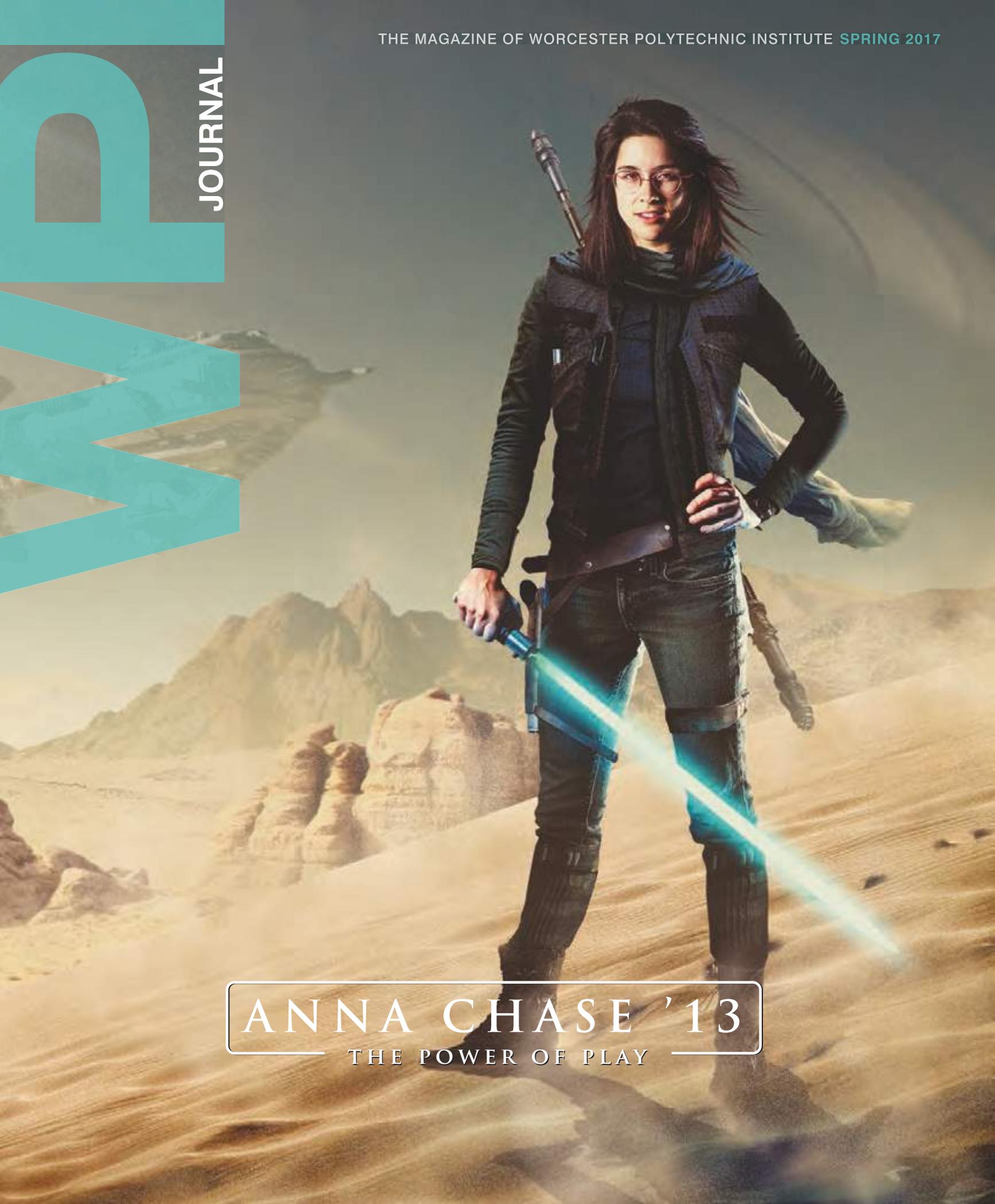


WPI

JOURNAL



ANNA CHASE '13
THE POWER OF PLAY



[CONTENTS]

30

FEATURES

18

THE ANALYTIC AVENGER

AT GOOGLE, JUSTIN CUTRONI '96 TURNS INFO INTO ACTION.

BY ANDREW FAUGHT | PHOTOGRAPHY MATT FURMAN

24

DELIVERING CHANGE

MAJED ZAMBARAJI '90 IS OUT TO CHALLENGE THE WORLDWIDE LOGISTICS INDUSTRY.

BY JOAN KILLOUGH-MILLER
ILLUSTRATION HYLTON WARBURTON

30

[COVERstory]

THE POWER OF PLAY

ANNA CHASE '13 ENGINEERS IMAGINATION.

BY ERIN PETERSON | ILLUSTRATIONS SEAN MCCABE
PHOTOGRAPHY STEVEN KING

36

ALL SYSTEMS GO

SCOTT MATHEWS '82 DEFTLY INTEGRATES NASA SPACEFLIGHTS.

BY AMY CRAWFORD | PHOTOGRAPHY MARIO DE LOPEZ



18

DEPARTMENTS

02

LETTERS TO THE EDITOR

READ THESE NOTES FROM SOME WHO FELT MOVED ENOUGH TO REACH OUT—SEND YOUR OWN THOUGHTS ON THE *JOURNAL* TO DMANNING@WPI.EDU.

03

A CONVERSATION WITH THE PRESIDENT

IGSD'S KENT RISSMILLER SAT DOWN WITH LAURIE LESHIN TO DISCUSS WPI'S "GLOBAL PROJECTS FOR ALL" STRATEGIC INITIATIVE.

04

BYTE ο'π

GET ACQUAINTED WITH WINSTON OLUWOLE (WOLE) SOBOYEJO, WPI'S NEW BERNARD M. GORDON DEAN OF ENGINEERING.

05

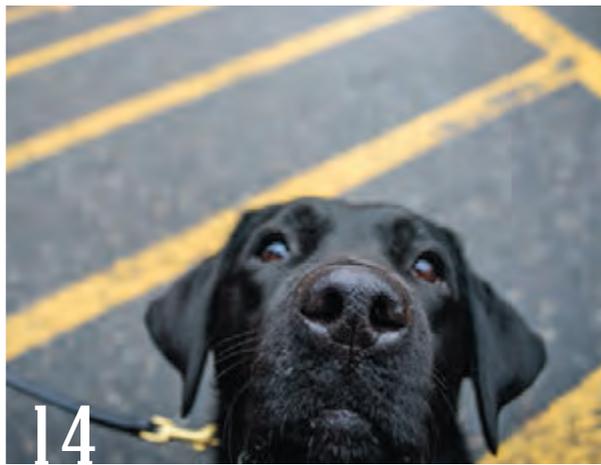
GLOBAL IMPACT

WPI'S NEW ALBANIA PROJECT CENTER IS ALREADY RIPE WITH OPPORTUNITIES FOR OUR STUDENTS.

17

TURNING POINT

ROB PROVOST '88 JOURNEYS FROM AIR FORCE OFFICER TO MUSICIAN, PRIVATE CHEF, AND CATERING BUSINESS OWNER.



14

42

WPI INSIDER

ALEX MARKOSKI WORKS TOWARD A DOUBLE MAJOR, YET MANAGES TO FILL HIS SPARE TIME WITH MUSIC, ENTREPRENEURSHIP, AND BIOMEDICAL LAB WORK.

44

ACROSS EARLE BRIDGE

GIVING DAY AND WHY PARTICIPATION MATTERS; TRACY RUBIN ACCEPTS STEVE'S GOAT'S HEAD AWARD; ONE ALUM'S RETURN ON INVESTMENT.

49

CLASS NOTES

NEW JOB? FANTASTIC TRIP? MAJOR MILESTONE? FORGET FACEBOOK—SEND YOUR NEWS TO CLASSNOTES@WPI.EDU AND SHARE IT WITH YOUR FELLOW ALUMNI.

56

COMPLETED CAREERS

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

**EXECUTIVE DIRECTOR,
ALUMNI RELATIONS**
Peter Thomas

CHIEF MARKETING OFFICER
Amy Morton

**DIRECTOR OF RESEARCH
COMMUNICATIONS**
Michael Dorsey

EDITOR
Doreen Manning
dmanning@wpi.edu

ASSOCIATE EDITORS
Peggy Isaacson
Joan Killough-Miller

CONTRIBUTING EDITOR
Judith Jaeger

ART DIRECTOR
Caryl Guarino Buhler

CONTRIBUTORS
Amy Crawford
Alison Duffy
Andrew Faught
Sharron Kahn Luttrell
Sira Naras
Paula Owen
Erin Peterson
Taryn Plumb
Susan Shalhoub
Julia Quinn-Szesuil

PRODUCTION MANAGER
Dianne Vanacore

PHOTOGRAPHERS
Matthew Burgos
Mario De Lopez
Matt Furman
Steven King
Teresa Lee
Phill Lehans

ILLUSTRATORS
Michael Aiello
Sean McCabe
Jonathan Reinfurt
Aaron Sacco
Hylton Warburton



CORRESPOND WITH WPI JOURNAL
WPI Journal
100 Institute Road - Boynton Hall
Worcester, Massachusetts 01609
wpjournal@wpi.edu
wpi.edu/+journal
508-831-4971
Submit Class Notes: classnotes@wpi.edu

WPI Journal (ISSN 1538-5094) ©2017 is published quarterly by Worcester Polytechnic Institute (WPI) in conjunction with the WPI Alumni Association. Periodical postage paid non-profit at Worcester, Massachusetts, and additional entry offices. Issues are mailed to all known WPI alumni living within the U.S. as a benefit of having graduated from WPI. This publication is guided by WPI's principles of free expression and accepted standards of good taste. Opinions expressed are those of the signed contributors and do not represent the opinion or official position of WPI or its officers. POSTMASTER: Please send address changes, Form 3579, to WPI Journal, Worcester Polytechnic Institute, 100 Institute Road, Worcester, MA 01609-2280.

PRAISE US OR PAN US OR SIMPLY SHARE BY SUBMITTING YOUR LETTER TO EDITOR DOREEN MANNING AT DMANNING@WPI.EDU.



GMO GATEKEEPER

I am ever grateful for the scholarships that allowed this first son of a Cuban immigrant to graduate in 2006 from WPI's biotech program. It was great to read about Melinda Belisle '08, "GMO Gatekeeper" at the USDA, who appears similarly equipped with a nuanced approach to an often polarizing issue. I often say that while I am not categorically "anti-GMO," I am pro-transparency and pro-democracy.

Ms. Belisle most astutely observes that "for a lot of people, the corporate practices are what really upsets them." Unfortunately it's quite difficult to decouple the promises of biotechnology from the practices of its most visible proponents: chemical manufacturers-turned-"life sciences" companies spending millions to keep consumers in the dark about what they eat, taking advantage of "revolving doors" between industry and regulators to promote the privatization of our global seed supply.

Congress (somehow) recently passed a bipartisan compromise on GMO food labeling, setting a precedent for mandatory disclosure of process-based information. The Secretary of Agriculture will now make final regulations, and consumers are demanding on-package labeling. The only path forward now is to educate the public about the promises and risks of biotechnology and to promote transparent, democratic control over this incredibly powerful set of technologies.

—Martin Dagoberto Driggs '06
Campaign Coordinator, MA Right to Know GMOs

WONDERFUL ISSUE

The Fall issue of the *WPI Journal* had very interesting articles. It was nice to read about the diverse fields in which WPI alumni are involved. I was most moved about the article about Anne Cheung's activities and her special involvement with educating girls in Cameroon. It only costs \$75 to send a girl to school for a year. I can't begin to imagine how many girls could go to school if WPI alumni visited a2empowerment.org and donated just \$75 each.

—Spike Vrusho '57

MAKING A DIFFERENCE

In 1964 I worked for Adage in Brookline, Mass., as part of a team that designed a "hybrid" computer for data acquisition and analysis. It was a hybrid because acquisition was by A/D converters whose gain and bias was controlled by digital inputs. All signal conditioning and scaling was done in the analog domain. Only those values that exceeded analog programmable limits were digitized so that A/D conversion time didn't limit performance. The digital values were then transferred to a 30-bit processor for analysis.

I was the project engineer for a system installed at the University of Virginia Medical School for real-time cardiovascular monitoring and analysis under an NIH grant. Prior to that time, all ECG analysis was done offline in batch mode. We developed all of the software for the wave analysis and the project was a success.

Earlier this week I had a visit with my cardiologist here in Phoenix because of possible atrial fibrillation. He decided to put me on a weeklong telemetered ECG analyzer. That analyzer does exactly what we did with a roomful of hardware in the '60s. I have three leads on my chest connected to a transmitter the size of a thumb drive and I have an intelligent cell phone transceiver the size of a pack of cigarettes in my pocket.

I am not blown away by the miniaturization or communications. I do, however, feel blessed in the sense that I am receiving the benefit of something that I worked on 50 years ago. I have often wondered if my life made a difference in this world. Not any more!

—Allan Devault '57

CORRECTION: Our article on Scott Ayers's work with the Consumer Product Safety Commission in the Fall 2016 issue erroneously pegged the agency's budget at a trillion dollars. The actual figure is closer to \$125 million, according to the CPSC Public Affairs office.

Letters may be edited for length and clarity.

**PRESIDENT LESHIN TALKS
“GLOBAL PROJECTS FOR ALL”
WITH KENT RISSMILLER**

With the launch of the newest project center – in Israel – President Leshin spoke with associate dean of Interdisciplinary and Global Studies ad interim Kent Rissmiller about WPI’s “Global Projects for All” strategic initiative. Last year the university sent more than 900 students and faculty to off-campus project centers in 26 countries. Counting MQP centers, WPI is now present in 46 countries. In January six students began studies at the Israel Project Center, which operates from hubs in Be’er Sheva and Eilat.

Here are highlights of their conversation.

LL First of all, I want to thank you for stepping up to become the interim dean of the IGSD, which is such an important part of our students’ education. Through Global Projects for All, we’re building on a really great foundation, and working to get many more of our students the opportunity to do a project off campus.

KR I’m really proud to be a part of an organization like this, especially one ranked the No. 1 study abroad program in the country [by the *Princeton Review*]. We’ve been expanding the program for the last 8 or 9 years, and at the heart of the plan is to really understand what a transformative experience this is for the students, and the opportunities they have to really engage in the meaningful teamwork and authentic projects we sponsor around the globe. To provide that opportunity for all WPI students is a great goal for us, and a real challenge. We’re expanding into more countries, and in the next year we’ll be running enhanced programs in Switzerland and in Panama – and growing the programs in Greece and Israel, as well.

LL A student sent me a selfie from Tel Aviv just this morning. I was in Israel with [Massachusetts] Governor Charlie Baker last month, and it was really exciting for WPI to be featured on one of those days, announcing our new project center.

KR Israel is an exciting place and has this reputation of a start-up nation, with cutting-edge technology and new companies emerging all the time. We have some students working in cybersecurity firms

and others cooperating on transboundary environmental problems that are part of that world. One of the things that sets WPI’s program apart is that our students are working with students from the host country – providing cross-cultural skills and experience that draws students to our program.

One of the prime movers for the Israel site was mechanical engineering professor Isa Bar-On. This program in particular provides opportunities for both IQP and MQP students, so you might even see repeat players.

LL Do you see that sort of blended project opportunities at individual centers becoming more prevalent as we expand?

KR It seems like there are some trends in that direction, especially when you see what’s happening in places like Switzerland and even Washington, D.C.

LL I think these are going to be fantastic experiences for them. Israel is just one of the places we’re expanding to, as we take seriously the idea of global projects for all – to get our students prepared for the global future they face.





ILLUSTRATION AARON SACCO

ENGINEERING A DEAN

Renowned materials scientist and engineer Winston Oluwole (Wole) Soboyejo, PhD, WPI's new Bernard M. Gordon Dean of Engineering, arrived in September from Princeton University, where he had served as professor of mechanical and aerospace engineering. Wole Soboyejo grew up in western Nigeria, earned his bachelor's degree at King's College in London and his PhD at the University of Cambridge, and held faculty positions at both The Ohio State University and MIT, before joining Princeton in 1999. Once he'd settled into his new office, the Journal sat down with him to learn more about his ambitions for engineering at WPI.

What will your experiences bring to the Dean of Engineering position?

I hope that my past experiences will provide me with the insights needed to contribute to the development of WPI engineering from good to great. This can be achieved by combining WPI's approach of project-based learning with a stronger focus on high impact research that addresses global challenges and opportunities in manufacturing, healthcare, water, energy, smart and sustainable homes, infrastructure in cities, and transportation.

Where do you see engineering at WPI heading in the coming years?

I think it will be better defined by the high quality of our research and innovation, and our unique approach to project-based learning at the undergraduate and graduate levels. In the case of our research, I see WPI emerging as a leading U.S. institution for research, addressing the needs of industry and society within a local and global context. This includes interdisciplinary research on materials processing and manufacturing, energy and the built environment, life sciences and biotechnology, and information

sciences and technology. The latter area will include knowledge-based science and technologies such as wireless and the Internet of Things, learning sciences and technologies, project-based engineering education, autonomous vehicles, big data, and robotics engineering.

What do you hope students receive from WPI's engineering programs?

I hope that students receive the type of education that will prepare them to be future leaders. We must, therefore, go beyond the normal boundaries of engineering to educate leaders who understand business and policy. We must provide our students with the fundamentals in the arts and sciences in ways that will help them articulate and reinvent themselves throughout their lives.

How will you involve others in your own research projects?

I plan on working closely with students, staff, and faculty in my own research projects on materials for healthcare, energy, water, housing, and transportation. In each of these areas, I hope to work with interdisciplinary teams to engage in work that goes from ideas to market and policy. This will include basic and applied research on nanoparticles and biomedical devices for the detection and treatment of cardiovascular diseases; materials for solar energy harvesting, light emission, and energy storage; materials for water purification; materials for smart sustainable housing and infrastructure; and robust materials for transportation. My hope is to engage teams in MQPs and IQPs, independent projects, MSc and PhD work, and postdoctoral research that will be done in collaboration with researchers from industry and other labs within and beyond the U.S. I also hope to welcome students and faculty from other countries into my lab, while promoting exchange programs that focus on interdisciplinary research and education for local/global development.



ILLUSTRATION: JONATHAN REINFURT

[GLOBAL *impact*]

The Albanian Project Center has doubled in size since its launch in 2013

Launched in 2013, the Albania Project Center is fairly new to WPI's Interdisciplinary and Global Studies

Division – and Albania is definitely a new experience for IQP students, like civil engineering major Sydney Brooks '18. She was a bit worried about traveling to such a foreign locale.

“Those worries immediately flew away the second I stepped off that plane and saw the mountains ... it was beautiful in its nature,” she says.

And it's another natural resource – a massive river – that had WPI students hard at work producing a video documentary and report, *Galvanizing Public Interest in the Cleanup of the Drin River*. The goal is to produce a tool that can be used in spreading the word about the river and problems such as pollution, runoff, overfishing, and flooding. Part of the problem? The river flows through five countries, and there is no central or collaborative management plan in place.

The Drin River documentary production is a two-year project. Last year's WPI student group was responsible for the research and interviews, as well as planning the logistics for a float down the river by

Albanian members of the Young Water Professionals, sponsored by the Water Supply and Sewerage Association of Albania (SHUKALB). From that foundation, this year's team worked with SHUKALB on post-production, developing a message and publicity plan for the film.

Worcester native Philip Giantris '65, executive director of SHUKALB (whose parents were Albanian) sponsored the project and has worked closely with Albanian Project Center co-directors Peter Christopher, professor of mathematical sciences, and Robert Hersh, instructor in the Interdisciplinary and Global Studies Division.

“We were fortunate to have Philip there,” says Christopher. “His organization has sponsored a project in each of the past four years.”

Giantris was always committed to doing some kind of project in Albania, a safe and robust country. “It's fun, colorful, and social, with the best food around,” he boasts of Albania. “A woman can be out alone after dark with not even a catcall. It's still that kind of good.”

As for the Drin, the WPI film will be used as an advocacy tool by SHUKALB to raise awareness about complex issues that stem in part

from the river's interconnectedness.

“Macedonia wants water for irrigation; Albania needs it for irrigation, hydropower, electricity,” says Giantris. “If Macedonia holds the river back with dams, it affects power and energy. We are also still way behind the curve with solid waste management.”

In other 2016 Albanian IQPs, student teams helped plan an eco-adventure park, created Albania's first high school robotics competition, examined pharmaceutical waste disposal practices in Tirana, mapped the entrepreneurial ecosystem, and studied medicinal and aromatic plant conservation.

The Albanian Project Center has doubled in size since its launch in 2013 from three projects and 12 students to six projects and 24 students. The project center grows in popularity – 39 applications were submitted for 2017. Six projects involving 24 students are lined up for the next academic year.

– Susan Shalhoub

A trailer of the documentary produced by WPI students for the Drin River project can be viewed at wpi.edu/+albaniaapc.



WPI

ALUMNI BENEFITS & RESOURCES

Take advantage of these services and programs offered by the Alumni Association and Office of Alumni Relations. Some, like the insurance program, have special rates for WPI alumni. Several are free, and some benefit WPI student scholarships.

