JOURNAL

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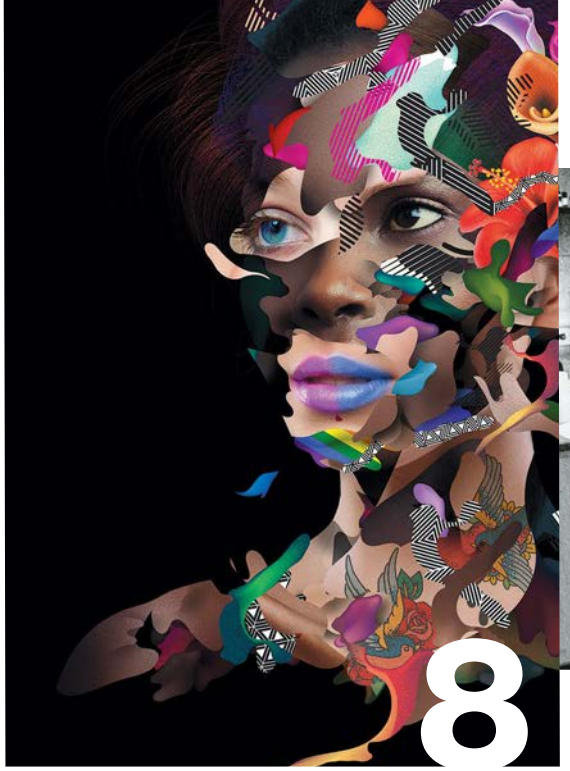
A SEAT AT THE LAB BENCH



winter 2020

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WALKING THE TALK

The COVID-19 pandemic has brought many changes to the WPI campus and to the way the university does business. It has even altered such longstanding rituals of academic life, such as office hours, as Art Heinricher, dean of undergraduate studies (at right, in white shirt), discovered. Sitting in his office in Boynton Hall near the beginning of A-Term, Heinricher looked out his window and saw masked students walking alone or in very small groups. This contrasted sharply with the sight he was used to seeing each fall: groups of students talking and laughing on their way to and from classes. He then thought about his own isolation. With access to Boynton Hall restricted and in-person meetings discouraged, Heinricher had cancelled his long-standing office hours, which gave him the chance to get to know students and "take the temperature" of the campus. So he decided, if students could not come to him, he would go where they were. Thus was born outdoor walking-and-talking office hours. Now he can stick to health and safety guidelines but still keep in touch with students. The meetings are unscripted, and casual conversations are the order of the day. The walking meetings are an opportunities to say "Hi," and to let students share what's on their minds. Because when everyone is feeling the stress of being cut off from human contact, personal connections—however brief—are needed more than ever before.

—COLLEEN WAMBACK

To see how WPI's academic enterprise has adapted to the unprecedented challenge of a global pandemic, read "In a World Turned Upside Down, We Are Still WPI," starting on page 28.

PHOTO BY MATTHEW BURGOS

PHOTO BY MATTHEW BURGOS

Featuring Lisa Pearlman, Director of Health Services

TO SEE A VIDEO OF THIS INTERVIEW, VISIT *WPI.EDU/+JOURNAL*

LL: Lisa, you joined WPI right before the fall term started. What a time to be starting a new position as the director of Health Services! It's now late October. How has it been going?

LP: Really well. I feel so lucky that so much thought went into how to make this a safe environment for students and how to plan and respond as things change. Having worked at other colleges and universities, I've never seen an approach as integrated as WPI's. It's been fascinating to work with the Coronavirus Emergency Response Team. They are a smart, supportive group of people who are working so hard to figure this out. Every day we have new questions we need to answer and new protocols we need to develop.

LL: Can we talk about our students and how they're doing? You and your team are in contact with any students who test positive.

LP: We haven't had too many, luckily. But we have had some, and we've needed to isolate them for 10 days, and quarantine their close contacts for 14 days.

LL: And you're also helping make sure all of our health and safety protocols are being followed. What are you hearing from students who have been impacted by the pandemic?

LP: They've been so cooperative as we have needed to do contact tracing, isolating, quarantining, and all the other things we need students to do to keep the campus safe. It's really hard to ask students to stay in one space for 10 or 14 days. We support them as best as we can with daily phone calls and visits from Health Services, if the need arises. We try to get them whatever we can to make this work for them, including food they like and help figuring out their laundry. We recognize that it's a big ask. Overall, our students are doing really well and are supportive of each other. I've been incredibly impressed.

LL: That's great to hear. And all of the students who have tested positive have recovered and are doing OK, right?

LP: Absolutely. It's been a pretty mild illness for everyone so far.

LL: We talk all the time about how this is a classic theory and practice moment. We planned for months and months to get to the point of being able to be open this fall and welcome our students back. But every new case brings an opportunity for learning. Can you talk a little bit about how you are going about that learning?

