

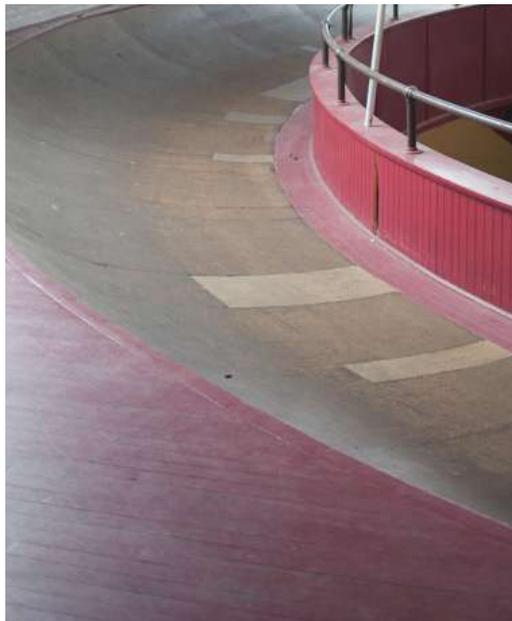
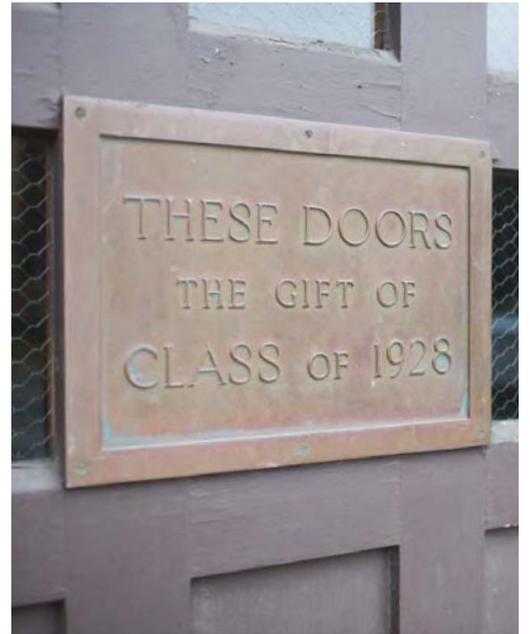
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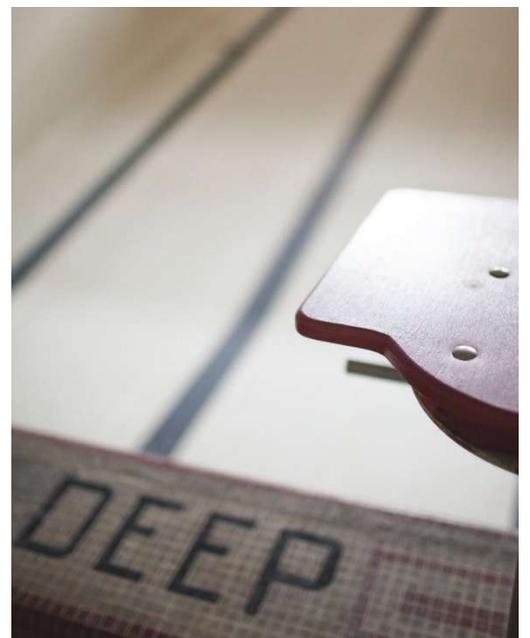
BANKING ON FOOD

WOODY BRADFORD '89 SETS
THE TABLE FOR HUNGER
PREVENTION



IN 1915 WPI ALUMNI TRANSFORMED THE CAMPUS THROUGH THEIR OWN FUNDRAISING EFFORT. **NOW THE ALDEN TRUST CHALLENGES ALUMNI TO REPEAT HISTORY AND TRANSFORM ALUMNI GYM INTO THE FOISIE INNOVATION STUDIO.** IF ALUMNI RAISE \$9 MILLION FOR THIS IMPORTANT PROJECT, THE TRUST WILL CONTRIBUTE \$3 MILLION. PLEASE CONSIDER A GIFT TO YOUR ALMA MATER IN SUPPORT OF OUR VISION FOR THE FUTURE.

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contents

24



30



36



features

18

The Charm of Chemistry

Thai environmentalist, teacher, and non-stop innovator Supawan Tantayanon '82 formulates a better future for her country.

BY AMY CRAWFORD

24

COVER ► Banking on Food

How Woody Bradford '89, financial expert and business whiz, is helping put food on tables in and around Boston.

BY KATE SILVER

30

A Living IQP

Entrepreneur. Author. Radio host. Motivational speaker. Life coach. Francesca Escoto '97 is sowing the seeds for social change.

BY DAVE GREENSLIT

36

Mining for Solutions

Christopher DaCunha '09 hopes to revolutionize an industry through engineering and biology.

BY JOSHUA ZAFFOS



departments

05

Message from President Leshin

07

Update on the Campaign

08

Letters to the Editor

Where we hear from you, our readers!

10

WJT

Hot news on campus includes a Q&A with our new cybersecurity professor, evidence on why butterflies never ask for directions, and a peek at successful events Camp Reach and TouchTomorrow.

44

Alumni / Advancing WPI

Honoring alumni Tom Newman '64 and Steve Hebert '66; plus how alumni extend their welcome to incoming freshmen and a touching gift from a non-alumnus.

52

Class Notes

What did you do on your summer vacation? Wondering where your classmates have been? See what everyone's been up to!

in
great
company

The qualities that define a WPI education are precisely what makes us a great business partner.

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WPI

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The View from Here

DEAR FRIENDS,

Can a building change the world? If it is filled with WPI students, faculty, and alumni working together to test their ideas, share knowledge across disciplines, and invent technological solutions that can raise the quality of life in communities worldwide—then I believe the answer is a resounding “yes!” In fact, this is our vision for the new Robert A. Foisie '56 Innovation Studio at Alumni Gym—a building, to be sure, but more important, a thrilling advance for WPI’s project-centered education and a reaffirmation of our commitment to the WPI Plan. The Alden Trust, one of Worcester’s most venerable foundations and one of WPI’s most generous benefactors, agrees. The Trust recently offered us a generous challenge: if we raise \$9 million from our alumni and friends for the transformation of Alumni Gym, the Trust will contribute \$3 million to the renovations.

I am delighted to have this opportunity to share with you some thoughts on this important project and its impact on our university’s future.

When I accepted the presidency of WPI, I did so, in part, because I felt a deep kinship with the students and faculty of this great university. We are a community of problem solvers who are inspired by the

intersection of science, technology, and the human condition. With the transformation of Alumni Gym into the Foisie Innovation Studio, WPI will place this intersection at the heart of our campus *and* our curriculum, giving students the resources they need to pursue their ideas to the fullest and position them for even greater success in their careers and lives. As an admitted techno geek, I cannot help but share my excitement about the tools our students and faculty will have at their fingertips: a robotics laboratory with an observation gallery to show off our great work, tech suites for students working on projects, classrooms for the global challenge-based Great Problems Seminars, and a maker space with cutting-edge equipment for rapid prototype development. And, to help students, faculty, and alumni build their ventures and bring successful ideas to the marketplace, the Foisie Innovation Studio will include a business development accelerator and a Center for Innovation and Entrepreneurship. From my office in Boynton Hall, I can hear the future humming already.

The future looks bright from my window, for sure. And while the Innovation Studio is an important part of our future, it also provides a wonderful opportunity for reflecting on WPI’s past. As one of the newest members of this community, I am profoundly moved by the legacy of Alumni Gym, and the band of graduates from the 19th and earliest part of the 20th centuries, who believed that WPI’s students should have a place to exercise their bodies and spirits as well as their minds. I am proud that the Foisie Innovation Studio at Alumni Gym, named in honor of another extraordinarily generous alumnus, Bob Foisie, will honor this legacy with prominent displays highlighting generations of innovations and achievements by alumni and students.

A building alone cannot change the world, but as the embodiment of all that is WPI, and fueled by our 35,800-strong alumni community, the Foisie Innovation Studio at Alumni Gym can. At a time when the world’s challenges are more complex, urgent, and impactful than ever before, WPI must innovate as never before. And if we do, and if we do it well, the short-term gains for our students will be extraordinary, and the long-term gains for the planet will be the kind of advances and inventions that spur economic growth and improve the human condition. WPI has proven that we know how to do this. It’s time to hit the accelerator. Won’t you join me?

Sincerely,

Laurie A. Leshin
President

Celebrate...
the 2014

●
I WORCESTER POLYTECHNIC INSTITUTE
INNOVATOR
OF THE YEAR



“WPI is enormously committed to innovation and entrepreneurship. We need to continue to embrace it, invest in it, and build on the successes we’ve had to date.”

Mark O’Neil ’80

Chairman of the Board, President, and CEO
Dealertrack Technologies

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WPI

Visit wpi.edu/+innovation to find out more about **innovation** and **entrepreneurship initiatives** at WPI.

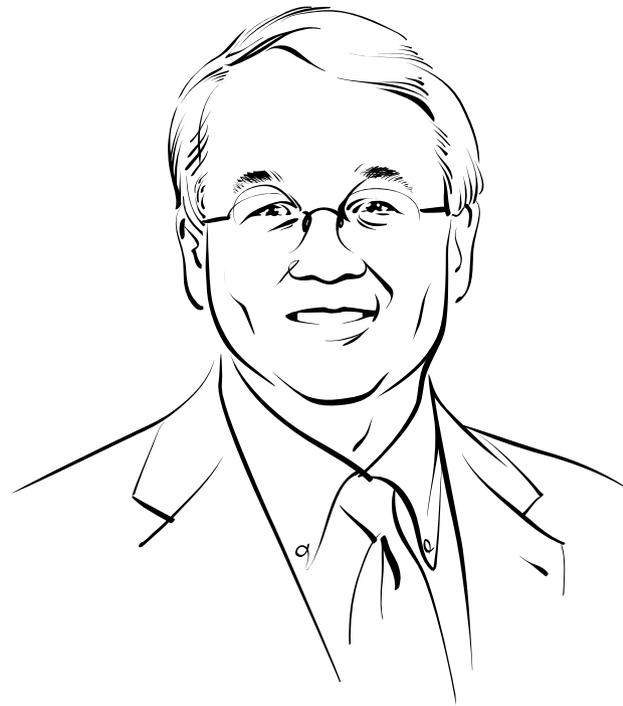
From the National Campaign Chair

DEAR ALUMNI:

As you read this, the campus is preparing for one of the most exciting occasions in recent history. On November 7 and 8 we will celebrate the inauguration of Laurie Leshin, 16th president of WPI, and kick off the university's Sesquicentennial Year. The WPI community—both on and off campus—is buzzing with anticipation about the start of this new chapter in WPI's story. I hope many of you will return to campus for the inauguration to meet President Leshin and to experience the energy and enthusiasm at your alma mater.

President Leshin, a dynamic leader with impressive experience that lends itself to a distinctive vision for WPI, is certainly the source of much of the energy and excitement on campus. Another source of anticipation is the transformation of Alumni Gym into the Robert A. Foisie '56 Innovation Studio, named in honor of Bob Foisie's extraordinary lifetime giving to WPI. Students and faculty alike look forward to the day when the Foisie Innovation Studio at Alumni Gym opens its doors as a state-of-the-art hub for WPI's distinctive project-based curriculum. Current plans include a robotics lab, maker space, and high-tech classrooms for the Great Problems Seminars. A Center for Innovation and Entrepreneurship will support the "practice" side of our motto by helping students find paths to commercialization for their projects. An Innovation Exchange on the former gym floor will provide flexible workspace for student project teams—a space made for the evolution of ideas to innovations. A connector running through the center of the building will showcase the history of the WPI Plan, student project teams working throughout the world, alumni achievements, and donors to the project.

Many of you have already contributed—I thank you for your generosity and commitment to this important project. However, we need many more of you to give if we are to raise the \$18 million needed to kick-start construction and allow us to open the new building in 2016—its 100th anniversary. To encourage alumni support, the Alden Trust—one of Worcester's most venerable foundations and the most generous foundation donor to WPI—has offered a generous challenge. If we raise \$9 million for the transformation of Alumni Gym, the Trust will contribute \$3 million. Every gift counts toward this challenge, but we will only garner the additional \$3 million if we hit our \$9 million goal in alumni giving. On the eve of WPI's 150th year and with the



inauguration of our new president, WPI is calling us to action, and we must respond. I ask you to join me in supporting the Foisie Innovation Studio at Alumni Gym and honoring the tradition of WPI alumni philanthropy that built Alumni Gym back in 1916.

There is great momentum building at WPI, driven by President Leshin and her vision and leadership, by our vibrant undergraduate and graduate students, by our eminent faculty, and by our dedicated staff. As a graduate, you will forever remain the lifeblood of this dynamic institution, and I hope you will remain involved and help nurture our growing culture of philanthropy at WPI. With many Sesquicentennial events planned for the coming year, you have more opportunities than ever to return to campus, to wear WPI on your sleeve, and to participate in the life of your alma mater. Excellence is a shared responsibility, and all great universities are made stronger with the involvement and support of their alumni. I ask you to join me in making a commitment to WPI. I hope to see you at the inauguration of President Leshin and at the numerous Sesquicentennial celebrations throughout the year.

MICHAEL J. DOLAN '75

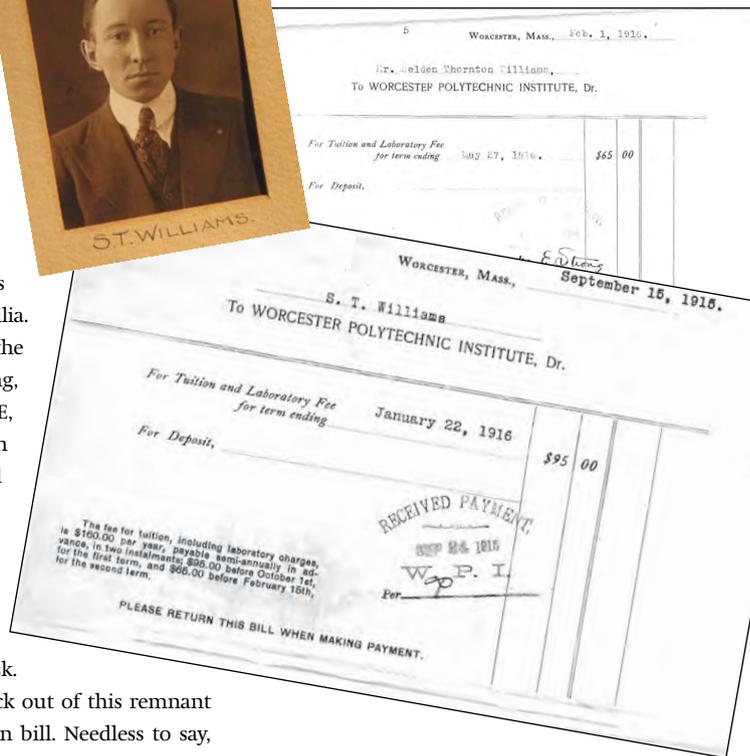
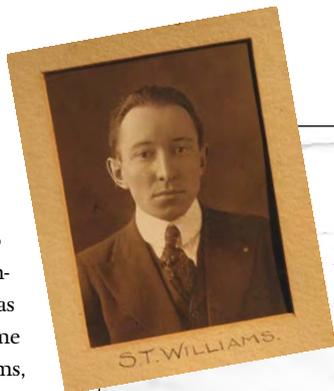
*Senior Vice President, Exxon Mobil Corporation
WPI Trustee and National Campaign Chair*

Keeper of the Legacy

While thumbing through the new *WPI Journal* I happened to notice the half photo with the name ST Williams under it. ST, as he was known, was my grandfather. I have become the keeper of his legacy items, which include over 100 patents and various other memorabilia. Along the way to becoming the president of Scovill Manufacturing, he was an engineer for the SAE, Victor Talking Machines (which became RCA), the Navy, and Schrader Valve (a division of Scovill). His protégé at Scovill was Malcom Baldrige of the Baldrige National Quality Award. He also was given the Goddard Award, which now sits on my desk.

I thought you might get a kick out of this remnant from his archives: a 1915 tuition bill. Needless to say, times have changed.

Good article.



KEN KOLKEBECK '72

Lighting Up Memories

Your photo of the Lightpainting on page 48 of the Summer 2014 issue was colorful, but the caption is what caught my eye. My association with Walter Knapp and son Steve was more of a personal nature than Greek. Thanks to his kindness, I spent my sophomore, junior, and senior year living with his widowed mother. At the time, I was told it was to keep an eye on her but I now suspect it was another side of his caring for students.

Enduring runny scrambled eggs every morning, mowing the lawn in the fall and spring, shoveling the winter snow, and washing windows with newspaper was repaid with scheduled Monday nights across the street at Walter's house to watch *Rowan and Martin's Laugh-In*, snowshoeing up Mt. Wachusett with Walter and Steve, or some other weekend activity in addition to the luxury accommodations. His mother was a wonderful and spirited woman who really took care of me and my future wife on the occasional weekend. Thanks for bringing back those memories.

BOB MEADER '68

Hey, alumni ... what did you like about the *Journal* this month? Did anything make you grimace? What would you like to see more of? What could you do without?

Y'know what? We'd like to hear about it—we can take it, I promise! We strive to produce an engaging magazine that shares the wonderful world of WPI with you, so drop us a line at wpjournal@wpi.edu or directly to me, Doreen Manning, WPI Journal, 100 Institute Road, Worcester MA 01609, and tell us what we can do better—or what we're nailing on the head. I'll share it with our staff and, potentially, with our readers on this page next issue.



WPI

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"Sexual assault knows no gender.

WPI's Sexual Violence Judicial Advocates are here to stand with you, guide you, and support you. As members of the WPI community, we are here to provide emotional support, help you connect with area resources, and navigate the WPI judicial process."

Jen Cluett

Colleen Callahan-Panday

Dave Ortendahl

Sexual Violence Judicial Advocates

The Sexual Assault & Violence Education Committee (SAVE) is a coordinated community response team composed of students, administrators, staff, and faculty working to nurture a campus community that is healthy, safe, and supportive for all.

**Education — Cultivating Awareness
Promoting Prevention — Empowerment**



President Leshin is doused by robots as the WPI community cheers her on.

► CONNECTIONS

Ice Bucket Challenge Hits Close to Home at WPI

President Leshin calls on community to support ALS research; offers hope through science and assistive technology

COMPEI THE GOAT, a couple of robots, and WPI's top brass—including President Leshin—put a WPI spin on the ALS Ice Bucket Challenge in August, enduring a bracing deluge at Reunion Plaza. The fun and raucous cheering was tempered by a personal connection with ALS, also known as Lou Gehrig's disease. Pointing to the Campus Center, which was recently named in honor of Steve Rubin '74, Leshin said, "Our chairman of the board emeritus, Steve Rubin, was diagnosed with ALS a couple of years ago, and has already taken the Ice Bucket Challenge himself. I have already given in honor of Steve, and would ask all of you to do so, as well, to help him manage, and to help others manage this terrible disease."

Leshin continued, "The ALS community has a motto: 'Technology is the cure until medicine proves otherwise.' Here at WPI, we're doing groundbreaking research in both the science and technology to help fight diseases like ALS. We're working on fundamental science to help understand the ways to a cure, but in the meantime we're inventing smart technologies." On display was a robotic wheelchair, just one of many assistive devices designed by WPI students and faculty to offer better mobility and independence to people with ALS and other disabilities.

Then came the fun. "So, here at WPI we're doing groundbreaking research, and now we're going to do some research on what happens when a robot and a goat conspire to dump an ice bucket on a president," Leshin jested, as WPI's Oryx robot wheeled onto the plaza. Oryx delivered a bucket of ice to Gompei, who then poured the ice into a bucket held by Team 190, the WPI-sponsored robot used to compete in FIRST Robotics events. Leshin grinned through her robot-actuated dousing, while students poured buckets over the members of the administrative staff.

Leshin was challenged to take the plunge by assistant professor of biology and biotechnology Jagan Srinivasan, Worcester Mayor Joe Petty, and—through a chain of university presidents—Tom Rosenbaum of Cal Tech, whom she referred to as "perhaps my friend." The Cal Tech challenge came from MIT, by way of Harvard—"company we're proud to be in," Leshin remarked. She then forwarded the challenge to WPI's SGA and GSO presidents, as well as secretary of the faculty John Sullivan.



► RESEARCH

Go North, Monarch Butterfly

Study demonstrates use of a magnetic compass by a long-distance migratory insect

IS IT TRUE that butterflies never ask for directions? A new study published in *Nature Communications*, co-authored by assistant professor of biology and biotechnology Robert Gegear, provides the first evidence that monarch butterflies use a magnetic compass to help guide them on their long migrations. The study, conducted at the University of Massachusetts Medical School by lead author Steven Reppert, MD, and UMass postdoctoral fellow Patrick Guerra, provides the first evidence for the use of a magnetic compass by a long-distance migratory insect.

Rain or shine, millions of monarchs make an annual 2,000-mile trek from breeding sites in the eastern United States to central Mexico, where they overwinter. The researchers previously showed that butterflies use a time-compensated sun compass located in the insect's antennae to orient themselves. "Monarchs, in fact, also use a sophisticated magnetic inclination compass system for navigation similar to that used by much larger-brained migratory vertebrates, such as birds and sea turtles," Gegear said. "This is likely a back-up compass for the butterflies, so they can continue to fly in the right direction even on days when they can't see the sun."

A better understanding of butterfly migration may help assure their survival, the researchers noted. Fall migration is currently threatened by climate change and by the continuing loss of milkweed, affecting overwintering habitats. Another vulnerability to now consider is the potential disruption of the magnetic compass in the monarchs by human-induced electromagnetic noise, which can also affect geomagnetic orientation in migratory birds.



► REMINISCING

Higgins Estate Residents Revisit the Glory Days

Once upon a time, a group of students lived in a castle. They had a noble quest: to uphold the honor of the historic mansion that had recently become a gem in their university's campus.