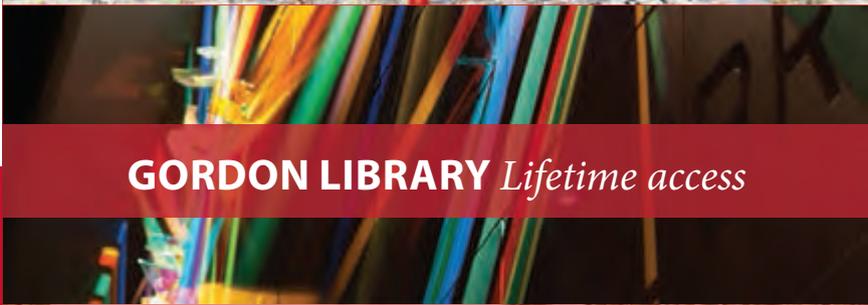
More at wpi.edu/alumni



ALUMNI CAREER SERVICES *Free—for life*



ALUMNI DIRECTORY
A global network of more than 38,000



GORDON LIBRARY *Lifetime access*



INSURANCE PROGRAM
Great prices on many insurance products



CENTENNIAL WALKWAY *Leave your mark*



WPI RING PROGRAM
Your connection to WPI tradition



PLUS—MERCHANDISE!
Show your WPI pride in style

WPI

DETECTING CANCER WITH A LIQUID BIOPSY

Metastasis is the process by which cancers spread, typically by entering the bloodstream. The prognosis for metastatic cancer (also called stage IV cancer) is generally poor, so being able to detect circulating tumor cells before they can take root and form new cancers could greatly increase a patient's survival odds.

A new technology for doing just that has been developed by a research team at WPI. Known informally as a "liquid biopsy," the chip they've designed and tested can trap and identify cancer cells in a small blood sample. It could become the basis of a simple and quick lab test.

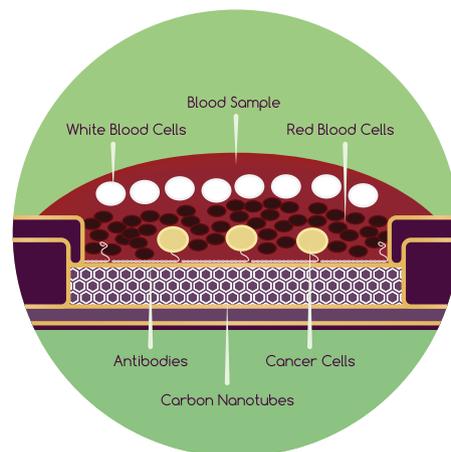
"Capturing circulating tumor cells is a difficult challenge," says Balaji Panchapakesan, PhD, associate professor of mechanical engineering and director of the Small Systems Laboratory. "There are billions of red blood cells and tens of thousands of white cells, with only a small number of tumor cells floating among them. We've shown how those tumor cells can be captured with high precision."

The results of successful tests with breast cancer cells were published in the journal *Nanotechnology* in the fall of 2016 (postdoctoral researcher Farhad Khosravi was the lead author; colleagues at the University of Louisville and Thomas Jefferson University contributed to the research). Panchapakesan says plans are in the works for development of an advanced device as well as further testing with other cancer types, including lung and pancreas cancer. He says he envisions a day when a device like this could be employed not only for regular follow-ups for patients who have had cancer, but in routine cancer screening.

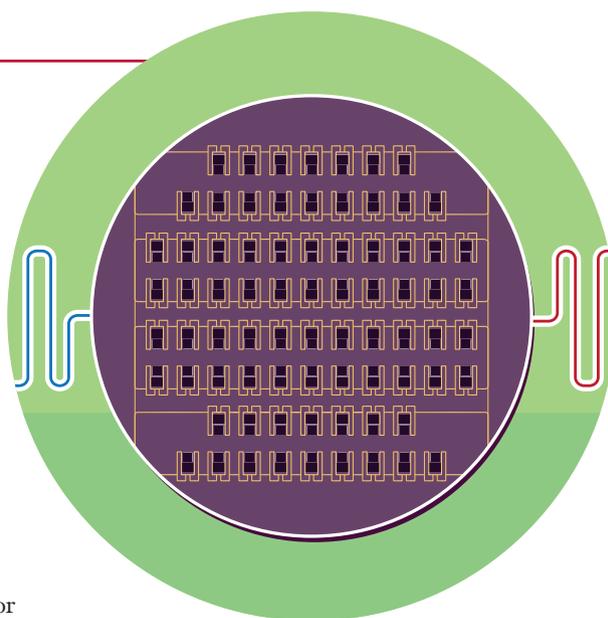
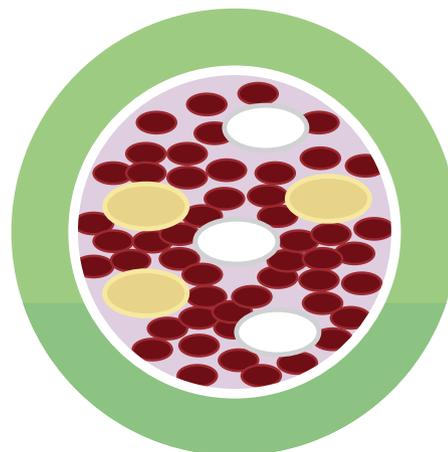
HOW IT WORKS

1. With the same photolithographic process used to make computer chips, a wafer of silicon is etched with dozens of tiny test units, each containing a small well.

The bottom of each well is lined with carbon nanotubes linked to antibodies that will bind selectively to one type of cancer cell based on the genetic markers on its surface (the chip can also capture structures called exosomes, which are produced by cancer cells and carry the same markers). A chip can be set up with multiple antibodies, so a single blood test can check for an array of cancer indicators.



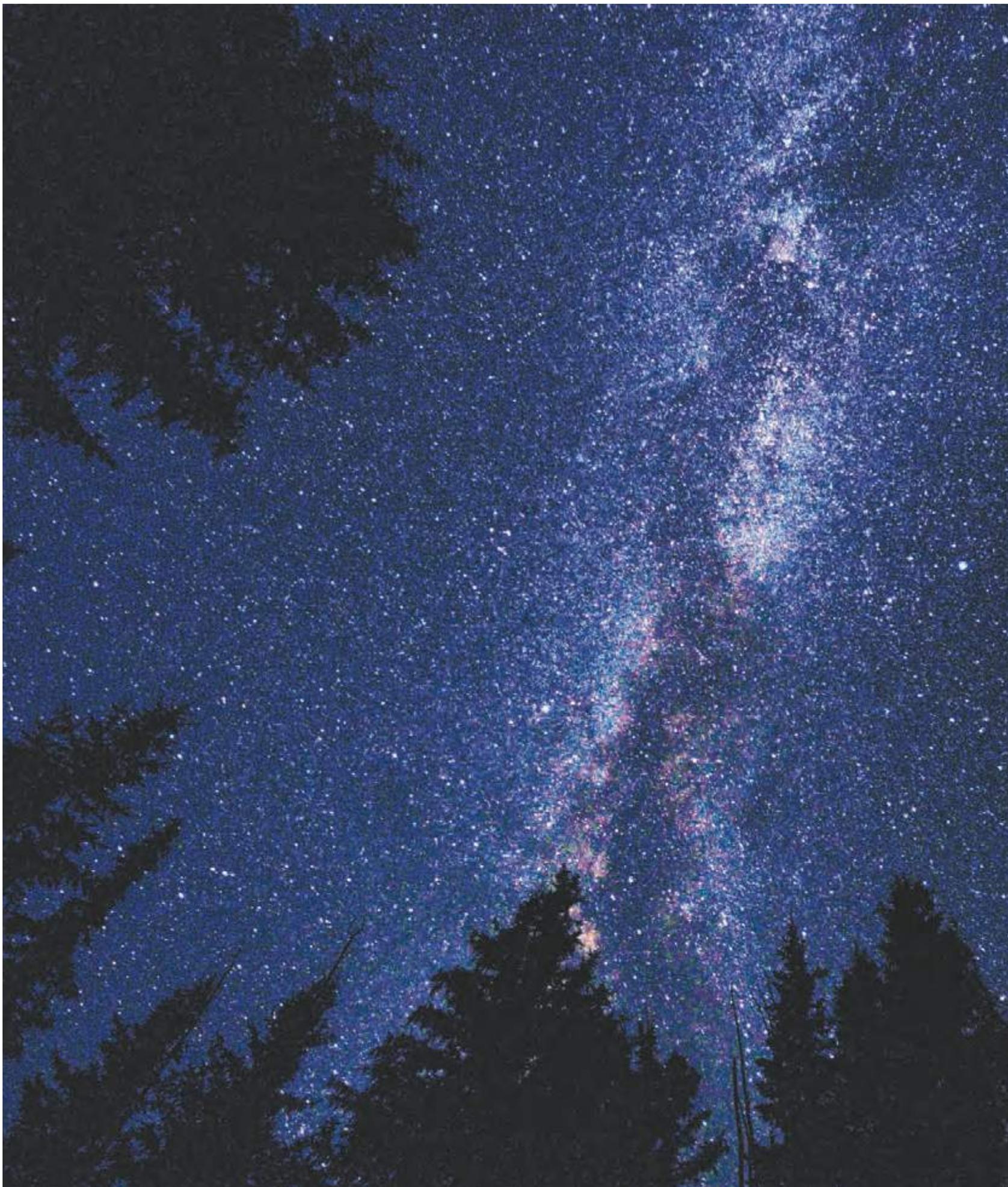
3. The captured cancer cells are stained and identified, allowing a physician to prescribe therapy targeted at the specific cancer type identified.



2. About 0.3 fluid ounce of blood is placed in each well. Gravity causes the heavier cancer cells to sink toward the antibodies. Most liquid biopsy devices use microfluidics, a slow process that can miss many cancer cells. The WPI chip captures a much higher percentage of tumor cells and takes just a few minutes, making it possible to get results back the same day.

When a cancer cell binds to an antibody, it alters the electrical properties of the carbon nanotubes, which act like semiconductors. The change can be detected, letting technicians know which wells to examine more closely.

LEARN MORE AND WATCH A VIDEO ABOUT THE LIQUID BIOPSY TECHNOLOGY AT WPI.EDU/+RESEARCH.





KEEPING PARKS DARK

Cadillac Mountain, located in Acadia National Park in Maine is the highest point along the North Atlantic seaboard and the first place in the United States to see the sunrise for six months out of the year. It is also considered one of the darkest locations on the east coast, with breathtaking views for astronomers, stargazers, and tourists. WPI students have been working to keep it that way.

The night skies over Acadia are threatened by light pollution from sources within the park and in surrounding towns, says WPI music professor Frederick Bianchi, director of the Bar Harbor Project Center. In 2013 the initial Dark Sky IQP team developed a sky quality heat map with about 240 measurements throughout the park. Since then, students have automated the measurement process and designed cell phone apps and a server that uploads to the cloud in real time. “They were able to take 12,000 Sky Quality measurements in less than seven weeks,” says Bianchi. “They developed the most accurate heat map of light pollution for Acadia National Park to date.”

The primary focus of the 2016 Dark Sky project was to complete and submit an application to the International Dark-Sky Association for Acadia to receive official designation as a dark sky park. This required not only suitable Sky Quality measurements, but the creation of a Lightscape Management Plan and a comprehensive lighting compliance inventory for the park. The detailed inventory compiled data on nearly 1,000 external lights in the park that included lumen output, fixture shielding, bulb color/temperature, and the use of timers and motion sensors.

“The National Park Service could never realize this kind of research alone,” says Bianchi. “They don’t have the funding.” In addition to affecting scientists and tourists, “light pollution has a long-term, trickle-down effect on wildlife, affecting migration patterns of animals in the park,” he says. “The students know that this is real work, and if they return to the park in 5, 10, or 20 years, they will see firsthand the impact of their efforts.”

— Paula Owen

INCLUSIVE SPACES

Where do LGBTQ students at WPI feel welcome and supported? What makes these places supportive and inclusive? Researchers at WPI will assess conditions at WPI to help address an engineering culture they call “notoriously inhospitable” to LGBTQ people.

Under a \$150,000 grant from the National Science Foundation, chemical engineering professor David DiBiasio, humanities and arts professors Kristin Boudreau and Jennifer McWeeny, and biomedical engineering professor Zoë Reidinger will investigate how LGBTQ students fare at WPI.

Their preliminary inquiries seem to indicate “pretty well.”

Boudreau and DiBiasio sat down with the *Journal* to offer some background on the project and share what they’ve learned in informal conversations.

NOT EVERYONE IS LOOKING FOR A SAFE SPACE

KB In our preliminary focus group—and the 2016 Campus Climate Survey—we noticed a lot of openly gay and transgender students at WPI who seem really comfortable here. There’s been very little research on LGBTQ students in engineering. One reason is that it’s hard to find students willing to talk, because they’re not out. At WPI, not only are they out, they’re open to talking about it, and eager to help us figure out what makes WPI so welcoming. That’s really our research question. We even heard from alumni who wanted to help,

DD What we heard at our focus group—and this is my wording—was “high school was hell, but when we came here it was totally different.” Not that everything is great and rosy all around. But the overall message we got was that at WPI you’re valued for what you do and what you bring to your team. And not for your sexuality or choice of partners.



KB One thing that surprised us was the students’ response to the Alliance (formerly the Gay-Straight Alliance). What we heard wasn’t a call for more groups like that. Students told us they felt accepted in other student organizations, and in their project teams. An interesting comment was “Sexuality ... [is] only part of who I am. I’m also a techie, I’m a nerd, I like climbing....” We heard students say, “At WPI, we don’t need a safe space.”

THE WPI PLAN MAY PLAY A PART

DD In addition to the broadly supportive environment here, WPI has a more extensive humanities requirement than most other engineering schools. That opens students’ minds to different points of view and diverse ways of thinking and being. We want to look at that,

oldest continuously running collegiate festival of original short plays that runs each year here at WPI. Many of these plays have addressed questions of sexuality. With an archive of scripts going back 34 years, we’ve got a treasure trove of material to look at. We’re going to have a student analyze that material.

WE ALL HAVE A STAKE IN THIS

KB Engineering environments, including engineering schools, are notoriously apolitical. Personal stuff—especially anything “non-normative”—isn’t really welcome. I can talk about my husband and family, but can my gay colleague comfortably do that? The emotional toll on LGBTQ people can drive qualified engineers out of the field.

DD Engineers who are non-normative have to pretend to be somebody else, part of the norm—which is mostly straight and white and male. But there’s supporting research showing that diverse teams of all kinds produce better results.

KB The world’s most difficult problems need every smart person, every hard-working, intelligent, well-trained person on board to solve them. If WPI is a place where engineers can come and understand that the world is full of straight and gay and everything in between, then maybe after four years they’ll take that out into the world and won’t put up with discrimination.

Share your WPI experiences with LGBTQ issues by emailing kboudreau@wpi.edu.

and the deep benefits of our project-based system on students.

KB We think there’s also a strong element of social justice in WPI’s project-based curriculum. Alumni have noted that working on diverse project teams has made them more open-minded, and more accepting of other people and what they bring.

NEW VOICES MAY HAVE SOMETHING TO TELL US

KB New Voices is the nation’s



“There’s not a student who’s been through WPI has who hasn’t felt at some point that they’re not smart enough. Everyone’s been through it. Find a good support group, find upper-classmen in your major who can help you—and pay it forward!”

—Denzel Amevor '15, at an Alumni of Color panel discussion held to celebrate Black History Month at WPI.

He was asked, what advice he would give a first-year student who was finding classes hard and wondering if he belonged here.

THIS APP KNOWS WHEN YOU’VE HAD TOO MUCH

If a police officer wants to know if you’ve had too much to drink, he’ll ask you to “walk the line.” “Police use the walk test because they know it works,” says Emmanuel Agu, PhD, associate professor of computer science. “And the research is quite clear. When a person is impaired by alcohol, they sway in different ways while walking.”

With the help of student researchers, Agu has drawn on that knowledge to develop a smartphone application that can tell users when they shouldn’t drive by monitoring changes in

their gait. Called AlcoGait, the app can predict a person’s blood alcohol content with 90 percent accuracy, on average.

The app uses data from the phone’s accelerometers and gyroscopes to profile a user’s gait while sober. Later, it runs in the background, watching for gait anomalies. Users can track their intoxication level to decide when to stop drinking; they’ll get a text message and the phone will buzz when they’ve likely exceeded the legal limit. “If people had this hard data in front of them, I think many more would say it’s not worth the risk to get behind the wheel,” Agu says.

Zachary Arnold '15 and Danielle LaRose '15 built the first working prototype, which earned them the 2015 WPI Provost’s MQP Award in computer science. Graduate student Christina Aiello refined the algorithms and tested

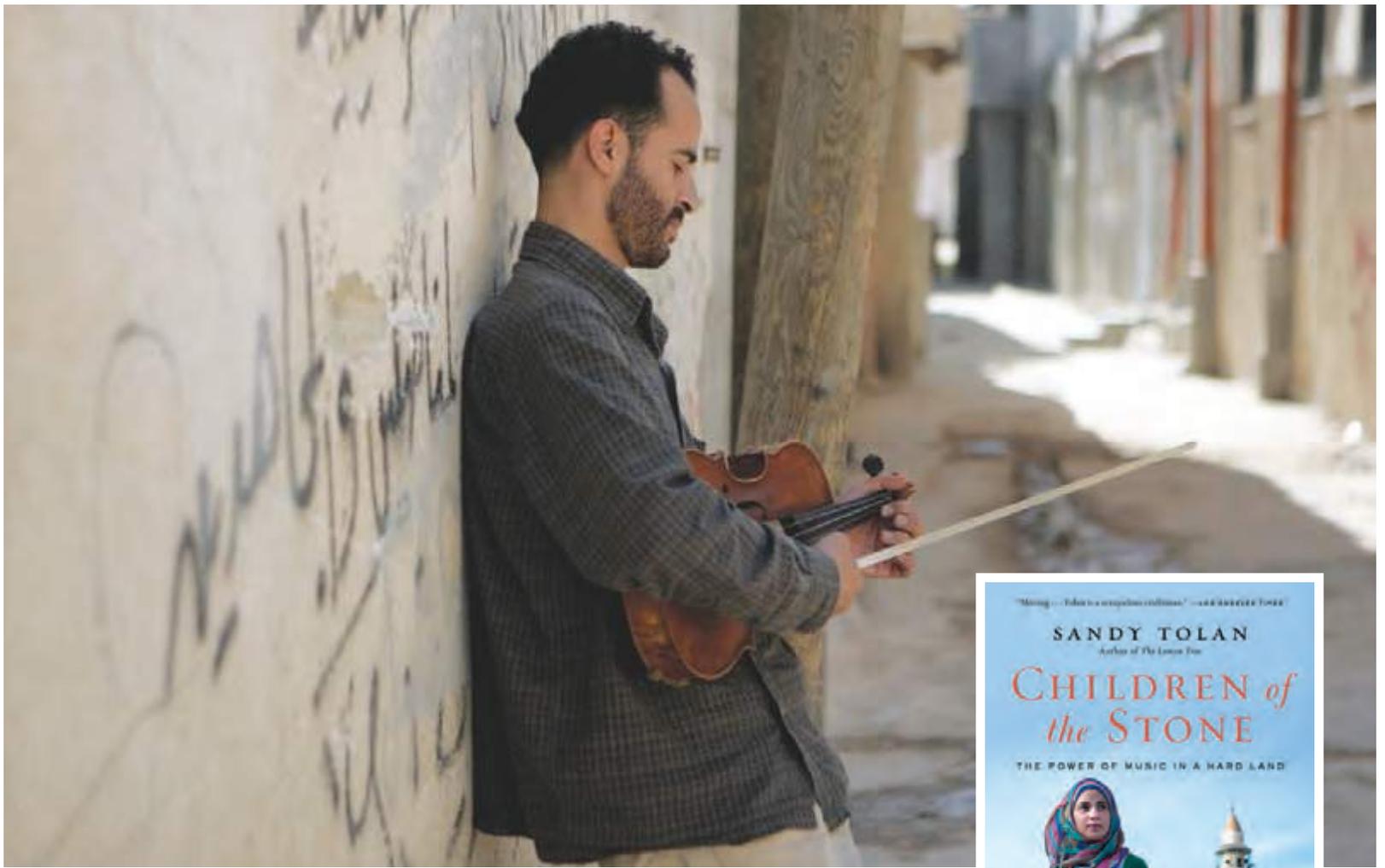
the app on 50 WPI volunteers who donned special “Drunk Buster” goggles to simulate intoxication, work that earned her a first-place award in WPI’s 2016 Graduate Research Innovation Exchange competition. Another MQP team (Benjamin Bianchi '17, Andrew McAfee '17, and Jacob Watson '17) is adapting AlcoGait for use on a smartwatch.

With colleagues at Boston University’s School of Public Health and Brown University, Agu plans a clinical controlled study in 2017. The blood alcohol content of 250 adult volunteers who’ve consumed alcohol will be tested with AlcoGait and a breathalyzer to compare results.

When it’s commercialized, Agu says, the app could integrate with an auto ignition kill switch, or be linked to a ride service like Uber or Lyft to automatically offer an intoxicated user a ride home.