LP: As you mentioned, WPI did a tremendous amount of planning before students came back to campus. But it's really difficult to know all the questions to ask until you're in the moment. And with each new positive case, new issues arise that we need to deal with on the spot. One good example is how we came up with a testing plan for students in quarantine, based on our first positive cases and their close contacts. Watching how things happened with that first cluster helped us figure out the right questions to ask and the changes we needed to make. As a result, we haven't seen any real additional spread near the campus from close contacts.

LL: We hope that continues as we get into the winter season. Thank you, so much, for all the work you're doing on behalf of our students. We're so happy to have you as part of our WPI team.

LP: Thank you. I'm really glad to be here.

This conversation took place on Oct. 22, 2020.

Giving Day is WPI's biggest day of giving back—and this year, on Oct. 1, the WPI community stepped up to support the university in a big way. The funds raised support financial aid, scholarships, student programming, academics, athletics, and so much more.

Thanks to our alumni, parents, students, faculty, staff, and friends!

900
Alumni, parents, students, faculty, staff, and friends donated on Giving Day

$375,000+
Raised on Giving Day

$74,000+
Raised for WPI Areas of Greatest Need (unrestricted)

$43,000+
Raised for Financial Aid

40
States represented by donors

200
Gifts from Graduates of the Last Decade (alumni from 2010–20)

400
Gifts to Student Experience Funds—student clubs, groups, and athletics teams

Thank you to our Giving Day Ambassadors!

35
Giving Day Ambassadors—students, alumni, parents, and friends

150
Gifts brought in by Giving Day Ambassadors

$28,000
Raised by Giving Day Ambassadors

Thank you for making a difference to this generation of STEM leaders, so they can make a difference too.

If you missed Giving Day, there's still time to make a gift:

WPI.EDU/+GIFT | 1-877-WPI-FUND

Mail (check payable to WPI):
WORCESTER POLYTECHNIC INSTITUTE
100 INSTITUTE ROAD, WORCESTER, MA 01609

IN SIDER

JOCELYN MENDES ’21

HONORABLE MENTIONS
Grimmgroup, Phi Sigma Sigma, Student Call Center, Robert E. Connors Award in Physical Chemistry, David Lapré Research Fellowship, STAR Fellowship

Raised in Leominster, just 20 minutes from campus, **JOCELYN MENDES ’21 (CH)** says that despite the close proximity, she didn’t discover WPI until she attended a science fair on campus during her sophomore year of high school. That visit made a lasting impression on her.

“I really wanted to be able to do research in college and to learn in a hands-on way,” she says, “so when I was deciding between WPI and a larger school, I chose WPI because I felt like I would have more opportunities.” Her choice paid off immediately—she was able to join a lab in her first year.

Now in her senior year, Mendes reflects that besides the discovery of a deeper love of research, another highlight of her WPI career was her IQP. During seven weeks in Zurich, she and her teammates worked with the Swiss Federal Institute of Technology. “Not only was our project a great learning experience,” she says, “but it was really exciting to be able to work for a technical university in a different country.”

COVID-19 may have thrown a temporary wrench into her education, but it didn’t prevent her from continuing as an undergraduate research assistant in Professor Ronald Grimm’s research group. “We studied the surface chemistry of semiconductor materials that have ideal properties for improving the efficiency of solar cells,” she explains.

Mendes says Grimm’s influence has augmented both her creativity and her problem-solving skills. “His mentorship as a research advisor has taught me how often you fail during research,” she says, “and that failure is okay so long as you have a plan forward!”

Professor Suzanne Weekes, associate dean of undergraduate studies ad interim, says that faculty members such as Grimm do important research and it is essential that undergraduates are a part of these discovery teams. “It’s a joy to see students like Jocelyn come to WPI and take advantage of all we have to offer,” says Weekes. “She has hit the ground running and I can’t wait to see what more she will do because, without a doubt, the world needs more great scientists!”

During D-Term, Mendes was unable to enter the lab, but instead focused her time on writing a manuscript. “I was lucky enough to spend some time in the lab during the summer,” she explains. “Even in person, it was difficult at times to learn new things and watch over people’s shoulders when we had to be socially distant, but we definitely found creative solutions. I think the biggest lesson from this experience is how important it is to be flexible and open to changing your routines.”

Her strongest advice to incoming students? Don’t be afraid to put yourself out there and try new things—both academically and socially. “Asking questions and approaching professors can be scary, but it is incredibly worth it in the long term for your learning experience. The same goes for making new friends and meeting new people. Putting yourself out there can result in lifelong friendships!”

Aiming to attend graduate school for a PhD in physical chemistry, Mendes says she is truly excited to continue her academic research, and hopes to join a research group that does groundbreaking work that she can feel passionate about. “My ultimate goal,” she says, “is to have a career that I love and one that allows me to learn something new every day.”

—DOREEN MANNING

PHOTO BY MATTHEW BURGOS

revisit.
reunite.
relive.

We've missed seeing you in 2020 and we're looking forward to a time when we can gather together on campus again. We hope it will be for Alumni Weekend 2021—but only time will tell. Keep an eye on your email and mail for future announcements.

