defend her title in Moab next fall.

## 2001

**Rohit Goyal** is principal product marketing manager for IoT and AI at Nutanix. Prior to Nutanix, he worked at Stealth Mode Startup Co. as a senior product marketing manager, improving the development and deployment of software applications in the cloud. He is a contributor to the online technology blog *The New Stack*.

## 2004

**Frank Giudici** is director of business development at Bedford Cost Segregation. He covers New York State, Vermont, Connecticut, Northern New Jersey, Eastern Pennsylvania, and the Western Massachusetts area. He resides in Saratoga Springs, N.Y.

## 2005

**Caitlin Bell** is a coauthor of *Emerging Contaminants Handbook*. The title refers to unregulated compounds discovered in the environment that have been found to represent a potential threat to human and ecological receptors. The book explores their toxicity, lifecycle, and regulation, as well as tools for characterization and treatment. Caitlin is a remediation engineer who focuses on sub-surface treatment of soil and groundwater using in situ techniques. She serves as a senior environmental engineer at Arcadis.

## 2007

**Ashley (Mossa) Lindeman** and **Jeremy Lindeman '05** welcomed Ryder Lindeman on Dec. 19, 2018.

## 2008

**Mike** and **Jesse (Daiglis) Demers '16 (MBA)** celebrated the holidays with their son, Macallen, all outfitted in matching WPI hats. "Class of 2039!" they posit.







## 2009

**Ashley Sutton** graduated from Iowa State University College of Veterinary Medicine in May 2019 with her DVM degree. “I have accepted a position in a wonderful small animal general practice in Summerfield, Fla.,” she says.

## 2011

**Dan Praetorius** and **Rachele Cox '13** report a number of big life changes for 2019. After many years working for Boston Dynamics and Google, Dan recently joined Optimus Ride, an autonomous vehicle start-up based in the Seaport district of Boston. Rachele received her master of public health from Boston University, and is currently living in Dubai, UAE, while working for Harvard Medical School in public health research. Dan and Rachele first met several years after graduating from WPI through a close friend and fellow alumnus. They were excited to celebrate their engagement at the end of 2018.

## 2012

The *Telegram & Gazette's* “Wall & Main” column profiled **Mike Audi**, founder of Blustream, a Worcester-based service that “creates a care-based relationship between a product, a user, and the provider of the product.” Mike described his first startup, Si devices, and shared what he learned from the experience. He also praised the “hard-nosed” culture of Worcester, noting that “the biggest challenge of being in Worcester is the perception that it’s second tier, which makes everything a little bit more difficult.”

## 2013

**Andrew Canniff (MS CE)** was one of the San Francisco Business Times 40 Under 40. He is director of business development for Northern California at the general contractor Suffolk. In his profile, he revealed his first job (lobstering in Maine), and his most surprising fact (letting his hair grow to shoulder length in college).

## 2014

**Sean Kelly ('16 MS MTE, '18 PhD)** was the subject of a “Wall & Main” profile in the Worcester *Telegram & Gazette*. He is the founder of Solvus Global, along with **Aaron Birt '14 (MS MTE), '17 PhD**, and Professor Diran Apelian.