PHOTO MATT BURGOS



CHILDREN OF THE STONE

Ramzi Aburedwan was seven years old, living in a Palestinian refugee camp, when he first heard live music. His life changed the moment his school teacher unlocked a cabinet full of old instruments, pulled out a violin (*kamandja* in Arabic), and began to play.

How Ramzi, who grew up in poverty, surrounded by violence, became a world musician is a remarkable story. In *Children of the Stone: The Power of Music in a Hard Land*, journalist Sandy Tolan documents how Ramzi founded Al Kamândjati, a nonprofit

organization that runs schools and summer camps to promote musical education and cultural exchange. In the fall of 2016, the two embarked on a book launch and concert tour with Ramzi's international ensemble, Dal'Ouna.

How WPI came to be one of the stops on the tour is another story. **WPI's coordinator of music Douglas Weeks has spent parts of four summers in Ramallah, teaching, performing, and mentoring young students at Al Kamândjati.** Weeks shows up in Tolan's book as "a barrel-chested trombonist with a gray ponytail" enthusiastically greeting his returning students with bear hugs.

The trombonist and the author met when they shared living quarters one summer, while Tolan was conducting research for *Children of the Stone*. "I knew nothing about music," Tolan said

about the challenges of writing a book with 100 pages of source notes, and dozens of famous musicians in the index. "Doug helped me understand the world of music: what it takes to learn it and play it." In his author's talk at WPI, Tolan characterized the book as "a universal story about a kid with a dream; but also a very specific story about growing up under military occupation. It shows what you can do if you have drive, charisma, luck—and a lot of motivated friends. Ramzi had all that."

The songs Dal'Ouna performed in Alden Memorial were both beautiful—and political. An instrumental piece captured Ramzi's first impressions of the sea, en route to study at a music academy in France. He pointed out that although his country is



bounded by water, Palestinians can't travel freely to the sea. Other songs—sung in Arabic—spoke of longing for home, for reunion with family, and resistance to oppression.

The title *Children of the Stone* comes from a common name for Ramzi's generation, who grew up during the first intifada, often picking up stones to hurl at Israeli soldiers. "It's a bit simple to think that these children have gone from rock throwing to music, and therefore there will be peace," says Tolan. "He [Ramzi] is still a freedom fighter, but now through his instrument."

CHARGING INNOVATION

A new way to make lithium-ion (Li-ion) batteries and technology that could make it possible for cargo planes to fly themselves shared WPI's 2016 Kalenian Award. The inventors, who were among the 19 students, faculty members, and alumni to enter the competition, will split a \$20,000 prize. Established in 2006 by Alba Kalenian in memory of her late husband, Aram '33, the award provides seed funds to nurture promising innovations.

BETTER BATTERIES

The battery invention was developed by Aaron Birt, a PhD student in materials science and engineering. Working with a team that includes Ali Valamanesh '19 and faculty advisor Diran Apelian, Alcoa-Howmet Professor of Mechanical Engineering and director of the Metal Processing Institute, Birt founded Kinetic Batteries to commercialize a process for making battery cathodes that eliminates the use of the solvents, polymeric binders, and carbon black found in most Li-ion batteries.

Getting rid of these materials makes it possible to replace the traditional tape casting process (in which a thick goop is applied to a foil tape) with a simpler spray process that results in better energetic properties with a fraction of the capital cost. The new process will also make the batteries easier to recycle.

AUTO PILOT

Nicholas Cyganski '17, a robotics engineering major, is leading a team that seeks to build the world's first completely autonomous civilian aircraft. The project is a step toward realizing the vision of transporting cargo with pilotless planes, which could reduce shipping costs by a factor of four. A pilot and aircraft owner himself, Cyganski has already acquired a Piper Cherokee, with support from private investors, and equipped it with fly-by-wire technology with the help of a team of 12 other undergraduates whose majors span six disciplines. "The Kalenian prize is just the first step in satisfying our investors," he says, "and putting the technology in larger, more capable aircraft."



“At WPI, I learned to think and work collaboratively, and I’ve become a systems thinker and catalyzer of effective change as a result.”

INNOVATOR OF THE YEAR

WPI named Kathy Loftus '86 the 2016 WPI Innovator of the Year. As global leader of sustainable facilities for Whole Foods Market Inc., Loftus sets the standards to drive down energy usage and reduce natural resources consumption, showcasing how holistic and sustainable operations contribute significantly to triple the bottom line. Through her team's efforts, the company has reduced its overall energy consumption by 15 percent and greatly increased clean and renewable energy technology use. Her team has also significantly cut waste by increasing donations, recycling, and diversion.

“Food retail is probably one of the most energy-intensive industries and is ripe for significant innovation,” Loftus says. “At

Whole Foods Market, we've grouped our stores into virtual territories and developed Internet-based systems that allow us to alter our energy use with the touch of a button, with any of our stores anywhere across the world.

“At WPI, I learned to think and work collaboratively, and I've become a systems thinker and catalyzer of effective change as a result,” she says. Loftus serves on WPI's Mechanical Engineering external advisory board and the Center for Sustainability in Business advisory board within the Foisie School of Business. Her “fresh ideas” for the natural and organic food supermarket chain were featured in the Spring 2012 issue of *WPI Transformations* (now *WPI Journal*).



PHOTO STEVEN KING

BELLA'S (NOT) THE BOMB

Like many celebrities, WPI's newest employee has achieved a certain cache on campus. Young and old wait patiently to speak with her, and audible excitement ripples

through the air when she passes by. Joining an elite group, she goes by only one name.

But Bella, who arrived at WPI with the sole purpose of explosives detection, doesn't notice the fuss. A two-year-old purebred black Labrador retriever, Bella started out at Guiding Eyes for the Blind with the potential future as a guide dog. When her drive and motivation to work for food rewards shone through, her handlers knew she

would be best suited to sniffing for explosives.

After 16 weeks of intense training and bonding with her handler, Officer Brian Lavallee, conducted at the Connecticut State Police K9 Academy, Bella has integrated onto campus smoothly. She works a normal shift, then changes out of her work collar and goes home with Lavallee. Her off-duty hours include regular family dog activities, as well as continual training, such as

finding inactive explosive training tools that Lavallee hides around his yard. Through training, she can detect scents ranging from shell casings to homemade explosives.

WPI Police Deputy Michael Ellsworth notes that while K9s have never found an explosive at WPI, the university is always thinking about safety. "This is forward thinking and global," he says. "We are cutting-edge."

— Julia Quinn-Szesuil

#BEAWARE

[WPI]

How's life in Rwanda these days—and where exactly is Rwanda, anyway?

Why would anyone vote against a peace accord for Columbia, after 50 years of civil war?

Did caste discrimination affect delivery of relief efforts after the 2015 earthquakes in Nepal?

For WPI students, an insider's perspective on world issues is as close as their classrooms after hours. At #beAware events presented by the Global Humanitarian Alliance (GHA) student organization, international students offer frank talk about how big issues affect real people. Following the formal presentation, there's time for casual conversation – and sometimes a snack of Latin American empanadas or Ethiopian injera to really get the flavor of different lands.

“As foreigners, we see some ignorance in the U.S.,” says Mateo Carvajal '17, a native of Colombia who led a discussion of the controversial peace proposal that earned a Nobel Peace Prize for his president and initially got a “No” vote from his people. Several Colombian students shared how their parents wrestled with the complex decision – and then asked the audience how they would have voted.

Other sessions have focused on the Syrian refugee crisis, caste discrimination in Nepal, and issues of religious freedom, gender, and sustainability. War and oppression don't seem so distant, the students say, when a classmate is standing in front of you and telling what happened to his or her family.

“Cheer up, guys,” urged Nelson Ndahiro '18 during a presentation called “Rwanda: Rising from the Ashes.” The Rwandan students – born into the first “post genocide” generation – had already evoked laughter by asking for a show of hands: “Who actually knows where Rwanda is?” After slides highlighting some world rankings of their homeland as safe, clean, and green, they concluded with a list titled “10 Fun Facts About Rwanda That Have Nothing To Do With the Genocide.”

“It's like a living history of the world, as it's happening,” says Hasson Harris '17, who hails from New York, but was drawn into the GHA by a desire for a more international understanding. “It's really eye opening. You get to learn things that are not always in your textbooks.”

HAPPY



THERE'S BEST AND BRIGHTEST, AND NOW THERE'S HAPPIEST.

The Princeton Review ranked WPI among the 20 colleges and universities with the happiest students. Is it something in the water – or the legacy of Worcester's smiley face inventor, Harvey Ball?

WHO GOES THERE?

INNOVATIVE SOFTWARE DISTINGUISHES MALWARE FROM HUMAN USERS

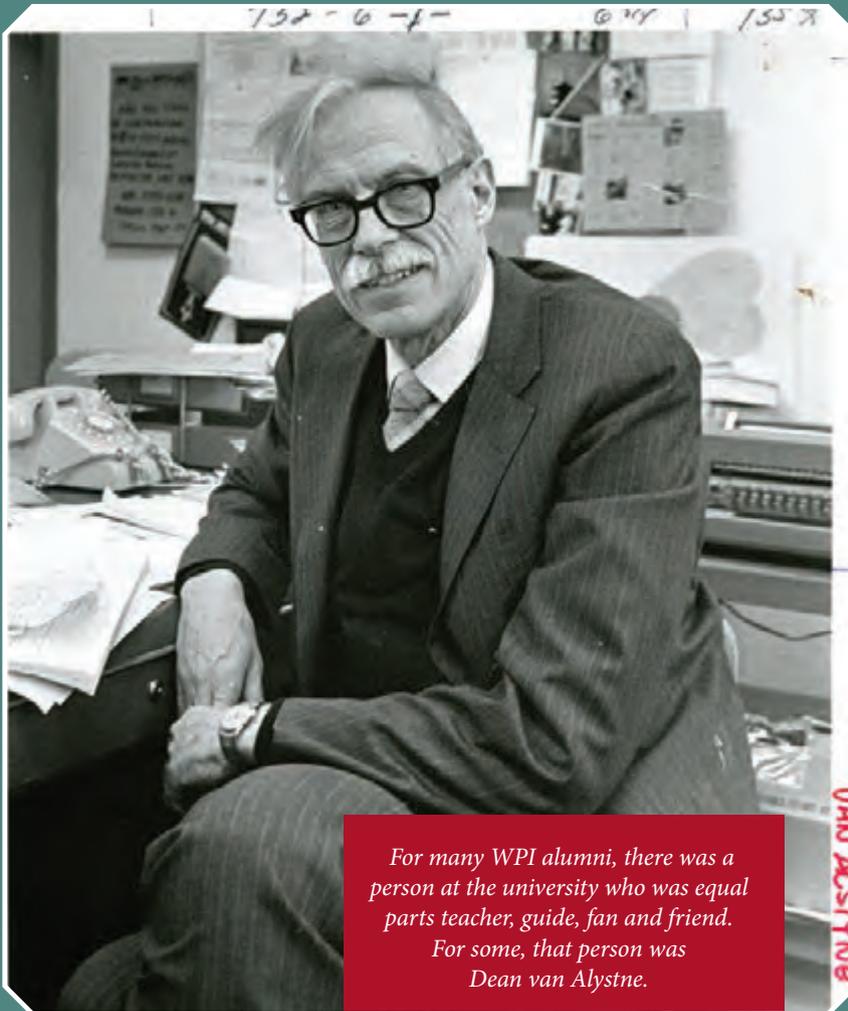
Like a burglar checking for unlocked windows, malicious software will often seek out the most vulnerable spots in a computer network. “Attackers find the weakest point of entry to gain access to information,” says Craig Shue, assistant professor of computer science at WPI, “and often that point is within a company's network ecosystem.”

Often overwhelmed by the volume of traffic on their networks, including legitimate communications from business partners like delivery services, payment collectors, and other outside vendors, operators may miss an incursion that targets a weakness on an individual computer. Shue has developed a software tool that can help tell friend from foe, human from machine, by watching the way that information is accessed.

For example, the software can tell the difference between how people and malware programs interact with a computer. Unlike people, malware or spam programs don't need to use a computer's hardware when attempting to send data throughout a network. Shue's software is installed on each computer in a network. It watches for suspicious activity and asks a centralized coordinator for permission before enabling any action. “We're basically putting a perimeter defense around each computer,” Shue says.

The program, created with prior funding from the National Science Foundation, was one of just eight such technologies funded by the Department of Homeland Security (DHS) in 2016. Recognizing the software as a product that “can have tremendous potential for commercial applications throughout the nation, enhance the competitiveness of individual small businesses, as well as expand areas of exploration and cooperation for all non-federal partners,” the DHS Transition to Practice program awarded Shue a three-year, \$350,000 grant to finalize the program and make it available for industry use.

Celebrate and Honor
Dean John P. van Alstyne



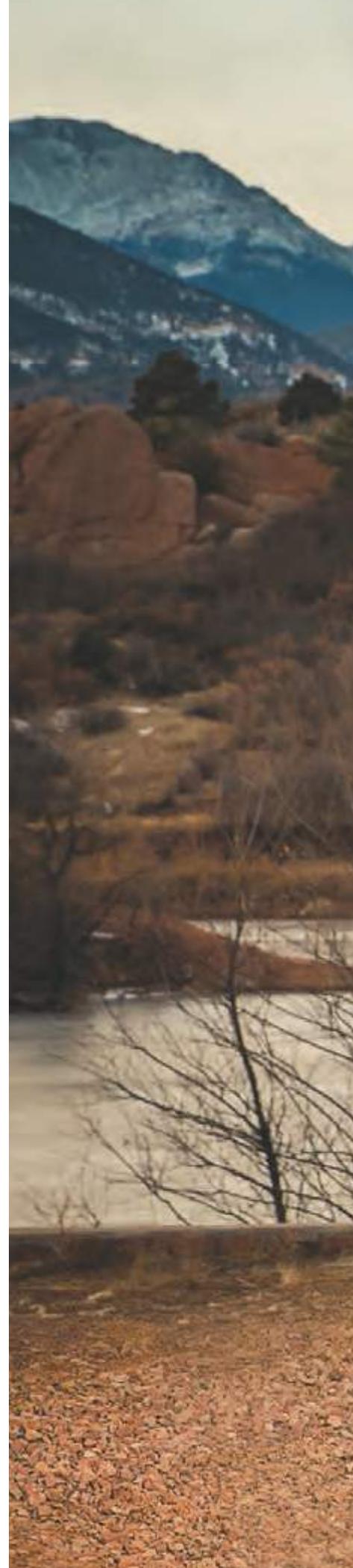
For many WPI alumni, there was a person at the university who was equal parts teacher, guide, fan and friend. For some, that person was Dean van Alstyne.

For nearly three decades, “van A” was dedicated to the university and, most especially, to its students. His concern for the individual student and his selfless devotion are legend at WPI. He embodied the spirit of WPI and the WPI Plan that he helped envision and realize.

Alumni volunteers are fundraising to create an endowed scholarship in his name and a physical remembrance of van A on campus.

Join us in honoring van A by making your gift.
www.wpi.edu/+vanA

For more information,
contact Kate Renaud, director of development,
508-831-6163, kereaud@wpi.edu.



[TURNINGpoint]

As the eldest of three boys, **ROB PROVOST '88 (EE)** grew up learning to cook for himself and his siblings—especially when their mother returned to the workforce. Throughout his secondary and college years, his kitchen roles ran the gamut from busboy to line cook. Yet it wasn't until his U.S. Air Force career that he expanded his love for the culinary arts. During those 20 years he gained what he calls “expansive exposure to diverse cuisines and beverages from around the world” as well as all four U.S. mainland time zones.

The retired lieutenant colonel used his robust background in math, science, and engineering, plus the creativity he says was developed while playing small combo—and big band jazz, to coalesce into a gastronomic turning point when he founded Fly Boys, a private chef and catering business based in Colorado Springs.

“There is no shortage of math or chemistry in a professional culinary program and I thrive on the creativity and experimentation required to test new flavor combinations and plate my culinary creations,” says Provost. Having recently completed professional certifications as a sommelier and cicerone, he explains that “making, tasting, and evaluating fine wine and craft beer requires both art and science.”

Using his Post 9/11 GI Bill, Provost also returned to WPI to take entrepreneurship classes and a few music classes, while his wife, Lt. Col. Cindy Provost, served as the U.S. Air Force ROTC commander for WPI's Detachment 340 (2009–13). Back on campus, he reconnected with professor of jazz studies Rich Falco and became the first president of the WPI Jazz Alumni Association, creating numerous opportunities for alumni to mentor and share performances with current members of the WPI Jazz Group.

Since then Rob and Cindy have returned to the Front Range of Colorado, where he visits five military bases in the area at least once a month to help veterans with transition to civilian life. He encourages his fellow vets to explore their true passions and, where possible, to pursue a new career using those passions.

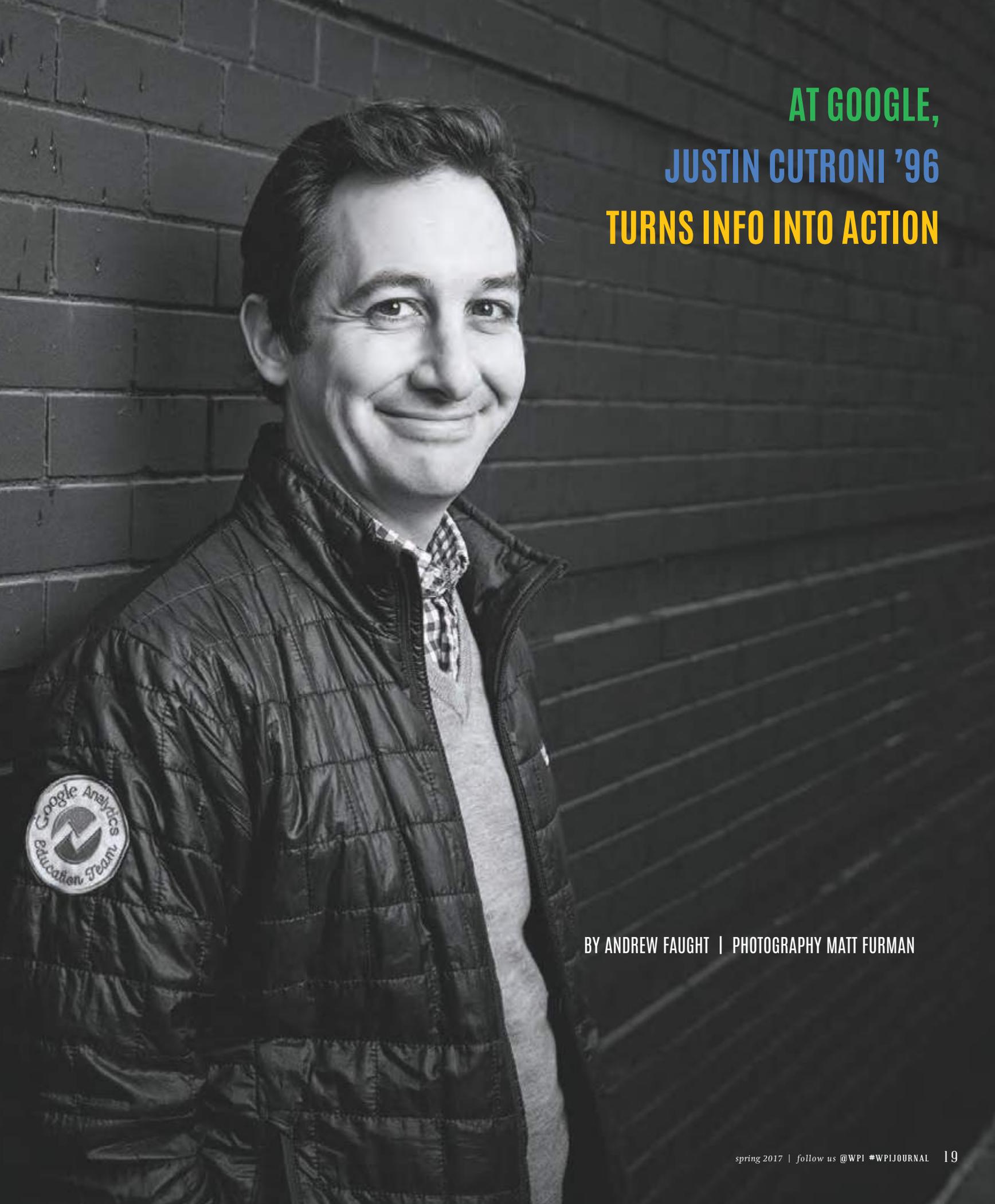
Following his own advice, Provost tapped his Post 9/11 GI Bill once again to attend Colorado Culinary Academy, where he met another food-loving USAF veteran. The two paired their love for cooking into Fly Boys in January 2015. Their culinary motto is Honor (ingredients), Service (exceptional), and Excellence (quality).

Learn more about Rob Provost's turning point at flyboyschefs.com.



**THE
ANALYTIC
AVENGER**

**AT GOOGLE,
JUSTIN CUTRONI '96
TURNS INFO INTO ACTION**



BY ANDREW FAUGHT | PHOTOGRAPHY MATT FURMAN

Google



Cutroni strolls along NYC's scenic High Line near Google's offices.



As a kid growing up in Belmont, Mass., baseball-crazy Justin Cutroni pored over newspaper box scores to trace the feats of his Boston Red Sox heroes. The matrices were devoid of sentimentality, the numbers revealing diamond glory in nothing more than gray agate type.