In the event we are able to hold Alumni Weekend on campus, mark your calendars for **June 3-6, 2021.**

Stay up-to-date at ***wpi.edu/+alumniweekend***

ILLUSTRATION BY JONATHAN REINFURT

GLOBAL IMPACT

HANNAH MURRAY '21 had several reasons for wanting to travel to the Ghana Project Center: being a part of its pilot year, choosing from the variety of project options, immersing herself in a new culture, and fulfilling a longtime desire to travel to Africa.

All good reasons—but one of the most prevalent? It made her nervous.

"I was a little scared to live such a different way of life for two months," she says, "which I took as a sign that I needed to go."

WPI's newest project center builds upon longstanding efforts to prepare students to have a lasting impact on the world through STEM. The idea for the project center was sparked by the nearly 20-year friendship between **ROB KRUEGER** (project center director and department head of Social Science and Policy Studies) and the Environmental Protection Agency's Kwabena Kyei-Aboagye Jr., who hails from Ghana himself.

"We worked closely on urban environmental issues in the United States, and he'd been asking me to do some work in Ghana for years," Krueger says. That initial nudge from Kyei-Aboagye eventually led to WPI's hosting a Ghanaian king and the Ghanaian Ambassador to the United States on campus to discuss collaboration opportunities. Later, it led to a meeting with the president of Ghana, Nana Akufo-Addo. This created a dynamic domino effect that brought about the project center's creation and its first cohort of students, who returned just before COVID-19 restrictions began in March.

While the project center is new, its roots already run deep, boasting a wealth of partnerships with Ghanaian communities, educational and governmental organizations, and traditional leadership. These partnerships not only allow for student project work, but also for faculty to explore myriad research projects, ranging from how algorithms and natural language processing is affected in Africa to exploring recycling effectiveness and efficiency in Agbogbloshie, the largest e-waste site in Africa. Through Krueger's Development Design Lab, projects run year-round on campus, in addition to the C-Term experience.

No matter the topic, a collaborative streak runs throughout the entire operation, and that's exactly what Krueger wants—after all, the project center wouldn't be a reality without the efforts of many people from around the world, something that's mirrored in the work being done there.

"We don't go in as experts," Krueger explains. "We go in as partners with the community. We didn't view Africa as a place that has problems, but a place that has assets, and our job is to help cultivate those assets that promote self-sufficiency."

That's exactly how Murray and her team approached their project, working with a group of local tradespeople to co-design and build a bridge that replaced a recently damaged one in Dwenase. "[The experience] taught me how to think about real-world problems beyond the scope of engineering," she says. "... the decisions engineers make affect the livelihood of the community. It's so important to make decisions in the field with empathy and a well-rounded perspective."

One of Krueger's favorite moments of the project center's inaugural year came from Murray's project—the community partners wanted to add a layer of concrete underneath the wood girders of the bridge being built to protect it from termites. It was an important innovation that could have come only from someone with local knowledge, and a perfect example of expertise combining to create an effective solution. "It was an *a-ha* moment," Krueger says. "We were all going through the motions of collaborating, but really didn't know what understanding, appreciating, and valuing local knowledge meant until that moment."

For all the reasons she had to travel to Ghana in the first place, Murray has just as many pieces of advice for future students: explore, learn the language, ask questions. Recalling her own nervousness about stepping out of her comfort zone, she offers one final piece of advice that, for her, brings everything full circle.

"Do things that make you nervous," she says.

–ALLISON RACICOT

Learn more about WPI's Global Project Programs at wpi.edu/+globalprojects

WTI

The latest in university news, research, and commendations

HONOR FOR DIVERSITY, EQUITY, AND INCLUSION

Over the past several years WPI has been on a mission to infuse diversity, equity, and inclusion (DEI) into every aspect of the university experience, inside and outside the classroom. Through initiatives large and small, the university has developed standards and set expectations for a campus environment that is accepting and welcoming to all. The work is now being recognized on the national level: WPI was recently named a recipient of the 2020 Higher Education Excellence in Diversity (HEED) Award, which honors U.S. colleges and universities that demonstrate an outstanding commitment to diversity and inclusion. It is awarded by *INSIGHT Into Diversity* magazine, the oldest and largest diversity-focused publication in higher education.

"The HEED Award celebrates our continued efforts to be a place where all can belong and thrive," said **MICHELLE JONES-JOHNSON**, vice president for talent and inclusion and chief diversity officer. "The award recognizes WPI's collective efforts to look critically at our culture, realize that there is still much more work to do, and doubling down on our commitment to creating meaningful and sustainable inclusive excellence."

Since 2016, WPI's efforts have been guided by Project Inclusion, a three-year self-assessment that established definitions and developed recommendations around diversity, equity, and inclusion on campus. Led by Jones-Johnson and faculty co-chairs **PETER HANSEN** (Year 1) and **EMILY DOUGLAS** (Year 2), the Project Inclusion Steering Committees created data-driven recommendations as the framework for each division to develop implementation plans to align the university's work going forward.