## 2015

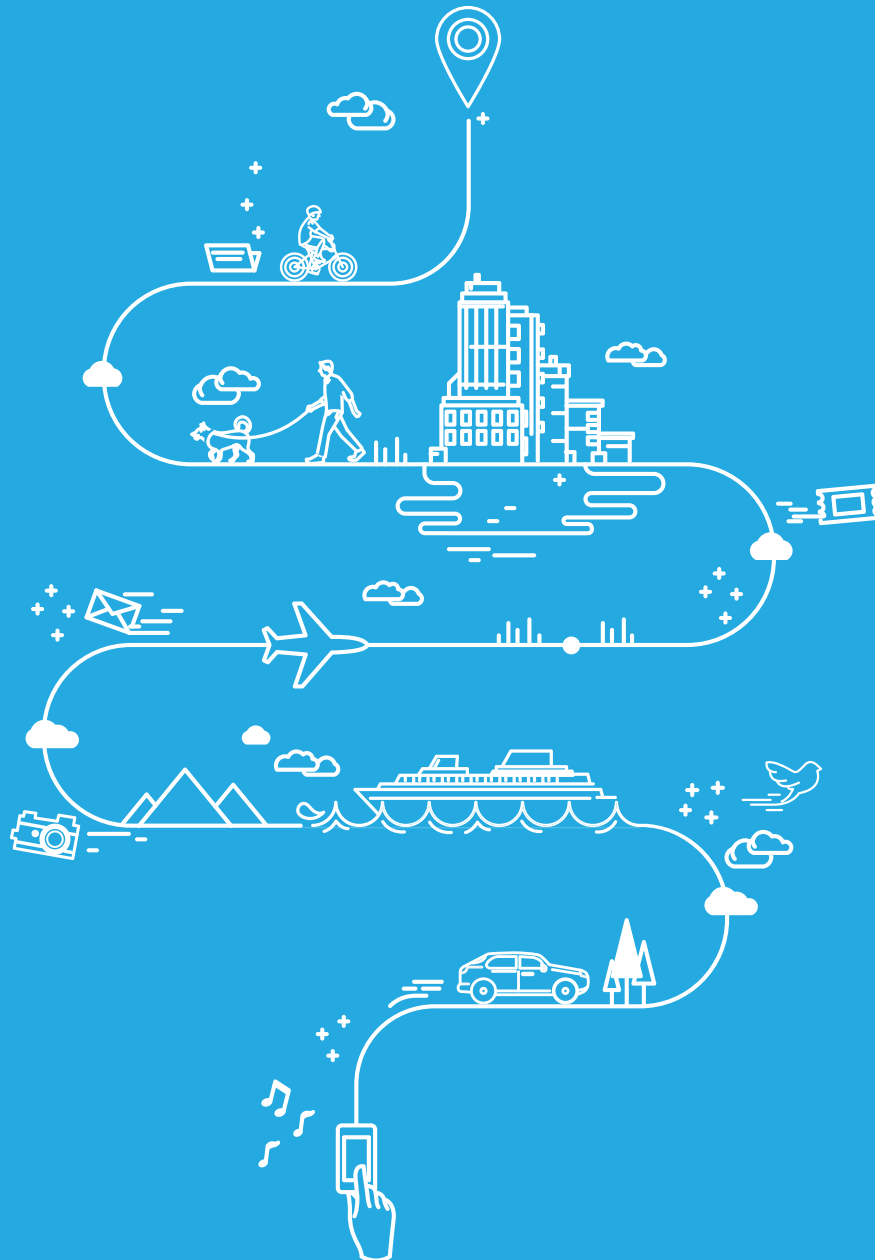
**Jean Pierre** and **Jessica (Williams) Miralda** share their wedding story: “We met our freshman year at WPI and recently got married in Massachusetts this past November. Our time at WPI brought along tons of good memories and – more important – a group of really good friends who celebrated our special day with us. We both got new jobs at Velcro Companies and moved back to Manchester, N.H., after living for a couple of years in Houston. We are excited to be back in New England close to family, friends, and WPI.”

When WPI sought to improve the process of matching juniors with their most desired off-campus IQP centers, **Alfred Scott**, a systems developer on the WPI web app development team, pitched in. After an MQP team developed an algorithm embedded in a “decision support tool,” he led the integration of the matching tool with the new eProjects 2.0 system that streamlines how a student requests, chooses, is matched with openings, in addition to filing project reports. Students now rank IQP sites in a three-tier sorting systems as “very interested,” “interested” and “not interested.” This year, 100 percent were matched to one they gave the highest rating. Read all about the new “Global Algorithm” on page 10.



[ CLASS*notes* ]

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Mike Mazzucco '86  
with his daughter, Jena '17



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***“My grandparents provided financial assistance  
so I could attend WPI. That act of generosity  
had a profound impact on my life. Educational  
philanthropy has always been important to us  
because a quality education is an investment that  
pays dividends for life. Supporting WPI and its  
students is our way of paying it forward.”***

*— Mike Mazzucco '86*

***Mike and his daughter, Jena '17, share a love  
for WPI that inspired Mike to establish the  
Mazzucco Family Endowment through a bequest  
that will support students studying civil  
and chemical engineering.***

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## FOR MORE INFORMATION

Contact Lynne Feraco  
Executive Director of Gift Planning  
888-974-4438  
[lferaco@wpi.edu](mailto:lferaco@wpi.edu)





## Alumni Weekend 2019

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In case you didn't make it back to campus for Alumni Weekend (May 30–June 2), here's a glimpse into what you missed! Join us for Homecoming, Oct. 4 and 5, and Keep up-to-date with plans for Homecoming (Oct. 4–5) and Alumni Weekend 2020 by bookmarking [wpi.edu/alumni](http://wpi.edu/alumni).





**John F. (Jack) Carney III**, former provost and vice president for academic affairs, died April 24, 2019, at his home in Cambridge, Mass., after suffering complications of multiple myeloma. He was 77.