But for Cutroni, there was magic in those columns.

“How did Carl Yastrzemski do last night? How about Jim Rice? One-for-four ... what’s his new batting average?” he reminisces. “I just love that sport, and it’s one area where I was always looking at numbers.”

Today, America’s pastime is awash in a slew of new metrics – or analytics – that measure player performance in ways once inconceivable. But so, too, are the lives of billions of people the world over.

That same kid who geeked out to baseball stats over three decades ago is helping lead an analytics revolution that’s changing the way we work, shop, and play.

Cutroni is, kidding aside, an analytics evangelist for Google (“The great thing about Google is, if you can dream it, you can call yourself that,” he says), promoting the Internet giant’s free web analytics services that process half a trillion digital moments across devices daily. Google, which launched Google Analytics in 2005, is ironically loath to reveal exact totals.

Its software allows businesses and organizations to understand how visitors use their websites and mobile apps. Such data can then be used to hone messaging and, in turn, drive more business success. In the end, its stated purpose is to improve the lives of all involved – from businesses selling exercise apps, for example, to the people jogging with those apps.

“It’s a win-win situation if businesses have data about their decisions and how that’s impacting their customers,” Cutroni says. “They can make better decisions that ultimately allow them to do a better job at their business. On the other side, if they’re giving their customers – and their potential customers – what they want, it’s a plus for the customer.”

Privacy debates notwithstanding, he says, “I see this as a great opportunity to aid and enhance both sides of that equation.”

Cutroni has emerged as a global leader in promulgating Google’s analytics products. He’s authored three books on the subject, and in 2014 he was named Most Influential Industry Contributor by the Digital Analytics Association.

As head of a 25-member Google education division, Cutroni helps run the Google Analytics Academy, with online courses reaching more than 100,000 people per month. He also meets with businesses in a bid to – as his job title suggests – bring more analytics converts to the flock.

“I want to make people understand what data they need, and how to make sense of that data,” he says. “That could mean working with small businesses, global corporations, or massive advertising agencies. I want to demystify this stuff. I want it to be approachable.”

This wasn’t the life Cutroni envisioned during his days at WPI. But that’s not surprising – it wasn’t until 1995 that the Federal Networking Council, an organization of representatives from various federal agencies, even defined the term Internet. As a mechanical and aerospace engineering major, he was enamored of flight.

“I wanted to build airplanes and rockets,” he says. “Analytics wasn’t even on the radar.”

Instead, he found himself working as a consultant in the information technology (IT) and services industry after graduation. In 2004 he joined EpikOne, a Williston, Vt., marketing and advertising firm whose work is built on analytics.

The very word analytics entered the tech parlance some two decades ago, according to Cutroni, when business people realized they could harness the power of the nascent Internet to generate information about customers. The metrics of the time were rudimentary, even primitive.

“You’d have IT guys sitting in a corner or in a basement looking at data about how long a website had been up (if there even was a website), or the amount of hits a website had gotten,” he says.

Google and Cutroni have burst those bounds by adding analytics whose features bear such designations as “bounce rates,” “acquisitions,” and “conversions.”

Cutroni’s journey started at WPI. When it came time for college, he considered various universities, but he chose WPI in part because “I’m a New England kid, so I didn’t really want to go too far.” During a campus visit he was struck by the university’s commitment to project-based learning.

“I fell in love with the idea that I’d have my hands on lots of stuff, because I like to tinker,” he says, noting the multidisciplinary nature of his work at Google. “I grew up changing the oil in my parents’ cars and helping my dad renovate houses. There was also a true community at WPI, and it was the best place for me.

“The methodology of WPI—the theory and practice—is still so core to who I am and how I learn,” he adds. “I need to understand the idea behind something before I apply it, and that’s what WPI teaching is based on.”

Cutroni did his MQP as a student researcher at NASA’s Glenn Research Center in Cleveland, which designs, develops, and tests innovative technology for aeronautics and spaceflight. His life’s work, it turns out, took flight with the dot.com boom.

These days Cutroni’s analytics pursuits have turned into a family affair. He’s helping brother-in-law Brian Klauber ’96 (CE) run online analytics for a toy called Swivel-Snaps [which Brian co-invented with his uncle, Bob Klauber ’65 (ME)].

“It allows children and adults to build in any dimension or any direction with core geometric shapes, like squares and triangles,” Klauber says of Swivel-Snaps. “You can build just about anything.”

The product hit the market this winter, and it’s available online, at New England toy stores, and at the WPI bookstore. Using Google programs such as Analytics and AdWords, Cutroni has orchestrated an online ad campaign designed to drive traffic, awareness, and brand recognition for Swivel-Snaps.

“It’s a very key role that he’s playing for us, and it’s a lot of fun to watch him in action. His skills are phenomenal,” says Klauber, who is a sales specialist for global accounts at the software company VMware. “Justin alone has driven, at last calculation, 40 times more visitors to the site because of the work he’s done. He’s helped put us on the map.”

The pair met in the fraternity system—Klauber in Theta Chi, Cutroni in Sigma Alpha Epsilon. They became close friends, breaking from their studies to share their mutual love of the outdoors. The friends hiked New Hampshire’s Mt. Washington, and both men are avid fly fishermen who enjoy woodworking. After graduation, they jumped into Cutroni’s Ford Bronco and logged 6,000 miles on a cross-country road trip, during which they visited nine national parks. Cutroni, who’d fallen for Klauber’s sister, Heidi, actually proposed to her while the couple hiked the full length of the Appalachian Trail.

Klauber says Cutroni has dispelled any notions that analytics is for nerds.

“Google has turned that entire stereotype on its head, because analytics has completely transformed how businesses operate and execute,” he says. “Justin does not fit the stereotype of nerdy. He’s an outgoing, outspoken, fun guy. He’s not a wallflower.”

Cutroni marvels at his own professional path. When offered a job at highly competitive Google in 2012, “I was as amazed as anyone,” he admits. It didn’t hurt that he was familiar with Google software and had gotten to know members of a team that built the products.

“One of the guys on the team, the engineering lead, said ‘Hey, what do you think about joining Google?’ I said, ‘It sounds great, what do you want me to do?’ And he said, ‘I really don’t know, but why don’t you try to get a job here and we’ll figure it out later.’ That’s literally how it happened.”

Cutroni lives in Vermont, but telecommuting allows him to oversee the work of his team at Google headquarters in Mountain View, Calif., and at another office in New York City. Still, he's on the road enough to partake of Google's famous perks, from at-work massages to the vast spread of entrees in company cafeterias, all free of charge for employees.

"The food is ridiculous," Cutroni says. "In Mountain View, I think there are 30 different cafes you can go to, everything from Indian to authentic Japanese to Mexican, and the food is all locally sourced. That you can eat three square meals a day there is just unbelievable."

Co-worker Alden DeSoto, a staff technical writer at Google, calls Cutroni "a luminary in the analytics space. He's well known throughout the field."

During his monthly trips to Mountain View, it's not unusual to find Cutroni and his team sipping brews and noshing on burgers, wings, and onion rings at the Sports Page bar and grill across the street from Google's campus. They discuss cultural events, new restaurants, and, of course, work. Inquiring minds aren't likely to miss Cutroni's musings.

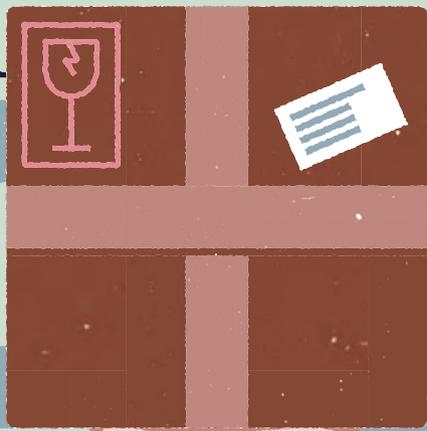
"With Justin, there's a real combination of passion and intelligence," DeSoto says. "He's a big thinker."

But even Cutroni admits that analytics has its constraints.

"No matter how much data you have, you still have to execute," he says. "If you're a ball player, you may know a curve ball is coming 90 percent of the time, but you still have to hit that curve ball. As a business, you may have data at your fingertips, but if you don't use it, it's totally useless. Analytics is about turning information into action."

That's a box score worth reading. **J**





Delivering
CHANGE

MAJED ZAMBARAJI '90

IS OUT TO CHALLENGE THE
WORLDWIDE LOGISTICS INDUSTRY



ONCE UPON A TIME,

A BIG BROWN TRUCK FULL OF BIG BROWN BOXES WOULD BOUNCE UP YOUR DRIVEWAY ON SQUEAKY SPRINGS. A DRIVER IN A CRISP UNIFORM—BROWN, OF COURSE—WOULD RING YOUR DOORBELL WITH YOUR PARCEL UNDER ONE ARM AND A CLIPBOARD IN HAND. YOU'D SIGN THE RECEIPT—BEARING DOWN TO MAKE CARBON COPIES—AND THE DRIVER WOULD ROLL ON TO THE NEXT CUSTOMER'S HOUSE.

TODAY, A HOST OF BRIGHTLY COLORED COMPETITORS SHUTTLE GOODS ACROSS OCEANS AT DIZZYING SPEED, BY LAND, SEA, AND AIR, USING EVERYTHING FROM AIRPLANES TO HAND-HELD DIGITAL DEVICES TO HASTEN DELIVERY. MAJED ZAMBARAJI IS OUT TO CHALLENGE THE FUNDAMENTAL ASSUMPTIONS OF THE EXISTING COURIER INDUSTRY, LEVERAGING NEW TECHNOLOGIES AND THE NASCENT SHARING ECONOMY TO DELIVER A NEW MODEL THAT LEAVES OTHERS IN THE DUST.

MAJED ZAMBARAJI IS OUT TO CHALLENGE THE MODELS ESTABLISHED BY THE BIG PLAYERS, ALONG WITH THE FUNDAMENTAL ASSUMPTIONS OF THE TRADITIONAL COURIER INDUSTRY. BY LEVERAGING NEW TECHNOLOGIES AND THE NASCENT SHARING ECONOMY, HE PLANS TO DELIVER A NEW MODEL THAT WILL LEAVE THE OTHERS IN THE DUST.



By Joan Killough-Miller | Illustration Hylton Warburton



**"THE TIME LAG BETWEEN
WHEN A CONSUMER PLACES AN ONLINE ORDER
AND WHEN THE DELIVERY
IS RECEIVED
CREATES AN OPPORTUNITY
FOR SOMEONE
TO GIVE CONSUMERS
ALTERNATIVE
BUYING CHOICES."**

—Majed Zambaraji



A PARTNER, NOT A PROVIDER

People have always bought more than they can carry home, writes Greg Niemann in *Big Brown: The Untold Story of UPS*. The global giant got its start in the early 1900s by providing an add-on service for shoppers at exclusive department stores.

The face of “third party logistics” (3PL) has changed radically since then. In today’s fast-paced, ultracompetitive global economy, Zambaraji says logistics is a “strategic differentiator” that can make or break an online business. “If it’s not very lean, if it’s not structured right, it becomes a hindrance to growth. Unless it’s very efficient, unless you can deliver reliably ... your business will fail.”

The growth of e-commerce is disrupting the traditional retail model, he says, upping the need for companies to compete internationally, and forcing them to speed up their supply chains. “This has created a void in the logistics market for a high-volume, low-cost business express delivery model.

“A lot of businesses today are looking for ‘logistics partners,’” Zambaraji explains. “They’re not looking for a provider, they’re looking for somebody who can solve problems and drive growth.” He’s positioning his new venture—Time Express Parcels, based in Dubai—to do just that. “The time lag between when a consumer places an online order and when the delivery is received creates an opportunity for someone to give consumers alternative buying choices,” he says. “This makes it essential for online businesses to

have their products delivered on the same day they were ordered.”

It’s that innovative spirit that made Zambaraji grow restless at UPS, where he previously held the post of vice president for the Middle East, India, Central Asia, and Africa. His charge was to lead development and expand the global giant’s footprint in those markets, which comprise more than 74 countries and territories. “UPS hired me because I am an entrepreneur by nature, but I felt very limited in what I could do—even though I was a vice president in the company.”

He yearned for the excitement of his earlier career, when he partnered in the start-up of RAK Logistics. Zambaraji speaks glowingly of his travels to open RAK branches in China, South Africa, Spain, Turkey, and the UK. “I literally put up the curtains and chose the furniture,” he says. “I had to hire people in countries where I didn’t speak the language, and figure out the taxation systems. When you’re building from scratch like that, every day is a new learning experience, and you can put your mark on everything, from A to Z.”

It’s that zeal that landed Zambaraji on the cover of *Logistics Middle East* in 2013, with the headline, “Big Game Player.” Since then he’s climbed the magazine’s “3PL Power List” of the region’s 25 most influential logistics executives.

FOUNDATION FOR LEADERSHIP

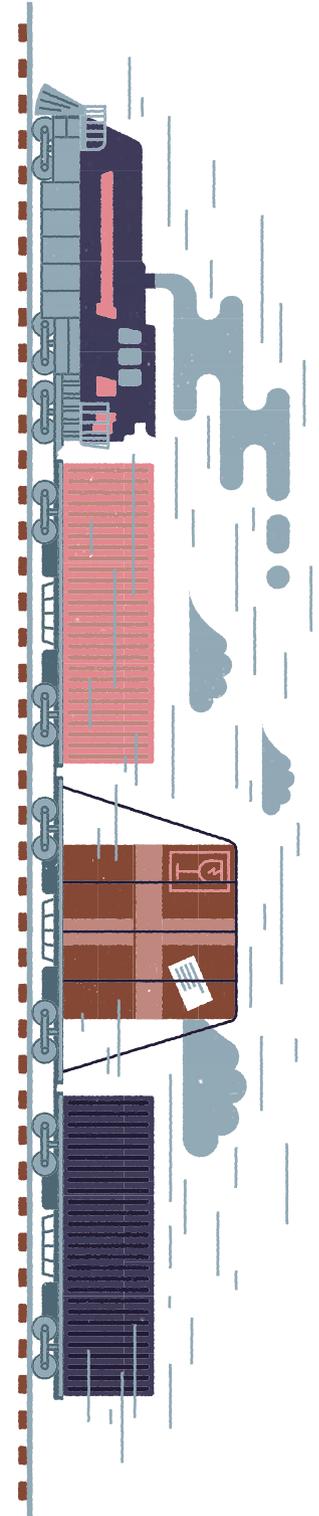
Zambaraji majored in mechanical engineering at WPI, drawn to the field by his strengths in math and science, and went on to earn a master’s from Tufts. “When you’re

in college, your teachers are actually investing in you,” he says. In particular, he remembers Professor Jack Boyd for his deep investigations of thermodynamics. “All the skill sets you develop in your courses become the foundation for your development throughout your career.”

Upon graduating from the MBA program at BU, he was selected for GE’s fast-track Financial Management Program. The next two years were a whirlwind, as he rotated through different placements across Europe. At the end of each workday came hours of study for the company’s master’s-level program. “If you fail one of the exams you’re kicked out of the program,” he says. “You’ve got an intense work schedule, very competitive classmates, and, on top of that, you’re living out of a suitcase.” He thrived on the experience and in the innovative corporate culture at GE, where he spent a total of 11 years taking on challenges in exports, sales, and operations.

Zambaraji’s transition into the logistics industry—and an opportunity to return to the Middle East—came in 2006, when he was offered a post as CEO of Agility Logistics. The move to Dubai brought the Lebanese-born UK national and his wife (also Lebanese) closer to their home ground. They are now raising their two young daughters there.

Today, as CEO of his own company, Zambaraji has the freedom to put his innovative energy where it counts. Time Express Parcels answers the accelerating demands of the



**“FOR ME IT’S AN INTELLECTUAL CHALLENGE
WHEN YOU’RE TRYING
TO CREATE SOMETHING
THAT’S BETTER THAN
WHAT’S OUT THERE RIGHT NOW.”**

—Majed Zambaraji



e-commerce sector, offering same-day delivery and weekend service up to 9 p.m. “I don’t see the big integrators as my competitors,” he says. “Part of why they have been able to dominate the courier business is because of the high barriers to entry in creating hubs as well as the networks allowing rapid delivery all over the globe.”

In the established model of logistics, a single company would own every node of the delivery service, from origin to destination. A bevy of brown UPS trucks ruled the road for more than a century. In 1973 FedEx upped the game with its fleet of orange-and-purple planes, loaded at midnight for next-day delivery to remote cities. But with today’s technology, “You can piggyback with a guy who’s already operating in Nigeria or Minneapolis,” says Zambaraji. “The new model is to capitalize on what I call ‘marginalized’ logistics.”

With the growth of e-commerce, just-in-time inventory, and international sourcing of manufactured goods, the cost of owning and maintaining so much infrastructure in so many different locations is making the big integrators too “heavy” to respond in a flexible, cost-efficient way, Zambaraji says. The age and size of a company are no longer badges of distinction when small, upstart companies can work together to move freight faster, at a much lower cost.

To explain the new world order

of “courier community sharing,” Zambaraji makes an analogy to other game-changers, such as Uber, where taxi companies are being challenged by a network of private cars summoned by smartphones. “With today’s technology, you don’t need to own your own network across the globe. We’re able to tap into underutilized assets that are lying around everywhere.”

For example, he can cut costs by capturing the downtime of trucks and vans that are already licensed to carry cargo, or locate empty space on ships and planes. “When independent operators network as a community of partners to provide a seamless service for a customer, we become very strong. And, as a consumer, you get a much faster collection time, a better transit time, and a cheaper service.

“Technology is the enabler that allows you to drive business in a much more efficient way and increase connectivity into global independent networks, which wasn’t possible in the past. Consumers benefit with more choice, greater visibility, better speed and reliability, and cheaper rates,” he says. “When you take cloud computing and the Internet of Things (IoT), and you take smartphones and apps – when you put all four of these together, you have a very dangerous recipe to actually disrupt some big industries.”

Time Express Parcels is investing heavily in technology, he says, with real-time assignment of pick-up tasks to drivers, and tracking and apps to relay potential missed deliveries to a backup system. Drivers carry Android phones with apps that tag the GPS coordinates of every customer. He notes that this is especially important in the Middle East, India, and Africa, where streets and house numbers are not as clearly defined as in the United States and Europe.

A dedicated unit of Time Express Parcels focuses on transport of pharmaceutical products and medical specimens, which need specialized handling and monitoring. Smart sensors can give real-time readings of temperature, humidity, vibration, and other variables that could compromise quality during transit. “We can provide proof that the content has not been tampered with, and that it has preserved the same characteristics as when it was sourced,” he says, pointing out that the drug or diagnostic being delivered could save a life.

Providing a longer window of safe passage for medical samples expands the scope of clinical trials, which previously had to be conducted within a restricted radius. “We’re now up to 96 hours, and there’s discussion of going for 120 hours,” Zambaraji says. “A drug being developed in the U.S. can now pull in patients from other parts of the world, because it’s

possible to maintain the integrity of the product at a high enough standard.”

Zambaraji shares his expertise on emerging technologies at industry conferences like The Big 5 Dubai and Leaders in Logistics. His sessions address transformative topics such as UAVs (unmanned aerial vehicles – the preferred nonmilitary term for drones), which are on the horizon as a vehicle for delivery and for remote monitoring of infrastructure – and the application of big data and cloud computing to streamline the complexities of the supply chain. In addition, he explores the potential of the IoT to connect transport vehicles, warehouse facilities, and even products, with real-time communication. All of these will have tremendous implications on supply chain logistics.

After the demands of the business day, Zambaraji likes to unwind with a half-hour run that he says helps him “recalibrate.” Shrugging off the stress of his job, he says, “You know, it’s amazing, when you do something you’re passionate about, you don’t get tired. Your mental state just drives you.” With work that’s both demanding and exciting, “It all comes together, and you don’t think of it as work. Maybe it looks that way from the outside, but for me it’s an intellectual challenge when you’re trying to create something that’s better than what’s out there right now.” J



Boundaries, oceans, and mountain ranges are no longer obstacles to teams working across time zones. Our world needs great minds with technical prowess, highly developed interpersonal and communication skills, and a depth of disciplinary, cultural, and public policy knowledge.

There is no better training ground than through WPI's Global Projects Program.

Help shape tomorrow's great minds.

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

Support Global Projects for All.

**For more information:
Kate Renaud
508-831-6163, kereaud@wpi.edu**

GREAT MINDS MULTIPLIED

GLOBAL PROJECTS FOR ALL

**A key component of Elevate Impact:
A Strategic Plan for WPI, 2015–2018**

[COVER*story*]





BY ERIN PETERSON | PHOTOGRAPHY STEVEN KING | ILLUSTRATION SEAN MCCABE





The *Star Wars* franchise has captivated the world for decades. Fans have meticulously studied and documented nearly every frame of every movie, ruthlessly pointing out each flaw and inconsistency. They demand—and expect—perfection.

For Anna Chase, who helped Hasbro design the collectible “Black Series” action figures for newly released films in the series, it meant there was no room for error. The six-inch action figures—a cool \$20 each—are designed to delight the movies’ biggest devotees. “From the sculpt of the face to the details of the clothing—every curve and every stitch is there, and it’s right,” says Chase, who spent three years as associate project engineer for *Star Wars* toys at Hasbro. “The average person might not notice it. But the true fans? They know when something’s been overlooked.”