In 1971, six women and 16 men moved into Higgins House, formerly the private residence of the Higgins family. In exchange for the privilege of living there, they took on chores, such as dusting the intricate wooden carvings, washing the leaded windows, and waxing the floors of the elegant Great Hall. They slept—sometimes three to a room—in every available room.

The group—known as THERA (The Higgins Estate Residents Association)—returned to WPI for a mini-reunion during Alumni Weekend 2014, to reminisce about their experiment in group living, which included communal meals and weekly house meetings to iron out problems. A cherished memory was the night they invited Milton P. Higgins (son of the original occupants, and chair of WPI's Board of Trustees in the '70s) to dinner. The students learned about the history and unique features of their new digs, and Higgins shared his own stories about growing up in a home built to resemble an English castle.

"It was wonderful to see the areas where we had lived, formed such great bonds, and generated such great memories," says Tony Cappuccio '74. "The weather cooperated, allowing us to visit the grounds that we trod on a daily basis going back and forth to class."

"This was part of the glory days for Higgins House and for WPI," adds Mike Tanca '74. "We hired our own cook to provide meals for us. We played our guitars on the third-floor organ loft. The acoustics were great—you could hear us all over the house." When the Great Hall was booked for an event, the students would retreat to their sleeping quarters in the servants' wing and carriage house.

Although more recent alumni may think of Higgins House as part of WPI from the very beginning, the house was not built until the 1920s, and was bequeathed to WPI on the death of May Higgins in 1970. Today it houses the Alumni Office and serves as an elegant venue for concerts, lectures, and other gatherings, as well a favored spot for alumni weddings.

►STEM POWER

Just Add Kids

The future takes flight with TouchTomorrow

What happens when you mix kids, robots, and space exploration in the futuristic atmosphere of WPI's out-of-this-world learning environment?

Excitement ignited the third annual TouchTomorrow festival. On June 14, the free, interactive festival celebrated the wonder of STEM with hands-on exhibits and activities ranging from extracting the DNA of a strawberry, to launching paper airplanes, to piloting a space rover on the moon. The festival followed on the heels of the three-day NASA-WPI Sample Return Robot Challenge, an international competition to build and program robots that can locate and retrieve geologic samples from the terrain of other worlds – without human control.

Thousands of TouchTomorrow participants took part in outdoor and indoor activities sponsored by groups such as NASA, WGBH Education, EcoTarium, Science from Scientists, FIRST Robotics, Worcester Historical Museum, Discovery Museum, iRobot, David Clark Co, and National Grid. Astronaut Bernard Harris spoke about his experiences in space, while kids got to snap a selfie in a spacesuit and engage in deeper learning about spacesuit design through experiments with vacuum chamber tubes. There were photo ops with WARNER (WPI's Atlas Robot for Nonconventional Emergency Response), a 6'2" humanoid robot, and presentations on WPI's cutting-edge research on human-robot interaction.

Best of all, budding scientists (and their parents) were exposed to the best of WPI's student and faculty research, with the entire campus turned into a learning lab bursting with indoor and outdoor activities and demonstrations. Participants had a chance to navigate a semi-autonomous wheelchair with voice commands, and try on a Smart Robotic Prosthetic



Hand. They were able to pilot student games in the IMGD lab, and build a dye-sensitized solar cell that runs on raspberry juice and titanium dioxide. At the end of the day—in

addition to a personalized souvenir they machined with a laser cutter—they took home stellar memories and an expanded vision of the future and how they could shape it.

►QUOTABLE

“Without my WPI background, I would have been limited in even knowing what I didn't know.”

—Novelist Gary Goshgarian '64,
on researching the science and technology
behind his award-winning thrillers

► FACULTY

iProfessor

Cybersecurity professor brings computer science to a new level

As technology advances into every back pocket through a multitude of wireless gadgets, so does the concern of privacy and security in the digital age. To help guide today's students through this digital—and ethical—landmine, Susan Landau, former senior staff privacy analyst at Google and a widely respected authority on cybersecurity, privacy, and public policy, has joined the WPI faculty as a professor of cybersecurity policy.

Before Landau began her new position this fall, we sat down to do some prying of our own to discover what she hopes to bring to her tech-savvy students this school year.

How did you first become involved in the cybersecurity field?

In May 1993, the *New York Times* reported on the “Clipper Chip,” a key escrow system proposed by the Clinton administration. Clipper provided 80-bit cryptography for telephone conversations—a reasonable amount for the time—but the keys were split and stored with agencies of the U.S. government. There were many objections to the proposal, and the Association for Computing Machinery, a professional organization of computer scientists, put together a group to study the policy issues. I was part of that group. I later ended up writing a book on wiretapping and encryption policy with a member of the committee, Whitfield Diffie, the co-inventor of public-key cryptography. After our book, *Privacy on the Line: The Politics of Wiretapping and Encryption*, was published, Sun Microsystems, where Diffie worked, offered me a job. I was supposed to be two-thirds technical, one-third policy, but at some point I had become three-quarters policy. I thought about it, realized I was hooked on the security and privacy policy issues, and never looked back.

What do you hope to convey to your students in regard to privacy and public policy?

Privacy and public policy are quite different.

On privacy, I'll be teaching a generation of students who have grown up with the Internet, with cell phones, and with increasing electronic gadgetry. I'll also be teaching students who grew up not only in the U.S., but also in other places with different views on privacy. So there's lots to explore here. There's legal issues—for example, examining what the constitutional protections for privacy are, or how legal approaches to privacy differ around the world—policy issues, technical approaches, and a lot more. It will be challenging—and fun.

On public policy, I'll be working to teach not only about a wide variety of issues, including digital rights management, privacy (of course!), wiretap and surveillance, cybersecurity, and telecommunications concerns, but also about how different interests influence the policy decisions that are made.



Why do you think it's important for a science and tech school to instruct students in the social science aspects of cybersecurity?

Technology is only part of a solution in cybersecurity. In order for cybersecurity solutions to really take hold, laws and policy incentives have to be aligned. So technologists need to have some understanding of law and policy as well as how the pieces all fit together. But it's also the case that the social sciences are important—for example, anthropology, in order to understand the social system before you design your security or privacy solution; psychology, in order to understand how to design systems that people will find easy to use; and economics, in order to understand how people measure risk and make choices.

As an advocate for women in science, technology, engineering, and mathematics, what do you feel is the biggest road block for women in these areas? What advice would you give to them?

Even a half-century after the women's movement began, women are still underestimated, our abilities and skills often called into question. This lessened for me as I got older and developed my professional reputation. But for younger women, this behavior continues and can be overwhelming. So, I have two pieces of advice: “Never, never, never give up” — that's from Winston Churchill. And surround yourself with people who believe in you. That will provide you with the greatest strength as you handle adversity, whether about being a woman or otherwise.

▶ INTERPLANETARY

Are We Alone?

President Leshin explores the quest for extraterrestrial life at Bennington College

A constellation of scholars and artists gathered at Bennington College in April to inaugurate its 10th president, Mariko Silver. As part of the eclectic festivities, WPI President Laurie Leshin was invited to anchor a multimedia event called “Are We Alone?” The presentation, described as “a visual, musical, and scientific journey of exploration for life in the universe,” featured musical compositions by Bennington faculty member Susie Ibarra, inspired by the first explorations of space.

Sharing the stage with musicians and a small chorus, Leshin took on the big question: Is there life beyond Earth? “We learn how to look for life elsewhere by looking at ourselves and the history of life on Earth,” she explained between musical interludes, as projectors

displayed a backdrop of haunting images gathered from space. Scientists seek evidence of the necessary ingredients to support life—water, organic material, and an energy source—which are indicators of environments where life might be possible. Leshin is part of the team operating the *Curiosity* rover that is currently gathering data on Mars. *Curiosity* has not yet turned up a “smoking gun” that confirms the presence of life on Mars, she noted—nor is it expected to. The rover has, however, transmitted strong evidence of the existence of habitable environments.

To put things in perspective, Leshin scaled the 13.7-billion year history of the universe down to a single calendar year, then asked students to guess at the dates of important milestones. The



formation of the Earth would take place in late August, and dinosaurs would have lived for a mere four days in December. It’s hard to fathom, but everything taught in history classes at Bennington—and WPI—would flash by in the last 10 seconds of New Year’s Eve.

▶ FIELD GUIDE

Bird by Bird, He Taught the World to Rethink Ornithology

One alumnus is still standing up for our fine feathered friends a century after his death

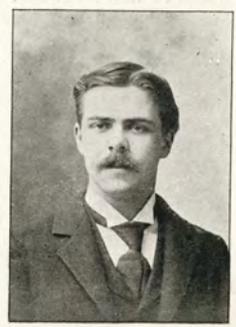
IN THE EARLY 1900s, shooting a bird from the sky to study it closely was not that uncommon. One ornithologist had a better idea. Chester Reed, Class of 1896, published a series of field guides that brought together art and logic to help bird watchers recognize live specimens from afar. “He was the first person to realize that appropriately colored illustrations would facilitate the identification of birds in nature,” wrote Michel Chevalier in *Bird Observer*. Reed also introduced a structure of systematic grouping and labeling to aid rapid identification, as well as a pocket-size format that was easy to take out into the field.

Working with his father, Charles K. Reed, Chester went on to publish 67 editions of the magazine *American Ornithology for the Home and School*, and numerous guides (including some on plants and photography). He made good use of the freehand drawing and drafting he learned at WPI. The 1869 yearbook noted, “Many an envious classmate has become discouraged on comparing his work with Chester’s.” Reed’s close communion with nature—which apparently led him to cut class more often than others—was also dryly noted. A humorous crystal ball “prophecy” foresaw him seated before an easel, hard at work on a sketch, “neglecting his work to roam the woods in search of curious animals.”



In 1912 Reed’s career was cut short by pneumonia. But his work lived on. The famous Peterson guides picked up where he left off, adopting and improving his format. In 2012—on the hundredth anniversary of Reed’s death—he was honored on the Biodiversity Heritage Library blog. Chevalier researched and preserved the Reeds’ accomplishments—and much of the artwork—on a comprehensive website, chester-reed.org. “His work played an important role in the history of recreational ornithology in America,” Chevalier writes. “He should not be forgotten.”

Reed is long gone, but not forgotten. This summer, the Museum of American Bird Art in Canton, Mass., included six of his paintings in an exhibit called “Painting Birds to Save Them: The Critical Role of Art in the Bird Conservation Movement.” Sharing wall space with masters such as Audubon and Warhol, Reed’s work stood among the canon of “exquisite works of art that helped convince the public that birds were worth saving.”





►JET GIRLS

Mission: Girls on Mars

Campers engage with President Leshin and her fellow women teammates from NASA

His past August, NASA's *Curiosity* rover marked two Earth years on Mars. NASA celebrated the women behind the *Curiosity* mission along with 7th-graders at WPI's Camp Reach, when the girls met with Laurie Leshin and other female engineers—via webcam—who continue to play important roles in space exploration.

President Leshin led the webcam discussion, as the girls interacted with five engineers

from NASA's Jet Propulsion Laboratory in Pasadena. Rover team members Jamie Catchen, Erisa Hines, Louise Jandura, Megan Richardson, and Amanda Steffy answered questions from the girls and engaged them on many space related topics.

"Statistics show that the middle school years are critical for keeping girls interested in science, and Camp Reach does an outstanding job at fostering passion for STEM," said Leshin. "I'm

so pleased that WPI helps ensure that these girls receive the mentoring that we know is critical for keeping them in the pipeline. My hope is that by meeting some of the women of *Curiosity*, these girls will have left Camp Reach knowing that the sky's the limit."

Camp Reach, now in its 18th year, is one of several WPI K-12 programs aimed at science, technology, engineering, and mathematics (STEM) education for girls. Each year, 30 girls from throughout Massachusetts participate in the two-week residential program and partake in hands-on workshops, a design project for a community organization, and a visit to an engineering workplace, along with recreational activities. They return for follow-up programs during the academic year.

▶CAPRINE MATTERS

Early Detection Saves Goats

Students develop a simple test to safeguard one of the most important farm animals in the developing world

If a virus has got your goat, the sooner you know, the better. Especially if it's the Caprine Arthritis-Encephalitis Virus (CAEV), which can spread undetected through a herd, reducing the milk production and lifespan of goats (and sheep, which are also susceptible).

Some WPI students are developing a simple, inexpensive test for the virus as they compete in the undergraduate International Genetically Engineered Machine (iGEM) competition. The program challenges students to create biological machines that work within living cells to produce a desired product or process.

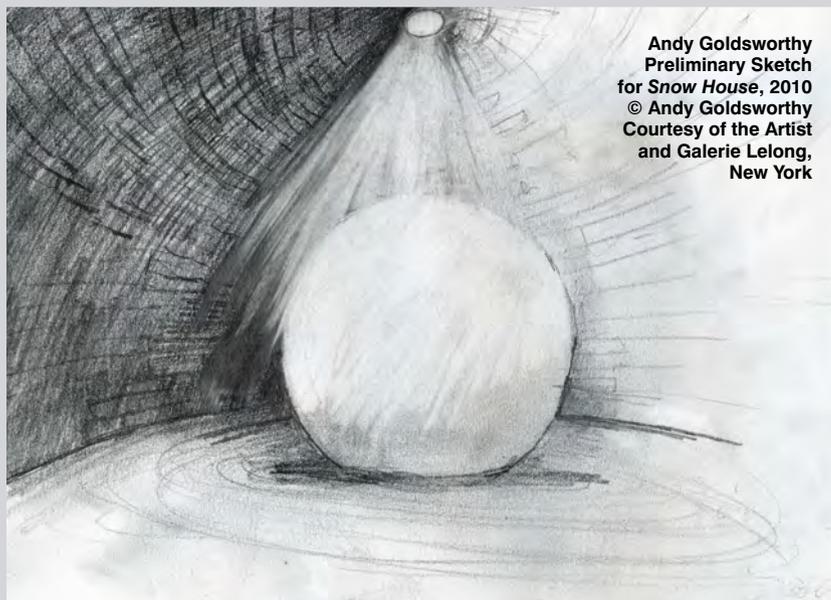
CAEV is slow to cause visible symptoms, so it can hit many animals before a farmer knows the herd is infected. There is no cure or vaccine, but early detection

would allow farmers to isolate or destroy infected animals before symptoms develop, thereby limiting the impact on their herds and their livelihood.

The WPI iGEM team's initial project is to create a

biological system within the bacterium *E. coli* that will indicate the presence of CAEV. In blood samples from infected goats, antibodies would bind to the transformed *E. coli*, causing visible agglutination.

This year, 245 teams from around the world will compete in the challenge, each starting with a standard toolkit of more than 1,000 biological parts (mostly DNA sequences) drawn from iGEM's Registry of Standard Biological Parts. "The concept is open-development, sharing information and ideas so that all teams can benefit from the experiences of each other," says Professor Natalie Farny, who serves as the team's lead advisor. Aside from solving an important global problem, the students' work would benefit WPI's own mascot—in theory, if not in practice.



Andy Goldsworthy
Preliminary Sketch
for *Snow House*, 2010
© Andy Goldsworthy
Courtesy of the Artist
and Galerie Lelong,
New York

▶FROZEN

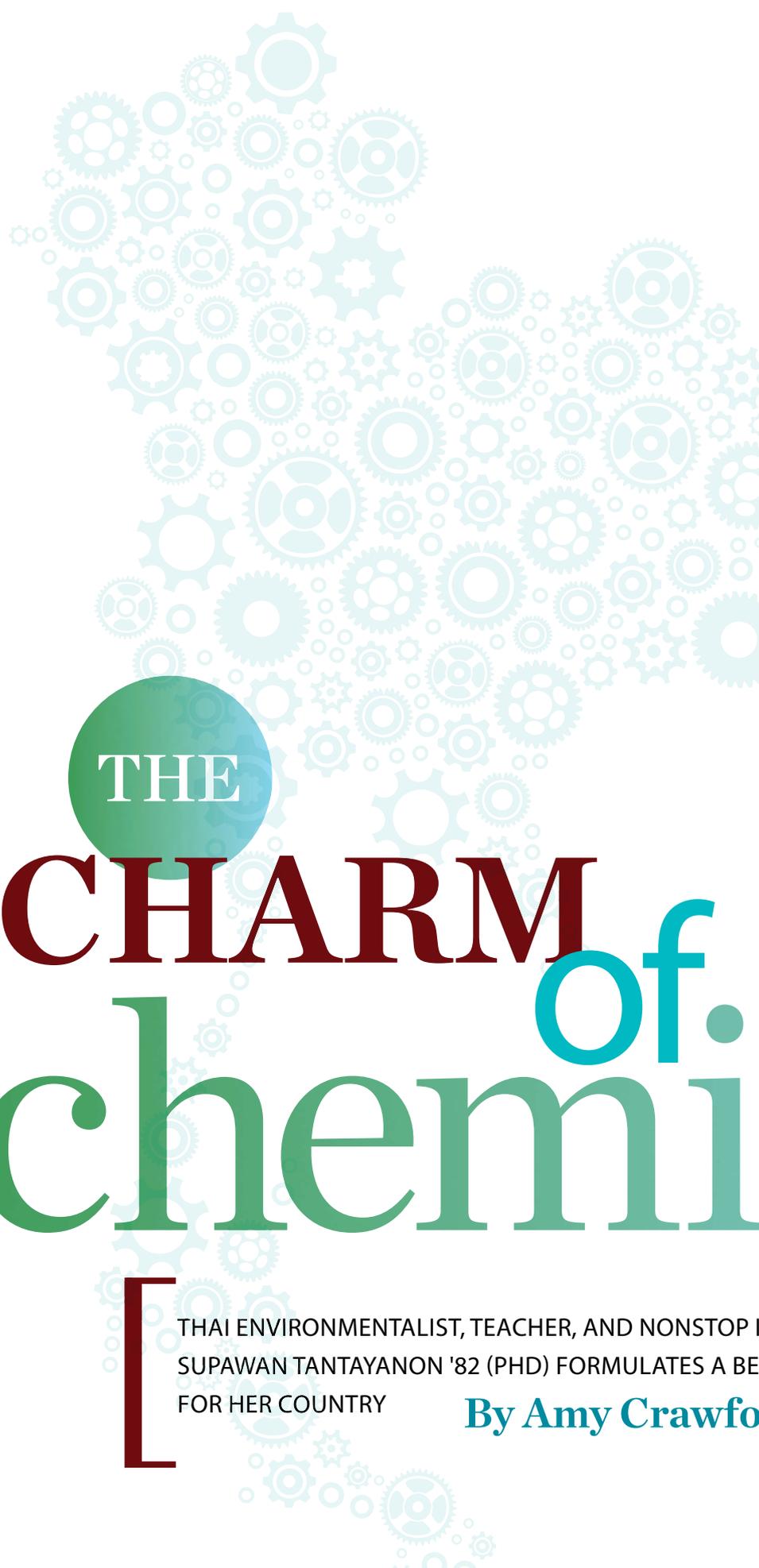
A Snowball's Chance

Thermodynamic MQP will keep artist's vision solid until spring

AS NEW ENGLAND GEARS UP for another winter, the deCordova Museum in Lincoln, Mass., is also preparing for snow. Next spring, the museum's Sculpture Park will break ground on a unique exhibit by British artist Andy Goldsworthy. With engineering input from WPI students, "Snow House" will preserve a 9-foot snowball within a banked granite architectural structure until the end of winter. At the spring solstice, the chamber will be unsealed and the doors thrown open to let visitors experience the gradual melting. According to the artist, "The work is not an object, but a container—a forum for change, memory, replenishment, season—in which the construction and care of the object, along with its interaction with people, are integral to the work."

Jenny Marquez '13, a member of MQP team that did the thermodynamic analysis for the structure, says her team was intrigued by this unusual merging of art and science. "We had never seen anything like it before. We knew that keeping the artist's vision, along with his constraints, was going to be a challenge. We were able to sit down with Andy and give him our suggestions. The initial vision of 'Snow House' was very simplified, and we felt it was very important to be honest and blunt about what he needed to do to keep the snow intact for the duration of he was intending."

The "Snow House" installation draws on the design principles of the pre-industrial ice house, which preserved pond ice for cooling before the advent of refrigeration. The students used ANSYS software to model a 3D simulation of heat transfer over time, factoring in soil properties, water drainage, and air circulation. "As a group, we were very excited to see Andy's vision move toward reality," says Marquez. "Adding the math behind it all made it real."



THE
CHARM of.
chemistry

THAI ENVIRONMENTALIST, TEACHER, AND NONSTOP INNOVATOR
SUPAWAN TANTAYANON '82 (PHD) FORMULATES A BETTER FUTURE
FOR HER COUNTRY

By Amy Crawford

Shortly after Supawan Tantayanon arrived at WPI to begin a PhD program in organic chemistry, she had cause to revisit her decision to move to Worcester. She and her husband, Rewat, a fellow chemistry student, had left their home in balmy Bangkok for New England just in time for the infamous Blizzard of '78. ¶ "I just watched snow falling for two days," she recalls. "At first, it was pretty." But soon the couple realized the implications. "There was more than one meter of snow," she says. "We lived on the ground floor, so we could not open the door—we had to climb out from the window." ¶ After receiving her doctorate in 1982, Tantayanon quickly returned to her tropical homeland. But despite the weather, she has no regrets about her time at WPI, which she credits with giving her the confidence she has relied upon as she used her three-decade career to help build a better future for this developing nation of 67 million people.

**ILLUSTRATION BY
STEPHANIE DALTON COWAN**

ประเทศไทย



In addition to her position as professor of chemistry at Bangkok's Chulalongkorn University, one of the premier research institutions in Asia, Tantayanon has worked to improve environmental safety in Thailand's petrochemical industry, partnered with UNESCO to create a chemistry lab kit for use in the country's rural schools, and started an innovative "technopreneurship" curriculum to help Thailand's tech sector take off. Her career has included many firsts, including stints as the first woman president of the Chemical Society of Thailand and the Federation of Asian Chemical Societies. She has also never forgotten her connection to WPI—in 1989, she was instrumental in helping to set up WPI's Bangkok Project Center, which has allowed dozens of students to complete their IQPs in Thailand.