RAME HANNA, WPI's director of diversity and inclusive excellence, served as the co-chair of Project Inclusion (Year 3) and coordinated the HEED award application process. "We are humbled by the recognition and grateful for the many partnerships and collaborations with colleagues who strive to center DEI as a foundational lens in their positions on campus. The process has been a yearlong endeavor and central to our commitment to embed, infuse, and actualize critical strategic diversity efforts on campus," Hanna said.

"The HEED Award not only created a platform to recognize institutions with an exemplary commitment to fostering a campus culture of inclusion and belonging, but has inspired a greater sense of agency and social responsibility in our commitment to equity in STEM. Working with **CHRISTELLE HAYLES**, WPI's diversity and inclusion specialist, to complete this rigorous application has helped provide WPI with a roadmap to measure our institution's level of achievement, while also uniting us as a collective to create intentional, transformative changes on our campus."

—LISA ECKELBECKER

ILLUSTRATION BY ALBERTO SEVESO

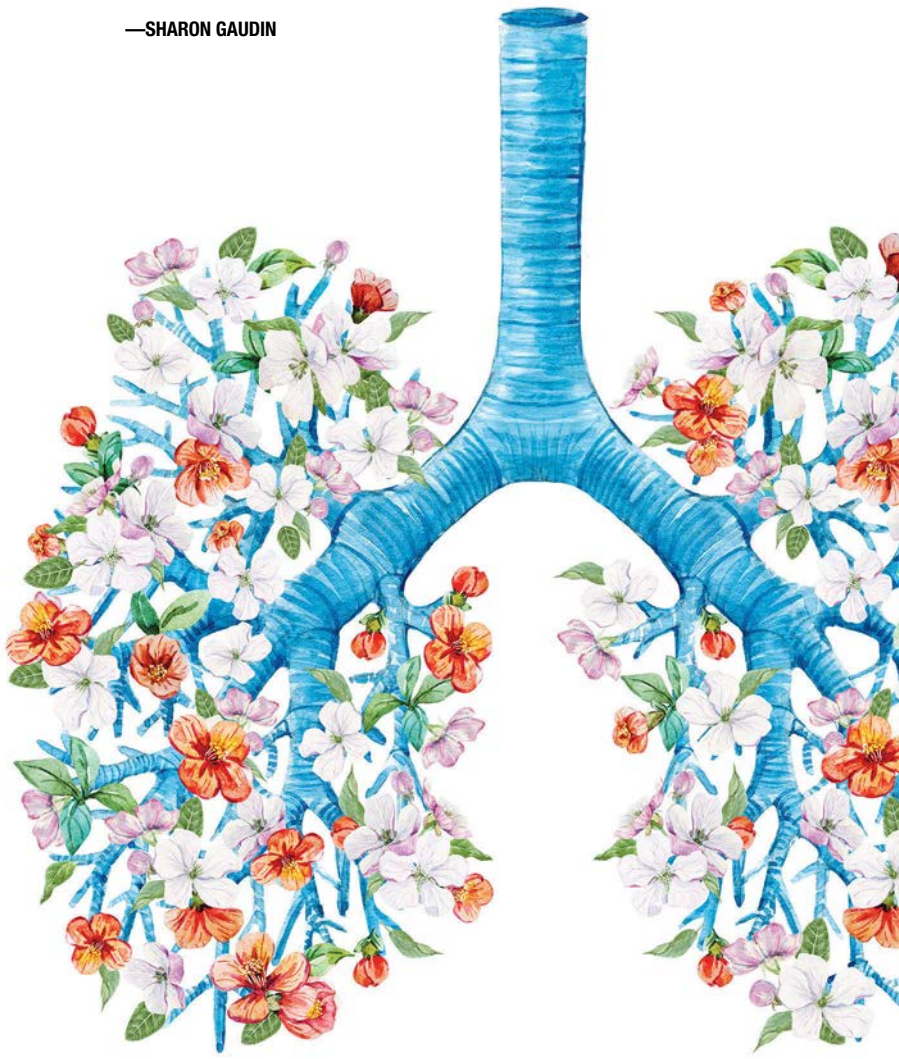
UNIVERSITY OPENS NEW RESPIRATORY CLINIC

Continuing to focus on the health and safety of the WPI community, the university has opened a specialized Respiratory Clinic, relocated its Student Health Center, and added a facility for COVID-19 testing.

Located at 32 Hackfeld Road, formerly the site of WPI's Student Health Center, the new clinic was created to focus solely on students presenting with any symptoms of illness, particularly symptoms suggestive of COVID-19. The idea is to separate symptomatic students from all those who have other health concerns or injuries. Staffed with two nurse practitioners and two registered nurses, it has air purifiers in each of its four exam rooms, along with a negative pressure room in which a lower air pressure allows outside air into the room; air flowing out of the room now passes through a filter.

The Student Health Center, where non-COVID-related issues are treated, has been relocated to 27 Hackfeld Road. With two exam rooms and four office spaces, it is staffed with a nurse and a nurse practitioner. The university also has set up a trailer in the parking lot next to 27 Hackfeld Road to expand its COVID-19 testing space. Health Services staff will direct individuals, by appointment, for additional testing, primarily for close contacts.