Take K-2SO, a new droid from *Rogue One* whose lanky frame bedeviled Chase and other engineers at the company. The challenge was not just to get it to look movie-accurate, but to make sure it could stand on its own, despite its awkward dimensions. “It’s not enough to look great in the package,” she says. “We had to make sure its joints were stiff enough so it could stand without flopping over.”

It wasn’t easy. In the first batch of samples, the droids kept breaking. The sharp edges and corners where the shin met the foot—one of the very things that made K-2SO look more like a droid than a human—were among the weakest points in the figure, and they needed to be among the strongest.

Fortunately, Chase had experience to draw on as she and others worked to fix the flaws. “I remembered a similar problem linked to a wind turbine I was designing in one of my courses at WPI” that provided valuable insight, she says. She and the team ultimately came up with a solution that minimized the corners that were causing the problem and kept the droid steady on its feet. The result? A full 61 percent of reviewers on Amazon—a discerning bunch—gave the figure a five-star review. (Even critical reviews conceded the droid’s exceptional realism and quality, faulting it primarily

because it didn’t arrive with a blaster rifle.)

For Chase, though, the joy of the work doesn’t come solely from the validation provided by hard-to-please fans. “A big motivating factor for me is making something that’s truly beautiful,” she says. “It’s about getting the texture, the materials, and all the other subtleties just right.”

This quest for excellence seems embedded within Chase’s very DNA, from her ambitious projects at WPI to the roles that have propelled her life after graduation. No matter what the work, she always aims high.

THE POWER OF PLAY

Long before she enrolled, WPI was a fixture in Chase’s life. Living just 20 minutes away, she’d been to campus multiple times, shooting hoops in the gym as a 12-year-old in basketball camp and displaying her projects in the Campus Center as a high school participant in regional science fairs.

When it was time to apply to colleges, Chase didn’t plan to stick close to home. But she was persuaded to give WPI a chance when she saw how her older friends were thriving on the unique project-based curriculum. “I saw how good they were at science, and what incredible work they had done,” she says.

She knew she’d made the right choice early on as she worked her way through the Great Problems Seminar as a first-year student. Her section, taught by Diran Apelian, Alcoa-Howmet Professor of Mechanical Engineering, and humanities and arts assistant professor Svetlana Nikitina, took on major engineering challenges of the 21st century, delving into ways to solve some of the world’s biggest problems linked to energy, water, and health.

Chase’s early connection to Apelian felt transformative. She loved that he was always biased toward taking action and making an impact. And she appreciated that he believed that students—even those in their very first year at WPI—could make a difference. “Sometimes, you meet someone and you just know they’re going to have an impact on you for the rest of your life,” she says. “Diran was

like that for me.”

That first year, she and classmates dug into one of the biggest challenges in Kenya: water scarcity. They looked at the impact of clean water on everything from sanitation to health. Apelian saw promise in Chase’s work, and he wanted her to see the opportunities up close. He secured funding so that she and a handful of other students could spend eight days in Kenya in 2009 working with local entrepreneurs – including one college-aged woman eager to sell clean water to people at church gatherings, weddings, and other events.

Apelian says that Chase was an obvious choice for the project. “I remember her from the very first day of class,” he says. “Anna is imaginative, curious, and has a moral compass that guides her. She is dedicated to making an impact – to making life better for others.”

That week in Kenya stuck with Chase, and in 2011 she returned – this time for five months. Working with Malewa Trust, a Kenya-based nonprofit, and Harbec, a company that develops products, including a human-powered water purification device called the Better Water Maker, she dug in deep. She worked with hospitals and schools to see if they could easily use the device. She studied what improvements were needed to make the device even more effective.

It was that study that indirectly led to Chase’s job at Hasbro. The hand-cranked purifier was a good way to generate the energy needed to decontaminate water, but turning the crank was hard work. Still, at the schools she visited she saw kids pairing up to turn the crank, making a game out of this chore. “I saw how play could make generating energy fun,” she says.

It prompted her to research the many other ways that kids’ boundless energy might be harnessed productively, from rocking horses that harvest kinetic energy through a coil-and-magnet mechanism to bicycles with tiny generators attached to the back wheel.

But perhaps more important than the research was the side project she developed. She created a science club in a secondary school in Kenya and taught students to build everything from simple dolls to wire-frame cars using recycled parts. “The kids were so inventive – so many were ‘makers’ at heart,” she says. “These were all things that helped me see the power of play.”



A FOCUS ON WORK THAT LASTS

After graduating in 2013, with play still on her mind, Chase applied for a position with Hasbro’s Boys Product Development. “I had no idea it was for *Star Wars*!” she says. “They asked me in the interview how I felt about [the franchise], but at that point I hadn’t even watched the movies. I ended up joining the team that was making toys for *The Force Awakens*.”

In the end, it was the company’s approach to toy making that cemented her desire to work there. Hasbro is laser-focused on an idea known as “play value” – the most valuable toy is one

that is both well built and well loved, used for many hours over many years. Clever design can help improve that value: adding an extra door on a vehicle might open up new storage places for weapons. And different ways to reassemble the toy make it more interesting. “We’re always looking at every toy, inside and out, to see how we can make it better,” explains Chase.

Of course, the toys she helps create aren’t just any toys. She’s felt the full impact of the *Star Wars* fan phenomenon, including the “insane” experience of being part of the marketing crush for both *The Force Awakens* and *Rogue One*. At a recent San Diego Comic-Con, for example, fans asked her to sign the packaging of action figures that she’d helped create. Online, she says, people can be brutal about every perceived flaw they see in the toys, but in person, they’re joyful, curious, and eager to hear any movie-related scoops.

Sheila Standing, Chase’s boss and the engineering manager of *Star Wars* toys, says Chase’s attitude has helped her thrive on the team. “Anna is intelligent, organized, and diligent,” she says. “Her passion and enthusiasm rubs off on team members.”

In January Chase left Hasbro to participate in an Outward Bound program that takes young leaders on climbing experiences from the Colorado Rockies to some of Ecuador’s highest peaks. Program participants learn skills including ice climbing, canyoneering, and wilderness survival techniques.

While she jokes that it’s a chance to “build on her superhero Jedi skills,” Chase also wants to reflect and recharge as she figures out where she can take her career next. She says, “It’s time for me to sit on the question of what’s most fulfilling for me.”

As someone who’s found ways to excel, whether she’s working on projects in the most rural villages of Kenya or in a galaxy far, far away, there’s no question she’ll land in an interesting place – and find a powerful way to make an impact. **J**

ALDEN SOCIETY MEMBERSHIP DRIVE JOIN TODAY!

“Both Sarah and I are deeply grateful for the education I received and the friendships we’ve made together on ‘The Hill.’ Our membership in the Alden Society honors the investment WPI made in me and ensures our giving will have an equally powerful impact for years to come.”

Joaquim (Joe) Ribeiro ’58



**ALDEN
SOCIETY**

HAVE YOU INCLUDED WPI

in a will or trust?

in a life income gift?

*as a beneficiary of life insurance,
IRA, or other retirement account?*

**The Alden Society is always
accepting new members,
please join today to help
ensure WPI's future!**

Membership is about giving you recognition NOW for your plans to support WPI in the FUTURE. To join visit **plannedgiving.wpi.edu**.

Let us know if you've made arrangements for WPI and we'll welcome you into the Alden Society.

FOR MORE INFORMATION

Contact Donna K. Stock
Assistant Vice President
of Leadership Giving
888-974-4438
dstock@wpi.edu



**ALL
SYSTEMS
GO
FOR NASA
SPACEFLIGHTS**

**ON JULY 20,
1969,** having broken

free of Earth's orbit through the power of the Saturn V rocket and traveled across space for three days, astronauts Neil Armstrong and Buzz Aldrin landed their 16-ton lunar module *Eagle* in the dust of the Sea of Tranquility, shimmied out through the vehicle's hatch, and became the first humans to walk on the Moon.

Back on Earth, 238,900 miles away, some 600 million people watched spellbound as the moonwalk was broadcast live on television. One was a boy named Scott Mathews, who sat on the floor in front of the black-and-white set in his parents' bedroom in Teaneck, N.J. It was just before 11 p.m. on the East Coast, but since school was out for the summer he had permission to stay up late for the historic event. Four days later, his family tuned in again to see the astronauts' stainless steel-clad command module *Columbia* splash down safely in the Pacific Ocean. By that point, the boy—who'd turned 10 that day—knew what he would do with his life. But unlike many children his age, he didn't want to follow in the footsteps of the men who had walked on the Moon. He wanted to be one of the engineers who sent them there.



SCOTT MATHEWS '82

BY AMY CRAWFORD
PHOTOGRAPHY MARIO DE LOPEZ



From watching the first moon landing, to standing here at Mission Control within NASA's Jet Propulsion Laboratory, Mathews's enthusiasm for space travel has never wavered.

“One of my favorite classes [at WPI] ... was called ‘continuum mechanics’ and I’ve used it to solve some pretty difficult problems over the years.”

“As a young child, watching the Mercury and Gemini missions, all the way through to Apollo, I knew I wanted to be involved,” Mathews says. “I would see the astronauts walking across the gangplank into the spacecraft, but I was never as interested in being an astronaut as I was in being one of those guys working on the space capsule and designing the launch tower. I was fascinated with building the stuff.”

Watching the near-flawless ballet of rockets, spacecraft, and other specialized equipment that had enabled humankind’s greatest feat, Mathews dreamed of being a choreographer. And nearly half a century later, that’s, in effect, what he is.

In the early stages of a years-long mission, NASA engineers come up with ambitious designs for the spacecraft, rockets, and rovers that extend humankind’s reach to space, to Mars, and beyond. But before the countdown, someone has to put everything together—a process known as integration. Because it involves handling sensitive, expensive, and sometimes very large components—all of which were specifically designed to function in space, not on Earth—integration requires the expertise of a highly trained team of engineers. That’s where Mathews comes in.

Now a 57-year-old whose enthusiasm about space travel hasn’t wavered since he watched that first moon landing, Mathews is group supervisor of mechanical integration engineering in the Spacecraft Mechanical Engineering Section at NASA’s Jet Propulsion Laboratory in Pasadena. Over the past 10 years, his team has worked on marquee projects like the Mars rover *Curiosity*, developing the procedures to assemble the myriad components of each spaceflight.

“You’d be surprised how easy it is in the design phase of a flight system structure to overlook how you’re going to actually put it together,” Mathews says. “You don’t want to come in late in a project and then be scratching your head, figuring out, well, how are we going to lift this thing off the table?”

Mathews’s role begins early, when he and his 22 team members create a graphic storyboard that may be hundreds of pages long. Just as a movie crew plots out each scene before shooting begins, JPL engineers map out the mechanical flow of parts coming together, deciding in

advance how to safely handle, support, and turn them.

Storyboarding begins with a computer model of the completed flight system, which the engineers then deconstruct and reassemble in simulation. Next, they decide where the integration will take place; each step must be assigned to one of the laboratories or oversized clean rooms, called bays, throughout JPL’s nearly 200 acres of facilities. Will an operation require a low bay with work benches to assemble small components, or a high bay (an enormous, gleaming white room with an overhead crane)? Will the assembly require scaffolding for people to stand on? Will they need to squeeze inside tight quarters to attach components?

“We have to pay attention to things like what the crane height is going to be, and the sizes of the doors we have to get through, how we’re going to be able to move flight system components and other equipment in and out of these rooms,” Mathews says. “We also look at how we’re going to move the components around the lab, and we make sure we’re providing structures and attachment points to various pieces of flight hardware to allow us to handle it and lift it up.”

PRICELESS INTEGRATION

Painstaking tests and rehearsals follow, often with replicas of the flight hardware. “We make sure that every screw we put in is torqued down properly and all the material we use is the strength we expected, and any welds we use to fabricate subassemblies are done properly,” Mathews says. “That usually gives us a pretty high degree of confidence that we’re not going to damage the flight hardware in any way.”

Each step of the integration is a sort of puzzle, and each brings its own challenges. In 2015, for example, Mathews and his team had to figure out how to transport the fully assembled Earth-orbiting climate science satellite SMAP (Soil Moisture Active Passive) from JPL to a launch site at Vandenberg Air Force Base, 170 miles up the coast. It looked like JPL engineers would have to create a specialized, expensive vehicle to carry SMAP on the highway—until Mathews hit upon an elegant solution.

“SMAP is about the size of a large refrigerator, but it has a big antenna assembly that makes it

very tall and unwieldy,” says Peter Waydo, one of Mathews’s supervisors at JPL. “Scott created a device we could mount our several-hundred-million-dollar spacecraft to that would safely turn it on its side, allowing it to be carefully inserted into the back of a tractor-trailer and anonymously transported down the freeway in the middle of the night, among the regular trucks on the road. It was completely safe and incredibly well protected, and Scott’s efficient, cost-effective approach will be the model for future spacecraft transportation. You never know what’s in that unassuming truck next to you on the freeway!”

Long before Mathews was loading priceless spacecraft into tractor-trailers, he was a junior high schooler pursuing his goal to one day work for NASA by taking Saturday classes in math, rocketry, astronomy, and mechanical engineering as part of a program for gifted young people. Such enrichment programs were unusual in the 1970s, but Mathews’s parents, although they had no background in engineering themselves, did what they could to support their son’s dreams. “From their encouragement,” he says, “I knew that the only way I was going to get to where I wanted was by learning a lot of complicated subjects and doing well in school.”

That extended to enrolling at WPI, which attracted Mathews with its practical, application-oriented curriculum.

“One of my favorite classes was actually one of the most difficult ones,” he remembers. “It was called ‘continuum mechanics’ [a branch of mechanics that involves modeling materials as a whole rather than as components], and I’ve used it to solve some pretty difficult problems over the years.”

Shortly after graduating with a BS in mechanical engineering, he was recruited into his first space-related job, at NASA contractor Rockwell International. Stints at other aerospace companies followed, and over the years he worked as a contractor on numerous JPL missions. At Martin Marietta, a precursor to Lockheed Martin, he helped build the *Magellan* spacecraft, an unmanned probe launched in 1989 to map the surface of Venus. With Lockheed Martin, he worked on the propulsion system for *Cassini*, which launched in 1997 and is currently in its final year of studying Saturn; the *Mars Polar*



View from the gallery of High Bay 1 in the Spacecraft Assembly Facility at JPL. This clean room is where dozens of NASA spacecraft have undergone final assembly and checkout. The emblems adorning the walls denote the spacecraft missions active in the facility through the years, including Ranger, Mariner, Cassini, Mars Exploration Rovers, and Curiosity.

Lander, launched in 1998; and Dawn, which NASA would send to the asteroid belt in 2007.

Finally, in 2006, after a stint at the University of Arizona's Steward Observatory—where he worked on the delicate mirrors and sensitive components of large ground telescopes—Mathews realized a lifelong dream: a job at JPL, itself.

“Scott was my first hire when I became a supervisor,” says Sergio Valdez, now a deputy section manager at JPL who at the time held the job title Mathews holds today. “I was looking for an all-around engineer who had done everything, and Scott’s been a real asset. He’s good at focusing on not just what’s in front of him, but looking at the big picture and how it all comes together.”

It’s a crucial way of seeing the world—not to mention the solar

system—and it will come in handy as his team takes on JPL’s next big project, *Mars 2020*. An evolution of the celebrated *Curiosity*, which landed on Mars in 2012, the *Mars 2020* rover is about the size of a sedan, and the vehicle and its flight system will require hundreds of steps to assemble. When it launches in three years, the science the rover performs will help pave the way for NASA’s long-term goal of sending astronauts to Mars.

Meanwhile, JPL is working on plenty of other projects, including an unmanned mission to Jupiter’s moon Europa, which may hold liquid water; a potential mission to an asteroid; and several instrument payloads for the International Space Station, which will observe the Earth’s oceans and atmosphere with an eye toward finding solutions for climate change.

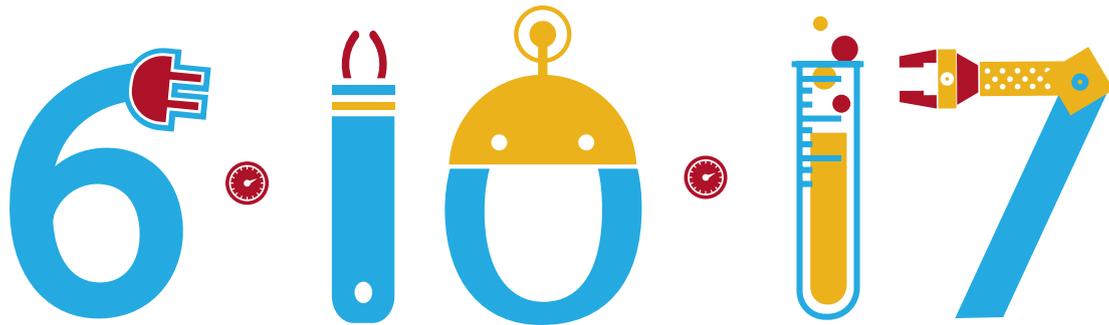
These are exciting times at JPL, Mathews says, although the work can be stressful at times. “There are certain operations where you just can’t help but hold your breath a little bit,” he admits. It’s also everything he hoped it would be, as a young boy watching history happen live on TV. **J**

“I’ve had a 34-year career now, and I’ve worked on so many different spacecraft. Every day I consider myself lucky.”



Worcester Polytechnic Institute

SAVE THE DATE



TOUCH TOMORROW

A FESTIVAL OF SCIENCE, TECHNOLOGY, AND ROBOTS AT WPI

JUNE 10, 2017

Festivities begin at 10am | Free and open to the public | Rain or shine

Hands-on experiments, virtual reality experiences, robotics presentations—and that's just in the first hour. Join WPI for all this and more during the sixth annual TouchTomorrow, a family-friendly festival showcasing interactive exhibits by WPI and friends.

LET US KNOW YOU'RE COMING!



touchtomorrow.wpi.edu



[touchtomorrowwpi](https://www.facebook.com/touchtomorrowwpi)

[WPI*insider*]



ALEX MARKOSKI

PHOTO PHILL LEHANS

HONORABLE MENTIONS: CHARLES O. THOMPSON SCHOLAR • WPI LAUNCHPAD FOUNDING MEMBER • UNIVERSITY INNOVATION FELLOW • WPI RECORDING CLUB, VICE PRESIDENT
• TECHENTREPRENEURS MEMBER • SOCCOMM MEMBER • GLEE CLUB AND VOCAL PERFORMANCE LAB PARTICIPANT • BIOMEDICAL ENGINEERING SOCIETY MEMBER • STUDENT ROCK ASSOCIATION
MEMBER • PHI KAPPA THETA FRATERNITY BROTHER

What does a double major in biomedical engineering and mechanical engineering set to graduate in 2018 do in his spare time? If you were **ALEX MARKOSKI**, you'd create a student group to develop an entrepreneurial mindset called WPI LaunchPad, join a fraternity (Phi Kappa Theta), serve as VP of the Recording Club, and become a member of SocComm, Choral Music Association, and Tech Entrepreneurs – just to name a few of this WPI Insider's outside interests.

Markoski returned from his IQP in China this winter, where he and his team focused on the WeWork collaborative, a shared-space entrepreneurial model within the rapidly growing high-tech industrial area of Hangzhou. "I can't thank WPI enough," he says, "for providing us with the opportunity to experience China's culture while enabling us to contribute tangible work that truly has a global impact."

Now he's back to juggling classes on top of his multiple biomedical lab positions. "Starting in sophomore year, I worked at UMass Medical where I designed and built a high-precision ultrasound positioning arm for critical patient tests," he explains. He went on to become an active member on such projects as improving the design of an automated fibrin string 3D printer (called LACEY) in Professor George Pins's lab, and a bioreactor that will be used to strengthen man-made blood vessels currently under development in Professor Marsha Rolle's lab.

As one of WPI's first University Innovations Fellows (UIF), a national organization funded by the National Science Foundation and directed by Stanford University and VentureWell, Markoski helps students discover what he calls "the entrepreneurial mindset, innovation, and design thinking" through events, workshops, and collaboration with faculty.

"After being accepted and passing the six-week training," he says, "we were able to attend a national meetup at Stanford, Google, and Microsoft, where we went through multiple workshops and activities, and listened to influential speakers such as Google X founder Sebastian Thrun, all focused on innovation and entrepreneurship."

When asked what drew him to WPI in the first place, Markoski says that WPI's collaborative, team-based, project-centric curriculum really stood out. Before applying, he "read about employers saying how WPI graduates are well prepared, and talked with alumni about their happiness with the quality of their education – and now I can say after living through this experience that I fully agree with their assessments."

LUCAS MANCINELLI '19
Hometown: Scituate, R.I.
Major: Aerospace Engineering

Involvement:

- Hockey Team
- Student Caller for WPI
- Phi Gamma Delta

"I love WPI's reputation, known by businesses around the world. I received an internship freshman year because the name WPI carried weight enough for the company to hire me."

WPI is built on a long and proud legacy of generous donor support. When you give to the WPI Fund, you support students like Lucas and join a much honored and celebrated tradition of philanthropy at WPI.