"Every time I go over there, she's started a new initiative," says Rick Vaz, WPI's dean of interdisciplinary and global studies and the project center's director. "She's one of the most amazing, energetic, determined people I've ever met."

CHOOSING A PATH

Growing up in the small city of Ratchaburi, in western Thailand, Tantayanon didn't plan on a career in academia. Instead, she thought she might be a grade school teacher. "Because that's the only thing that we see every day, right?" she says, with a laugh. She was also used to caring for children, since she was often called on to help out with her seven younger siblings. "I cooked breakfast for everyone, then they went to school and I would clean up everything before I went to school," she says. "Maybe that trained me how to work effectively!"

That work ethic came in handy when Tan-

tayanon made an unorthodox choice for high school. She was interested in science, but it was the 1960s, and the only school in Ratchaburi that offered a science-focused curriculum also had a student body that was overwhelmingly male. "The number of ladies in the school was very little, like 11 or something like that," she says. "I think that influenced me, because you are a minority, right?" The handful of girls faced relentless teasing from the boys, and Tantayanon felt she had to prove herself. "They made me feel that I cannot make any mistakes," she says. "I could not fail."

Standing up to the pressure helped her stick with a challenging science curriculum, and Tantayanon would go on to study

it was the best choice."

Supawan and Rewat Tantayanon—newlyweds at the time—were the chemistry department's first Thai students. Supawan's advisor, Professor James Pavlik, recalls the faculty worrying at first that the couple's Thai education might not have prepared them to do graduate work in the United States.

"We quickly learned that our doubts were unfounded," he says. "The Fulbright Program did us a big favor by sending Supawan and Rewat to WPI. They both had excellent academic backgrounds and they became excellent graduate students. They were also excellent citizens of the department. Everybody liked and respected them very much."

DESPITE THE WEATHER, SHE HAS NO REGRETS ABOUT HER TIME AT WPI, WHICH SHE CREDITS WITH GIVING HER THE CONFIDENCE SHE HAS RELIED UPON THROUGHOUT HER THREE-DECADE CAREER.

chemistry at Chulalongkorn before earning a master's degree at Bangkok's Mahidol University. Then, in 1977, she applied to the Fulbright Program for funding to pursue a PhD in the United States. When she won the scholarship, the program applied to five universities on her behalf. WPI was the first to reply.

"Fulbright asked me whether I will wait for the next four before I choose where I go," she says. "I said 'No. WPI answered me first. I'll go to WPI.'" Today, she says, "I think

In addition to her abilities as a researcher, Tantayanon quickly became known around campus for her skills in the kitchen. Professor Stephen Weininger, who later worked with Supawan to set up the Bangkok Project Center, had an office two doors down from her lab. "This was before there was a Thai restaurant on every corner," he says, "and there would be this fantastic smell floating down the hall"—the aroma of lunch that Tantayanon had brought from home. She eventually indulged her American colleagues' cu-

Thai Connections Make Bangkok Project Center “Something Special”

When Amy Kampa '15 stepped off a plane in Bangkok this past January, she was struck by the sheer size and bustle of the Thai capital. A native of rural Minnesota, Kampa had never been outside the United States before, and she soon realized that her first foray to another country would be a major departure in more ways than one.

Luckily, the staff of WPI's Bangkok Project Center had prepared her well before she left Worcester, covering everything from basic Thai vocabulary to “the bathroom situation,” as Kampa puts it, explaining that anyone using a public restroom in the Southeast Asian country is expected to bring his or her own toilet paper. By the time she left Thailand two months later, after working closely with a team of fellow WPI juniors and Thai college students on an IQP analyzing the human dimension of a recent oil spill, Kampa knew she would miss Bangkok.

“I miss the warmth,” she says, “the warmth of the people smiling and patiently talking with me in Thai... My Thai friends were generous, kind, and warmhearted, eager to teach us their culture—the conventional parts as well as the bad words and night life.”

WPI's Bangkok Project Center was one of only a handful when it opened in 1989. Today, there are more than 40 project centers around the world, but according to Rick Vaz, the center's director and the university's dean of interdisciplinary and global studies, the Bangkok center is still something special.

“It's definitely unique among the project centers,” Vaz says.

The difference, he explains, is the close relationship that WPI has forged with Chulalongkorn University, thanks in large part to the work of Supawan Tantayanon and other Thai alumni.

Over the years, the Bangkok Project Center has routinely produced winners and finalists for the President's IQP Awards. Some of the more compelling projects have centered around Khlong Toei, a Bangkok slum community where WPI students developed a computer lab for a kindergarten and built a playground. Several projects have been sponsored by Thailand's King Bhumibol Adulyadej and Princess Maha Chakri Sirindhorn.

“A number of our students have gotten to meet her majesty,” Vaz says, adding that the princess is “gracious and dedicated to helping the less fortunate.”

What makes the Bangkok Project Center special, however, is the inclusion of Thai students from Chulalongkorn on IQP teams. It's a partnership that WPI students say gives them a greater insight into Thai culture.

“It's the ultimate inside view,” says Athena Casarotto '15, who worked with Kampa on the oil spill project. “They showed us where they hang out, we met their families. Their parents would be cooking us meals as we worked.” Those friendships, Casarotto says, made her and her classmates feel at home in what could have been a very foreign place.

“We really felt like we were living in Bangkok, like it was our city,” she says. “I can't wait to go back.”

curiosity about the exotic cuisine by bringing enough food to share, introducing them to such specialties as chicken with green curry sauce, sweet and sour fish, and a spicy soup called tom yum kung.

“It was the first time I'd tasted Thai food,” Weininger says. “Of course, it was wonderful.”

WHY NOT?

More than three decades later, Tantayanon still reflects fondly on her time at WPI. “Everyone was very nice,” she says. “We knew all the professors—because it's small, we were friends with them.” Even the department's custodian left an impression, she says, when he offered to drive her and Rewat around Worcester as they hunted for an apartment.

It was those friendly relationships that she missed most when she returned to Thailand. Chulalongkorn University has about 40,000 students and a much more formal culture, with none of the intimacy she had found at WPI. That may explain why Tantayanon, though she now lives 8,500 miles away from Worcester, has maintained a strong bond with WPI. Over the years, she's sent some of her own best students to do graduate work in Worcester. (Pavlik says the department was “consistently pleased with their performance.”) And after helping set up the Bangkok Project Center, she stayed involved, coordinating projects and forging a relationship between Chulalongkorn and WPI that has allowed students from the two universities to work together.

“She could translate culturally between the two worlds, which was really invaluable,” Weininger says.

Tantayanon has also been responsible for several innovations in the way science is taught at Chulalongkorn—innovations that

reflect the sensibility of her American education. In 2007 she started the school's Technopreneurship and Innovation Management Program, a multidisciplinary program in which graduate students work to transform basic research into marketable ideas—including a company called RediGen, which relies on technology developed by Tantayanon herself to recycle used car tires into a new multifunctional composite material.

Over the years, Tantayanon's initiatives have faced opposition from her more conservative colleagues, but each time she was able to convince them to embrace innovation. Her power of persuasion has often proven useful—and, along with her optimism, it's something her American colleagues have always admired.

"There's one thing I think is emblematic of her," Weininger says, recalling their collaborations. "And that is, 'Why not?' We'd be blue-skying about something, thinking, 'Oh, wouldn't it be nice?' I could foresee all sorts of difficulties. But Supawan's response would be 'Why not?' She didn't accept that difficulties would rule something out."

That's unusual for an academic, adds Vaz. "Usually they'll focus on their own teaching and research. But Supawan has focused on advancing both her alma maters, and also on the future of Thailand."

Despite her far-reaching goals, Tantayanon acknowledges that balancing her myriad commitments has been tough. She didn't apply for full professorship until a month before her retirement from Chulanlongkorn in 2012, landing that position just this year.

"You have to sacrifice something, but my sacrifice is my own," she says. Her family has always been her first priority (she still finds time to cook those famous Thai meals for her husband and two sons), followed by work that benefits society. "The priority for myself is the last one," she says. "I didn't get a promotion because I didn't have time for myself. You have to get all your publications together, you have to write it up and then



HER POWER OF PERSUASION HAS OFTEN PROVEN USEFUL—AND, ALONG WITH HER OPTIMISM, IT'S SOMETHING HER AMERICAN COLLEAGUES HAVE ALWAYS ADMIRERD.

submit. I don't have time for that."

Even in retirement, she still has little time to waste. Recently, she found herself in the United States again, preparing to give a talk on women leaders at the annual meeting of the American Chemical Society in San Francisco. It had her reflecting on her career, and she confessed that she never planned her path in advance. Instead, she says, she simply opened herself up to opportunity.

"Whatever comes, I would not say no," she says. "I would like to give that advice to everyone, that you just be open, you just do the best you can do. You do for the community, you do for society. And the return comes later." ■



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BANKING ON FOOD

How one financial expert and business whiz is helping

BY KATE SILVER | PHOTOGRAPHY BY CHRIS CHURCHILL

GREATER BOSTON FOOD BANK

put food on tables in and around Boston

If Woody Bradford '89 has his way, everyone in eastern Massachusetts will soon have access to at least one meal a day.

As chairman of the board of The Greater Boston Food Bank (GBFB), he's got an ambitious goal on his plate.

It's also a personal one.

Growing up in the small town of Auburn, Maine, a half-hour north of Portland, Bradford learned early on never to take a meal for granted. Starting in grade school, he joined his dad and stepmom as they drove around town, collecting food salvaged from grocery stores in large banana boxes. They'd comb through the items, discarding anything that couldn't be eaten, and deliver the rest to the home of JoAnn and Ray Pike, a couple who'd set up a makeshift pantry in their garage, sharing food with the neighbors who needed it. That pantry, with the help of Bradford's parents, would go on to become the Good Shepherd Food Bank, the first of its kind in Maine. Today, it's the largest in the state.

Bradford recalls the immediate, visceral difference food makes in a person's life. "You saw the impact you could actually have on somebody's life by helping them satisfy one of the basic foundational needs: food, clothes, shelter," he says. "Food's first for a reason. If you don't eat, you die. We made a big difference to people, and that's always stuck with me."

But it was more than that—there were times Bradford's own family selected items from the pantry's shelves. "We didn't have much growing up," he says. "I'm one of those stories."

They were living in a camp at the time, where heat came from a wood stove and running water was a luxury they had in the summer, but not the winter. The family would frequently shower at his grandparents' house or the local YMCA, and food from the food bank helped stretch out a fair number of meals.

"It's probably the foundational reason I have this great passion for the cause," he says. "I can see what a difference it makes to solve that issue for people."

FOUNDATIONS

When high school graduation approached, Bradford considered only one college option: WPI. He'd always been good at math and science, and was impressed with WPI's reputation as an engineering school. The university was small enough to feel safe, and far enough from home to feel independent. He didn't bother applying anywhere else, figuring if he didn't get in he'd join the military.

He got in.

While at WPI, Bradford played football and joined Sigma Phi Epsilon. He fondly recalls the fraternity's annual Christmas party—the brothers spent weeks soliciting donations of toys from area businesses, and purchased a number of items themselves. Then, one of them would dress as Santa and hand out toys to Worcester kids in need. The experience helped nurture his service mindedness and round out his education.

Academically, he thrived in the sciences, and had trouble selecting a major. Physics? Math?, Chemical engineering? Looking back, he admits he's not sure why he ultimately opted to major in chemistry, but he does recall a couple of influential professors encouraging him to pursue the subject, explaining that there were a number of great career opportunities in the field.

And so there were. His first job after graduation was as a technical service chemist with National Starch and Chemical Co. in New Jersey, where he worked with a group making adhesives. He quickly found a mentor and enjoyed the job. Not long after he began, his company purchased a small adhesives company and needed someone to manage it. "My mentor reached out to me, a little kid straight out of WPI, and said we're going to let you go to work on this. So I got thrown into the pit of figuring stuff out with no real roadmap."

It was the first of many times he would be grateful for his WPI education. "WPI gave me an extraordinary foundation for thinking analytically and thinking logically," he says. "It was the foundational learning that had the biggest impact in terms of my career going forward."

In his new position, he relied on his chemical background, while also publishing in a technical journal, patenting a product he'd developed with his team, rebranding products, seeking FDA approvals, and more. "I realized there was a whole world out there beyond mixing things in a test tube," he says. "So I decided to get a business degree."

On a whim, he applied to Harvard Business School and was accepted, graduating with high distinction as a George F. Baker Scholar. Once again, he credits his WPI foundation for his success. "Harvard Business School is known for the case method of learning, where you don't sit and get lectured to, and you don't get books to study and talk about it afterwards. You're given business cases to solve. And so you're sort of thrown into the pot," he says, likening the experience to the IQPs and MQPs of WPI. "Here's a problem, figure it out."

“I think life does that. Life throws you into the middle of things. So you need a good educational foundation to figure it out.”

FULL PLATE

That business expertise is what led Bradford, in a round-about way, back to his roots: fighting hunger.

In 2004 he was working as managing director with Putnam Investments in Boston, where he sat on a charitable giving committee that oversaw a pool of money that was donated to nonprofits. At that time, The Greater Boston Food Bank (GBFB) had launched a capital campaign to raise the funds needed to build a state-of-the-art, 117,000-sq.-ft. warehouse. The organization pitched Bradford's group at Putnam. “I was the only one on the committee who knew anything about food,” he recalls.

As GBFB president and CEO Catherine D'Amato spoke to the committee about the goals for the warehouse, a familiar name came up: JoAnn Pike, the woman who'd begun the food pantry in Maine with the help of Bradford's family. “She happened to know JoAnn very well, so we had an instant connection,” says Bradford.

After listening to her speak, and taking a tour of the food bank, the committee agreed to donate \$100,000 each year for five years. Putnam was the first corporation to give to the capital campaign.

Looking back on that day, D'Amato recalls Bradford's connection. “When I meet with people who have passion for the food bank, there is usually one little kernel or a connected story—they grew up poor, they had to eat government cheese, they might have missed meals as a kid,” she says. “In Woody's case, his father had this passion, so there was this connection for him and the next generation.”

The experience awakened something in Bradford, and he began volunteering his own time and money with the food bank, even bringing his two sons (now 13 and 16) along. It wasn't long before he joined the board, and he has taken on positions of greater responsibility ever since, building up to his latest role as chairman of the board. While his jobs have changed over the years, with added responsibility and remarkable success (he's currently the president and CEO at Conning, an investment management company for the insurance industry), his commitment to the food bank hasn't wavered.

Because GBFB is a distribution center of food, it works to gather excess food from area grocers and purchase additional food at wholesale prices through donations. The warehouse then distributes food to hundreds of agencies throughout eastern Massachusetts, and those agencies serve it directly to people in need. “We're going to distribute close to 50 million pounds of food this year

The Greater Boston Food Bank

GBFB ranks as one of the largest food banks in the United States. Here's a look at the organization, by the numbers:

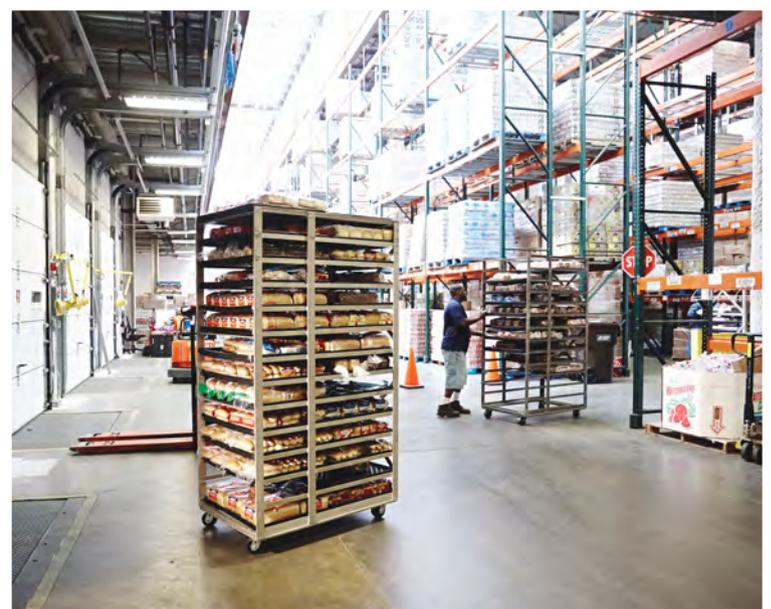
1 of 9	People in eastern Massachusetts at risk of hunger
125,000	Children in eastern Massachusetts at risk of hunger
21%	Increase in requests for assistance from GBFB since 2008
33%	Households served that have a child under 18
15%	Clients served who are 65 and older
72%	Households served that rely regularly on GBFB
61%	Households served that must choose between food and utilities
48	Million pounds of food distributed in 2013
190	Communities served by GBFB
550	Community agencies served by GBFB
545,000	People served in 2013
25,000	Volunteers who sort and distribute food
117,000	Square foot measurement of the food distribution facility (Yawkey Distribution Center)

Learn more about The Greater Boston Food Bank at gbfb.org.

through The Greater Boston Food Bank,” says Bradford, pride seeping through his words.

D'Amato says that from the moment she met Bradford, he began asking tough questions of the organization, and he continues to do that to this day. She describes him as a strategic thinker, and one who really helps her management team excel. “This is a guy who studied at WPI as an undergrad, so he has the technical capability. Then a business degree from Harvard... that's a dangerous combination in terms of skill,” she says. “Because you have the numbers proficiency and the confidence, and then the strategy.”

She adds that his business acumen has helped the organization strive toward a greater impact than she ever could have imagined, and she laughs about how Bradford's leadership and scrutiny has made it more challenging for her on a day-to-day basis. “I can't just go out and ask for another dollar, I assure you,” she says. “I have to prove that that dollar's being spent wisely toward the mis-



sion and will result in a return. That's the nature of his business experience."

But it's not just strategy and financial expertise that Bradford delivers. It's empathy and heart, along with a narrative of hope. "It's a nice connection to see how you cannot lose sight of that kernel," says D'Amato, "whether it's justice or taking care of others or giving back to your community. I think he grew up with limited resources and has done well, and is giving back. It's a great story."

BALANCE

Bradford says his work with the food bank has brought a sense of balance to his life—from the days he was helping his parents deliver food, to his years at WPI, and throughout his career—every piece of knowledge and experience he's picked up has helped fuel the next step. Add to that his work with GBFB and there's a deeper fulfillment and added sense of perspective.

"I have this picture in my head with a set of scales and buckets hanging off in different directions," he says, "and if they're not all balanced, the scales tip over. I think everybody should have some cause or set of causes they can be deeply involved in and make a difference in. Where you can see the difference and feel the difference. I think it makes you a better person."

When Bradford's planning out the financial and business strategy of The Greater Boston Food Bank, he's not just looking at profit and loss statements, or saving money for the shareholders' sakes. In his leadership position with the largest hunger-relief organization in New England, it's all about feeding people. If he finds a way to save the organization money, then more people—people like his own family when he was young—will have food that year.

"I am fortunate to be where I am, given where I came from," says Bradford. "To be able to give back to an effort that I know is actually making a difference, where I can see the tangible difference in lives, is just ridiculously fulfilling." ■

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A LIVING

Entrepreneur.

Author.

Radio host.

Motivational speaker.

Life coach.

**Opportunities
unlocked
by fate.**

BY DAVE GREENSLIT

PHOTOGRAPHY BY EDWARD LINSMIER

RANCESCA ESCOTO '97

didn't really want to attend WPI. Her first choice was Harvard, where she would have studied social sciences.

She didn't like her first engineering job, quitting after a couple years to go into education, where she worked in career services, public affairs, and teaching.

But that didn't do it for her, either, so she decided to venture off on her own, becoming what she calls a serial entrepreneur who has been an author, radio host, motivational speaker, and life coach, among other things. Her current efforts lie in helping Latinas build businesses, especially those that reduce poverty and fight disease.

And a funny thing happened to Escoto while she was busy doing all these things. She came to appreciate, even treasure, her education at WPI.

"I didn't know back then my life would be a living IQP," she quips from her home in Tampa, Fla.

CONNECTIONS

A native of the Dominican Republic, Escoto came to Lawrence, Mass., as a teenager, the oldest of five children in her family. She excelled in science and math, and despite her desire to go to Harvard, she decided on WPI, which offered her a full scholarship. "It was an opportunity too hard to pass up, so I went for it," she says.

Escoto felt culture shock in the United States, in general, and at WPI, in particular. However, the university had just started EMSEP (Excellence in Mathematics, Science, and Engineering Program) — now called the Connections Program — aimed at bringing in more students of color while providing them with support services. When she earned her degree in management engineering in 1997, she was in the first class of EMSEP graduates, and she credits the program and one its founders, Blanche Pringle, with helping her through school.

According to Escoto, it wasn't unusual for EMSEP students to spend time at Pringle's home. As their mentor, Pringle guided them through money problems and other issues faced by minority students.

"Blanche was instrumental throughout my time at WPI. I know that she made all of us feel special, but I really, really think that I was the special one," Escoto says.

Escoto was on the founding board of the WPI chapter of the Society of Hispanic Professional Engineers and went on to hold national positions with the group, which she says also inspired her to excel in classes and stick it out in engineering, since it was important to her to be part of the STEM initiative.

"Doing well was part of my contribution," she says. "Graduating with distinction was important — getting good grades and being part of a movement to increase Latinas in STEM."

While at WPI, Escoto served as a tutor in EMSEP. She also was a member of Skull, the senior honor society, and she received a WPI

Community Service Award for exemplary service to the university and the City of Worcester.

MOUSE TRAP

Escoto showed early signs of the entrepreneur she would become when she developed software with two partners to track the engine performance of cargo planes. Still, she felt she should concentrate on her day job at General Electric, where she began in the company's technical sales leadership program in Dover, N.H., and finished in the commercial and industrial side of the business in Miami.

Escoto worked at GE for two years. And hated it.