—SHARON GAUDIN



Research Hits Record $56 Million During 2020

WPI researchers brought in $56 million in government, corporate, and private funding for their work during the 2020 fiscal year, a jump of 50 percent over the previous year.

BOGDAN VERNESCU, vice provost for research, credited talented faculty, institutional efforts to find and develop opportunities, and new facilities for the leap in awards.

"We've built infrastructure through our Research Solutions Institute to support research, we know what expertise our researchers have, and we are finding opportunities to go after and support faculty to develop the proposals," Vernescu says. "The support we provide allows researchers to seek out larger, more complex awards and to work across disciplines on proposals."

About 240 awards were received during the year ended June 30, supporting work ranging from learning technologies to the development of PracticePoint facilities at the Gateway Park campus.

The biggest funder of awards to WPI during 2020 was the National Science Foundation, which originated about $17.9 million in awards to the university's researchers, followed by the U.S. Army, the U.S. Department of Energy, the U.S. Department of Education, and the National Institutes of Health.

A team led by **DANIELLE COTE**, assistant professor of mechanical engineering, was awarded the largest individual award—$5 million from the U.S. Army—as part of a $25 million contract to develop 3D printing technology for the repair of military vehicles and equipment in the field.

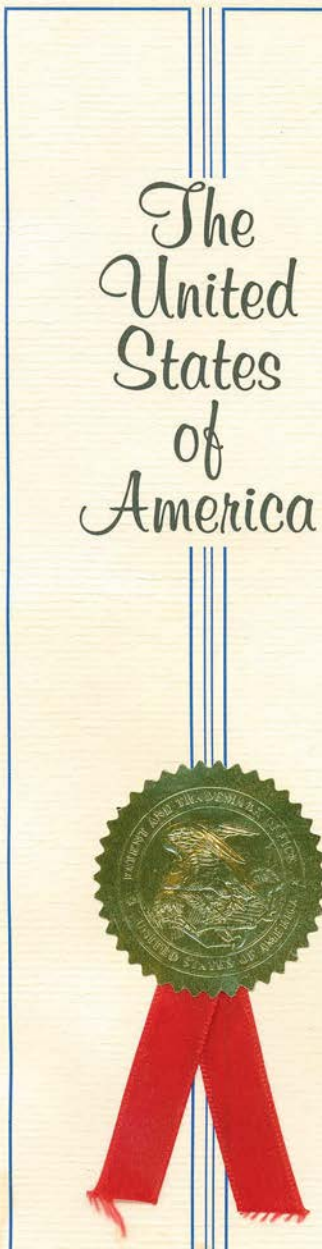
NEIL HEFFERNAN, William Smith Dean's Professor of Computer Science and director of the Learning Sciences and Technologies Program at WPI, received the largest initial award of $4.98 million from the U.S. Department of Education to scale and expand ASSISTments, an online teaching and learning tool. The total award for the five-year project is expected to reach nearly $8 million.

The amount of research money a university brings in matters because it can support work that bolsters reputation and attracts more students. At WPI, it also helps to financially support more than 150 graduate students, research scientists, and research engineers. In FY 2020, research expenditures on grants exceeded $31 million.

In addition, research funding opens opportunities in the labs, which benefit students by preparing them for the workforce, Vernescu says.

"If we have faculty and infrastructure that is at the cutting edge of technology and science," he says, "we can train our students for the best jobs."

—LISA ECKELBECKER



WPI INVENTORS AWARDED RECORD NUMBER OF PATENTS

Faculty and student inventors have set a new record for patents awarded during one academic year by collecting 20 U.S. patents since July 2019 for inventions ranging from antifungal agents to battery manufacturing methods.

TODD KEILLER, director of WPI's Office of Technology Commercialization (OTC), says the newest crop of patents cover an exciting mix of technologies—12 have already been licensed to companies for possible development into commercial products.

"We're on a roll," Keiller says. "And we're not just getting the patents, we're putting them to work, which we hope will lead to revenue for inventors and for WPI."

Patents are key to securing control of intellectual property developed in the laboratories of WPI. They can produce revenue for the university if they are licensed to companies, and they sometimes form the backbone of new businesses. Previously, the largest number of patents awarded to WPI inventors in one year was 16, in 2018.

In addition, the patents have an impact on the community. Keiller says 19 companies have been created to pursue WPI patented technologies, generating 55 new jobs. Almost all the companies are located in the Worcester area.

Even while the university closed most campus operations because of the global COVID-19 pandemic, technology commercialization activities have continued.