Lucas's scholarship helps to support him through his internship experience and his work in aerospace engineering. Your gift and those of your fellow donors have a direct and immediate impact on his WPI experience and on the entire WPI community.

Make your gift today and start your WPI legacy.

Online: wpi.edu/+give

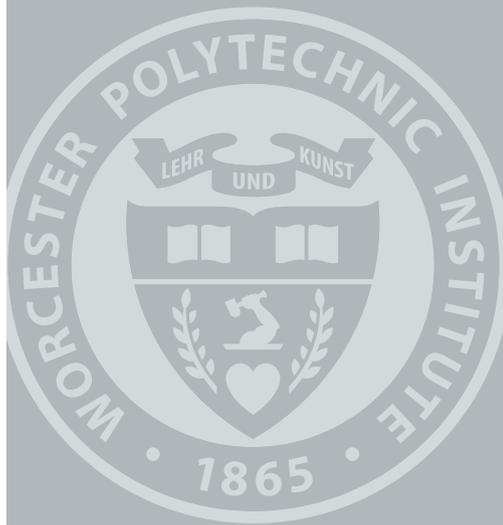
Phone: 1-877-WPI-FUND

**Mail: The WPI Fund, 100 Institute Rd., Worcester, MA 01609
(please make checks payable to WPI)**





FROM THE
ALUMNI
PRESIDENT



Dear Alumni:

The WPI legacy has been a focus for us this past year. I continue to be amazed, time after time, at the wonderful legacy our alumni have created. A heartfelt thank you to the over 1,350 community members who helped make Giving Day a success on November 29. We exceeded our goal of 1,000 donors and unlocked an additional \$125,000. Your generosity and support of WPI has resulted in more than \$300,000 for the WPI Fund. Thank you again for sharing your treasure and cultivating a legacy that will positively impact thousands of students.

Alumni social and educational activities certainly haven't slowed down in the past few months. The Women of WPI held its second annual conference on November 12. Several speakers, including Sue Giroux Sontgerath '88 and Susan Celia Roberts '92 facilitated discussions focused on life balance. At the February 16 meeting, Lauren Stratouly Baker '82 updated attendees on the technological advances in fitness wearables. Graduates of the Last Decade once again had a great time at its annual winter social at Harpoon Brewery in Boston.

Many more opportunities to reconnect with fellow alumni, current students, faculty, and staff lie ahead. It seems like there's something for us every month—a few of the larger opportunities are Community Service Day in April, Commencement and all the festivities that go with it in May, and Alumni Weekend in early June. Keep an eye out for more specific details in upcoming issues of *The Bridge*.

Next fall WPI will induct the inaugural class into the WPI Hall of Luminaries. Thanks to everyone who submitted nominations. The selection committee has reviewed them and has sent the names of 20 candidates on to the balloting committee. The creation of the WPI Hall of Luminaries and the work they are doing for this inaugural class is no small task, and I am grateful to the commitment of those committee members for their efforts. I look forward to the induction event—yet another way we can honor our WPI history and pride.

I am happy to announce that the Alumni Association Board of Directors has decided to move the annual meeting of the Alumni Association back to Alumni Weekend in an effort to facilitate more alumni participation. Alumni Weekend, June 1–4, is when the largest concentration of alumni are back on campus. We hope you can join us!

If you have any feedback or ideas you want to share, feel free to reach out to me at rmdelisle@alum.wpi.edu

All the Best,

Rachel M. Delisle '96, '06 MBA



PARTICIPATION MATTERS

WPI students, alumni, parents, faculty, and staff shared these and many other messages of giving and gratitude on Giving Day, Nov. 29, 2016. Giving Day aimed to inspire more members of the WPI community to participate in the university's long and proud tradition of philanthropy. To rally support, generous donors put forth a challenge: reach 1,000 donors in 24 hours to unlock an additional \$125,000 for the WPI Fund. Together, the WPI community crushed that goal

by 30 percent, reaching 1,363 donors and \$220,000, for an overall total of \$345,000 with the matching funds.

Giving Day was the best single day of philanthropy at WPI yet: 540 alumni and 450 students gave; 40 percent of the typical number of parents who give each year gave on that one day; and twice the number of faculty and staff who gave last year donated this year.

The Foisie Business School helped fuel the day's momentum by reaching nearly 50 percent participation from its faculty and staff, in response to a participation challenge from Beswick Professor Frank Hoy. The

Senior Class Gift campaign also helped the effort by earning 100 percent participation from fraternities.

Pride and excitement overflowed the Rubin Campus Center and popped up on social media from all over the country and the world as alumni and friends shared their stories of giving back to help keep WPI moving forward.

Giving Day 2016 proved that every gift does make a difference, and participation does matter. You can view more photos on the *WPI Journal* online and relive the excitement of the day by searching social media: #mywpilegacy.

It is said that legacy is how one lives on in the world's memory—for what one has done on the world's behalf. As a fiercely vigilant guardian of legacy at the university, the WPI Alumni Association presents the Goat's Head Award for Lifetime Commitment to WPI as one of many ways to recognize and celebrate individuals for what they do on behalf of the WPI community.

During last year's Homecoming Weekend, the highly prestigious Goat's Head Award was given posthumously to emeritus trustee and former chair of the WPI Board of Trustees Steve Rubin '74. Rubin's wife, Tracy, received the award on his behalf surrounded by a large gathering of well-wishing alumni, faculty, staff, and friends. As an invited speaker at the event, former chair Phil Ryan '65 put it best when he said, "caring for WPI, caring for our students, faculty, staff, and alumni, and caring for the future of our great university was Steve's driving passion."

Rubin was known as a loyal alumnus, visionary leader, tireless advocate, and generous philanthropist. From his early student days in the young computer science program, he established himself as an especially important member of the WPI community. Also speaking at the event, Professor John Orr offered, "...with the ability to connect people, share opportunity, and make everyone feel important," Rubin "embodied an infectious spirit of dreaming, working hard together, and learning every single day." It is undeniable, from the very beginning of his time here on the



GOAT'S HEAD HONORS RUBIN LEGACY

Hill, Rubin had a positive impact on the WPI community, and his more than four decades of devotion to WPI has since been called unmatched.

Over many years of tremendous growth and extraordinary change for the university, Rubin's energy, passion, and tireless dedication demonstrated what true commitment and service look like. He emerged as a leader for the Alumni Association Executive Committee and Venture Forum. Later, as a trustee, he helped advise the university on its technology needs,

facilities, and academic programs. He played a foundational role in WPI's marketing and awareness-building program. He was a prime mover in the strategic goal of achieving better national recognition and led the quiet phase of the university's \$248 million campaign, *if...The Campaign to Advance WPI*. Steve Rubin was an inspirational force behind the most successful fundraising effort in WPI history. Quoted as saying, "I love WPI. It helped me have a complete and successful life," Rubin was filled

"...CARING FOR WPI, CARING FOR OUR STUDENTS, FACULTY, STAFF, AND ALUMNI —AND CARING FOR THE FUTURE OF OUR GREAT UNIVERSITY WAS STEVE'S DRIVING PASSION."

—PHIL RYAN '65, TRUSTEE EMERITUS

with gratitude for the university and demonstrated it by becoming one of its most generous supporters. Although he played a pivotal role in the campus center's being built, it was with tremendous humility that he agreed to WPI's request to officially name it in his honor. How completely fitting that the vibrant building lies at the very heart of WPI's campus.

As a visionary innovator, generous philanthropist, leader of great integrity, and true friend to the university, Rubin epitomized the values represented by the Goat's Head Award. The Association offers the Rubin family most hearty congratulations on this meaningful acknowledgement and celebration of Steve Rubin and all that he was—and still is—to WPI.

RETURN ON INVESTMENT

AN ALUM'S CONTRIBUTION SUPPORTS GROWTH SIMILAR TO HIS OWN.

Twice during Sean Mahoney's ('09) undergraduate career nobody would have blamed him for walking away from WPI. The first was when thieves broke into his car trunk and stole everything he owned, including his computer. The second came at the end of his junior year, when he ran out of money to pay for college.

The theft in 2003 could have forced him to quit—he couldn't do his coursework without a computer. But Janet Begin Richardson (then vice president of campus life) and Philip Clay (then dean of students and currently vice president for student affairs) organized an effort to buy him a new one. It was only when he couldn't pay his tuition in 2005 that Mahoney left WPI—but not permanently. The WPI Plan encourages students to chart their own paths and he took that to heart. He formulated a plan to finish his degree, securing a job as a release manager at a Framingham telecom company. Two years later while leading a global team of 20, he used vacation time to attend classes at WPI. After earning a BS in electrical and computer engineering, he then ambitiously completed 13 graduate courses in a single year. By that time he was director of a web development certificate program at Boston University's Center for Digital Imaging Arts. He earned an MS in information technology management at WPI while working full-time 40 miles away.

"I would leave class at BU at 4:29 on the dot, rush west on the [Mass] Pike, grab something to eat at the Campus Center, and head to class," Mahoney remembers. "I'd schedule conference calls for my drive and fit homework in during lunch and after classes." Somewhere in there he married his girlfriend, Lynn, and started the company he leads today, AndPlus, in Southborough, Mass., which focuses on complex web and mobile applications and IoT software development.

Due to his efforts, graduate placement rates at the program Mahoney led at BU rose from 10 percent to 100 percent. To date, he has also invested in or co-founded eight early-stage ventures, half of which are generating revenue. Others will be launching products created by his team at AndPlus.

Mahoney says WPI's project-based learning, emphasis on collaboration, and the seven-week terms gave him the skills to manage his hectic schedule, instilled in him a deep respect for people and process, and fueled his entrepreneurial instincts. Each term brought a new team to organize and a new problem to solve, giving him plenty of practice for his own ventures.

"It's fun to look back at my transformation while at WPI," he says. "I don't think that would have happened at another school. I enjoy a team-based approach—it's core to how we write the software we do at AndPlus"

Mahoney maintains strong ties with WPI as a member of the Foisie Business School's Tech Advisors Network, nurturing new and prospective ventures launched by

members of the WPI community. His ongoing work with WPI and his memory of the university's generosity when his computer was stolen, inspired him to donate \$25,000 to the Foisie Innovation Studio in support of Innovation and Entrepreneurship and another \$5,000 to the WPI Accelerator Fund, which provides funds to early stage business ventures and the commercialization of ideas.

"That experience has always stayed with me," Mahoney says of the effort by Clay and Richardson. "I don't know what I did to deserve that kind of support, but sometimes we have to stop and ask ourselves, 'What we can do for people?' and do it just because we should."

—Sharron Kahn Luttrell



Sean Mahoney speaks to Assistant Professor Karla Mendoza Abarca's student group focused on Social Entrepreneurship called Enactus, at the ProtoFoisie space in Gordon Library.

BETTERING THE WORLD THROUGH GLOBAL PARTNERSHIP

He had an immense thirst for knowledge; he strove to better himself and the world; he was admired, respected, revered.

Born in 1889 in mainland China, Yi Chi Mei came to WPI in 1910 as a Boxer Indemnity Scholar. Four years later, as the world's superpowers were on the precipice of war, he proudly returned to his native country equipped with a degree in electrical engineering.

Over the ensuing years, he used his skills to promote education throughout Asia, and to lead by example: one that was both patient and compassionate.

Now, his alma mater seeks to carry on his legacy – while also advancing global public safety efforts – through a unique proposed global partnership.

WPI has announced its plan to collaborate with Tsinghua University in Beijing, which Mei headed and helped rebuild after the Sino-Japanese War, to establish the WPI-Tsinghua Center for Global Public Safety.

“This is a great partnership to have between two premier universities,” says Professor Tahar El-Korchi, head of WPI’s Department of Civil and Environmental Engineering and interim head of the Department of Fire Protection Engineering. “By our connection through Mei, we want to create this center to bring our know-how and culture of sharing to the rest of the world.”



Although still very much in the preliminary stages, the new effort would build upon WPI’s already strong relationship with China (highlighting Mei as one of its first Chinese alumni), as well as its role as a leader in fire protection engineering. Academic and research efforts would focus on fire prevention and suppression, as well as disaster prediction and management, and would cover a wide swath, from dual-degree and exchange programs, to public outreach and training, to cross-cultural research.

Noting the thousands of lives and billions of dollars lost in recent natural and man-made disasters, El-Korchi stressed that the center’s

work will be comprehensive in nature – including fires, earthquakes, tsunamis, pollution, cybersecurity, emergency response, and post-disaster resiliency.

“All countries and communities face disasters that are beyond their control,” he says, adding that collaboration and resource pooling can foster outcomes “that transcend all kinds of boundaries.”

“It’s not one thing,” he says. “We want it to be big” – which is in keeping with Mei’s vision of bettering the world.

Upon graduation, Mei returned to China to teach math, physics, and English at Tsinghua University, Beijing – of which he was named president in 1931. He worked to

establish its engineering school, double enrollment, and rebuild it following its damage and several relocations during World War II. He also served as minister of education in Taiwan and, in 1955, established National Tsing Hua University in Taiwan.

HIS ALMA MATER SEEKS TO CARRY ON HIS LEGACY.

“Tsinghua University refers to him as the ‘eternal president,’” says Karen Bean, WPI’s executive director of advancement. “The past paves the future for global public safety. This center will be in his honor.”

The next steps are to formulate the center and raise funding through sponsors, according to Bean. WPI president Laurie Leshin and Tsinghua president Qui Yong have already made pilgrimages to each other’s campuses, and an advisory board will help determine further direction and priorities.

“It’s our most important academic partnership,” says Bean. “It’s global, it’s advancing research and education, it’s to save lives, it’s really allowing us to focus on our strengths and grow them.”

1944

Irving Gerber met **Jonathan Rourke '76** at a temple function recently, and told the younger alum a thing or two about WPI in the 1940s. See Jonathan's class note under 1976 for a look back at a bygone era, and a summary of Irv's career.

1954

Jaak Jurison published *The Last Train from Estonia*, a memoir of his family's experience during World War II, which left them caught in the conflict between the armies of two ruthless dictators, Hitler and Stalin. After his father's arrest and imprisonment in Siberia, Jaak was left in a war zone, under a totalitarian rule. He managed to escape to Germany, where he endured five years in displaced persons camps. "This compelling account, written with long perspective, is more than mere witness to history," says an Amazon.com review. "In its parallels to present-day conflicts in Eastern Europe, it serves as a timely warning to all who love freedom." Jaak is now retired as emeritus professor from Fordham University; he lives with his wife, Siret, in Corona del Mar, Calif.

1956

Ted Coghlin was posthumously inducted into the WPI Athletic Hall of Fame at Homecoming 2016. He was honored as one of WPI's most dedicated graduates, and a great champion of WPI Athletics. Dana Harmon, director of physical education, recreation, and athletics, said, "He continually strived to make WPI Athletics the best it could be as a student-athlete, as an alum, and as a fervent supporter through the years—we owe him a great deal of thanks for all he has done."

1957

George Friberg writes, "After 54 years in Toms River, N.J., we moved to State College, Pa., to watch our boys' families grow up, since we've been near our girls all these years. Got some good athletes there, and a possibility of four starters on the H.S. basketball team next year. Having a great time watching them all."

1961

Tom Pantages and **Jim Dunn** shared memories of dormitory superintendent Bob Rochette, known to dining hall patrons for the phrase "One butter, please." "His nickname was "Rocket," writes Tom, "but that's not the English translation of Rochette." Jim worked for Rochette back when the only campus dining hall was in Sanford Riley. He recalls, "The crew was always anxious to complete their tasks to get on with college life (sleeping, studying, and such). However, some freshmen were laggards in getting to the dining hall and completing their meal. So the crew would 'urge them on' to completion."

"When Morgan Hall was built, Bob Rochette was no longer the staff person and a married couple supervised the kitchen operation," Jim notes. But the new dining hall posed new opportunities for mischief. "The would-be-engineer freshmen learned that they could take a fork and put a cooked pea on the end and spring it to the ceiling, which was of a rough texture," Jim relates. "Of course the pea would stick on the ceiling. The crew was glad to investigate those events and find the guilty."

1962

Christopher Jacobs received FDA clearance for the Genteel blood draw device for children and adults with diabetes. The device utilizes painless vacuum technology and can be used on body parts other than just fingers. "Genteel's patented technology is a game-changer in an industry of spring-loaded 'pokkers.' It is covered by six U.S. and over 25 international patents," he notes. "I promise it will challenge everything you've come to believe about a lancing device." Jacobs is CEO and chief research engineer for Genteel, based in Midland, Texas.

1963

Bob Magnant retired in September, after 43 years of Federal service. He received a letter from President Obama, and a gold watch—a personal treat from his co-workers at the VA Medical Center in West Palm Beach, Fla. He shares this

reflection on his career. "I referred to myself as a 'computer doctor' within the Department of Veterans Affairs, Office of Information Technology; they called me a Senior Information Technology Specialist. But what's in a name? My previous titles included 2nd lieutenant (in Vietnam), then electrical engineer, first working with Army electronics R&D in New Jersey, and then with the U.S. Army Communications Command in Maryland, California, Iran, Germany, and the Far East for 20 years. All in all, I worked for you.

"In 1985 I headed south, with my Rhodesian Ridgeback in tow, to seek out new fortunes in Palm Beach, Florida. While real estate investments failed me, my pot of gold turned out to be my wife, Judy, and a new family. As luck would have it, the VA decided to build its first new hospital in decades nearby, extending my Federal service with a second career. I was part of a crew hired to configure and install 800 new desktop computers throughout the facilities. In IT, we provide the computer and communications service that help the providers, caregivers, technicians, clerks, and the clergy to do their jobs. But we are truly in the people business too.

"To this day, I remember my classes in comparative religions in Boynton Hall fondly. I hope that WPI will continue to give emphasis to 'the value of the human dimension in engineering.' I have been telling people for years that engineers are a caring and compassionate species, not one that's cold and analytical. The gold watch and the 75th birthday card I received from WPI give testament to that."

1964

Milt Dentch writes, "After taking early retirement from Polaroid in 1996, I started providing consulting services for quality and environmental management systems and became certified to provide audits for the International Organization for Standardization (ISO). After conducting over 500 audits all over the world and providing training for auditors, I decided to record the best practices I had observed and simplify the often

confusing requirements of ISO. The American Society for Quality published my first book, *The ISO 14001:2015 Implementation Handbook* in April 2016. The book provides guidelines for organizations needing to have their environmental management system certified by an ISO accredited registrar. Based on success with the first book, ASQ asked me to write a similar handbook for companies requiring certification to ISO 9001:2015; in August 2016, it published *The ISO 9001:2015 Implementation Handbook*. This book provides guidance to organizations needing to certify their quality management system.

"My first foray into writing, *The Fall of an Icon: Polaroid after Edwin H. Land*, published in 2012, chronicled my years at Polaroid. What started as a way to both supplement my retirement income and provide me with interesting travel opportunities has become a fun hobby! I have another book in progress with ASQ; I've also edited a book by my 12-year-old grandson, and one by my 83-year-old Chinese neighbor that describes his escape from Nanking in 1936."

1967

Stephen Luber is associate professor of pediatrics at the University of Washington Medical School. Current clinical interests include major behavioral problems of children with an active clinical teaching practiced focused on children with autism spectrum disorder, prenatal exposure to recreational drugs, foster children, and learning disabilities. He has served as principal investigator in over 100 clinical therapeutic trials and published in refereed journals on vaccine development, infectious disease, and pediatric psychopharmacology. A graduate of the University of California, he previously had a solo practice in Ketchum/Sun Valley, Idaho, for 16 years.

Stephen says, "I am grateful for 35 years of marriage to Lorie, a pediatric nurse practitioner with an active career in school-based nursing. We have three daughters and three grandchildren. We maintain a residence in Sun Valley, where our family enjoys cross-country

and downhill skiing, hiking, biking, white water rafting, and an occasional backpack trip into the Sawtooth wilderness area. I fondly remember a prolonged rugby career with the Bay Area Touring Side, three overseas tours, several national championships, and profound friendships. Recently indulged in old boy play at the Aspen Ruggerfest!”

1968

Ken Battle writes, “Well, I just hit 70, maybe a bit later than many of my classmates, so I kicked in SS at max rate and continue to work at Jacobs Engineering in N.J. My wife, Jeanette, and I are selling our New Jersey house and will expand our Finger Lakes house and move there full-time. I will continue to work after the move, maybe a few less hours a week. With that house so close to Watkins Glen, I just had to buy a track car; I purchased a 2003 M-B E55 ANG with 530HP to use on track days. I still have my ’84 Ferrari 400i but sold my ’69 Lotus a couple of years ago. Once we have our lake house expanded, we will welcome visits from long missed friends.”

Bill Belisle writes, “Still doing paperwork for our business ... but enjoying more of the world. Last year, it was China. This year my wife, Belinda, and I visited the Baltics and Scandinavia. Lunch at the Den Gyldene Freden restaurant was a treat! The Nobel committee for literature meets there every week, and the place is virtually unchanged since 1722.”

1969

Bruce Green celebrated 70 last year. He writes, “Three generations of my family graduated from Worcester Tech. My father went to WPI after coming home from WWII in the South Pacific as a naval aviator. WPI gave him the start to a successful career in industrial sales.” Bruce lives in Brunswick, Maine.