"I was miserable," she says. "I still had this chip on my shoulder about 'I don't want to be an engineer. Why am I here?'"

While Escoto felt privileged to work for GE and valued the experience, she also realized that the corporate world restricted her creativity and potential for leadership. So she left and became the assistant director of career services at the University of Miami. She liked that job, but she returned to Massachusetts when she got married. She then became public affairs liaison for the superintendent of schools in Lawrence, where she established a summer program for students gifted in STEM. From there, hoping she could make even more of a difference in the classroom, she taught for a year.

Seven years ago, with their third child on the way, Escoto and her husband moved to Tampa, and she began to think about the life she wanted for herself and her family.

"As much as I wanted to be part of something big, I thought I might have to create my own little movement and be the leader of that. My mom always said you can be the tail of a lion or the head of a mouse, and so I was thinking head of a mouse doesn't sound so bad."

Thus, the serial entrepreneur was born.

DIALOGUES

As a speaker, Escoto travels the country, addressing mainly college-age women, nonprofit leaders, and entrepreneurs.

In a talk called "Divorce Your Own Drama," which is also the title of her first book, she suggests ways to break destructive patterns, forgive, and take charge of happiness. Other popular talks urge Latinas to use entrepreneurship to both create wealth and contribute to the social good; teach nonprofit leaders how to build membership and promote social change; and show new entrepreneurs how to apply the methods of technology start-ups to traditional business.

Her former radio show, *Living Latina*, carried on the Woohoo Radio Network, delved into Hispanic culture, politics, family life, and relationships.

Escoto is a prolific writer, feeding a blog with her views on marriage and social change; her articles have been published in the *Huffington Post* and *Fox News Magazine*, and on YourTango.com,



Escoto notes that technology enables entrepreneurs to enter global markets that had been out of their reach, and a big part of her work is to teach them how to turn ideas into a profitable business.



a website devoted to relationship issues. Her upcoming book, *The Business of Social Change*, describes the methods of successful social entrepreneurs and their challenges. She is working on e-books and workshops called “Nuts and Bolts for Latina Start-ups,” which also serve as the foundation for her Innovators Institute, an umbrella program with a number of initiatives to teach the business basics of start-ups.

Those basics include developing an entrepreneurial style and business model, learning about profit and loss statements, preparing business plans, and pitching to potential lenders and investors.

In July she was part of a roundtable discussion on National Public Radio about getting the next generation of minorities into the technology field. Host Michel Martin talked about Escoto’s participation in the Latina Startup Tour, which will bring training to 800 women and their businesses in eight cities this year, including Boston in October. During the discussion, Escoto called Latinas the fastest-growing entrepreneurial sector in the country, and said the goal is to get them to embrace technology and to use it to become part of the start-up economy and to solve social problems, especially poverty and disease.

Escoto notes that technology enables entrepreneurs to enter global markets that had been out of their reach, and a big part of her work is to teach them how to turn ideas into a profitable business.

“In today’s economy, the little gal (or guy) is best positioned to take over the world,” she wrote on her blog. “If you are an entrepreneur, this is the best time to leverage all the existing resources and make a big impact in your community.

“A tiny business can thrive and grow and compete because it has a smaller operation to fund. In other words, it takes a lot less food to feed a zebra than it does to feed a dinosaur. While giants need large volumes of sales to keep afloat, a small business can scale with lower volumes.”

This September, Escoto launched a series of podcasts called “Start-ups for Social Change,” featuring stories of successful entrepreneurs who fight disease and poverty. In January, the site will be expanded to provide training, coaching, and tools for those who want to build a small business to fight these social ills.

As an example of using technology for good, she points to a vehicle developed by I-TEC, the Indigenous Peoples Technology and Education Center, a missionary effort to help people in

Escoto calls Latinas the fastest-growing entrepreneurial sector in the country.

remote regions. The vehicle, a car that’s capable of going airborne—via a powered parachute—when the roads end, can be used to shuttle supplies and provide healthcare to off-the-grid locations.

“This automobile costs around \$60,000, making it about 12 times less expensive than a helicopter, and thus much more accessible to those who need it most,” Escoto said, noting that an indigenous tribe in Ecuador will use the vehicle.

She cites the work of the nonprofit organization Engineering for Change, which works on technical solutions to humanitarian issues, including those involving agriculture, water, energy, health, and sanitation.

But she also says a start-up for social good could be as simple as a woman in a village with a cell phone that she rents for five minutes at a time.

While Escoto has the heart of an entrepreneur, she realizes there are only so many businesses she can build herself, so she’s decided to help others get started and be a part of their enterprises vicariously.

“I’m going to be part of something that is still bigger than myself,” she says. “It’s about people who are also pursuing the kind of life and the kind of society that I want to see.”

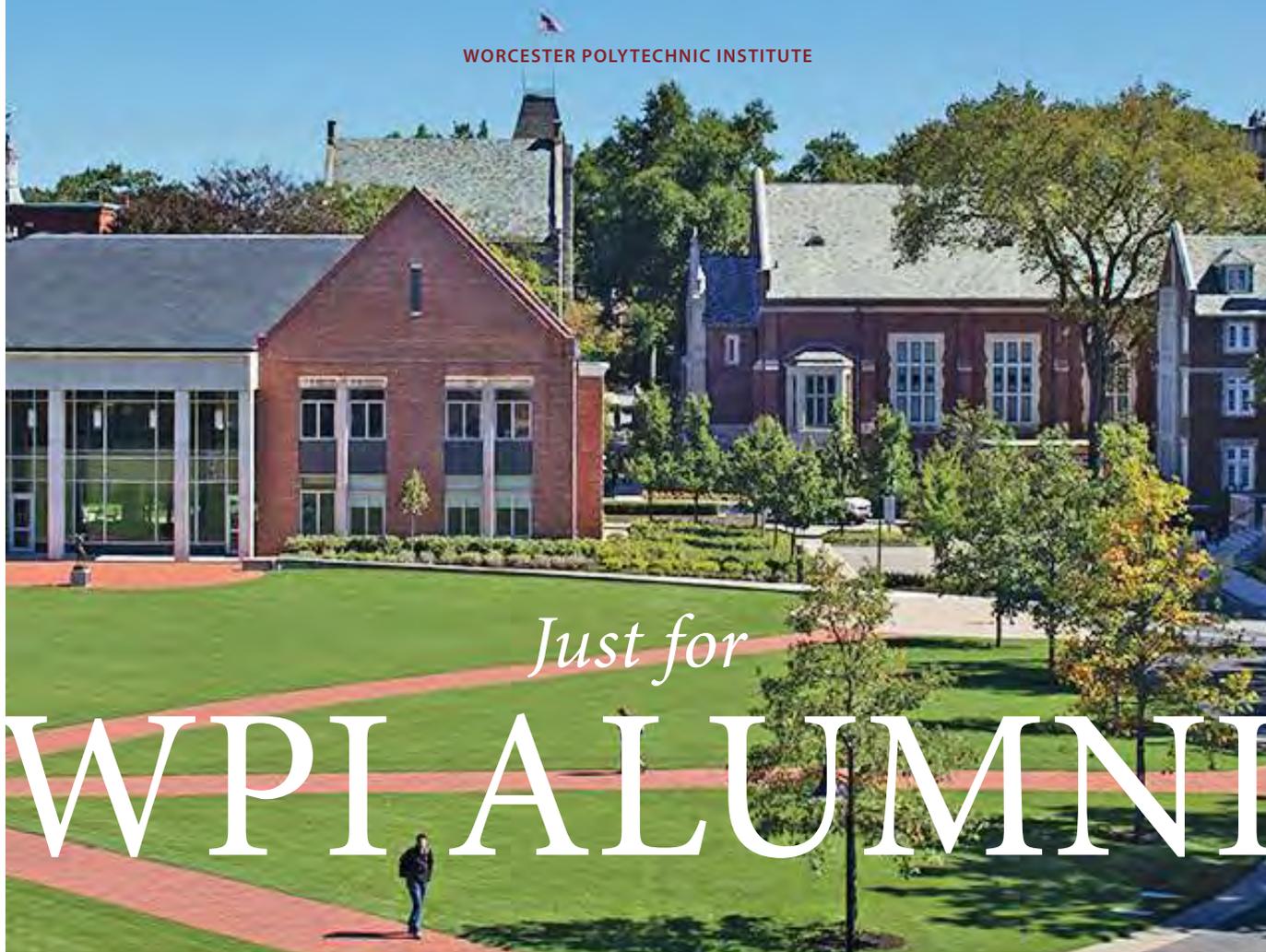
With her technology background, Escoto can help start-ups with marketing, advertising, and other aspects of running a business. “I have a unique life experience, education, and access to resources that help me help those businesses that are using technology for good,” she says. “I’m going to help them grow their enterprises so they can impact more people,” especially in efforts to reduce poverty and disease.

RETROSPECTIVE

Escoto claims she was “educated in between cultures and countries by mothers, fathers, aunts, grandparents, WPI’s engineering curriculum, Christian leaders, and graduate school professors at Bentley.”

“WPI is one of the best things that has ever happened to me. I didn’t realize it at 20, when I was graduating. At that time, it seemed like finally the torture was over and I could get away from all that engineering talk I had no passion for.

“Today, I look back at my time at WPI and think, ‘That’s why I believe that there is a God.’ This just doesn’t happen by coincidence.” ■



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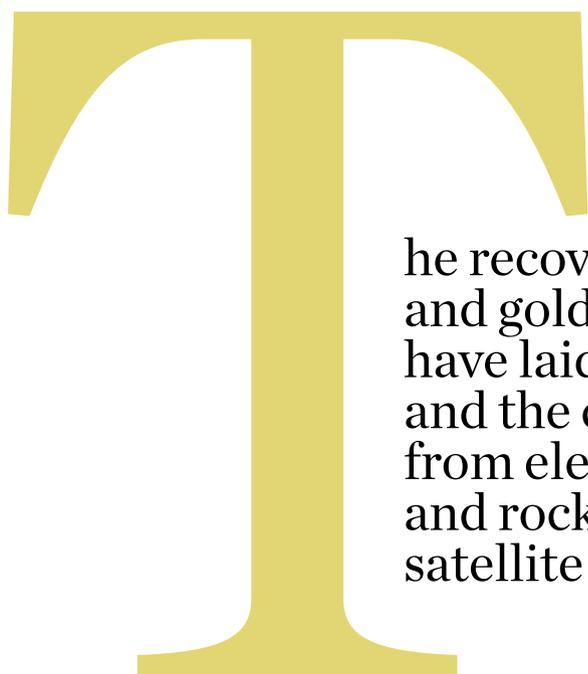




mining for solutions

CHRISTOPHER
D'ACUNHA '09 HOPES TO
REVOLUTIONIZE AN
INDUSTRY THROUGH
ENGINEERING AND
BIOLOGY

BY JOSHUA ZAFFOS
PHOTOGRAPHY BY STEVEN MECKLER



he recovery of heavy metals such as copper and gold, along with minerals and fossil fuels, have laid the cornerstones for the advances and the conveniences of the modern world—from electricity, automobiles, airplanes, and rockets to computers, cell phones, and satellite television.

Much of the progress has relied on naturally occurring microorganisms that help extract metals from ore and mineral reserves. Due to increasing costs and environmental concerns, the mining industry is starting to expand its use of existing microorganisms in a process called bioleaching. While bioleaching is a “mature” technology, already in wide use, the potential to genetically engineer organisms for that purpose is largely unexplored. Christopher DaCunha is ready to change that.

“Mining is actually one of the largest biotechnology industries, because you’re using biology to extract metals from rock on an extremely large scale,” says the CTO of start-up Universal BioMining. “But there’s been almost no genetic engineering involved. The biology side of the leaching process with regard to speciation, organism distribution, and population kinetics merits more study.”

DaCunha and UBM are forging into new territory within that area. Instead of engineering the complex mining environment to cater to the natural extremophile organisms, which function under extreme physical or geochemical conditions, he wants to flip that relationship on its head and genetically engineer organisms to work better in extreme environments. “We’re working towards a paradigm shift from engineering the conditions to suit the organisms, to engineering the organisms to suit the conditions,” he says.

The innovations would mark a leap forward for the mining industry, which still operates with many conventional practices, such as smelting and heap leaching that use highly corrosive sulfuric acid or cyanide to make metals soluble. By developing genetically engineered solutions, UMB plans to introduce more efficient and environmentally friendly practices to mining—and potentially double the recovery rate of metals.

“There’s been great progress in genetics in recent years, but the [mining] industry has yet to take advantage,” he says. “We saw a huge opportunity to come in and change the operational paradigm and the way that people think about these processes.”

PERSEVERANCE

DaCunha himself is a novice in the mining industry, but no stranger to intellectual exercises and problem solving. Originally from Massachusetts, he grew up reading encyclopedias while his friends flipped through comic books; and he enjoyed solving various kinds of puzzles.

As a student at WPI, beginning in 1998, he started on a premed track but soon gravitated toward biology, engineering, and applied microbiology. His interests steered him to a job with Professor Alex DiIorio ’86, who led the WPI Bioprocess Center and directed research and development for the biotech industry. [DiIorio, a much esteemed and respected scientist who earned his master’s and doctorate in biotechnology at WPI, died in 2010, after a long illness.]

The work with DiIorio became essential for DaCunha, who was strapped for tuition funds and ultimately couldn’t afford to continue his education as a full-time student. Instead, he held various posts in DiIorio’s lab over the next six years and completed his studies one class per term, graduating in 2009 with a degree in biology and biotechnology. Moving up from lab coordinator to lab manager, DaCunha worked with DiIorio on contract engineering projects, and also assisted in the design of new lab space when the program moved into the newly built Life Sciences and Bioengineering Center at Gateway Park in 2007.



The arrangement with industries also meant DaCunha worked closely with companies at an early stage in his career on manufacturing processes, fermentation and purification development, prototype device designs, and FDA validation studies.

“The Bioprocess Lab at WPI was unique in that we did contract manufacturing and R&D,” says DaCunha. “It gave me a lot of experience in a lot of different areas of biology and engineering. That really solidified what I wanted to do—to apply a broad range of knowledge to various projects.”

Most prominently, DaCunha worked on a project with Edeniq, a California-based firm focused on developing processes to convert lignocellulosic biomass and agricultural waste, such as wood and switchgrass, into affordable and industry-grade sugars that can be used to produce biofuels. For his part, DaCunha researched how microorganisms from termite hindguts and fungi break down lignocellulose. That included heading off into the woods to collect insects and fungi. “Getting out in the field and actually digging through rotting logs, finding bugs and different fungi was really fun for me,” he says, “and then bringing them back to the lab and doing something useful and beneficial with biofuels was really an awesome opportunity.”

DaCunha developed protocols to extract organisms from termites’ stomachs that break down cellulose, and did mutagenesis studies—using ultraviolet radiation to mutate and isolate genetically altered organisms. The results were isolates 70 times more active than the original organisms, a significant breakthrough for cellulosic conversion—and for Edeniq. The success led to a job offer, prompting DaCunha to move to California after graduation.

As a senior R&D scientist at Edeniq, he found himself fulfilling his broad interests, taking on a wide range of responsibilities in the company’s genetics, biochemistry, pilot plant, and bioreactor development programs. The biofuels research allowed him to explore process engineering and genetic engineering, laying the groundwork for his leap into those fields with Universal BioMining.

BRAIN GAMES

DaCunha’s path into genetic engineering and biotech innovations for the mining industry first passed through space.

Dating back to his days at WPI, perennial puzzle cracker DaCunha and a colleague liked to play brain games, he says, such as the planning behind the colonization of Mars. This

personal fascination stuck with him and circled back into his professional life after his time at Edeniq.

Having worked on novel feedstock production for biofuels using genetic engineering, he was asked by NASA officials to speak at the In-Situ Resource Utilization conference at the agency's Ames Research Center in Silicon Valley about using similar systems for food and fuel production in non-terrestrial environments.

Amid introductions, conversations, and more brain games, DaCunha met Patrick Nee, a mechanical engineer from MIT and a software developer. The two soon were talking about the logistics of exploring and mining in space—never mind that neither had experience in the mining industry. Those discussions planted the seed for the start-up of Universal BioMining.

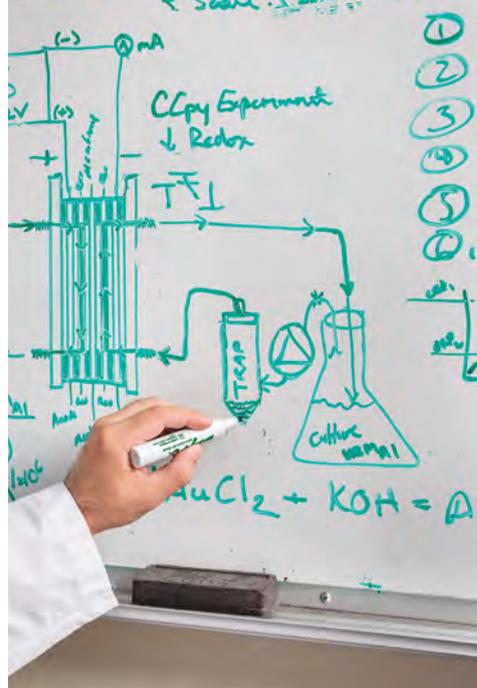
DaCunha and Nee launched the company in January 2011, in an office at the Bioscience Laboratories business incubator in San Francisco run by Connie John. With Nee as CEO and DaCunha as CTO, the company acquired angel funding from friends and scored a \$120,000 grant from NASA to study the feasibility of mining the moon and Mars using biological organisms. The partners quickly recognized that the near-term business and R&D opportunities were back on Earth—after all, few mining companies were utilizing bioengineering and genetic engineering. The company had discovered a niche and soon began working with some of the industry's largest companies, which prompted a 2013 move to Tucson, where UBM is now headquartered.

EXPANSION

Metals mining remains vital and has even grown in importance to the planet with the expansion of technology and the reliance on copper, gold, and other resources for so many products, from telecommunications to defense to renewable energy. Yet, companies have already mined and consumed the most accessible and highest-grade reserves. The mining industry now has to double the amount of earth it moves and excavates every nine years in order to sustain metals production, while also spending millions of dollars to leach and process minerals at high temperatures and in extreme environments using highly corrosive agents.

DaCunha and Nee are applying their expertise to halt those inefficient and increasingly expensive and environmentally harmful trends and practices. "We're saying let's change the organism population to suit the environment and the job instead of trying to engineer the environment to suit the organisms," says DaCunha, "and that's been our long-term vision."

This meant pioneering practices and collecting data that



hadn't previously been considered. The company spent a full year developing protocols to extract extremophiles' DNA, and devising metagenomic data processing methodologies, a cutting-edge field of genetics that uses UBM's proprietary software and runs on cloud supercomputers, to identify organisms found in mining environments. It allowed new insight into extremophiles' relative abundance, and how the community of organisms changes over time. DaCunha and Nee have created a

"library" of organisms, genetic material, and identification methods that they use for bio-mining research and now offer as a service to the industry.

"There's not a lot of published data or knowledge we can apply, and there's a lot of processes we have to develop ourselves," DaCunha says. "You can't manage what you don't understand. We're in this industry where no one really knows what's there—and we can start measuring and seeing the dynamics of [organisms'] population shifts during the leaching process, which takes up to two years."

Research advances have also enabled UBM to begin developing a bio-leaching process that operates at moderate temperatures by genetically manipulating the organisms and bacteria that act as catalysts during processing.

"What we're doing is using nature's millions of years of evolution to our advantage," he adds, "and then applying that to mining."

So far, Universal BioMining has submitted seven provisional patents on new applications that should improve mining yields. The company's research and development projects will likely continue for several years still. DaCunha and Nee's interest in bio-mining in space also remains a simmering yet constant pursuit, thanks to the NASA grant.

With more than 70 percent of copper ore reserves considered low-grade chalcopyrite and recovery rates stuck at around 10 percent of the available copper, DaCunha believes the company's technologies could eventually double or triple those recoveries while also reducing the environmental impacts by diminishing or eliminating smelting and more efficiently using water. "When it comes to mining, anyone who uses technology is complicit in the environmental impact," he says. The breakthroughs UBM is working toward would be a global game changer.

"I've always been conscious of the environment, so it's a big opportunity for me to apply my broad knowledge of engineering and biology—and my background from WPI—to the growing problem of the depletion of copper ore," DaCunha says. "We're trying to do something that's revolutionary in the industry." ■

Community Engagement

Swiss Project Centers offer an exciting environment for WPI students to engage with local organizations and communities on issues of regional and international impact.



Switzerland

A country with robust scientific and technological production, an educational system that mirrors the applied model used at WPI, and a strong international outlook, Switzerland is a natural fit for WPI's global engagement initiatives. Switzerland, too, is seeking world-class collaborations with institutions like WPI to advance its values in research and innovation.



WPI and Switzerland A hub of global engagement



Building on strong foundations

WPI has productive ties to **Zurich University of Applied Sciences, University of Lucerne, HEG Fribourg School of Engineering, Swiss Federal Institute of Technology, Consulate of Switzerland/Swissnex Boston, Credit Suisse**, and many other companies and alumni in the region.

An exchange of people and ideas

WPI brings our colleagues from Switzerland to campus, committed to broadening their experiences and making connections with the wider WPI community. Overall, WPI hosts nearly 25 students and venture leaders on campus every year.



For information on helping to grow the WPI Switzerland Hub, contact Karen Bean, University Advancement, at kbean@wpi.edu.



the campaign to **advance WPI**



IF... WE INVEST IN STUDENTS. IF... WE INVEST IN FUTURE LEADERS AND INNOVATORS. IF... WE INVEST IN PLACES AND SPACES.

“There were several faculty members who made a lasting impression upon me during my student days through their professional competence and their concern for students. Those fond memories have fueled my dream of establishing a scholarship fund to support qualified students with financial need and burning ambition to make a difference in the world.”