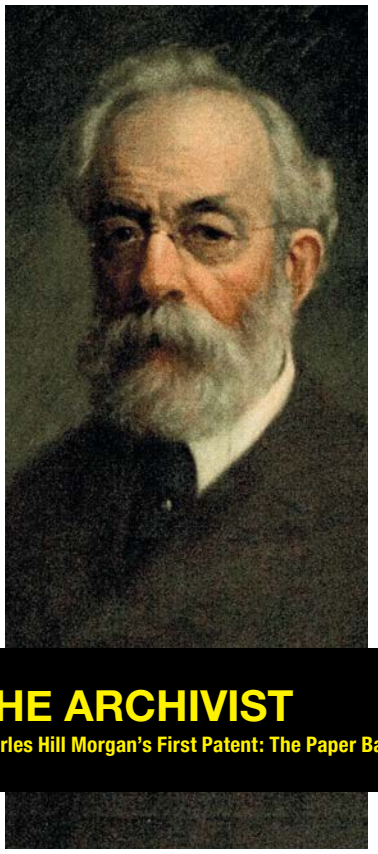
"Remote operations have actually increased our productivity," he says. "People have gotten used to Zoom and virtual meetings. We can operate this way without meeting face-to-face."

The path to a patent starts with a "disclosure," when a faculty member files with the OTC. About half of disclosures are filed by teams that include faculty and students, Keiller says. Another 30 percent are filed by faculty, the remaining 20 percent by students. WPI inventors filed a record 67 disclosures with the OTC during the 2019 fiscal year.

—LISA ECKELBECKER

PROFESSOR ELKE RUNDENSTEINER, director of the interdisciplinary Data Science program, received a two-year, $832,046 grant from the Army Research Laboratory to use artificial intelligence and machine learning to accelerate the assessment and prevention of corrosion in metals, such as any metal on military vehicles used in the field. Rundensteiner, along with data science associate professor **FATEMEH EMDAD**, will work with Army researchers and engineers to provide experimental data sets, introduce critical problems, and mentor students working on the project. The Army Research Lab has an option to extend the two-year allotment to a five-year, $2.4 million grant.

PHOTO WPI ARCHIVES



THE ARCHIVIST

Charles Hill Morgan's First Patent: The Paper Bag

CHARLES HILL MORGAN, a WPI trustee from 1865 to his death in 1911, founded Morgan Construction Company in 1888, but his initial love of production and design was fostered at an early age.

Born in Rochester, N.Y., in 1831, he moved at the age of 12 to Clinton, Mass., to begin working in a mill to help support his family. As a teenager, he learned mechanical drawing and grew into the role of supervisor of the dye house for Clinton Mills when he was only 21 years old.

By 1852, Morgan began sketching drawings and processes for new machinery in a series of diaries he kept for the remainder of his life. He took one entry—titled "Bag Machine, Clinton, Oct. 1856, Description of Drawings, Specification & Claims for B. F. Rice's Paper Bag Machine"—into production with the help of fellow Clinton engineers Joseph C. Smith and Benjamin F. Rice, crafting a machine design capable of bending, folding, and gluing paper bags of various sizes.

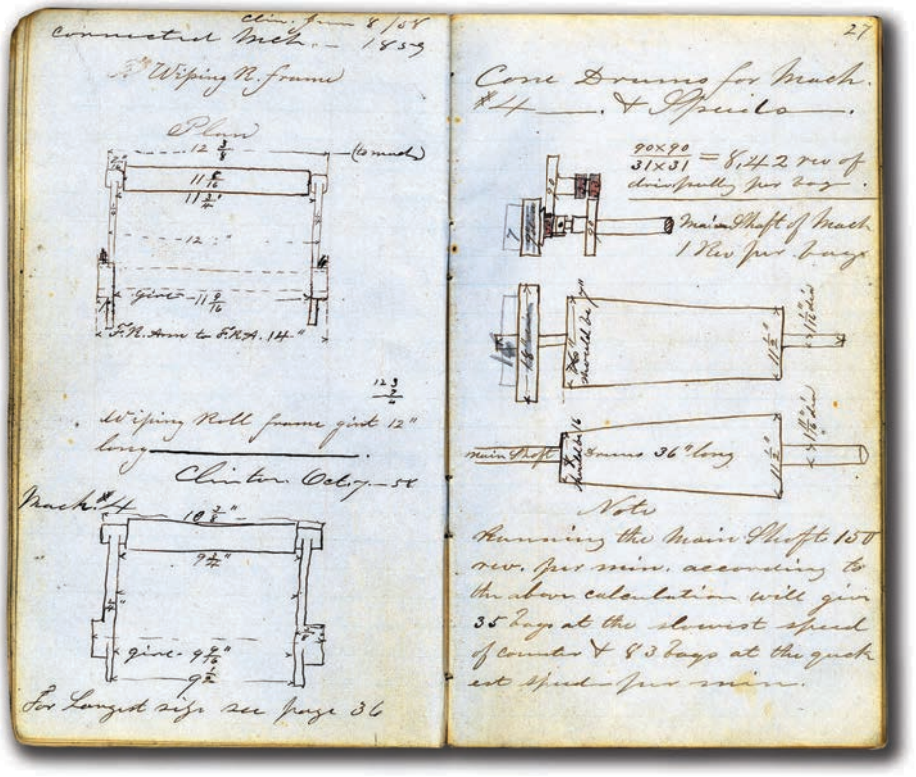
The machines proved a commercial success and soon Morgan's bags dominated the market. By 1859, his three paper bag machines were producing an average of 70,000 bags per day. The design was so successful, he was forced to defend his copyright against several manufacturers, including his former employer, E.W. Goodale. After a series of successful court battles, Morgan finally had his first patent as principal inventor.