Chuck Hardy and **George Spires ’64** teamed up for a tour of Utah’s national parks, visiting Zion, Bryce Canyon, Canyonlands, and Arches, as well as Mesa Verde in Colorado. They also took a steam train ride on the Durango



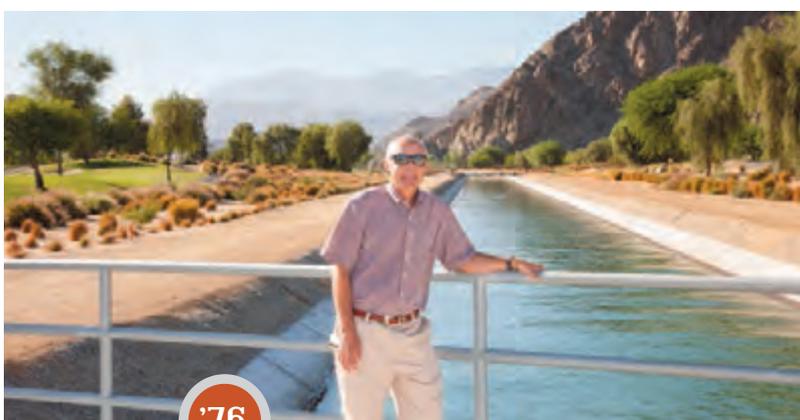
’67

Stephen Luber



’72

Ken Kolkebeck



’76

Mark Johnson

& Silverton Narrow Gauge Railroad in Colorado. “We are planning on visiting the baseball, football, hockey, and basketball halls of fame late next summer,” he writes. “In January my wife and I embarked upon a 28-day cruise to Southeast Asia that included ports of call in Hong Kong, Vietnam, Cambodia, Thailand, Indonesia, and Singapore. I continue to perform consulting work, as needed, and am taking courses of interest at the University of Wisconsin Green Bay.”

Mahendra Patel (MS ME) retired from the Massachusetts Bay Transportation Authority (MBTA) on Nov. 30, 2016, after an engineering and management career of more than 47 years. His long career encompassed electric utility projects and the Big Dig, culminating in the public transit industry. He was active in ASME for over 30 years, holding office and serving on Region I committees, including a stint as vice president. He also served in several electric utility industry organizations.

A founding member of the Asian Indian Organization Patidar Samaj of New England, he has served as president and secretary, and continues to serve as treasurer. Mahendra and his wife, Lekha, are active in several Indian cultural organizations. They are proud parents of Mona (Harvard, UPenn) and Reena (BC, Suffolk), both lawyers. “We love and enjoy grandparenting,” he writes. “Upon retirement, I plan to do more traveling and gardening, and also learn Spanish and woodworking.”

1970

On Nov. 5, 2016, **Jack Gale**, PGA Master Professional, was inducted into the New England PGA Hall of Fame. Gale has been a PGA member for 40 years and is a past president of the New England Section. Currently he is a PGA teaching professional at Cyprian Keyes Golf Club in Boylston, Mass., and the golf coach at Shrewsbury High School.

’72

Edward Schrull



1972

Howard Levine writes, “After more than 44 years, I have moved back to my hometown. I am looking forward to being of service to the college and to my beloved Department of Physics. Having rejected a faculty position out of my PhD degree in physics from Rutgers, I can help WPI physics students with my knowledge of industry and leading-edge technologies in semiconductors, nanoscience, and ceramics. I look forward to the future!”

Ken Kolkebeck writes, “I retired from FirstFuel Software at the end of 2015, and have been enjoying retirement since. Merry Mans and I were married on Sept. 10, 2016, on our dock in Sparta, N.J., in front of a small group of family and friends.”

Edward Schrull and his wife, Annie, celebrated their 30th anniversary in September with a two-week trip to Europe. Their tour included a cruise of

the western Mediterranean, three days in Rome, four days in Paris, and a day in London. Ed and Annie have three adult children and five grandkids ranging in age from 6 months to 5 years. Ed works for the Tennessee Valley Authority in Chattanooga as corporate nuclear fleet licensing manager. "We live near the 8th green of the Black Creek Country Club and take great joy in heckling our fellow golfers," he adds.

1973

Richard Belmont writes, "Retirement is wonderful. I'm staying busy volunteering through my church and with the AARP Tax Foundation. My golf game is improving and I do some traveling with my family. Highlight this year was traveling in the Canadian Rockies and seeing the Calgary Stampede and Rodeo."

Dean Kamen's iBOT mobility device was in the news again last fall, when Toyota announced funding for design improvements. The wheelchair, which allows users to rise to standing height, climb stairs, and navigate rough terrain, went out of production in 2009. Kamen says that advances in technology will allow him to reduce the weight and the cost of the chair considerably.

1974

James Kuzdal published *The Principles of Earned Value Management: A Cost and Schedule Control System*. He writes, "EVM is a system that allows a manager to determine whether a project is on track to meet its cost and schedule objectives. If not on track, the system provides tools to assist in the isolation of the source of the problems. My book is designed to serve a variety of needs. As a textbook, it can be used by the novice to learn the topics step by step; it can also be used by an instructor to provide supplementary course materials and exercises. As a reference manual, it provides the practitioner with a handy source of application examples, definitions, and formulas. Some new concepts are presented that expand upon the mainstream of EVM practice. There is also a discussion of Earned Schedule for time analysis and forecasting." Jim is currently president of Brook-Anthony Corp., providing

consulting services and seminars to government and commercial clients.

1975

The Anti-Defamation League's Mountain States Region honored **Vicki Cowart** as a civil rights champion at its 2017 Civil Rights Awards Reception in February. Vicki has been president and CEO of Planned Parenthood of the Rocky Mountains (PPRM) since 1993. During her tenure, the organization has empowered hundreds of activists through strategic advocacy that has included defeating three ballot measures that would have prohibited abortions in all circumstances. In 2015 she courageously led the staff and community of PPRM through political smear campaigns and an attack on the health center in Colorado Springs that killed three and left several people injured. In addition to its advocacy work, PPRM provides health care to more than 125,000 women, men, and teens through its 29 health centers in Colorado, Wyoming, New Mexico, and southern Nevada.

Marty Elia writes, "My lovely wife, Gail, and I are celebrating our 30th wedding anniversary all year long."

1976

Mark Johnson's reflections on his 40-year career in the water utility sector were published in the October 2016 issue of *Water Gazette*. In a retirement essay, "Water Across America," he writes of his work, his family's adventures, and his plans for golfing, hiking, and traveling—as well as some part-time consulting. He thanks California's Cochella Valley Water District "for providing me and my family a great last stop for a wonderful and rewarding career."

Steven and Madeline Gauthier Lowe are proud to report that their son, Matthew, received his PhD in electrical and computer engineering from WPI in May 2016.

Roland Moreau writes, "I retired from ExxonMobil in 2014 after 34 years, having served in a number of technical, leadership, and management roles. I remain active in the oil and gas

'75

The Anti-Defamation League's Mountain States Region honored Vicki Cowart '75 as a civil rights champion at its 2017 Civil Rights Awards Reception in February.

industry as an officer for the Society of Petroleum Engineers International in the role of vice president of finance. I was recently elected to the board of trustees for the American Institute of Mining, Metallurgical, and Petroleum Engineering as president-elect designate. My wife, Jane, and I continue to live in Houston, and we enjoy traveling and volunteering in our free time. I am forever thankful to my education at WPI for having prepared me for a successful career."

Jonathan Rourke writes of meeting **Irving Gerber '44** and his wife, Shirley, at a temple function in Belmont, Mass. "They kindly shared many recollections of their years on the WPI campus during WW II, which was, as they noted, the Cluverius era," Jonathan writes. "Irving and Shirley met during Irving's first year. He was living at the old AEPi fraternity, in the days when girls were not allowed off of the first floor. And, they further noted, in that era rules were generally followed. Irving's career began in the day of the first germanium diodes, precursors of the transistor, and, of course, all that has come since. Irving ran multiple businesses, but sold out at 60 and began a second career as a custom furniture maker, something he pursued for three decades. There may be a lesson in longevity there for my classmates!"

1977

Michael Abrams and his wife, Nancy, spent Thanksgiving on Maui. He returned from their holiday in time for Giving Day, and says he might have recruited one more supporter. He shares the following story: "While I was on the Road to Hana at the Three Bears Waterfall (wearing my WPI cap), the fellow next to me turned and said, 'WPI! Did you go there?' And so I met Tim Fox, Class of 2003. I reminded him of Giving Day and wrung a promise to donate out of him. Our spouses obligingly took a picture of us for posterity."

Robert Cundall is Lincoln Center's new executive VP and CFO. He brings 35 years of experience in finance and operations, most recently with the Museum of Arts and Design, and has held executive posts in the technology and energy sectors. In addition to his BS in management from WPI, he holds an MBA in finance from The Wharton School of the University of Pennsylvania.

Brothers **Gustavo** and **Raul Matamoros** paid a visit to former WPI writing tutor Liz Rubin Cotton, assisted by Gustavo's son Gustavo Matamoros-Cipolli, who contacted WPI for clues to her whereabouts. Gustavo senior and his wife, Norma, who live in Venezuela, were in America in January, staying at Raul's home in Connecticut. They had come to bring their son to the University of Hartford for the start of his program in audio engineering technology. The four of them came to Worcester, enjoyed lunch at the Boynton, then, guided by memory, tried to find Liz's house. A neighbor directed them to her new residence. Young Gustavo reports on the visit: "She is 73 years old and very healthy." They shared a very nice time that evening, and she was amazed when she saw me, because she said that I look so much like my uncle when he was young!"

1979

Mary McDonald writes, "I travel pretty extensively for work, and in the past few weeks that's taken me near friends and classmates. I visited with **David Mauriello** in Dallas, and **Beth Driscoll**

Kinney and Karen Chesney '78 in New Jersey." Mary is CEO/CTO of McDonald Consulting Group in Austin, Texas.

1980

Marc Hildebrant (MS EE) has retired from industry after 40+ years. He writes, "I'm now restoring old music from Edison cylinders (c. 1900) and some 78 rpm records from the 1940s. Some of my restored music is available on Amazon on Volume 1 of the "Novelty Tunes" series by Diamond Cut Productions. I'm using powerful DSP software to remove the distortion from the music and am having a good time."

"The best times of my life were at WPI," writes **Carlos Maltos**.

1981

Randy Byrne writes, "I started my own business, final_slogan2, focusing on helping scientific equipment companies transform their B2B organizations from a traditional product and technical focus to being more customer-focused in their sales and marketing organizations. We help clients adopt strategic and tactical approaches that help them differentiate themselves from competitors via intelligent use of digital sales and marketing technologies to drive organic revenue growth."

1982

Mark Brown writes, "After a distinguished 32+ year career, I have retired from Northrop Grumman (formerly Westinghouse), where I achieved the position of senior consulting engineer working as a systems architect. I reside in Ellicott City, Md., with my wife, Shirley, and I'm looking forward to travel, home projects, and relaxation."

Helen Vassallo, professor of management in the Foisie Business School, sent the following message to the WPI Community on Giving Day. "WPI is a very special place. I received my MBA from its business school many years ago. Since that time three of our children have received five degrees from the Institute: one ME, two BBTs, one ECE, and one BME. The latest relative to enter WPI is my grandchild, who intends to study fire protection

engineering. I am grateful for my excellent education and for that of my offspring, as well as for all the sorority women I have advised, and all the students in the classes that I have taught."

Bob Wadja writes, "Time is passing so quickly. Lori, whom I met at a Sigma Pi Halloween party in 1982, is still my wife. Our oldest, Julie, is a college sophomore dual degree in bio/econ; our son, Eric, has two more years of high school and is an avid hockey player and javelin thrower interested in studying physics (at WPI?). Looking forward to going part-time soon, and then retirement. Have replaced running with cycling. It's all good!"

1983

Karen Barnard writes from Anchorage, "Termination Dust is topping the Chugach; skiing should be great this winter! Looking around for WPI alumni in Alaska or/and for an inquisitive project using complex systems as part of the solution."

Eric Schade writes, "Hello from Maine. I haven't often felt I was worthy of the class notes section. This year I have several things to share. First, both my sons are at WPI. Andrew is a junior in computer science, and Ben a freshman, possibly following me with mechanical engineering. Both love it, and it is fun for me to be back after so many years, if just to visit. Andrew spent A-Term doing his IQP in Santa Fe, giving my wife, Sue, and me an excuse to visit. "Second, my little business is to design small boats that people can build themselves. I also teach build-your-own kayak classes through The WoodenBoat School in Brooklin, Maine (thewoodenboatschool.com). This year, while teaching at its off-campus location at Chesapeake Light Craft (CLCboats.com) in Annapolis, one of my eight students was Robert Stein '71 of Rutland, Vt. He built himself a beautiful 14-foot wooden kayak that I designed. It is built from wooden CNC (Computer Numeric Control) parts made by Chesapeake Light Craft and assembled using epoxy and fiberglass."

1984

Desiree Awiszio writes, "It was an enlightening evening at the MathAltitude School of Mathematics in Worcester on Nov. 12, 2016. I invited

WPI students from our IEEE student section chapter to offer presentations, demos, experiments, and videos that really excited the K-12 students. Thanks to Elizabeth Bliss '17 (chair), Mariya Zagalskaya '17 (vice chair), and Binam Kayastha '18 (webmaster). Also present was Christopher Coulter, the business development officer for Bay State Savings Bank in Worcester. His presentation addressed some of the different financial vehicles to help parents with the cost of their child's education – information the parents really appreciated. Also, as an IEEE senior member and chair of the Women In Engineering (WIE) Committee for the IEEE Worcester County section, I spoke to students last April about the engineering career path, and the feedback was terrific. I have since organized another event with MathAltitude principal Olga Serebrennikov.

Patricia Bray has joined the staff at Dartmouth College as part of the Advancement Division. After 32 years in the corporate world, she's enjoying the opportunity to use her skills to support the college's mission of education, lifelong learning, and the creation of knowledge.

1985

Pete Manca is president and CEO of Egenera, which was recently named Cloud Vendor of the Year by Channelnomics.

1986

Marge Motyka Shinkle was part of the Inaugural Women's Red Sox Fantasy Camp at JetBlue Park in Ft. Myers, Fla. As part of Butch Hobson's Blue Sox, she helped win the 2016 Championship. Championship rings were presented by team coach Rico Petrocelli at Fenway Park in May. Marge played second base and was nominated for the camp Gold Glove award.

1988

Milosh Puchovsky ('91 MS FPE), a professor of practice in WPI's Fire Protection Engineering Department, served a term as president of the Society of Fire Protection Engineers (SFPE) in 2016. His areas of interest include the design and evaluation of active and

passive fire protection systems, including means of occupant egress.

Sue Giroux Sontgerath writes, "Heri and I are entering our second year of empty nesting and has been great so far. Our daughters, Juli (22) and Steffi (19), are at Loyola of Maryland and WPI, respectively. Juli will graduate in May and is hoping to enter the Peace Corps; Steffi is studying chemical engineering at WPI. I am working for WPI's director of pre-collegiate outreach programs. I supervise most of WPI's pipeline programs for K-12 students. It's great to work on campus and see all the exciting changes. Heri is the VP of operations and finance for Nora, a specialty flooring manufacturer."

1989

Rosemary Vassallo Nelson ('90 MS) writes, "I just celebrated my third year at Integrated Genetics as Automation Group lead. I also had the pleasure of watching my son, Chris (Class of 2020), start his college career at WPI in the ME department. My sincere hope is that he enjoys his time here and learns as much as he can from his professors, teammates, classes, and life experiences as I did. There is nothing quite like a WPI education."

1990

Noah Forden placed third in the American's Challenge Gas Balloon Race in Albuquerque as co-pilot on a balloon called One Leg Out (so-called, the Providence Journal suggests, because the basket's dimensions would make it impossible to sleep with both legs fully extended.) Noah traveled to the race in his homebuilt plane, expecting to compete in his own balloon, but was pulled into the One Leg Out team at the last minute when that balloon's owner was unable to compete for medical reasons. Noah works as a civilian engineer at the Naval Undersea Warfare Center in Newport, R.I.

Chris Hill completed a year's sabbatical, during which he and his wife traveled around the world, visiting countries in Asia and South America and all points in between. His thoughts and musings on the trip can be read at gocircamundi.com. The sabbatical comes after a successful exit from a mobile application analytics company that he helped build over the

last few years. Now back in his hometown of Seattle, Chris says he's interested in connecting with alumni living or visiting in the area and with others, on either coast, who are building mobile-, app-, or data-centric businesses.

Roberto Morales writes that he is enjoying his travels to remote locations in support of national security programs run by Orbital ATK. Bob is currently chief engineer and deputy program manager for a global network of satellite tracking stations for the U.S. Air Force. He notes that the program started as a limited demonstration and is now undergoing upgrades after a decade of successful operations.

'90

Roberto Morales



1991

Michael "Strike" Messer writes, "After 25 years in the U.S. Air Force as a fighter pilot, analyst, and cyberspace operator, I retired on Sept. 1, 2016. I am now working as a defense contractor for PLEX Solutions, a small cybersecurity company, as their director of the US Cyber Command Business Unit at Fort Meade, Md. I am responsible for the company's work force in the command and other activities supporting the DoD in and through cyberspace. Ironically, I didn't do very well in ANY of my computer science classes at WPI and now I am very deep into cybersecurity, network operations, and all things computer related."

1992

David Friedman was named acting assistant secretary of the Office of Energy Efficiency and Renewable Energy.

1993

MITRE president **Al Grasso (MS CS)** was honored by the Society of Women Engineers with for significant contributions to the acceptance and advancement of women in engineering. He received the Rodney D. Chipp Memorial Award during an Oct. 28 ceremony in Philadelphia. "Al has consistently created and developed programs for women to make them feel recognized, respected, and welcomed," said Sarah MacConduibh, MITRE's vice president for Air Force programs. "Through his leadership, MITRE has

continued to embrace a diverse, inclusive workforce while also encouraging a collaborative culture."

Laurie McCabe ('04 MBA) received her PhD in organizational leadership from Regent University in 2012 and soon after launched a commercial version of her unique treadmill desk design through her company, Dr. McCabe's Fitness Products. She attributes the innovative design of this aftermarket treadmill desk to the completion of her dissertation – which was written entirely while walking 3 mph on a treadmill. Laurie also teaches strategic planning at Christian colleges in Kenya.

Jeff Rembold writes, "My 12th grade daughter has WPI on her short list, so I brought her to the November 11 open house. It was a wonderful visit, seeing all the great changes as well as all that is still the same – lots of good memories. I even bumped into **Kevin Beatrice** there!"

The Hollywood Reporter reported on the challenges that VFX supervisor **Pete Travers** faced in creating a new generation of ghosts for the 2016 remake of *Ghostbusters*. Travers and his Sony Pictures Imageworks team also brought favorites from the original 1984 comedy back to life, including Slimier, and the Stay Puft Marshmallow Man. Travers spoke of tapping into the "reverence" for the original film, while incorporating 30 years of new technologies, which included using an LED-covered drone to create the illusion of a hovering ghost.

1995

In September, **Jacques Brouillette** accepted the position of director of production at Harvey Remodeling in Shrewsbury, Mass. He sums up his responsibilities as "delivering home remodeling projects – from small front porches to entire new homes – on time and within budget, while creating raving fans of our customers." He adds that he is excited about this new opportunity and the challenges it will bring.

Joy (LaPointe) Clark was promoted to vice president/partner of Leggat McCall Properties, a Boston-based private commercial real estate developer/advisor and project management firm. She and her husband, **Adam Clark '97**, currently reside in Newton, Mass.

1996

Tony Delgado Parra is health, safety, and environmental manager with Kuwait Drilling Company. He resides in Kuwait City with his wife, Edwani, and his daughters Oriana (13) and Amanda (2). Prior to this assignment, Tony spent eight years working for Baker Hughes and Tullow Oil in the African continent.

1997

Natalie (Schneider) Grace passed the Virginia bar exam, graduating from patent agent to patent attorney. She works with Oblon, an intellectual property law firm based in Alexandria, Va. Her specialties include patent

prosecution and post-grant proceedings in the areas of computer science, electrical engineering, and mechanical engineering technology.

1998

Gregory Zelfond is a founder and CEO of SharePoint Maven (sharepointmaven.com), a consulting agency that helps small- and medium-size businesses collaborate using SharePoint and Office 365 technologies.

1999

Paul Graves (MS EV) and his wife, Jane, recently celebrated their 20th anniversary. He writes, "We enjoyed a trip to the Boston Mountains in Arkansas, where we did some hiking and stayed in an off-grid cabin complete with solar-battery power, filtered rainwater, chickens, and a panoramic view of a forested valley."

2000

Luis Velasquez writes, "It's been a while since we left WPI. I loved my time at WPI. It was a great experience. Since 2000, I have moved to Houston, started working at NASA, and I have gotten married. Time flies. Greetings to all my classmates!"

2001

Congratulations to **Bill Shaw**, executive director of the Martinos Center for Biomedical Imaging at Mass General Hospital, who was selected for a Zhi-Xing China Eisenhower Fellowship. He will spend the four-week fellowship focusing on the factors that drive biomedical innovation, with the goal of encouraging investment in high-risk, early-stage ideas for new healthcare products and services. Starting in Beijing and ending in Shanghai, he will analyze differences in culture, finance, law, and regulation that underlie biomedical innovation in the U.S. and China. He will also seek ways to increase interactions between U.S. academic innovators and Chinese industry.