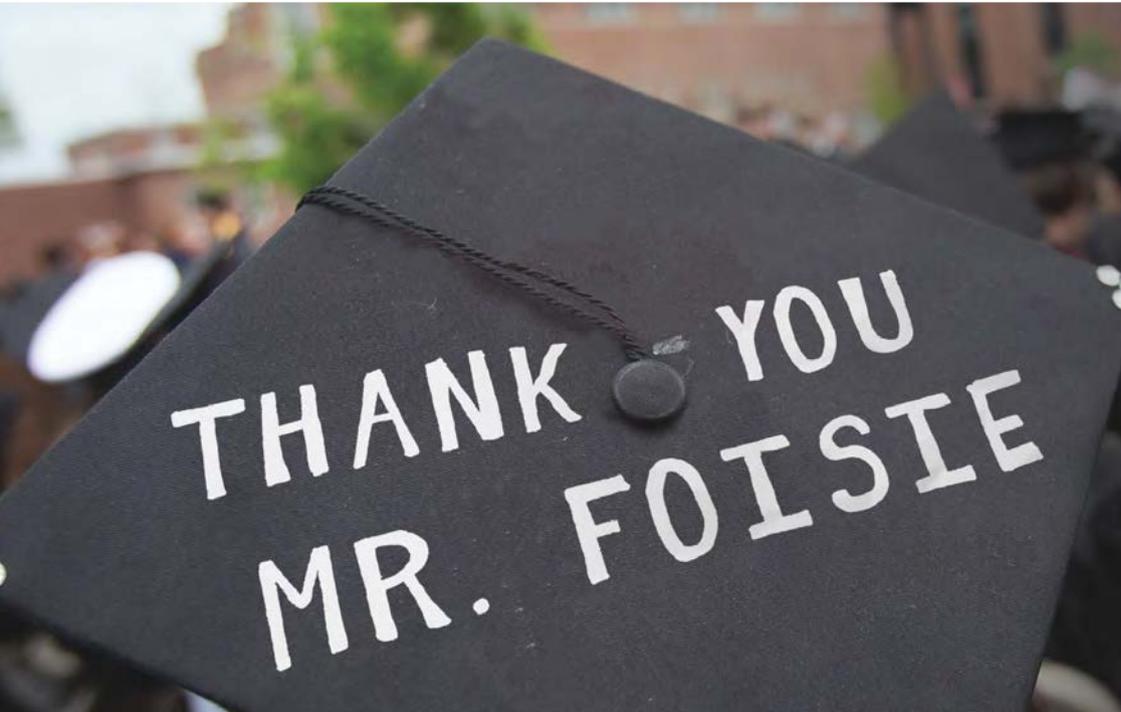
Robert Foisie '56



BOB FOISIE '56

Paying It Forward

After graduating from WPI, Bob Foisie went on to a successful career as an innovator and entrepreneur. But he never forgot those responsible for his success. Over the past two decades, Foisie has supported more than 580 WPI students through 17 endowed scholarships. But even that pales in comparison to his latest act of generosity. In May Foisie committed \$40 million—the largest gift ever by an individual in the university's history, all of it earmarked for scholarships. In honor of his extraordinary generosity, the Foisie Innovation Studio at Alumni Gym and the WPI School of Business now bear his name.



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WPI



THE VIEW FROM THE HILL

From the Alumni Association President

DEAR ALUMNI AND FRIENDS,

The excitement on campus is palpable. The inauguration of Laurie Leshin as WPI's 16th president is just around the corner, with a symposium on Friday, Nov. 7, and the installation ceremony, a luncheon, and the Intergalactic Inaugural Ball on Saturday, Nov. 8. If you haven't registered yet, there is still time: visit leshin16.wpi.edu/register and enter the code WPICommunity. This is our chance to make history with WPI.

The inauguration weekend kicks off WPI's Sesquicentennial Celebration, with festivities continuing from Founders Day 2014 to Founders Day 2015. Keep an eye on your email and the WPI Alumni Facebook, Twitter, and other social media channels for WPI 150 events, trivia, and updates. It's going to be a fun year!

There is also much buzz on campus about the repurposing of Alumni Gym into the state-of-the-art Robert A. Foisie '56 Innovation Studio, a home for WPI's distinctive approach to project-based undergraduate STEM higher education.

The fundraising effort for this critical project just received a boost from the Alden Trust to encourage more alumni support. It's up to us to raise \$9 million from our fellow alumni, and then the Trust will contribute \$3 million to the project. This is our opportunity, as alumni, to make a big impact on the campus and on WPI students for years to come. Visit the Foisie Innovation Studio website to learn more and make your gift: wpi.alumnifund.me.

Alumni Gym is one of the top priorities for President Leshin, and she has hit the ground running to meet and engage with as many students, faculty, and alumni as possible in the first months of her

tenure at WPI. The festivities on Nov. 7 and 8 present an opportunity for the WPI community to celebrate and formally recognize the start of her presidency. It is also an opportunity to see for yourself that our alma mater is under strong leadership.

Many of you experienced the dynamic atmosphere on campus at Homecoming, Oct. 10 and 11. It was wonderful to have such a great crowd to honor this year's Goat's Head Award recipient Steve Hebert '66, aka Mr. WPI, (see page 46). After joining WPI's administrative staff in 1969, Steve became a guiding hand and a fountain of knowledge for the decades that followed. His emphasis on alumni involvement early in his career makes the award that much more meaningful and important.

In the spirit of re-engagement, in the coming year the Alumni Association will be working to strengthen communication with you and between alumni and the university. I hope you'll bear with us as we experiment with different approaches and continue to improve our offerings. As always, you may reach out to me (mwalton@alum.wpi.edu) or any of the

Association Board members with your feedback on what we're doing right and how we might improve our engagement with you.

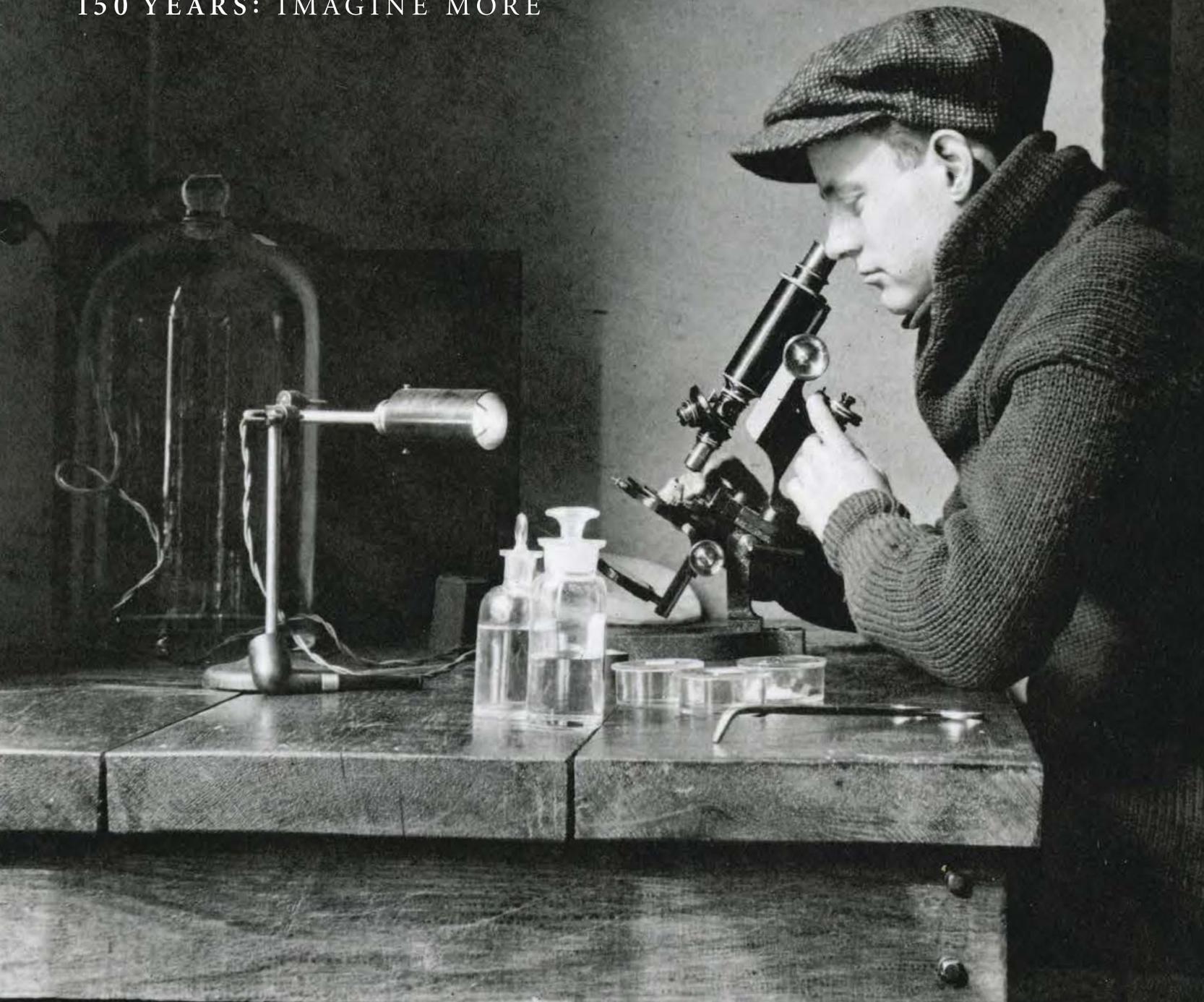
With best wishes,

Myles Walton '97

This is our
opportunity, as
alumni, to make a
big impact on the
campus and on
WPI students
for years to come.



WORCESTER POLYTECHNIC INSTITUTE
150 YEARS: IMAGINE MORE



Fall 2014 kicks off a yearlong celebration of **WPI's 150th anniversary**, beginning with the inauguration of **Laurie A. Leshin** as the university's 16th president on November 8.

The Right Fit

Goat's Head Award recipient devoted almost four decades to his alma mater

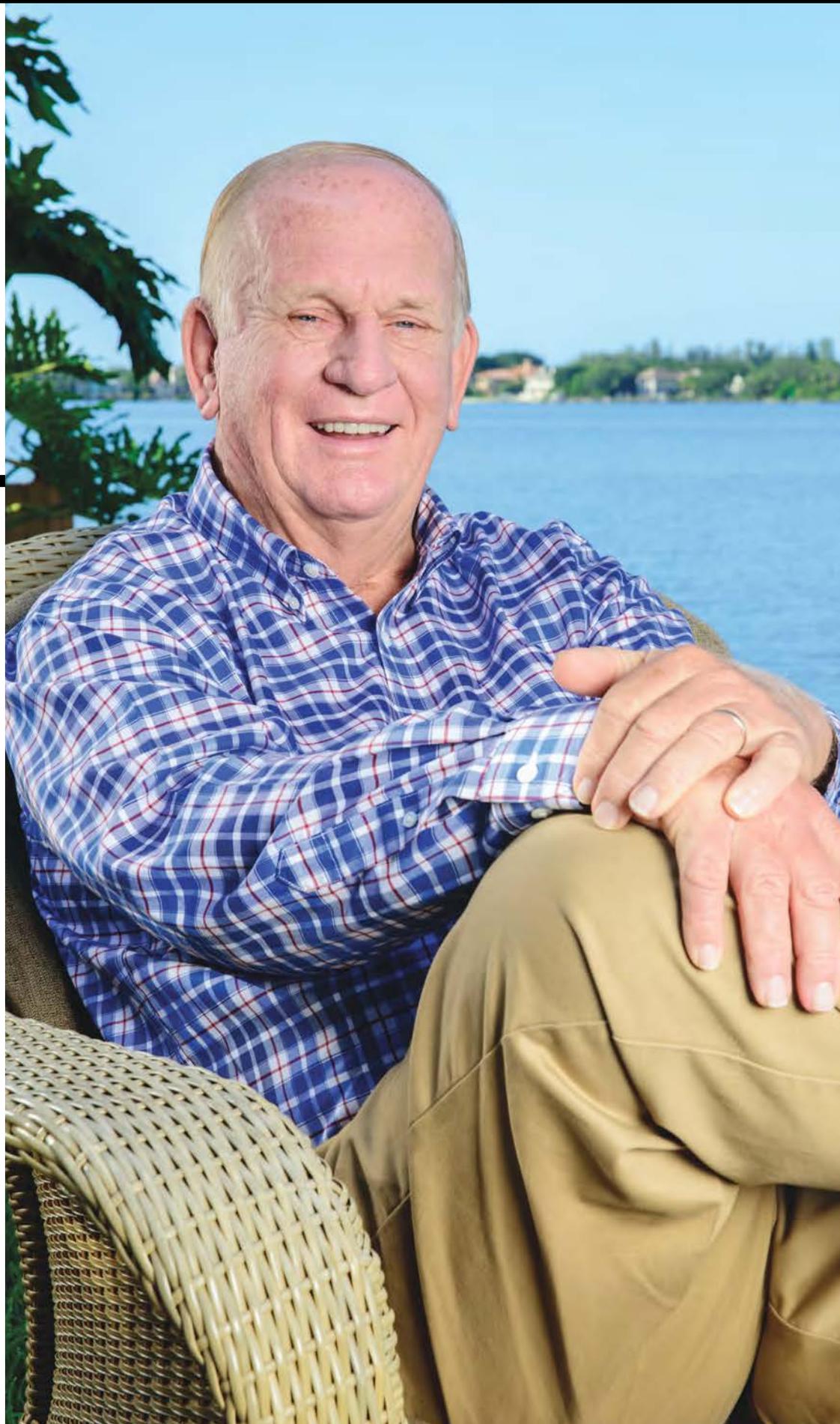
When Steve Hebert first visited the WPI campus as a high school student with his parents, he wanted to enroll before even stepping out of the car. "I think it just felt right because of the physical appeal of the campus, seeing the students, and thinking that I could fit in there," he recalls.

Not only would WPI be the right school for Hebert to earn a BS in civil engineering in 1966, it would also be the right place for a career that spanned 37 years.

Upon graduation, Hebert spent three years in Vermont teaching a combination of math, mechanical drawing, and physics; he also served as assistant basketball and football coach and eventually the athletic director. Yearning for something more, he visited WPI's placement office. While there, he was tapped for the position of WPI's assistant alumni secretary.

"It was a strange choice for someone who'd attended an engineering school so he wouldn't have to write," Hebert quips. But the role was the right fit because it was a people-oriented job and he was a people-oriented person. As an undergraduate, he was active in student government and the American Society of Civil Engineers chapter on campus. He served on the yearbook staff, was president of his Skull class, and managed the basketball team.

"My basic nature is to be involved," he says.



“My fraternity, Sigma Phi Epsilon, was very volunteer oriented.”

In the secretarial role, Hebert focused on fundraising efforts and fostering alumni and community involvement with WPI. A major accomplishment was securing the Alumni Association under the umbrella of the university.

When Jon Strauss became president, he took Hebert under his wing and advanced him to secretary of the corporation—a senior-level management position. After 15 years in alumni and development roles, Hebert attained the position of vice president—administration, CFO, and treasurer.

He is humble when reflecting upon his achievements at WPI, and quickly adds, “I had a lot of good people around me; no one ever accomplishes anything by himself.”

During his tenure, Hebert led the effort to close West Street to vehicular traffic. “It made the campus safer and a better environment for a college community,” he says.

He was a key member of the administration team that led the creation and development of Gateway Park. “It was good for WPI as well as for the city; it was a win-win situation,” he recalls. In addition, he played a role in making the Bartlett Center a reality as a result of his efforts.

“Everything we did was people-oriented and culture-oriented; our efforts revolved around making the campus environment a great place to learn, work, and live,” he says. He excelled at bringing diverse parties together to work for the common good of WPI—he was the face of WPI to the outside world.

He believes he spent the bulk of his career at his alma mater because “it was a growing, innovative institution with great people involved—whether they were students, staff, faculty, or alumni. I was very fortunate.”

Hebert retired in 2007, never having directly used his engineering degree. But WPI taught him so much more, he says. “I learned how to think, analyze, and make decisions, which served me well over the years.”

As the 2014 recipient of the Goat’s Head Award for Lifetime Commitment to WPI, Hebert says, “I am honored to be selected and hope that I helped to make a little bit of a difference at WPI.”

— Karen Appold



The last of this year’s summer BBQs was held on campus in August to help connect staff, faculty, and incoming freshmen.

Barbecue Series Offers Meaningful Welcome

Incoming college students have a lot more to worry about than being solely responsible for their academic success ... and their laundry. Being new to campus can be a jolting experience, rife with new challenges, whether students are attending school five miles—or thousands of miles—away from home.

That’s where the WPI Alumni Association comes in. To offer incoming students a leg up on these challenges, the WPIAA has held a series of barbecues each summer since 2002, hosted by alumni or parents of current or past WPI students. This year 19 such events were held at the homes of volunteers across the country. The opportunity for socializing in a more cozy setting than typical welcome-to-college events gave some first years a chance to chat about “all things WPI” before even stepping foot on campus.

“These events are incredibly popular and are always oversubscribed,” says Maureen Maynard, assistant director of alumni relations. “Students and parents are excited to be introduced to the WPI community on a more personal level.”

Barbecues were held largely in

New England and New York, with one event in San Francisco. A final, cumulative event was held on campus to allow one last chance for new students (particularly international students) to mingle before classes began. All told, there were 282 new students attending these events—Maynard notes that this is more than a quarter of the incoming freshmen.

Ed Crivello ’81, a member of the WPI Parents Association Executive Committee and dad of Matt Crivello ’15, hosted a barbecue with his wife, Fernanda, at their home in Franklin, Mass.

“As a WPI alumnus, hosting a new student barbecue provides the opportunity to reconnect and stay connected with the WPI community,” says Crivello. “Every alum should consider such a rewarding experience that takes a very small effort.”

Crivello has hosted barbecues in years past, and his standing as a current WPI parent lends another tone to the gatherings—eager freshmen have access to an experienced student and can ask all sorts of questions about life and studies at WPI. And he loves seeing the new students come alive once given the chance to meet some of their classmates.

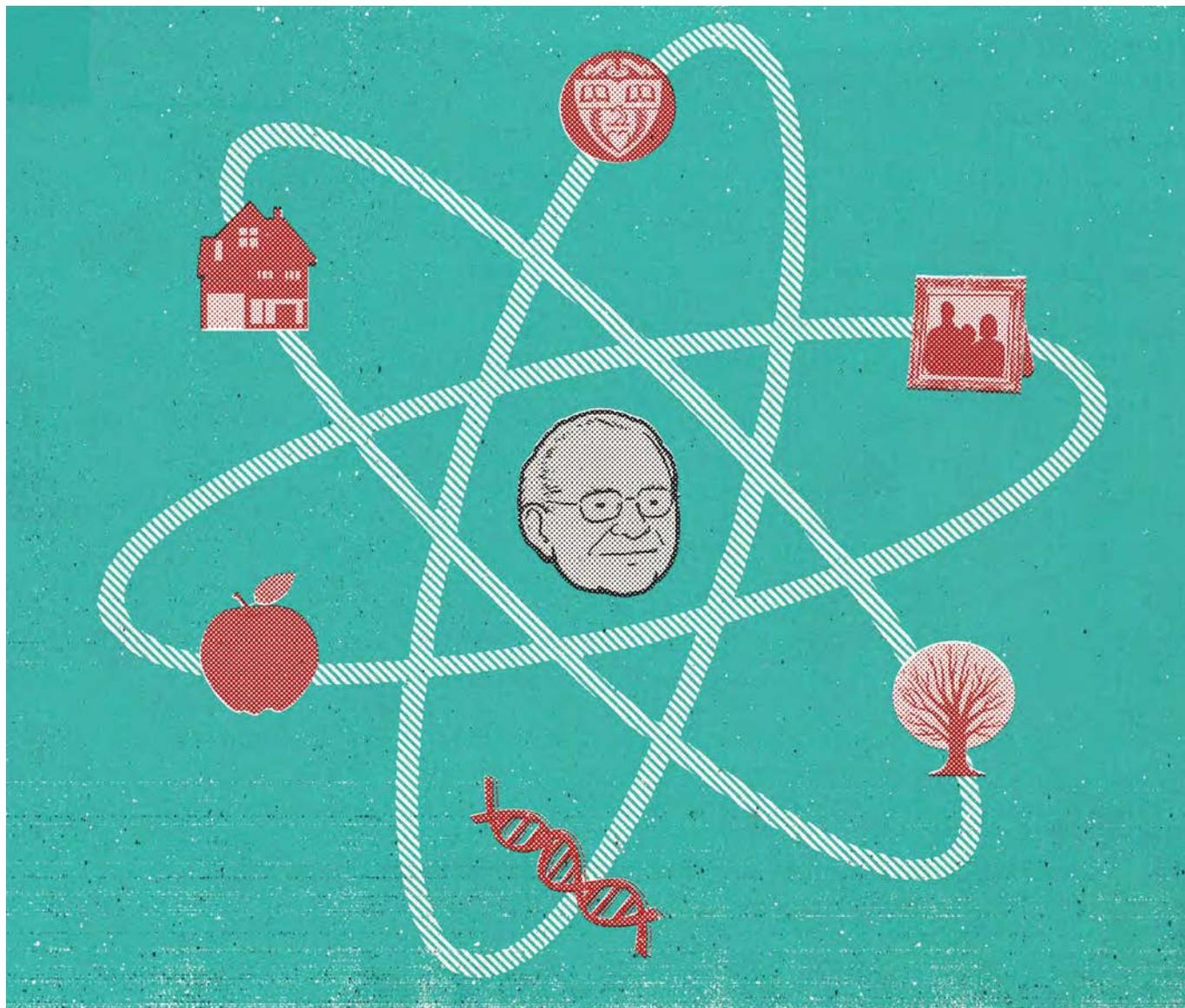
“What I find most rewarding about hosting a New Student BBQ is seeing the students interact with one another,” he says. “They quickly disengage from their parents and start talking about what they expect to be doing in the first weeks of school.”