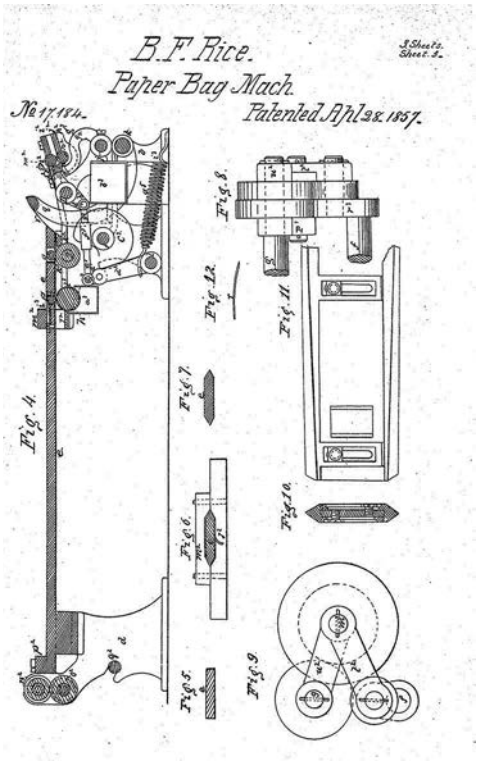
With his brother, Francis Henry Morgan, Charles moved to Philadelphia in 1860, where they set up their first family company. They hired their father, Hiram, as their first employee and began to market their bags internationally. In 1864 Charles returned to Worcester to become general superintendent at Ichabod Washburn's firm, Washburn and Moen Manufacturing Company, one of largest producers of steel products in the world.

In 1881 Charles founded Morgan Spring Co. and in 1891 he founded Morgan Construction Co. When he passed away in 1911, he was widely regarded as one of the most influential industrialists, engineers, and philanthropists of his era.

Recognized as one of WPI's founders, Morgan's journals and the records of Morgan Construction Co. are held in the WPI Archives.

—Arthur Carlson, assistant director of Archives & Special Collections at WPI's George C. Gordon Library





GOT POTHOLES?

$10K prize to WPI classmates for innovative pothole detection device

Three WPI students earned first place honors and a $10,000 prize in the Second Annual SICK Challenge. SICK Inc., named for the late Dr. Erwin Sick, was founded in 1946 in Germany and is one of the world's leading manufacturers of sensors, safety systems, machine vision, encoders, and automatic identification products for industrial applications. The competition challenges students to develop a solution to a problem using SICK Inc. LiDAR technology.

The trio—recently graduated seniors **NOAH BUDRIS** of Oxford, Conn., who majored in mechanical engineering, and **DANIEL PELAEZ**, also of Oxford, Conn., who majored in electrical and computer engineering, along with fifth-year senior **NOAH PARKER** of Arlington, Mass., who is majoring in computer science and robotics engineering—developed a product dubbed ROADGNAR, which detects, analyzes, and measures potholes, cracks, and other pavement deficiencies that cause roadways to be in poor condition.

With this data, local governments can better prioritize what roads need to be repaired based on their condition. **ALEX WYGLINSKI**, professor of electrical and computer engineering, who served as faculty advisor for the team, says, "The students drove this effort 100 percent."

The team has filed for and obtained a provisional patent for the technology. In the future, they plan to pursue a utility patent once they have refined the product and acquired further funding.

—ANDY BARON

$4.9 Million to Train Cybersecurity Workforce

WPI has received $4.9 million award from the National Science Foundation (NSF) and the Department of Defense (DoD) to support cybersecurity scholarship programs in an ongoing effort to fill a critical need for cybersecurity workers in federal government positions. The funding provides generous scholarships through two separate programs to undergraduate and graduate students who commit to government service, after graduation, to address cyber threats and challenges facing the nation.

In late 2019, it was reported that four million cybersecurity workers would be needed globally to close the skills gap. With record numbers of people now working from home and companies, organizations, and agencies—including the U.S. government—moving services online, the demand for a skilled cyber defense workforce is soaring.

"Federal agencies need security experts and these scholarship programs are an excellent way to attract student attention and interest," says **CRAIG SHUE**, computer science associate professor and director of the WPI Scholarships for Service program. "We have strong opportunities in security education, particularly in computer science and electrical and computer engineering, that can help our students learn how to meet federal needs."

—COLLEEN WAMBACK

"I'm convinced now more than ever that my daughter made the right choice 2yr ago to attend @WPI. Thanks to you for the example you set every day. You bring amazing energy to your job and a willingness to engage in all levels of campus life while taking on big challenges."

—Kent Lohrey to @LaurieofMars on Twitter after President Leshin (with face covering while socially distancing) was seen helping students on Move-In Day in August.

Small Business Digitization

Imagine owning a small business and not having the budget or technological knowledge to create, update, or manage your digital presence. Now envision a team of WPI students coming to your rescue—for free.