Carney joined the WPI faculty in 1996, calling himself an admirer of the WPI Plan since its inception. A Lowell native and graduate of Merrimack College, he earned his master's degree and doctorate in structural mechanics from Northwestern University. He went on to earn an international reputation as an expert in automotive safety. His research focused on "impact attenuation devices" (crash cushions) made of compressible cylinders as a substitute for the rigid concrete barriers that posed a hazard to highway workers and motorists. He held 10 patents, published numerous papers, and served as chair of the Transportation Research Board's Committee on Roadside Safety Features; he also chaired the executive committee of the Highway Division of the American Society of Civil Engineers.

Before coming to WPI, he held faculty positions at the University of Connecticut School of Engineering and Auburn University; he served as professor of civil engineering and associate dean of research and graduate studies at Vanderbilt University. In his eight years at WPI, he increased the number of tenure-track faculty, helped launch the Center for Educational Development, Technology, and Assessment, and kept the university on an even keel through a downturn in the national economy and a decline in applications to engineering schools.

Carney retired from WPI in 2004 and was welcomed as chancellor of the University of Missouri-Rolla, where he shepherded the institution through a restructuring and a name change to Missouri University of Science and Technology. He retired in 2011. He is remembered

on both campuses as a collaborative leader with a reputation for being straightforward, knowledgeable, and approachable.

"Jack was always supportive of WPI's mission and appropriately expanded our offerings," says Professor Diran Apelian, who served as provost before Carney." He was kind, thoughtful, and a most considerate person. It was never about him, but always others whom he served. We lost a good man."

Predeceased by his wife, Patricia, Carney is survived by two daughters and five grandchildren.

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*This past spring WPI lost two notable alumni who made major contributions in their fields — computer technology and aviation.*

**George E. Comstock III '46 ('48 MSEE)**, a Silicon Valley

inventor and entrepreneur, got his start in the research labs of Norton Company, where he earned the first of his 40 patents. He moved on to Potter Instrument Co. in the mid-1950s, breaking new ground on random-access memory (RAM) and magnetic tape storage drives for some of the earliest computers. Later, as vice president of engineering for Friden, he collaborated with Andrew Gabor on daisy wheel printing technology. In 1969 they launched their own company, Diablo Systems, which was later purchased by Xerox for \$30 million. The Diablo 630 became the model for high-output office systems in the ensuing decades.

In 1977 Comstock started Durango Systems. Its flagship product, the Durango F85, was a multiuser microprocessor-based package that integrated a high-capacity disk drive and a versatile dot matrix printer. He ended his career at Network General Corp., retiring in 1991.

His precise account of these early days of the computer industry was captured in an oral history recorded by the Computer History Museum in Mountain View, Calif. In recognition of his accomplishments, WPI awarded him an honorary doctor of engineering degree in 1982.

George Comstock died March 11, 2019. Predeceased by his first wife, Kathryn Peddle Comstock, he leaves his wife, Anne Hillman, five children, seven grandchildren, and one great-grandchild.

**David S. Jenney '53**, known as "the Father of the Black Hawk Helicopter," began a 40-year career in aviation just as rotary-wing aircraft were proving their worth in the Korean War. Fresh out of WPI, he joined the newly formed helicopter research group of United Aircraft Research Laboratories (later United Technologies Corp., parent company to Sikorsky Aircraft).

As supervisor of aerodynamics at Sikorsky in the 1960s and '70s, he led a team of engineers in designing the innovative systems that made the Blackhawk helicopter an ultra-reliable workhorse for the U.S. Army, with new configurations still in use today for warfare, search and rescue, disaster relief, and executive transportation. In the 1980s he worked on the design of the RAH 66 Comanche, a stealthy scout plane with low noise and a low-infrared signature. His best-known innovation, the canted tail rotor, provided increased lift without the weight of an additional engine.

He retired from Sikorsky in 1993 as director of technical engineering. At his 50th Reunion, WPI honored him with the Robert H. Goddard Award for Outstanding Professional Achievement.

David Jenney died March 22, 2019. He leaves his wife, Janet, three children, four grandchildren, and a great-grandchild.