Getting new students to socialize with each other is exactly the point of this series, confirms Maynard. “We often see the students arrive at the events timid and anxious, but they leave as friends, laughing and sharing contact information,” she says. Beyond being a fun event, the hope is that tight bonds with WPI will form—before school is officially in session.

David Wheeler ’93, treasurer of the WPI Alumni Association, has been hosting barbecues at his home in Portsmouth, R.I., for a few years now. While he loves chatting about WPI and career paths with the new students, he also hopes these events plant a seed of long-lasting commitment to their future alma mater.

“It’s a worthwhile investment to support this example of alumni involvement,” he says. “We feel it can help put our freshmen on a path of engagement that can last a lifetime.”

— Alison Baitz



A Worcester Patriot

Cannons were firing on all sides as Lembit (Hans) Laasberg and his wife, Irene, fled their native Estonia in 1943 in a small boat at night during World War II.

Estonia was first occupied in 1940 and illegally annexed by the Soviet Union as a result of the secret Molotov-Ribbentrop Pact between Russia and Germany. When World

War II broke out and the Russians were defeated, this small Baltic country was soon occupied by Nazi Germany, and it was then that Laasberg and his wife found themselves in a boat, caught in the crossfire as the two sides fought a sea battle that lit up the night.

For a short time in 1941, while still under the first Russian occupation before the Germans arrived, Laasberg had been part of a

resistance movement against the Russians called the “Forest Brothers.” He had just completed his first year in agriculture and biology at the University of Tartu. Now to escape, the couple deliberately steered the boat into the shallows, which was filled with landmines that the keel of their boat was too short to detonate. With that strategy, they evaded the larger ships from both

countries, eventually making their way to Finland, where they stayed for about a year. Several of Laasberg's friends were not so lucky and were later captured.

This was one of the vivid stories that Laasberg—a supporter of WPI until his death this past April at age 91—liked to tell, says his friend Villu Tari, president of the Boston Estonian Society. “His stories definitely stood out—not only because of his knowledge but also because of his memory,” he says. “He was able to recall names, and dates, and days of the week from things happening 50, 60, 70 years ago.”

Eventually, Laasberg made his way to the United States, where he settled in Worcester and became a distinguished biochemist and an assistant professor at Harvard Medical School. But he never forgot the years of deprivation and hardship during the war. “It was a trait of Lembit to create a family around himself,” says Tari. “If you gave him support, he would give it back to you 100 times more—that’s the way his world worked.”

The latest evidence of his generosity came last year, when Laasberg donated \$100,000 to WPI to found a lecture series in the biotechnology department. “He wanted to make an impact in the future, and through his generosity, individuals will be empowered,” says dean of arts and sciences Karen Oates, who met with Laasberg last year. “After speaking with him, I now better understand his forward thinking and his ability to see the power of biotechnology to make the future better for others.”

Education had been key to reversing Laasberg's own misfortunes during the war. He and his wife didn't stay long in Finland before they moved to Sweden. By a quirk of ancestry, Laasberg was descended from Austrians who, during the Thirty Years' War (1618–1648), had once helped the king of Sweden, he later told Tari, and by Swedish law free education was given at certain universities founded by Swedish monarchy to anyone who could prove that their ancestors served or fought for the Swedish king, no matter how long ago.

Laasberg took full advantage of that opportunity to study chemistry and engineering at Swedish universities, eventually leaving in the late 1950s for Canada to do graduate work in immunology and immunochemistry at McGill. Finally, he came to the United States, where he continued advanced studies at Harvard, Tufts, and MIT in areas of physiology, pharmacology, and spectroscopy. He joined the faculty at Harvard Medical School and served as director of anesthesia research at Beth Israel Hospital, authoring some 50 scientific papers.

Despite his success, however, he never lost sight of the importance of family and community. Living in the Worcester area, he and

“It was a trait of Lembit to create a family around himself,” says Tari. “If you gave him support, he would give it back to you 100 times more.”

Irene were active in the Boston Estonian Society, and frequently entertained at their home, where Laasberg insisted on cooking whenever anyone came over. “He always had a table full of food—even when I showed up unannounced, which I tried to do,” says Tari, who spoke at Laasberg's funeral this past April. “If I came from an invitation, we'd spend all day around the table eating and having conversations about everything life brings along.”

Laasberg cooked simple but tasty German-influenced Estonian dishes—heavy on meat, potato, and cabbage—and always made sure everyone's wine glass was full. “He knew the value of relationships of family and friends,” says Tari. “He really cherished those relationships and made everyone feel welcome at his house.”

Laasberg was particularly close to his uncle Oskar and his cousin Tamara (Oskar's daughter), who both worked at AstraZeneca Pharmaceuticals in Worcester. Oskar had lost his wife due to illness prior to the war, and at one point had gotten separated from Tamara, as well, when they escaped from Germany to Italy. Sitting in a refugee camp

in Italy as thousands of people displaced by war passed by with all their belongings, Tamara spotted her father among them—a one-in-a-million chance reunion. “From that point on,” says Tari, “they were pretty much holding hands until he died.”

After Irene died in 2001, Laasberg moved to Tamara's home. His cousin later suffered from Alzheimer's disease and Laasberg cooked and cleaned for her and oversaw her medication. Even after friends prevailed upon him to place her in a nursing home, he continued to visit her for several hours each day. When Tamara passed away in 2012 at the age of 98, Laasberg invited his colleagues from Harvard to her funeral.

Despite his pride at being part of the Harvard community, however, Laasberg was even more proud of living in Worcester. “He was sort of a Worcester patriot,” says Tari, who lives in Chelmsford. “After Tamara passed away, I once offered for him to move into my house, and he said no. He loved Worcester.”

Introduced to WPI through history professor Leena Osteraas, a friend of Tamara, he felt that he could have more impact with a donation to WPI than to one of the institutions he had attended. In addition to funding the biotechnology lecture series, he set aside funds in his estate to endow the Oskar E. Lasberg, Tamara D. Lasberg, Lembit H. Laasberg, and Irene L. Laasberg Scholarship Fund.

It is the perfect legacy for Laasberg, tying together his generosity with the love of home, education, and family. “He was an old-class man, in the best sense I can describe it,” says Tari. “Given the life he'd been through with hardships and losing family during the war, he knew how fragile those connections are, and he held onto them. There is definitely something to learn from in that.”

— Michael Blanding

Bow Ties and Beanies

Herbert F. Taylor Award recipient says relationships are ties that bind

When Tom Newman '64 was weighing acceptances to universities like MIT, RPI, UConn, and WPI, it was WPI's personal touch that welcomed him most. Fifty years after graduation, that same warmth is a driving force behind Newman's extensive alumni efforts.

Most recently, Newman and his wife, Bonnie, established the Tom and Bonnie Newman Endowed Scholarship for Entrepreneurship in WPI's School of Business to support students interested in entrepreneurship and innovation. The first scholarship will be awarded this academic year.

"What transcends the 50 years is the people-oriented culture," says Newman of WPI's appeal. "WPI focuses first on the people and cares about students in a number of ways." Quite simply, Newman enjoys giving back to the school that offered him so much. This spring, his efforts earned him the Herbert F. Taylor Award for Distinguished Service to WPI from the WPI Alumni Association.

Despite the enormous changes over the past five decades, Newman says the basic principles still ring true. "WPI is still a fairly small group of people with exciting paths ahead of them," he says.

As a new student, Newman's strong connections with his Theta Chi fraternity brothers and his classmates opened the tender spot WPI continues to hold in his heart. "If you pick up the phone and call someone from the Class of 1964, it takes about 20 seconds for that relationship to be rekindled no matter how well you knew them," says Newman. "The bonds of WPI people are pretty tight."

Those bonds give WPI a prominent place in Newman's life, much more so than



Northeastern University, where he earned his engineering master's, or Babson College, where he earned his MBA. "The fraternity system was a nurturing system for me," he says, even laughingly recalling the bow ties, beanies, and name tags of Orientation. As

house president for Theta Chi, he presided over 120 brothers whose close proximity and camaraderie, especially in pre-Campus Center days, forged friendships quickly. "I had no real authority, and it was like herding cats," he says of his presidency, "but it

was a great leadership experience.”

Always a steadfast supporter of WPI, Newman’s alumni activities increased in recent years. He served as chair of his 50th reunion, and his team broke reunion fundraising records. During his five-year term as Alumni Association treasurer, he quadrupled the available budget from \$70,000 to \$300,000 and used the increase to support more student scholarships, he says. Most recently, Newman joined the Strategy Council on Innovation and Entrepreneurship in the School of Business, which is tasked with integrating innovation and entrepreneurial studies throughout WPI’s curriculum.

The new scholarship, says Newman, “reflects two personal influences near and dear to my heart” because each changed his life course.

“It’s not just the affinity for the school, but a drive to do something about that affinity.”

“Scholarships were invaluable to me,” he says. “I couldn’t have gone to WPI without them.” And his MBA studies “helped the puzzle pieces click,” showing him how to use his knowledge to make a meaningful impact on what he was doing. Those early influences led him to a 37-year career at Teradyne, where he served in a wide variety of management roles. He retired as vice president in 2009.

Newman says his motivation isn’t any different from most alumni who work tirelessly for WPI. “The desire to give back is

common among people who do this,” he says. “It’s not just the affinity for the school, but a drive to do something about that affinity.”

With all of WPI’s achievements, it comes down to the students, and their passion resonates with him. As a sixth grader watching a science-class ham radio demonstration, Newman’s world changed when he comprehended the power of technology benefiting humanity. “I literally decided that day to become an engineer, so I’d be able to achieve those benefits,” he says.

Seeing the same drive in today’s students thrills him, and he glimpses the potential they hold. Newman says he is especially looking forward to meeting recipients of the scholarship he and Bonnie are endowing. “You get to rub shoulders with kids who will change the world.” — *Julia Quinn-Szcesuil*

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1941

Richard Jasper's wife, Mary, shares the sad news of his passing on their 62nd wedding anniversary, Oct. 13, 2013. He leaves seven children, 18 grandchildren, and 10 great-grandchildren.

1946

On July 18, **Fred Kull** wrote, "Next Sunday I will be 91. I am enjoying life in Noble Village Senior Living Facility in Suwanee, Ga., in a 2 BR apartment. My wife died 3½ years ago, and I went blind in my left eye from a stroke. Otherwise I am doing well for my age. I sure miss driving, but can use the residence's transporter bus to get to the store. A lot of years passed since we graduated! Best wishes to those still living in my class of '46."

1949

Sam Franc shares, "Betty and I are still retired in Florence, Ore. We are both disabled, me more than Betty. Daughter Marcia lives with us and takes care of the hard chores, and daughter Susan lives next door. The deer in the area have been decimated by a cougar that moved in this year, and I miss seeing the fawns in the back yard. For you that don't know, the weather here is very mild year round. Not much snow, no hurricanes, tornadoes, or big storms. Rain in the winter—more of a drizzle, no floods. Summer temps are mostly in the 60s and a few 70s."

1950

Clayton Roberts ('51 MS EE) writes from Syracuse, N.Y., "Keep trying to retire a third time. I am now president of six Christian radio stations in upper New York State (as a volunteer)."

1951

Dick Davis shares, "Susan and I are blessed with good health. We're now living rural, with gardens, orchard, trout pond, and lots of woods. Still making home visits, mostly to elders, rendering diagnostic, chiropractic, and acupuncture care—but thinking of retiring for the fourth time (after engineering, marketing, consulting, and health care). Very interested in current advances in cosmology and quantum sciences, but haven't yet mastered smart phones."

1953

David Hathaway contributed this travelogue. "A motorcycle ride in heavy rain from Islesboro, Maine, to the Bar Harbor airport in Trenton to attend a WPI event on Mount Desert Island in August was well worth the trip on my BMW K1200GT. Seeing what five groups of IQP students were doing, meeting their advisor and President Laurie Leshin was a highlight in this summer's activities. I was greatly impressed with the new leadership of WPI and will be watching more closely now that I have personally met these key people."

1957

Spike Vrusho resides in Vero Beach, Fla. This is his sixth year of involvement with raising funds for the Homeless Family Center via their Annual Fund Raising Dinner.

1959

Roger Kuenzel shares, "I attended my 55th reunion dinner this year and had a great time." He lives in Kingston, Pa.

Lawrence White writes, "Since the passing of my wife, Linda, six years ago, I met and married a wonderful woman from Colombia. I retired last year from Friedman Bros. Manufacturing, where I was vice president and CEO. We were on the East Coast of Florida at the time, and we then moved to the West Coast, to Naples, where the golf is the best."

1961

Asjed Jallil writes, "Though retired since 2006, I have again become quite active consulting, as well as representing a company located in Mumbai, India. Have received some orders and prospects are promising. Still playing tennis, doing Tai Chi, reading, and traveling."

1962

Jesse Erlich, a partner at the Boston law firm Burns & Levinson LLP, has once again been selected by his peers to be listed in Best Lawyers® (for 2015). Lawyers are not required or allowed to pay a fee to be listed; the honor is based on a peer-review survey of more than 52,000

attorneys who cast more than 5.5 million votes on other lawyers in their practice areas. Jesse notes that *Corporate Counsel* magazine has called Best Lawyers "the most respected referral list of attorneys in practice."

1963

Roger Weiss is president of Paricon Technologies Corp. He lives in Foxboro, Mass., with his wife, Carolyn.

Harry Wright, president of H. Wright Consulting LLC, lives in Bradford, N.H., with his wife, Sandra.

1964

Editor's Note: *The Class of 1964 contributed detailed personal updates and favorite WPI memories for the 50th reunion. Some of these are excerpted below; others appeared in the previous issue of WPI Journal.*

Chris Almy shares, "After six years in graduate school and two years in the USAR Signal Corps, I joined Knolls Atomic Power Laboratory, where I have pioneered the development of finite element methods used to analyze nuclear-powered reactor components for the Navy's submarines and aircraft carriers for 42 years. I am currently enhancing the thermal analysis tools and mentoring newer engineers." Chris has vivid memories of lining up outside Salisbury on his third day at WPI. "When we emerged we were laden with compulsory ROTC manuals and uniforms. My family had made good on the threat to send me to military school if I didn't behave and never told me that was where I was going!"

After graduate school, Chris spent two years at Ft. Monmouth in Electronics Command. "Over the next 20 years, the Army sent me back to the R&D Command to set up and train personnel on new computers and model analyzers. The computer skills I acquired in graduate school were welcomed by the Ft. Monmouth engineers, and the new skills I acquired during those annual tours enhanced my value in my civilian job. ROTC was certainly a win-win for me." Chris adds that he is busy with his children, grandchildren, and duplicate bridge, as well as coaching youth baseball and raising funds for the Schenectady Cancer Society. "Around the family and neighborhood I am the fix-it guy and the problem solver."

Send your class note to classnotes@wpi.edu. Images welcome!

'58

Bill Rabinovitch writes, "I am dedicating one of my latest images, just completed... thrilled learning Laurie A. Leshin has become the 16th president of WPI and believing my image will create even more positive energy both for her and WPI. The image will be realized in a print edition of 25, signed and numbered. I've announced the news about Laurie on my Facebook page with this image. Some have said my image incredibly seems to combine Pollock, Matisse, and de Kooning into something new and innovative." Bill adds, "Wow! A woman WPI president — exactly what's needed!"



Denny Balog has spent 40 years with Osram Sylvania and is now executive director of engineering. He lives in Roseville, Calif., with his wife, Judy.

Frank Caradonna writes, "A career in aerodynamics research has been a load of fun for me. I'm told that having fun is the best way to know you've made the right career choice. But I've had other interests. Early on, I became really interested in the piano. On mustering out of Army active duty, I spent my unused leave money on a Mason-Hamlin grand. In the past 10 years I've become involved in a big band as well as some smaller groups. I'm hoping for a jazz-filled future." Frank is retired from a 43-year career with the Army Labs in Mountain View, Calif. He lives in Los Altos with his wife, Monika.

"Cap" Chenoweth started out in the Ocean Science Field Building testing deep diving submersibles and instrumentation. "After a stint at Virginia Institute of Marine Science, I started a 10-year teaching (physics) and coaching career. In summer of '81, I started an alternative energy contracting company, Sunworks Engineering, designing and building advanced heating/cooling/control systems, including solar and geothermal systems. Still doing that as well as teaching one course a year. My activities include ski and lacrosse coaching, Alpine and Nordic skiing and racing, and restoring and racing historic sports cars." Cap and his wife, Ginny, have one daughter. He recalls Professor Ray Scott as "the best pure teacher I ever had, anywhere."

Paul Covec and his wife, Joan, have two sons and one grandchild.

Ed Curtis writes, "Equipped with a first-rate education from WPI, I was fortunate to have a very satisfying career as a serial entrepreneur and international energy consultant. Of the most interesting and exciting things I have learned is the great value and process of entrepreneurial pursuit. I have created a lot of jobs indirectly as a result of my work, and I have significantly influenced the development of large-scale natural gas technology, thereby leaving a net positive impact on our economy and our environment." Ed is retired as CEO of E. J. Curtis Assoc., an international business-development consultancy in the energy industry. He lives Bradenton, Fla., with his wife, Carolyn.

Peter Dornemann writes, "My career has had three separate phases. In phase one, I was in marketing management with Fortune 500 companies. In phase two, I was in sales management with high-tech companies. Now, in phase three, I am a health insurance broker focusing on individuals and micro-companies. I was a member of one of the first high-tech delegations to visit China. I have helped hundreds of small business people get cost-effective health insurance coverage. Clients often showed their appreciation with gifts like homemade brownies or wine. Back in my 35 years of corporate sales and marketing, this personalized level of appreciation simply did not happen." His best WPI memory? "A Fiji Island party on Cape Cod. I really should not say anymore." He also fondly recalls professor Ken Scott. "He went the extra mile and somehow got me through Thermo-Dynamics."

Pete Fenner sends this recap of his life: "My first 20 years I worked as real-time Fortran expert. The next 15 years I was a PC network contractor and part-time Inventor/House

Husband/Dad. The last 15 years I have been licensing our patents, and I expect to spend the next 10 years figuring out how to retire!" Asked how he's made the world a better place, Pete adds, "After licensing our patents to six major companies in 2006, my whole family set up the Fenner Family Charitable Foundation, which supports many causes close to our family. Our family also gives much personally to those same charities." Pete's favorite college memory involves a bird, a fraternity, and a mechanical clock. "In my second or third year at WPI, the guys in Sig Ep decided to turn the front of 11 Boynton Street into a giant BOKO Clock! I lived in the room that had the window where the KOKO bird went in and out. My roommate and I had to sleep with window open and that mechanical marvel in our room for a week!" He also cherishes a life lesson learned from Professor Romeo Moruzzi. "Senior year, **Todd Varnum** and I were lab partners in Professor Moruzzi's control systems class. Near the end of course, Moruzzi told us he would not give us a good lab grade because our results were 'too good!' We met with him and showed him our detailed lab notes on how we always chose the same equipment. I learned the importance of details and work notes, and that had served me well for 50 years." Pete and his wife, Suzan, have two children and three grandchildren.

Duke Gale writes, "My wife (and high school sweetheart), Jane, and I spend summers in Chatham Mass., and winters in Naples, Fla. We have two daughters, a son-in-law, and two grandkids. After WPI I earned a PhD in economics from Rutgers U. and taught economics at UMass Amherst from 1967 to 1978. Worked at a business-strategy think tank in Cambridge from 1978 to 1990. Started my own consulting company, Customer Value Inc., in 1990—still operating,

'64

though at a greatly reduced level. Wrote a couple of books on business strategy that came out in 1987 and 1994. I invented a "System and Method for Pricing a Product" for the business community, which my fraternity brother, **Ralph Gelling, Esq. '63**, wrote up to produce a patent. It was awarded on Jan. 31, 2012, the day after my 70th birthday. My value-analysis process and software help business teams to set the price for a new product, based on its warranted market value, while knowing its unit costs and the prices of competing products. I'm currently trying to draft a third book. In my spare time I enjoy singing, tennis, sailing, kayaking, clamming, theater, and travel/touring." Duke enjoyed music at WPI, even while studying for an EE degree. "It was fun singing in the Sig Ep octet and the WPI Chorus. Classmate (and fraternity brother) **Bob Geiger** taught me to play the ukulele. I used to play and sing at WPI parties while in school and still do at the Lankau annual WPI/PKT Class of 1964-centered muster in Mashpee on Cape Cod. I think that making music lifts the spirits of family, neighbors, friends, and guests and makes the immediate world a more enjoyable place."

Clark Gesswein chronicles his life as "My WPI Plan"—a journey from that took him from ROTC to the CIA to national security jobs in the private sector. "It may not have been a formal plan per se, but WPI was indeed the cornerstone of an unexpected and extraordinary journey," he writes. "Of course it started with loving and supportive guidance by my parents, especially my patriotic Dad, who strongly believed I had an obligation to serve the country in the military. So in 1964 I graduated from WPI with a BSEE degree and a commission as a 2nd Lieutenant in the U.S. Army Reserves, Signal Corp. I worked my first engineering job with Otis Elevator during the summer of 1964. Then came two years of active duty military service with the Special Forces (Airborne) at Ft. Bragg, N.C. ('Airborne' meaning I was a paratrooper and jumped out of 31 perfectly good airplanes. It was my job!). I married my college sweetheart, Janice (Jan) Hamlin, whom I met in 1963 at WPI, while on active duty.

"Shortly after I finished military service, the CIA offered me a position in their Office of Communications, responsible for operating and maintaining a 24/7 worldwide radio communications network. My true love was always radio communications—I became a licensed amateur radio operator when I was 16. I went on to serve 26 years with the CIA, including nine years overseas in the Philippines, Liberia, and West Germany. I retired from the government in 1993. I am what's known as a "Cold War Warrior"—that's the nickname for people who worked in the intelligence agencies and other frontline elements of the government



John Schmidt retired last year from ABC Television Network Group as senior audio/visual systems engineer. "I started out working for Grumman Aerospace as a systems reliability engineer, mostly on the Lunar Module program. Left Grumman in 1970, worked for Adelphi University as university electronics engineer. (Don't let the title fool you; I was also responsible for the University-owned 13KV power distribution system, and made repairs on more than one

occasion to the fire control system on the boilers in their central heating plant.) In 1977 I started at ABC Television, where I stayed until retirement. While at Grumman and Adelphi I also did a lot of consulting/contract engineering for a number of radio stations and a couple of recording studios in the Long Island/New York area. I was the (mostly volunteer) technical director of WALI/WBAU, the college radio station at Adelphi from 1965 until it went off the air in 1995.