2002

Toby White ('04 MS FPE) was recognized by *Consulting Specifying*

Engineer as a 40-Under-40 recipient, in an awards ceremony held in Chicago last fall. He is an associate at Arup in Cambridge, Mass., and has worked in Arup's San Francisco, Hong Kong, Sydney, and Boston offices. His work on large, mixed-use casino resorts is focused on developing unique approaches to safety issues in the gaming industry. He's also an avid drummer and percussionist, formerly with Fennario, a Massachusetts-based Grateful Dead tribute band. Since recently becoming a dad, he has taken a hiatus from frequent performances, but occasionally fills in with other bands when the opportunities arise.

2003

In March 2016, **Anthony Forester** and his wife, Kellie, welcomed their second daughter, Josephine. The family is currently living in Los Angeles.

Benoit Steenland-Gilbert and Jennifer Borus welcomed their daughter, Everleigh Rose Gilbert, on Dec. 18, 2016, "with hopes for future WPI graduates in the family," Ben adds.

2004

Joe Bush is executive director of the Worcester CleanTech Incubator. For the second year in a row, the incubator received a \$120,000 grant from the Massachusetts Clean Energy Center. Located in the Printers Building in downtown Worcester, WCII provides workspace and prototyping labs to seven start-up companies.

2005

David LeRay married Dorothy Du on Aug. 20, 2016. Classmates **Derrick Custodio**, **William Herbert**, **Vonda Bui**, and **Wilson So** were in attendance. All these alumni met on Floor Four of Daniels Hall in 2001.

Piyali Mazumdar writes, "I am excited to announce that Art by Piyali has teamed up with Service Dog Boutique to support a great cause. My canine artwork is now being featured on one-of-a-kind home products, clothing, and accessories. All purchases will support someone who benefits from a

service dog. You can browse my collection at servicedogboutique.com." Piyali works out of her home studio in Auburn, Mass. Her website notes, "My paintings depict the universality of life and emotions. They portray the grey shadows of life coupled with vibrant blooms of emotion. They are signposts of my journey through places and cultures around the world."

Rick Richter informs us of his marriage to **Samantha Michalka** on June 26, 2016. "Dr. and Mr. Michalka are living in their new home in Dedham, Mass.," Rick writes.

2006

Martin Dagoberto is campaign coordinator for Massachusetts Right to Know GMOs. He has been active in seeking legislation that requires labeling of genetically modified foods. [See his Letter to the Editor, p. 2.] In an online interview with *Truthout*, he credited his WPI education with sparking his interest in the issue. "It was there that I gained an appreciation not only for the immense promise of medical biotechnology, but also for the incredible set of risks that the shortsighted and accelerated engineering of our food entails."

Greg Ratner lives in Brooklyn, N.Y., and has been working on his second technology start-up, Troops, for over a year. He reports that they closed \$7 million in Series A financing in September and are looking to hire more amazing software engineers. Greg is getting married in March 2017. In his spare time, he runs a popular Instagram account, @FlashAndHam.

Adam Wilbur and **Suzanne (Peysler) Wilbur '07** live in Holland, Mass. He writes, "Suzanne and I hosted a Christmas party with Santa at our home, which was attended by a number of WPI alums and their families."

2007

Jenelle (Pope) and **Patrick Canny** welcomed their daughter, Ellen Josephine Canny, into the world on Dec. 5, 2016. "Ellen is already showing an aptitude for engineering, as she has optimized the flow rate of her formula bottles," they note.

Vanessa Castro was selected to participate on the advisory board for the Energy Management and Controls Technology Program at Valencia College in Florida. She is the only woman, and the youngest member on this board.

Derek Williams and his wife, Amanda, welcomed their first child, Mason James, on Oct. 11. Derek is coming up on 10 years working as a dynamic measurements engineer in experimental testing at Pratt & Whitney. An avid saltwater kayak fisherman, he has been selected as a member of Three Belles Outfitters' Hobie Kayak Fishing Team.

Attending the wedding of Glen Gallagher and **Belinda Barbagallo** in June were **Alisha Begin '09**, **Melinda Belisle '08**, **Alissa Paquette '07**, and **Linda Papaargir '08**. "All five ladies were founding members of the Alpha Xi Delta chapter at WPI," Melinda notes. "The beautiful outdoor ceremony at Gibbet Hill in Groton, Mass., overlooking rolling hills of conservation land, was followed by an intimate dinner."

Ashley Mossa Lindeman and **Jeremy Lindeman '05** are happy to announce the arrival of their son, Aksel Owen, on Nov. 1, 2016.

2008

Cheryl (Boquist) Ingram and her husband, Eric, welcomed their third child on May 24, 2016—a boy named Ozlo James. "He was happily welcomed by his siblings Tesla Jane and Zakkary Eric," Cheryl reports.

2009

Founders **Nick Bold**, **Alex Camillo**, and **Kevin Harrington** teamed up to launch Technocopia, a not-for-profit maker space in the Printers Building on Portland Street in Worcester. Other alums involved in the effort are facilities director **Ian Anderson '08**, and MBA candidate Joe Forjette, who serves as financial director. The facility offers common work space, rental bays, and a variety of tools, plus training classes and workshops. Shared work areas include a wood shop, 3D printer station, electronics bay, CNC mill, and a laser cutter station. Check out the calendar of events at technocopia.org.

2011

Charlie Cummings and **Kaylyn Button '12** are now married and live in Virginia Beach, Va. Charlie is flying jets for the U.S. Navy and Kaylyn is an optometrist at a local practice.

Erin Kiley (MS AM, '16 PhD) joined the math faculty at Massachusetts College of Liberal Arts (MCLA) as an assistant professor. Her research focuses on mathematical modeling and computer simulation of microwaves. Most recently, she wrote a mathematical model and corresponding multi-physics computer simulation of microwave sintering.

Linnea Palmer Paton writes, "Guillaume Marceau and I were married in 2012 in Connecticut. We welcomed our first child, Adaline, in January and currently live in Brooklyn, N.Y."

Quontay Turner returned to campus in December as the closing speaker for WPI's 2016 Great Problems Seminar poster presentation day. She is now senior assistant director of multicultural recruitment at Emerson College.

2012

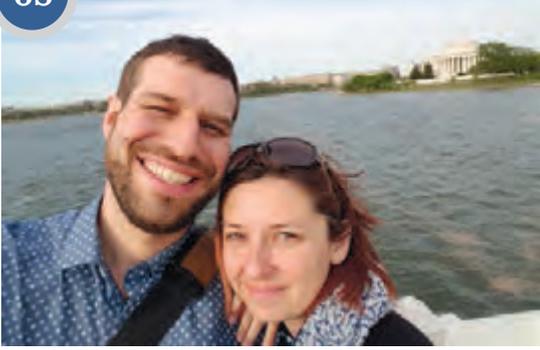
Jetta Garrity started a new job as a manufacturing engineer at Stryker. She and **Andrew Lybarger ('13 MS)** bought their first house, in Fort Worth, Texas.

Jon Gay made the list of *Apparel Magazine's* "30 under 30." (He was nominated by classmate **Victoria Brown**.) Jon, still an avid runner and a triathlete, works as a quality engineer at New Balance, where he puts footwear and apparel through testing protocols that he has created. In the magazine's write-up, he harks back to his cross country and track team days at WPI, as well as his MQP on polymer chains.

John Wilder writes, "In August I accepted a position as a software specialist with P&G Gillette. All year I have been busy marching in parades across Massachusetts with the Aleppo Shriners Minutemen, and recently I was inducted into the Sons of the American Revolution. On Sept. 11 my sister gave birth to a beautiful daughter and I became an uncle for the first time."

'05

Rick Richter and Samantha Michalka



'05

Piyali Mazumdar



'07

Derek Williams



'09

(from left) Nick Bold, Alex Camillo, and Kevin Harrington



'15

Sam (MacNeal) Cornwell

2013

Macauley Kenney writes, "I joined forces with four other MIT alumni to start Kumwe Logistics, a freight brokerage serving transportation needs in East Africa. Together we participated in the MIT Delta V accelerator and, after a successful pitch on Demo Day, are operational in Rwanda and beginning to scale."

On Oct. 15, 2016, surrounded by many of their friends and fellow alumni, classmates **Shelby Miller** and **Jonathan Marokhovsky** were married at the Fruitlands Museum in Harvard, Mass. The pair met in a WPI residence hall in 2010. They recently purchased a home in Woonsocket, R.I., and say they look forward to expanding their new family with a furry companion soon.

On Dec. 23, 2016, **Ryan Shooshan** proposed to **Nikole Connor '12 ('14 MENG)** inside the Great Hall of Higgins House. He first led her on a scavenger hunt around campus, with last clue leading to the surprise proposal. "She said Yes!" Ryan reports. The couple met in 2010 when they were

paired up as community advisors for the same freshmen dorm. They currently reside in Louisiana and plan to wed in the spring of 2018. "WPI has always been a special place for the two of us." says Ryan. Nikki chimes in, "I couldn't have planned a more perfect proposal." The couple expresses thanks to the Alumni Office for granting entrance to Higgins House during the holiday break.

2014

Sarah Sawatzki writes, "Hello, Class of '14. My biggest life update is that I moved into an expat role in Nagoya, Japan! I moved in August and have a three-year contract here, working as a quality engineer for Pratt & Whitney."

2015

Sam (MacNeal) Cornwell writes, "I married my high school sweetheart, Alex Cornwell, on July 22, 2016. Alex did not attend WPI, but was a regular visitor on campus. Lavaliered into Alpha Gamma Delta in 2014, he has become a revered member of my chapter. He holds WPI in a special place

in his heart just like I do. We now live closer to WPI than before – two miles away as opposed to the four miles away our parents live. Thirty Alpha Gamma Delta sisters attended the ceremony."

Peter Graham Chambers is co-founder of Sleepbox, his second start-up. He sees potential for the company's soundproof "napping cabins" in offices, to give workers a place to concentrate, or to recharge. In a recent writeup in *The Improper Bostonian*, he expressed the hope that current focus on productivity, and Arianna Huffington's book *The Sleep Revolution* might help make the case for his product.

Henry Nguyen (MENGR) writes, "I am engaged to a wonderful girl by the name of Chung Le, and I am currently working as a test engineer contractor at Panasonic in Dublin, Ohio."

Yang Zheng shares, "The years spent studying at WPI will be the most unforgettable memory in your life!"

2016

Maeve McCluskey writes, "I just began

my first 'real world' job, working as the office manager of an awesome start-up, Eduporium, located in Watertown, Mass. Eduporium's aim is to make educational STEM technology available to children of all different backgrounds through careful market research and competitive reselling. It's a fast-paced, friendly environment, and in some ways it reminds me of WPI. Thinking fondly of all of my friends on campus! Can't wait to come back and visit for all of the wonderful theatrical performances."

Katie Picchione writes, "I'm in my first year in the Technology and Policy Program at MIT, where I'm developing methods to monitor and evaluate systemic change in Uganda's agriculture sector as part of the U.S. Agency for International Development's global food security initiative."

Vincent Sabo returned to campus in December to lead a discussion on Food Insecurity in Our Community, sponsored by the Office of Sustainability.

Viseth Sean sends word that he started PhD work this spring.



STEPHEN N. JASPERSON,

who taught physics at WPI for 39 years, died Oct. 5, 2016, in Plymouth, Minn., after a long struggle with progressive supranuclear palsy (PSP). He was 76. Described as “pumped about physics,” his devotion to teaching and to his field inspired colleagues and earned praise from students.

Jasperson earned his bachelor’s degree in physics from the University of Wisconsin, Madison, where he met his wife, the former Ann Eckstein. He also held a master’s degree and a doctorate in physics from Princeton University and completed postdoctoral research at the University of Illinois at Champaign-Urbana. He joined the WPI faculty in 1970, served as head of the Physics Department from 1984 to 1994, and retired as professor emeritus in 2008. He continued to share his love of physics with senior citizens, teaching courses in the WISE (Worcester Institute for Senior Education) program.

His specialty was solid-state physics, with research that included optical detection of plasma oscillations in metals and semiconductors. His love of music led him to help found the Tri-college Group for Electronic Music, offering courses and performances in concert with other area professors. His scientific perspective helped students understand the physical attributes of what they were hearing.

He joined colleagues at lunchtime in runs with the WPI Footpounders, and enjoyed hiking and backpacking with his family. He summited Mt. Whitney four times, the last to celebrate his 60th birthday.

In 2001 Jasperson was honored with the WPI Board of Trustees’ Award for Outstanding Teaching. He was praised as a skilled instructor who genuinely loved his subject and enjoyed sharing his enthusiasm with students. “He’s pumped about physics,” said one student. “His door is always open,” said another.

In addition to his wife, Ann, he leaves two daughters, and two grandchildren. His father, brother, and sister also survive him. The family has established a legacy fund at CurePSP.com to support research and awareness of PSP and related disorders. Memorial donations may also be made to Struthers Parkinson Center.

MERL M. NORCROSS,

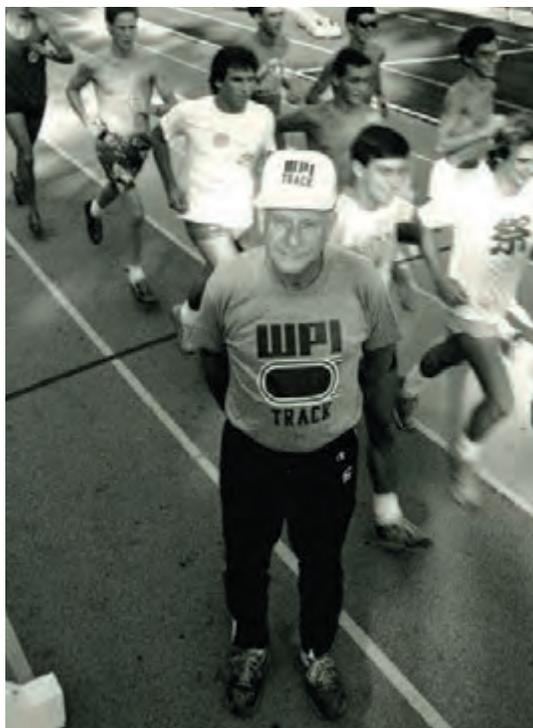
legendary coach and longtime resident of Holden, Mass., died Jan. 7, 2017, at his home in upstate New York, after an illness. He was 89. In his five decades as associate professor of physical education, including 42 seasons as head track and field coach, he formed warm bonds and inspired generations of WPI students. In 2007, WPI dedicated the newly renovated track in his name.

Merl Norcross arrived on Boynton Hill in the fall of 1952 as an assistant coach in football, basketball, and track. Under his leadership, WPI celebrated many winning and undefeated teams, and he counted eight Division III All-Americans among the students he coached. The Engineers posted a winning record in each of his final 26 years as head coach, while amassing a .700 winning percentage during his entire standout career. In all, he spent 53 years mentoring and inspiring WPI students.

Beloved by students, Norcross was tapped for Skull with the Class of 1960. He was inducted into WPI’s Athletic Hall of Fame in 1986, and was honored as Division III New England Coach of the Year in 1987.

A native of Kingston, Pa., he lettered in football, basketball, and track in high school and received a full football scholarship to the University of North Carolina at Chapel Hill. He graduated in 1950 with a bachelor’s degree in education, after time out for Army service during World War II. He then earned an M.Ed. and began coaching at high schools in North Carolina.

Norcross retired from WPI in 2004, but within a year was back in action, assisting with the Bancroft School’s track and cross country teams. He remained close to his WPI colleagues, visiting and calling frequently. He leaves his wife, Sandra (Higgins) Norcross, of 50 years, two sons, and a sister. He was predeceased by his two brothers.

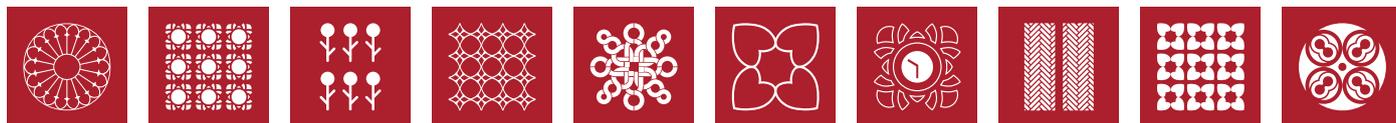


JOHN M. DRISCOLL '39 THETA CHI
 STANLEY KIMBALL '40 PHI SIGMA KAPPA
 WILLIAM RADZIK '40
 FRANK BODURTHA '42 CH
 ARVO SAARNIJOKI '42 CHE, SIGMA PHI EPSILON
 BILL CURRIE '43 ME
 BAILEY NORTON '43 ME, PHI SIGMA KAPPA
 WENTWORTH MAYNARD '44
 CUSHING BOZENHARD '45
 ABE GAMMAL '46 ME
 EDWIN KAPUSTA '47 MS CHE
 JERRY ECKERMAN '48 PH, ALPHA EPSILON PI
 AL GOLDBERG '48 CHE, ALPHA EPSILON PI
 TOM HESS '48 ME, PHI KAPPA THETA
 MERVYN PERRINE '48 LAMBDA CHI ALPHA
 JOHN COPPOLA '49 ME, THETA CHI
 WILLIAM FITZMAURICE '50 CE, THETA CHI
 EARLE HALLSTROM '50 ME, PHI SIGMA KAPPA
 BARTLETT HASTINGS '50 EE, SIGMA PHI EPSILON
 ALBERT WARNER '50 ME
 JIM GRENIER '51 EE
 JOE GWIAZDOWSKI '51 ME, PHI KAPPA THETA
 TOM O'CONNOR '53 EE, PHI KAPPA THETA
 JACK MALLOY '54 CE, PHI KAPPA THETA
 BOB MATCHETT '56 CH, SIGMA PHI EPSILON
 DAVE PRATT '56 CHE, PHI SIGMA KAPPA
 HARRY DER HAROOTUNIAN '57
 JAMES ARCHER '58 EE
 TOM DOWNS '59 CE, PHI SIGMA KAPPA
 LARRY MELLEN '59 CHE, SIGMA ALPHA EPSILON
 DOUG STOTZ '59 EE, PHI GAMMA DELTA
 HARLAN BEMIS '61 MA
 ALLEN JOHANNSEN '61 SIGMA PHI EPSILON
 WALTER JAWORSKI '64 MS CE
 JOHN VYTAL '65 MS EE, PHI SIGMA KAPPA
 ERIC ZINK '65 CH, PHI SIGMA KAPPA
 BOB KENNEDY '67 EE, LAMBDA CHI ALPHA
 RONALD ROBERTS '69 EE, PHI KAPPA THETA
 DEAN ELLSWORTH '73 SIM
 RICHARD NORLIN '73 CHE, MSM
 ROBERT HOUSTON '74 MSM
 ED BOYEA '75 MA
 RICHARD WEAVER '75 CE
 JOHN DEWINE '76 CE, SIGMA PHI EPSILON
 RAY HOULE '76 ME, LAMBDA CHI ALPHA
 MARY LEPAGE '76 MG
 JACK NISBET '76 MS CS
 PAUL WOOD '78 MS CH
 TIMOTHY DALEY '81 ME, PHI GAMMA DELTA
 JAMES MORGAN '81 CS
 JOHN MORSE III '81 SIM
 WINIFRED WESTON '81 SIM
 JUAN CABARCOS '84 MGC
 DOUGLAS SMITH '88 SIM
 GREG THOMSON '89 MFE, ALPHA CHI RHO
 MICHAEL TARASIEWICZ '00 CE
 ALICIA D'ERAMO '01 SD
 JOSEPH TALEB '13 ECE, ZETA PSI
 JEFFREY HAVILL '14 ME, PHI SIGMA KAPPA

THE WPI COMMUNITY ALSO NOTES THE PASSING OF THESE FRIENDS OF THE UNIVERSITY: BARBARA BERNSTEIN, ANN CUTTING, DOROTHY FAY, ROBERT LABARRE, JEAN LYNN, WILLIAM MILLER, EDNA NOILES, ELIZABETH SCOTT, AND JERALD WEISS (PROFESSOR EMERITUS, PHYSICS).

Complete obituaries can usually be found online, by searching legacy.com or newspaper websites. WPI Journal will share information from our files and assist classmates in contacting surviving family members. Contact jkmill@wpi.edu or call 508-831-5998 to request further information.

CELEBRATING YOUR PAST



COME BACK FOR ALUMNI WEEKEND

ALUMNI WEEKEND 2017 JUNE 1-4

Find out more and register at
wpi.edu/+alumniweekend
Pre-registration closes May 24

#WPIalumniweekend

Last year, nearly 1,000 alumni and friends came back to Worcester for Alumni Weekend. Don't miss out on these great events, and much more, in 2017.

- Alumni Weekend Golf Tournament
- 50-Year Associates Reception & Dinner
- Alumni Weekend Luncheon & Awards Ceremony
- WPI After Hours
- Special events for Reunion Classes ending in 2 and 7



WPI

Worcester Polytechnic Institute
100 Institute Road,
Worcester, MA 01609



ON THE COVER: Anna Chase '13 creates within an imaginary landscape, much like our cover artwork by Sean McCabe.