- JOHN COYNE '48 EE, PHI KAPPA THETA
- LOU KATZ '48 EE, '49 MS EE
- FRED SYIEK '48 EE
- HOWARD CHENEY '49 ME, THETA CHI
- SUMNER COE '50 ME, SIGMA ALPHA EPSILON
- CHRIS LAMBERT '50 EE, '62 SIM
- PHIL WILD '50 CE, ALPHA TAU OMEGA
- WALT DENNEN '51 EE, PHI KAPPA THETA
- ANTHONY GIORDANO '51 CE, THETA CHI
- CHARLIE REICHERT '52 ME
- BOB CRAIG '53 EE, '55 MS EE, THETA CHI
- DAVE VAN COVERN '53 CE, SIGMA PHI EPSILON
- KEN CROSS '54 EE, '55 MS EE, SIGMA PHI EPSILON
- GARY KUNKEL '54 ME, THETA CHI
- IRWIN SMITH '56, PHI GAMMA DELTA
- TOM BAKER '57 CHE, '67 MS MTE, THETA CHI
- BOB BRASS '57 EE, SIGMA PHI EPSILON
- RAYMOND GODIN '57, ALPHA TAU OMEGA
- PHIL PUDDINGTON '59 ME, SIGMA PHI EPSILON
- DAVE JOHNSON '60 CHE, SIGMA ALPHA EPSILON
- LARRY ISRAEL '61 EE, ALPHA EPSILON PI
- RAY MESSENGER '62 ME
- HARRY ROOK '62 CH, '67 MS CH, TAU KAPPA EPSILON
- DENNIS SNAY '63 EE, PHI GAMMA DELTA
- JOHN BOYLE '64 MS PH, '67 PHD PH
- FRANK BENHAM '65 CE, ALPHA TAU OMEGA
- WILLIAM JAMESON '65 ME
- BOB SINUC '66 CHE, SIGMA PHI EPSILON
- JOHN GRANT '69 ME, PHI KAPPA THETA
- BRUCE FOSTER '73 EE
- RICK NABB '73 ME, SIGMA PHI EPSILON
- MIKE PATSOURIS '73 PH
- GEORGE LEWIS '74 PHD BME
- JEFFREY BAUMER '77 ME, PHI KAPPA THETA
- DAVID LAFERRIERE '77 CHE
- RICHARD MALLIA '82 CS, PHI SIGMA KAPPA
- JOE VIGNALY '82 ME, ALPHA TAO OMEGA
- DICK TURCOTTE '83 SIM
- CATHERINE MURRAY '86 ME, '90 MS MTE, DELTA PHI EPSILON
- ALISON HENDERSON '87 ME, ALPHA GAMMA DELTA
- THOMAS HOTALING '88 EE
- ALAN DIFONZO '94 MS MA
- GARY LEANNA '97 ME BME
- DAVID YANKOVICH '00 MS CE
- DAVE MORAN '02 MG
- JAMES GAUDETTE '07 BBT
- PAUL ALLAIRE '60 EE, DOCTOR OF ENGINEERING HONORIS CAUSA 1994, WPI TRUSTEE EMERITUS, AND PHI KAPPA THETA MEMBER, PASSED AWAY IN APRIL. AN EXTENDED OBITUARY WILL APPEAR IN OUR NEXT ISSUE.


THE WPI COMMUNITY ALSO NOTES THE PASSING OF FORMER STAFF MEMBERS **JANICE DRESSER** AND **NORMAN HUTCHINS**, FORMER DEAN OF STUDENTS **PAM SHERER**, AND FRIEND OF THE UNIVERSITY **ELEANOR ABBE**.

Complete obituaries can usually be found online by searching [legacy.com](http://legacy.com) or newspaper websites. *WPI Journal* will assist classmates in locating additional information. Contact [jkmliller@wpi.edu](mailto:jkmliller@wpi.edu) or call 508-831-5998.



## Accelerating Faculty Research—*One alum's legacy:*

A leading industrialist in early 20th century Worcester, William B. Smith, Class of 1908, began his career as a manufacturer of textile machinery and ended as a tireless, civic-minded leader and generous philanthropist. He died in 1952. In 2016 WPI accepted a \$7.1 million gift from the William Binns Smith Estate. His legacy is making an impact now, and will for generations to come, on WPI faculty, like Professor Xiao, who have been named William B. Smith Fellows and are receiving support for their research from the endowed fund his estate established.



“ I am very honored to be the William B. Smith Distinguished Fellow in Robotics Engineering. As director of the Robotics Engineering program, I view this honor as WPI’s recognition that robotics engineering is its signature program and also of the university’s commitment to further elevate this pioneering and award-winning program to the next height and with global impact. ”

—Jing Xiao, Director, Robotics Engineering Program  
William B. Smith Distinguished Fellow in Robotics Engineering  
Dean’s Excellence Professor

To learn more about creating your own legacy here at WPI, contact Lynne Feraco at [plannedgiving@wpi.edu](mailto:plannedgiving@wpi.edu).





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*Rachel Wilkins-Thurman at a snowy substation in Central Massachusetts*