"Now that I'm supposedly retired, I'm trying to get everything done that I put off until after I retired. Somehow, the list is getting longer, not shorter... I have recently become involved in audio restoration, volunteering to transfer a large number of audio tapes and cassettes of some historic value from Trinidad to digital formats. For the last 25 years I have been traveling to Trinidad, mostly for Carnival. I have many friends who play steel drums (the correct term is steelpan). I hang out with them, make audio recordings of some of them, and take a lot of photographs. (I don't play—I'm 'rhythmically challenged.')

If you want to see some of that, look at my website, panjumbie.com.

Send your class note to classnotes@wpi.edu. Images welcome!

around the time of the demise of the Soviet Union. I went on to private sector positions supporting the intelligence community and retired fully from Aerospace Corp. at the end of 2010. What a ride! Things are a bit more mundane now. We have two sons and three grandchildren that get our time and attention. I'm also trying to play more golf and improve my game. And there's the never ending list of household chores. But they do provide exercise! Life is good..."

Gary Goshgarian writes, "So far I have written eight science thrillers (three under my own name, and five under the pen name Gary Braver)—some of which became bestsellers, including *Flashback*, winner of a 2006 Massachusetts Book Award for Fiction. The latest (2012) is *Tunnel Vision*. Although I got advanced degrees in English and have been an English professor at Northeastern University for 45 years, I don't for a moment regret my WPI education. It, and a few summers as a project physicist at Raytheon, led me to introduce a course in science fiction at NU in 1972, and I have been teaching it ever since. It was one of the first such university courses in the country, and probably the longest running. My thrillers center on major technical breakthroughs in biochemistry, neuroscience, pharmacology, and archaeology. Their relative successes had to do not only with decent story lines and writing, but significant technical research. Gary's fondest memories include group discussions with English professor Jim Hensel. "For the better part of my freshman year, a dozen of us met regularly every Thursday afternoon at 4 o'clock, discussing Plato, Shakespeare, Faulkner, Woolf, and Kafka. Our discussions were lively and inspired, and we loved it, especially the subversive kick of being at the epicenter of science and technology. Jim loved it, too, and even wrote glowingly about us and his experience in a *College English* article (1962) called "Are Engineering Students Square?" His conclusion: a resounding 'No.' What he did was open doors for us—and for one, perhaps a little too widely."

Dick Healing writes, "Still 'thinking' about retirement...as soon as I run out of interesting things to do!"

Larry Hull retired from NASA as a computer engineer/project manager. He writes, "After 38 years with NASA, I retired to enjoy travel and family. Much of my time is taken up with volunteer activities. Some may have made a difference, particularly to individuals. I recall being in the first computer class offered at WPI, and that first (IBM) computer with paper tape input. Fun AND frustration!" Larry lives in Greenbelt, Md., with his wife, Rena.

Bruce Larsen retired from Verizon as director of regulatory operations. He writes, "After 40 years of

marriage, Joy passed away from early onset Alzheimer's. My second 'dream wife,' Sally, and I were married on 1/23/04. An interesting fact that I learned (thru Sally) is that my great-grandfather Larsen was an Antarctic explorer and that the Larsen Ice Shelf was named after him. "Bruce's top WPI moments include when **Sandy Williams** and I attempted to drain Institute Pond in front of SAE; leading the WPI ROTC Band in competition at the World's Fair in NYC (we came in 2nd!); and managing to pass senior finals, hours after my twins were born." His favorite mentors were Bill Grogan ("Who always made things clear and was a great guy,") and Bill Trask ("Who took personal interest in me and got me out of trouble when Sandy and I attempted to drain Institute Pond"). Bruce also credits ROTC Capt. Smith for persuading him to stay in ROTC. As a volunteer, Bruce has established a homeless shelter in Jaffrey, N.H., chaired an Episcopal Church music organization that sent dozens of kids to top-notch music camps, and organized and managed seven European concert tours to promote peace.

Cliff MacDonald and his wife, Mary Jean, live in Toano, Va.

Tom Newman retired from Teradyne as vice president, corporate relations. "I've traveled a lot, most of it internationally (especially Asia), and have cultivated friendships with an international group of friends. I enjoy fly fishing, cycling, sailing, photography and family. I also hold a Coast Guard captain's license." (Read more about Tom on page 50.)

Bruce Ochieano started out as a civil engineer in San Francisco, then served in the U.S. Army Corps of Engineers for two years, mostly in Vietnam, as 2nd and 1st Lieutenant. After earning an MBA at Wharton, he returned to San Francisco to work with Arthur Andersen & Co. (now Accenture) for three years. The next 17 years were in corporate finance positions, mostly as treasurer for Advanced Micro Devices in Sunnyvale, Calif. "Finally, in 1990 I left AMD and set up my own personal financial advisory firm (Bruce Ochieano & Co.) and did financial advisory consulting, etc., for 22 years. I retired in January 2013. At age 28 I really lucked out and met a beautiful and very bright girl (Anita—then 24). Through much persistence, I convinced her to marry me 13 months later. Together we have raised three children (now 35, 32, and 29) and watched them become well-educated, mature, independent, responsible adults." In addition to helping launch a school foundation that now raises millions of dollars for elementary and high schools in Menlo Park, Bruce has also coached youth soccer and Little League. "My wife and I are substantial financial contributors to our church's 'homeless fund,' which works with local social service agencies to keep

families temporarily down on their luck from losing their homes and helps them get them back on their feet."

Bob Parker is retired from Pratt & Whitney as a quality control manager. He and his wife, Jeanne, live in Ellington, Conn. "I have a son who attended WPI. I have a grandson. I like to do gardening and to travel. Goals and objectives are to stay healthy and continue to enjoy life. I try to be as environmentally responsible as I can. I have fond memories of camaraderie with fellow students."

Bob Peura is co-founder and senior vice president of Grove Instruments. He sends this summary: "Carol and I married a week after graduation, and we are celebrating our 50th anniversary this year. We moved to Iowa after graduation, where Carol taught school and I earned my PhD in EE and BME at Iowa State University. I returned to WPI as an assistant professor. In my early years, I helped implement the WPI Plan and start project centers at UMass Medical School, St. Vincent Hospital, and Tufts Veterinary School. I also founded the Biomedical Engineering Department with the support of our BME Advisory Board, co-chaired by classmate **AI Potvin**. I retired as emeritus professor after 40 years of service in 2008.

I am co-inventor of six U.S. medical device patents. I have a personal passion for the development of Grove's noninvasive glucose monitor since two of our children have Type 1 diabetes. My thesis, when I started VivaScan (now Grove Instruments), was that there has to be a better way to self-manage diabetes. Our goal is to deliver the first FDA approved noninvasive, painless and bloodless first line glucose meter for use in the lifelong care of diabetes patients. Carol and I operate Deer Run Tree Farm, a choose-and-cut Christmas tree farm at our farm in Princeton, Mass. We enjoy spending time with our grandkids in New Hampshire, Vermont, and Michigan. We have a home in Edgartown on Martha's Vineyard where we four-wheel drive on the Chappaquiddick Island beaches and enjoy fishing for stripers and blues in the surf. We also enjoy cross country skiing.

Fred Scofield writes, "Most of my career was spent in nuclear power plant project management with a local electric utility. Nine years were spent with an oil and gas company that eventually became Enron. I'm now retired, and my wife, Margaret, and I continue to serve as sponsors of our church teenage youth groups. We have five sons."

Gus Shields reports that he took "A simple career path from fighter pilot to airline captain. I flew first line fighter jets (F-4) and for airlines (Airbus 320) without aviator incident during a 38-year career. I have marched for civil rights and

served as the equal opportunities officer (as an ancillary duty during my service as a fighter pilot) when racial problems were rampant in the military. It was a high priority." Gus and his wife, Elaine, have one daughter.

Fred Siff retired from the University of Cincinnati in 2009 as professor of information systems and VP and CIO emeritus, "after a happy lifelong academic career in similar positions at George Mason University and the University of California, Santa Cruz. Returned to Santa Cruz to be a beach and tennis bum. All family in the Eastern Time zone: They voted us off the island so they could have a West Coast retreat. My son Daniel is enjoying the same career path as mine, on staff at Colby College in Maine." Fred's memories include "Feeding typically mis-punched cards into the IBM 1620 in the basement of (was it?) Stratton Hall. Keeling over as the (fallen) guide on one ROTC Saturday. Washing my car on the Quad Friday in November 1963 when we heard the news that President Kennedy was shot—and the world stopped." Favorite professor? "Of course has to be the legendary van Alstyne. Although on the other end of the scale, The Red Vector and that older fellow who taught History of Western Civilization complete in one dramatic semester (including music played on a record player) have to be in the mix."

Moe Silvestris writes, "After active duty in the Army Chemical Corps for a few years, I worked for a few industries and consulted in environmental engineering. Married in 1965. MBA from Lehigh in 1973. Got my P.E. license in 1975. My wife, Elaine, passed in 2008. I retired in 2010. Now I spend as much time with old buddies as I can. I also volunteer at the Allentown library and do local community college tutoring in math and science." He shares this recollection: "The best story is **Dave McCaffrey** on the ROTC field. He didn't know his ID number or rifle serial number, and when asked 'What do you know, Cadet?', he replied, ' $PV=nRT$ sir!' (ChE inside joke.)" Moe is grateful for "Professor Robert Wagner, above all. He could have flunked me in Thermo 363 but let me pass to 364, which I passed, thank God! That was the pivot point for me at WPI, and also for my career, and a big part of my life."

Brian Sinder is president of Lobis Technology Consultants. "I consult with small U.S. companies, helping them to find international distributor partners. Family relationships are most important to me. Lois and I have six grandchildren in the Chicago area, three in Florida, and two in Jakarta, Indonesia."

David Stone retired from DTS Technical Services as principal owner. He was a consultant on setting IEEE

and IEC industry standards for Eaton's Cooper Power Systems. He and his wife, Nancy, have two children and four grandchildren. "In retirement, I have returned to my hobby of model railroading," he writes.

Dan Turner writes, "While a student at WPI, I was married to a wonderful woman, Lois. While I struggled academically in some areas, Lois was my greatest supporter and encourager throughout my time at WPI and throughout my career. I spent 32 years, at Ebasco Services in New York City, mostly as a designer. After I retired, Lois was discovered to have ovarian cancer. Twenty days after the discovery she went to be with the Lord. It took me a long time to get adjusted to being a widower. We raised two children together, and our son, Smyth, graduated from WPI 25 years ago. I am now remarried to another wonderful woman, Elaine, for almost nine years. We have this 'thing' between us: When I turned 18 years old, she was 1 day old. Yes, our birthdays are one day apart! I will say no more. With Elaine I have two stepdaughters and a granddaughter. My hobbies include collecting kaleidoscopes and coins from all countries. I also established an annual scholarship fund through my daughter's high school for students who show interest in engineering. I work as a volunteer for senior services doing handyman work and minor repairs, such as rewiring lamps, tightening chairs and tables, and even changing light bulbs."

Carl Youngman writes, "I have been very lucky to have had a long and varied career with several national brands, a private equity partnership, and a few of my own businesses. This has served to reinforce what I already knew: Nothing is more important than your family. I continue to serve on several boards and have retained an active relationship with The Young Presidents' Organization—I mentor CEOs. Golf and grandchildren are my hobbies, and I still play both the piano and the guitar." Carl has fond memories of professor Hobart Newell. "He made it fun."

1966

Jan Moren writes, "It is with considerable sadness that I report the passing of classmate Colonel (retired) **John A. "Jack" Stockhaus**, who was my fraternity brother at SPE and my brother-in-law. Jack died after a brief but courageous battle with cancer. His mother, Norma Flodman, was a longtime secretary for Bob Pritchard in the athletic department."

1967

WPI Journal received this bulletin from **Joe Ferrantino**. "**Gary Dyckman '66** won the 8th Annual Georgia Cup Golf Tournament, beating **Wayne Blachard '68** and me for the second time in eight years. Wayne has also won the event once in eight years. As engineers you should be able to figure out who won the other five years, and who the favorite to win is in 2015."

1968

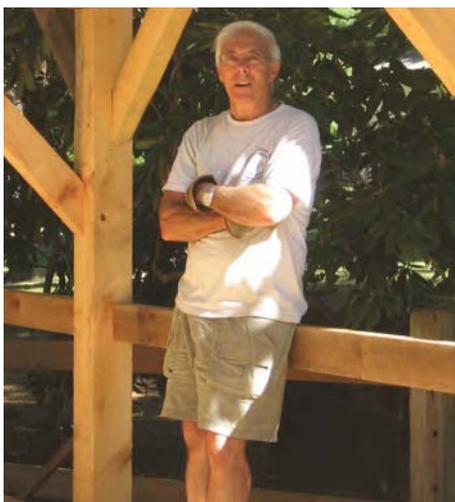
Bill Belisle sends this update: "As an ME grad, I came out to California in '68 to work on an MSME and was an aerospace engineer for 10 years. I did design and development work on life-support systems for Skylab and on environmental control systems for many commercial aircraft. After earning an MBA, I became the training manager for my employer, Garrett AiResearch. Shortly thereafter, I left to join my wife, Belinda, in our own firm, Belisle & Assoc. For over 30 years now, we have taught basic writing communication courses to Fortune 100 companies and government organizations. Check out our website, BelisleAssociates.com. On the side, however, my love for art and antiques extended to my becoming a Certified Fine Art Appraiser (CFAA). I even teach art appraising. To add to my knowledge in this very different area—and for enjoyment as well—I recently added another notch to my educational belt. I just graduated in May 2014 from Cal State Long Beach with a post-baccalaureate BA in art history. I guess it's true that old dogs can learn new tricks."

Thomas Kiely was honored with a Special Recognition Award from the Pennsylvania Section of the American Water Works Association (PA AWWA) in May. A senior project manager in Gannett Fleming's Water/Wastewater Practice, he was honored for his 43 years of professional service to the water industry in southeastern Pennsylvania, coupled with his volunteer efforts and leadership roles in the Southeast District of Pennsylvania. Kiely has been with Gannett Fleming nearly 13 years, working to provide the public with clean, safe drinking water through his successful management of water main, tank, pumping station, and treatment projects in the eastern states. During his tenure with the firm, he has managed numerous projects for water utilities throughout Pennsylvania, including clients in Bucks, Chester, Delaware, and Montgomery counties, as well as in

Send your class note to classnotes@wpi.edu. Images welcome!

'68

Bob Meader writes, "Retired end of June 2013 from the Corps of Engineers. ('Every day is Saturday!') My wife, Betty, and I have four granddaughters. Currently working on timber frame number seventeen, which was initially constructed in our front yard in Hanover, Mass., and disassembled for transportation."



New Jersey, Rhode Island, Virginia, West Virginia, Illinois, and Ohio. He previously spent 30 years at the Philadelphia Suburban Water Company (now Aqua Pennsylvania), including eight years as chief engineer.

1970

"Take this job and love it!" writes **Peter Blackford**, special projects manager at Cable USA in Naples, Fla. "Through a fortuitous set of circumstances, I was introduced to the wire and cable business in 1978 and have been enjoying it ever since. While it may at first consideration seem mundane for a WPI graduate, this is a business in which one can use a great portion of his technical education on a regular basis.

It's natural to expect that electrical engineering would be useful, but this is where that comes together with mechanical engineering, chemistry (polymer and other subsets as well), materials science, metallurgy, mathematics, statistics... well, you get the idea. This multidisciplinary application keeps things from being boring, and I have found the years passing unbelievably quickly. One ulterior motive in 'spilling the beans' on this 'stealth career': We need more engineering talent in this field! If one is interested only in becoming a cube rat, wire and cable is not for you; but if your curiosity is broad-based and multi-scientific, then give me a call at 239-280-3871 (direct) or 239-592-9814 (cell).

1972

Ken Kolkebeck writes, "At the end of 2009 I cofounded the service company FirstFuel Software, along with CEO Swap Shah, to help utilities and large real estate holders by analyzing electrical meter data using data science techniques not normally available to this user group. Since that time, we have gone from the two of us to over 70 employees, including WPI grads **Tyler Leeds '05**, **Evgeny Rahman '05**, and **John Massih-Tehrani '06**. We have created a new category in the electric metering space: advanced analytics for demand-side management and energy efficiency. FirstFuel is gaining converts from major utilities and government entities—all in a down economy. Recently we had a series B investment, which included the German utility Eon. See our news pages at firstfuel.com to get an idea of the success we are having."

1973

John Goulet writes, "This past year I did not win a Nobel Prize. In fact I was not nominated once again. (I don't know how this keeps happening!) But, I was one of the first two people to graduate from WPI under the Plan, in February '73. I am on the Mathematical Sciences faculty at WPI, and I did manage to: a) be awarded the Access-Friendly Faculty of the Year Award during Disability Week; and b) get promoted to Full Professor of Teaching."

1974

Holly (Keys) Ault continues as an assistant professor in the Mechanical Engineering Department at WPI, with a focus on engineering design, CAD, geometric modeling, and rehabilitation engineering. "For the past 10 years, I have been the director of the Melbourne, Australia, Project Center, and have advised IQPs at several other centers as well," she writes. "In my spare time, I enjoy quilting and gardening.

After spending 28 years at Norton Co., my husband, Bill [Ault '73] has changed career paths and he is now the pastor at the First Church in Templeton, Mass. We live in the parsonage, a lovely home that was built by John Boynton. Nearly every summer since 1980, Bill and I have led groups of high school youth on a weeklong service project that we call work camp. We pound nails, spread paint, mend roofs, dish up food, sort through clothing, teach summer Bible school, and a plethora of other tasks for agencies such as Habitat for Humanity, Heifer Project, and other local social service agencies. We also went on several trips to New Orleans in the aftermath of Hurricane Katrina."

Mike Benoit writes, "The day after graduation I started work as a process engineer at Pfizer Inc. in the chemicals division in Groton, Conn. After five years I moved to the minerals division in northwestern Connecticut, where I managed a lime and limestone operation. After three years there, serendipity intervened, leading me to take a job with a startup company in the environmental business. I was tasked with developing and implementing technologies to recycle energy-bearing wastes as alternative fuels in industrial furnaces. That company became very successful and a key player in a new industry. In 1996 I left the company to run the industry's trade association, which was based in Washington, D.C. I continue in my position as executive director and am now based at my home office in Madison, N.H." Mike and his wife, Celeste, have rescued and restored a historic 1825 farm in Rice City, R.I. "I also co-invented two patented technologies that enable solid hazardous waste and whole scrap tires to be beneficially used as alternative fuels in cement kilns."

Todd Cormier and his wife, Kathleen, have two sons and one daughter. "I started my career as a field engineer, built 12 hydroelectric powerhouses, and progressed to a director/expert testifying witness," he writes.

Bill Stafford has been a senior engineer with CFS Engineers in Kansas City, Kansas, since 2008. His previous posts included senior vice president of Terta Tech and executive vice president of Professional Service Industry in Washington, D.C. He and his wife, Kathleen, have two children and three grandchildren.

Bob Trotter worked for American Bosch and Ford Motor Co. before joining Stanadyne Corp., where he has spent the last 34 years. His role involves developing emissions-reducing diesel fuel injection equipment. He and his wife, Xiaohong Li, have three children.

Helen Weimerskirch is a senior project manager at The George Washington University. She has managed major construction projects of 70–125 million dollars. "My major goal is to retire in two years," she writes. "I sing with a barbershop chorus that brings joy to audiences of all ages, but mostly to seniors." Helen recalls "having a tour of the campus with Ann and Gretchen when I was thinking about transferring to WPI. And I remember thinking 'There are girls here just like me!'"

1975

Nitsch Engineering founding principal and chairman of the board **Judy Nitsch** received the EY Entrepreneur Of The Year™ 2014 Award in the New England region's services category, along with President and CEO Lisa Brothers. The honor was announced at a special gala event at the Sheraton Boston on June 10. In response to winning the award, Judy said, "Since the beginning, I've shared that our success relates to having terrific clients, fabulous employees, and wonderful projects. Throughout our journey, we've focused on this core, which has allowed us to steadily grow." The company is about to celebrate its 25th anniversary, with 85 employees and 15 shareholders, and the highest revenues ever last year.

1977

Steven Fine was recently promoted to manager of R&D Services at Laticrete International. "I manage all R&D service projects, handle the analytical equipment of the lab, as well as manage regulatory and standards issues. I have been employed at Laticrete for 28 years."

1978

Dean Giacopassi writes, "Recent open heart surgery has me yearning for retirement more than usual. Wishing all the best to WPI alumni of all years. During my undergraduate stay at WPI (1974-1978), class year didn't seem to make much difference. We were all techies."

1980

Jordan O'Connor runs an architecture practice out of Petersham, Mass.

1982

Scott Dale and **Steve Tartaro** are both employed at the Leon D. DeMatteis Construction Corp. in Elmont, N.Y.,

'85



From left, **Farah Smith '88**, **Amy Jackson '06**, and **Chris Olson '85** are members of Community Rowing Inc. in Boston. In August, the women's masters team went to the USRowing Masters Nationals at Comstock Riverside Park in Grand Rapids, Mich. During the four-day regatta, they competed in 25 events, with many top finishes. "The competition was fierce," Amy writes, "but almost all boats advanced to finals and the team brought home three gold medals and trophies, a silver, and eight bronze medals! We placed 6th in the Women's Points trophy out of 120 teams!"

building infrastructure in the New York City/Tri-State area. Steve is VP of construction and has been with DeMatteis for 30 years. Scott joined the company five years ago and serves as a senior project manager. He is currently working on building the first Net Zero Energy building in the Northeast (P.S. 62R in Staten Island). Steve is married and has three children; Scott is married and has four children.

Scott Mathews has been promoted to supervisor of the Mechanical Integration Engineering Group of the Spacecraft Mechanical Engineering Section at Jet Propulsion Laboratory in Pasadena, Calif. June marked Scott's eighth year of service at JPL, during which time he has worked on the Mars Science Laboratory/*Curiosity* program, the Soil Moisture Active Passive (SMAP) spacecraft, and numerous other flight projects.

1983

Joel Kearns is now European Service Module project manager at NASA Glenn Research Center in Cleveland. The ESM is part of NASA's Orion Multi-Purpose Crew Vehicle, the successor to the Space Shuttle, and will launch into space in 2017.

Mark LeClair ('88 MSME) is CEO of NanoSpire Inc., in Buxton, Maine. He has been working on "the LeClair Effect," a theory of the origin of life, and researching its role in producing fusion. "I had the privilege of presenting my cavitation origin of life theory in 2001 to Dr. Barry Blumberg and staff at NASA Ames Astrobiology (NAI) headquarters," he writes. "NASA funded my invited presentation through a grant. NASA also funded my trip and presentation to the 2012 Conference on the Physics, Chemistry, and Biology of Water. In 2013 I gave a slide presentation to the Global Breakthrough Energy Movement."

Mark Scott writes, "My son Erik graduated from WPI with an aerospace degree this year. Two weeks later, I made the first flight on my homebuilt airplane. It took me seven years to complete. It was difficult to squeeze in time amongst a full-time job, family and house duties, and raising two kids, but it was worth it. I plan to fly it all over North America, including Alaska. Eventually I will put it on floats. I still work at Sikorsky Aircraft, where I am rotor technology lead for the company working advanced rotor systems and aircraft design."

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'85

1984

Desiree Awiszio writes, "I had a wonderful time at our 30th class reunion this year. I continue with the consulting engineering business, specializing in custom ASIC/FPGA/CPLD architecture and design engineering for commercial, defense, and military applications."

1985

Angela Padavano has been a civil engineer for the MassDOT for 29 years. She writes, "My spouse, Rose-Ellen Padavano, and I recently opened our second restaurant on Shrewsbury Street in Worcester. Padavano's Place is the sister restaurant to Rosalina's Kitchen on Hamilton Street, also in the city. We are excited to share that our son, Sebastien, is part of WPI's Class of 2017, majoring in chemical engineering."

1986

Thomas Gall (MSEE) works for ASGAL Informatik GmbH in Walenstadt, Germany.

Mike Gonsor writes, "It was great getting together back on campus with a few of the Skull Class of '86 on campus in June. Gathered at Tomb were classmates **Mike Kelly**, **Phil Cyr**, **Dave Henry**, and **Gary Sargent**. After a tour of campus, we 'toured' The Boynton (just like old times)!"

Intellectual property attorney **Lori Johnson** was recently hired by national law firm Chamberlain, Hrdlicka, White, Williams & Aughtry, as an equity shareholder in its Atlanta office. She was previously a partner in the Atlanta office of Finnegan, Henderson, Farabow, Garrett & Dunner. She also served abroad for several years as resident managing partner of Finnegan's Brussels office. Lori earned her J.D. from George Washington University Law School in 1992. As a former patent examiner for the U.S. Patent and Trademark Office (and a certified patent valuation analyst), she travels the United States and Europe to lecture on the development and enforcement of U.S. intellectual property rights. In her new post, Lori represents and assists clients with IP portfolio establishment and landscape analysis, as well as due diligence for acquisitions and new product launches, and dispute resolution in the chemical area.

1988

Col. **Michael Thurston ('03 MS EE)** is program manager, Joint Battle Command-Platform, managing classified

The 15th Annual Charity Golf Outing in support of the Muscular Dystrophy Association was held July 17, in Bolton, Mass., with employees of Bard, Rao + Athanas Consulting Engineers turning out to support former coworker **Nick Johnson** (seated, in photo), who has been diagnosed with Friedreich's ataxia, a neuromuscular disease that falls under the MDA umbrella. Nick and his wife, Sue, took part in the event, with a total of 56 foursomes generating approximately \$50,000 in funding, bringing the overall total to almost \$400,000 since the event's inception. Many local companies throughout New England generously come together each year to sponsor the golf outing, including Platinum Sponsor Electric Supply Center (ESC), whose president, **Larry LaFreniere '88** (in black shirt), says, "Nick and I started on very similar paths, both attending WPI at the same time, and it really hits home when you see how muscular dystrophy changes the trajectory of someone's life. The ESC team is always honored to help in the effort."



'99

Tim Igo has reached his goal of climbing the “7 Summits”—the tallest mountains on each of the seven continents (Everest in Asia, Aconcagua in South America, Vinson in Antarctica, Kosciuszko in Australia, Kilimanjaro in Africa, Elbrus in Europe, McKinley in North America.) He writes, “Mount McKinley was the last mountain in the journey, and in June I went up to Alaska. On June 28, I was successful in reaching the summit: the highest point in North America. I brought a flag with the seals of my three alma maters: Austin Preparatory School, Worcester Polytechnic Institute, and Babson College F. W. Olin School of Management.”



deployed platforms at the Army's Aberdeen Proving Grounds. He was commissioned in 1988 into the Signal Corps, with initial duty as platoon leader and executive officer, C Company, 11th Air Defense Signal Battalion; and later served in Darmstadt, Germany, and in Belgium. Mike has deployed twice in support of Operation Iraqi Freedom, and also deployed to Haiti as part of the 10th Mountain Division in support of Operation Uphold Democracy. His awards include the Legion of Merit, Bronze Star Medal, Humanitarian Service Medal, and many others. He is married to the former Anne Marie Tourville and has five children.

1990

Michael Pace writes, “Married to my wife, Rosanne, for 16 years and have one child, Anthony, who is 10 years old. Have enjoyed being a Phoenix resident for past 20 years.” Michael is an associate vice president and investments financial advisor in the Private Client Group at Wells Fargo Advisors in Mesa, Ariz.

Colonel **Rory Welch** retired from the Air Force in July after serving over 23 years in uniform. He has begun his next career as director of business development for Intelsat General Corp. in Bethesda, Md. Rory and his wife, Nancy, live in Manassas, Va. Their daughter, Lauren, is a first year student at UVA and their son, Ryan, is a senior at WPI.

1992

Donald Peterson was named dean of the College of Science Technology Engineering and Mathematics at Texas A&M University-Texarkana. He is also chair of the Biomedical Engineering Society's Industry Affairs Committee.

1994

Bob Mason writes, “I recently launched a new Boston-based venture firm called Project 11, which invests

early-stage seed capital into technology and software startups. P11 focuses on deep collaboration with founders ideally working with teams accelerating their business growth after the launch of early prototypes. For the past couple of years I was part of the management team for the Techstars Boston accelerator program, investing in dozens of startups from Boston, across the U.S., and in Europe. I'm very excited about the recent flourishing of and emphasis on entrepreneurship at WPI and encourage others to get engaged through the WPI Tech Advisors Network. Connect with me on Twitter @bmason.”

1995

Patrick Delahanty has moved to Petaluma, Calif., where he is the web engineer for TWIT.tv, an online tech news network created by TechTV's Leo Laporte. Patrick has made numerous appearances on various TWIT shows, such as

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"Coding 101" and "Know How." He recently became engaged to Svetlana Chmakova, an artist and author from Toronto, Canada.

Chris Tashjian is manager, Endoscope Process Engineering, at Karl Storz.

1996

Six weeks after completing his first 100-mile ultramarathon, the Zion 100 in Utah, **Steve Labranche** ran the Grand Canyon, 24 miles from south to north rim.

1997

José Lopez and his wife, Carmen Arrigo, moved to Barcelona.

1998

Kim (Farrell) Dunkelberg ('00 MS MSE) is finishing up her post-baccalaureate teacher licensure program at Worcester State University and is returning to the workforce after 10 years to be a 6th-grade science teacher at Wayland (Mass.) Middle School. "I'm looking forward to using my engineering background to implement an inquiry-based chemistry and physics curriculum with a fun team of students and teachers!" she writes.

1999

Paul Graves (MS EVE) vacationed on Cape Cod this summer with his wife, Jane, their two daughters (ages 10 and 13), and extended family. "We had a blast on a whale watch out of P-town, doing a little hiking, and mostly playing on the beaches both on the bay side and ocean side," he writes.

Julie Kernis and her husband, Brad Phinney, welcomed a daughter, Cara, in July.

2000

Melissa (Wright) Hayes writes, "After many years of bench research in molecular biology, microbiology, and immunology, I have joined the Regulatory Affairs department at Becton-Dickinson Diagnostic Systems in Sparks, Md. I oversee molecular in-vitro diagnostic device product development for infectious diseases from a regulatory standpoint, ensuring the development of safe and effective products. The new position has been extremely challenging and rewarding."

2002

Mike Perkins clocked in 1:49:06 at the Mt. Washington Road Race, running the Auto Road from base to summit. His time was good enough for him to place 406th, out of 1,060 runners.

2005

Gregory Krane moved to Gainesville, Fla., in July 2014, to begin residency training in anatomic pathology at the University of Florida College of Veterinary Medicine. He and his wife, Farleigh, look forward to meeting any WPI alumni in the Florida area.

Joe Vaughn ('08 MS FPE) writes, "I've been living in Macau SAR, China, for the past seven years, working as a third-party consultant for the local government on the casino resort developments. In July 2013 I proposed on the summit of Mt. Fuji in Japan, and on Feb. 22, 2014, I married my wonderful wife, Tippi (Tam), in Hong Kong. We had a small ceremony on a Hong Kong tram, and it was fitting that we cut the cake as we passed by the Wan Chai fire department."

2006

Laura Handler is director of service design and strategy at Tocci Building Co. Her recent projects include Autodesk's headquarters in Waltham, Mass., and the Alexandria Center at Harvard's Kendall Square campus.

'01



Paul and Amanda (Kight) Muller recently moved from Leavenworth, Kans., where Paul graduated from the Army's Command and General Staff College. Along the route to their new home in Redondo Beach, Calif., they celebrated their 10th wedding anniversary by renewing their marriage vows in Las Vegas with Elvis (of course). Paul is now serving at the Air Force Space and Missile Systems Center at Los Angeles Air Force Base, and Amanda is a senior systems engineer at Northrop Grumman.

'07

Lauren (MacMath) '07 and **John Beckos '02** got married on Aug. 2, 2014, on the top of Winter Park Ski Resort in Colorado. They were both members of the WPI Ski Team, and their shared love of skiing brought them both to Colorado. They got engaged while mountain biking in May of 2013. They have maintained many of their friendships made while at WPI and were excited that so many alumni were able to attend, including '07 classmates **Joseph Guzman, Nicholas LaBue, Ashley (Mossa)**



Michael Lalli, Albert LaValley, Ashley (Mossa) Lindeman. Also attending were **Jeremy Parker '98, Josef Scherpa '98, Justin Bourgette '02, Justyn Garon '02, Gina (Colangelo) Aquilano '03, David Deroche '03, Robert Kilgus '05, Jeremey Lindeman '05, Jonathan Longabucco '06, Courtney (Nowill) Pennington '06, Tiffany (Wong) Smith '06, Julie Buffam '08, and Michael Brown '08.**

Amy Jackson competed in the US Rowing Masters Nationals in Grand Rapid, Mich. "It was an amazing experience and it is great to be on a team with other WPI alums!" she writes. (See group photo on page 58).

Justin and **Katrina (Van de Berg) Mattern** welcomed their daughter, Evelyn Grace, to the world on Jan. 13, 2013, weighing 8 pounds, 12 ounces and measuring 19.5 inches long. She is the granddaughter of **Hans Renier Van de Berg '79** and niece of **Rebecca Mattern '10.**

2007

Sam Feller, aka "The Awkward Engineer," announces a new product—the Model AWK-105 Analog Voltmeter Clock, a desk clock with 1950s retro appeal. Sam says, "It features dual analog meters to tell time (one for hours and one for minutes), powder-coated sheet metal construction (no cheap plastic!) and knob selector switches to set and adjust time. See it and sign up for product updates at awkwardengineer.com."

2008

Mary Kate Toomey walked the 26.2-mile Jimmy Fund Marathon, which benefits the Dana-Farber Cancer Institute. "I moved to Newton this summer," she reports. "Only two more classes until I finish my MBA at UMass Amherst! In July I completed my first full year at Consigli Construction Co."

2009

Vineet Barot is a flow analysis engineer at Hydro-Thermal Corp. in the Madison, Wisc., area.

Steph Carlyle lives in Bellingham, Mass., and works for Intertek Group, PLC.

Paul Kassebaum ('12 PhD PH) was elected to the board of directors of the Artisan's Asylum in Somerville, where he organized a robotics competition as part of the 2014 Cambridge Science Festival.

2010

Katya (Mayboroda) Moran writes, "This summer **Paul Moran '08 ('10 MS EVE)** and I celebrated six blessed years of marriage and the birth of our baby girl, Alina. Paul is enjoying his work as a project engineer at Tighe & Bond. I taught math and science at a junior high school for 2.5 years, and now tutor from home. We settled in Springfield, Mass., in a charming 'gingerbread' house, close to my family. We have been youth group leaders in our church in West Hartford for three years. Life is full and exciting!"

Send your class note to classnotes@wpi.edu. Images welcome!

'09

Bryan “Brick” Rickard is WPI’s associate director of alumni relations.

2011

Jason Gabriel writes, “Greetings. I’m serving on active duty in the U.S. Air Force as an astronautical engineer. My home station is the Air Force Research Laboratory in Albuquerque, N.M., where I work on developing the next generation of military satellite and missile technologies. I’m currently deployed to Afghanistan in support of Operation Enduring Freedom, serving as a liaison officer to U.S. Special Operations Command for an Air Force reconnaissance system.”

Ross Yaylaian joined Cantor Colburn as an associate in the firm’s Hartford, Conn., office, after graduating with distinction from Suffolk University Law School in May. His practice will focus on the preparation and prosecution of patent applications related to chemical engineering technologies for foreign and domestic clients. Prior to that, Ross worked as an in-house patent agent, handling patents concerning photoluminescence, dynamic color change, nanomedicine for the treatment of MDR cancer, and biomedical computer software.

2012

Patrick Kearney writes, “After spending a year (including the worst winter on record!) living in Chicago and studying at Northwestern University, I have completed my MS degree in neurobiology. This fall I will be moving back to the Worcester area to continue my education and begin my PhD at UMass Medical School. Looking forward to being back in the neighborhood!”

2014

Keleigh O’Neil is a technical consultant for Expicient Inc. She lives in Portland, Maine.

Nick Rallis works for General Dynamics Electric Boat as a fluid systems engineer.



Jennifer (Himottu) and **Keith Flanders ('10 MS FPE)** are currently living in Christchurch, New Zealand, for a year. Jennifer had the opportunity to go back and work from her company’s satellite office, and Keith was able to transfer over to his firm’s New Zealand office. Jennifer is a structural engineer in Thornton Tomasetti’s property loss consulting department (working with most of the buildings that were affected by the series of 2010 -2011 earthquakes). Keith is a fire protection engineer in Aon New Zealand’s sprinkler certification sector. “We’ve both had a lot of fun traveling around Australasia while not working,” Jennifer writes, “and hosting WPI alum travelers who find their way to New Zealand.”

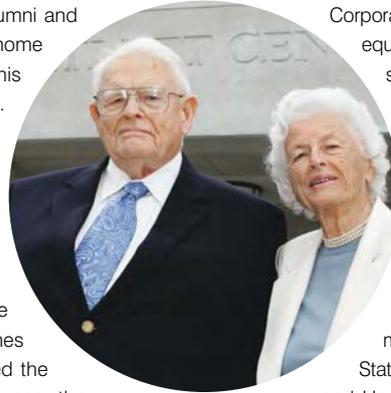
In Memoriam: James Bartlett Jr. '39

James Lowell Bartlett Jr., one of WPI's most accomplished alumni and most ardent supporters, died Aug. 26 at the age of 95 in his home surrounded by his family and friends. He leaves behind Shirley, his wife of 72 years, and three children, James III, Judith, and Stephen. He was blessed with grandchildren Cheryl Brown; Keith, James IV, Zachary, and Matthew Bartlett; Katelyn, Andrew, and Megwyn Bennett, three great-grandchildren, and a large and immensely loved extended family. He was preceded in death by his daughter Pamela, his four siblings, Parker, Milton, John, and Mary, and great-grandchild Rachael Dawn Brown.

The Bartletts have been generous supporters to WPI over the years. Their philanthropy toward WPI began in 1998 with the James and Shirley Bartlett Scholarship Fund. The Bartletts also provided the transformational gift to name the Bartlett Center, which houses the university's admissions and financial aid offices (and is the first LEED-certified building in Worcester), and another leadership gift toward the construction of WPI's Campus Center. The lobby of the Ruben Campus Center is named in their honor. The Bartletts were members of the Salisbury Society, which recognizes remarkable lifetime philanthropy at WPI.

Jim Bartlett was born in Newton, Mass., to James Lowell Bartlett, a meteorologist, and Philena Parker Bartlett, a professional educator and administrator. While a student at WPI, he worked in his father's wholesale greenhouse, and his aunt helped pay his first year of tuition. During his time at WPI, he met Shirley Wyatt, a student at the Worcester Art Museum School, while attending a Sunday evening gathering at the Central Congregational Church in Worcester. They were married on Nov. 7, 1942.

For over seven decades Bartlett developed a reputation as an accomplished engineer and businessman, pioneering developments in a wide range of technical fields and founding many businesses. After graduating from WPI, he joined B. F. Sturtevant Co. as a research engineer, eventually becoming assistant director of research. He later designed fans and blowers for heating, ventilating, and air conditioning systems at Trane Co. Relocating to California in 1951, he rose through the ranks to become a chief engineer at AiResearch Manufacturing Co., where he designed and developed components for small gas turbine engines, environmental systems for the Boeing 707, and an advanced air-breathing engine that burned liquid hydrogen. In 1958 he helped found Cosmodyne



Corporation, which became one of the nation's largest manufacturers of equipment for storing, transporting, and handling liquefied gases. After selling his interest in Cosmodyne a decade later, he joined Cordon International as a senior vice president and director.

Retiring in 1970 to the Santa Ynez Valley as a rancher, Bartlett became a member of the Santa Barbara County Planning Commission, joining efforts to preserve the natural resources of the Valley. Leaving retirement, he returned to his passion of engineering and business in Goleta, becoming president and owner of Hydranautics, producing hydraulic systems for shipyard and offshore use. Over the next 10 years Hydranautics became a major supplier in the field of reverse osmosis desalination in the United States and the Middle East. When Hydranautics was acquired by Rohm and Haas in 1984, Bartlett established Bardex Corporation to continue his

interest in manufacturing heavy-load moving equipment. He reacquired interest in Cosmodyne and consolidated it with several other cryogenic companies. He later formed TriSep to make semipermeable membranes for reverse osmosis, ultrafiltration, and nanofiltration. In 2000 he became chairman of the board of Pacific Design Technology Inc., which designs and builds fluid circulation systems for military and space applications. One such application was supplying the integrated pump assembly part of the electronic cooling system on the Mars Scientific Laboratory, within the *Curiosity* rover.

WPI recognized Bartlett for his many accomplishments in engineering and business by conferring on him an honorary doctorate of engineering in 1998. The WPI Alumni Association recognized him in 2004 with the Robert H. Goddard Alumni Award for Outstanding Professional Achievement. He also earned a listing in the 14th edition of *Who's Who in Commerce and Industry*.

Along with Bartlett's many remarkable entrepreneurial adventures, he loved to spend time with his wife, piloting his small plane, and building or remodeling the homes they have lived in. He always had a side project in his workshop. Beyond Santa Barbara, the couple's second love has been both the home and friendships they built on the Island of San Juan, Washington.

With his lifelong interest in religion and social welfare, Bartlett was a deacon and an elder at the First Presbyterian Church in Santa Barbara and was a board member of the Rehabilitation Institute Foundation. He was known as a civic and community leader.

Peter Muto '40
Robert Allen '42 (Sigma Phi Epsilon)
Noel Totti '42 (Phi Gamma Delta)
Richard Walsh '45
Sidney Wetherhead '45 (Theta Chi)
James Adams '49 (Phi Sigma Kappa)
Brian Stone '50 (Sigma Phi Epsilon)
John Black '53 (Sigma Phi Epsilon)
Gregory Arvantely '54 (Alpha Tau Omega)
Alan Ede '55
Robert Horrigan '55
Guy Nichols '56 SIM D. Eng. (hon.) '81

John Howe '57 (Lambda Chi Alpha)
Peter Dirksen '58 (Sigma Phi Epsilon)
Alan Benson '59
F. Gary Augeri '60 (Sigma Alpha Epsilon)
Robert Purpura '60 (Theta Chi)
Edward Sappet '60
Terry Donovan '61
Joseph Swartzbaugh '62 MS
Frederick Borgeson '64
Stephen Griffin '65 MS
Gordon Eaton '66 MNS
John O'Brien '72 (Sigma Phi Epsilon)

Ernest Kallander '77 MSM
John Roman '77
Gary Beach '78
Edward Curtis '79
Bruce Richmond '80
Edward McGrath '81
Mary Carvajal '83
Kenneth Terrell '83
Daniel Field '87
James Pickett '87 MBA
David Sheridan '07

We also note the passing of Professor Emeritus Vincent F. Connolly, '87, on May 23, 2014. He taught mathematics at WPI for 45 years.

Complete obituaries can usually be found through legacy.com and newspaper websites. WPI will share details on the "completed careers" of friends and classmates. To request further information, contact jkmillier@wpi.edu or call 508-831-5998.

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—Judy Nitsch '75, WPI Trustee Emerita and Alden Society member, with her Trustee Mentee, Brianna Gillespie '14



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