That's what the Small Business Digitization Services (SBDS) Program is all about. This no-cost community resource was launched in May by a team that included **NORM WILKINSON**, executive director of programs in the Foisie Business School, and **GINA BETTI**, recently retired director of outreach.

In collaboration with the Small Business Development Center at Clark University and the Center for Women and Enterprise in Westborough, SBDS deploys student teams as digitization consultants to small businesses and nonprofits in central Massachusetts.

According to Betti, the project has been a great success to date—from both a student and a local business perspective. "I am delighted when I hear directly from our small business and nonprofit clients who are so pleased with how our students were able to help them prioritize digitization needs and worked to resolve them."

AN THI-PHUC TRAN '21 says that she greatly appreciated this opportunity to help real businesses during the pandemic. "Specifically, I was able to experience how to deal with different kinds of clients, from those who are tech-savvy to a completely non-tech person. I was also able to improve other professional skills, such as communication, leadership, and virtual meeting organization," she shares.

Juliet Feibel, executive director, ArtsWorcester, says that the students working on the arts organization's website were smart, responsive, professional, and "they worked their tails off to address the needs we specified." Together, Feibel and the students researched and implemented a better e-commerce platform, ran a focus group, and re-organized the site to serve visitors more effectively. "The students required nearly nothing from us outside of our meetings, and saved us at least $10,000—funds that we otherwise would have had to cut from other programs or raise anew. Their work will have an immediate and significant impact," she says.

"We were thrilled to be a client," say Sandie and Ken Wheeler, owners of Pets Gone Healthy. "The students have been wonderful to work with, and we feel that the WPI team really cared about our success."

CHARLIE KOUTSOGIANE '22, an MBA student and advisor to the project, says this responsibility was nothing but positive. "A program that allows small businesses to pivot and continue to thrive, while giving students the chance to cut their teeth on real work, is a win-win," he says. "It is also refreshing, in a time where people tend to answer tragedy with hollow well-wishes, to see the school willing to start something that only benefits others—specifically others who tend to be under-appreciated."

SANDRA WELLINGHOFF, director of blended learning, says that not only has this program helped many local businesses, but it has given students an opportunity to gain experience during a time of quarantine and canceled plans. "Many students had lost summer internships due to the pandemic," she explains, "but they were still able to get experience and learn new skillsets that they can add to their resumes."

Kelly Roberts, owner of My Healthy Birth—which now has a new online birthing resource directory, thanks to the SBDS team—sums up the success of the program when she says, "I am grateful for this fantastic opportunity that benefits community organizations and WPI students alike."

Symptom Tracker Helps Mitigate COVID-19 Spread

This past fall, a new daily tracker was developed to monitor the health of the students, faculty, and staff returning to campus, in order to help detect the onset or progression of COVID-19 symptoms.

The Symptom Tracker—accessible through smartphone apps and WPI's website—connects community members with health resources. It also provides critical information to the university as part of ongoing efforts to help protect the health and safety of the WPI campus community during the pandemic.

The IT Services team worked with the COVID Health Behaviors Group to build this new functionality using Microsoft Power Apps—a suite of apps, services, and connectors that allowed WPI to create a custom tool with automation to make entering and following up on symptoms easy. This is a secure tool that uses an individual's WPI credentials and multi-factor authentication.

Daily use of the Symptom Tracker is an important part of the university's overall health and safety plans, which include:

- **Routine testing of all students, faculty, and staff who will be on campus**
- **Safety protocols, including social distancing measures**
- **Reconfiguration of classrooms and campus spaces**
- **Additional Health Services staff**
- **TechFlex, a reworking of teaching and learning that allows for online, in-person, and hybrid options, giving students and faculty the flexibility to choose the options that are best for them and their loved ones.**

WPI's Testing Coordinator monitors the results daily and connects with those who report any symptoms.

1 Million Ways to Make a Difference

WPI's Women's Impact Network (WIN) is a diverse group of women who share a passion for education, leadership, and philanthropy. Each year, WIN members donate hundreds of thousands of dollars that are distributed to WPI students, faculty, staff, and alumnae through Impact Grants (members vote on which projects to fund). In its first five years WIN has raised more than $900,000 and funded 53 grants—20 aimed at diversity and inclusion and 12 supporting K-12 pipeline development. WIN is currently accepting applications for its next round of grants and will award its one-millionth dollar in spring 2021. Learn more: *wpi.edu/+WIN.*

Break the Chain of COVID Transmission

What's a key part of mitigating the spread of COVID-19, whether globally or on campus? It's talking … talking with people who have tested positive for the virus, investigating their close contacts, and warning those people before they continue the spread of COVID-19.

Anyone who comes into close contact with someone who has COVID-19 is at increased risk of becoming infected themselves, and of potentially spreading that infection to others. It creates a chain, or spider web, of transmission. Contact tracing, which is credited with eradicating smallpox, is about identifying people who may have come in contact with an infected person. It is done to slow COVID's spread and help protect the community's health by quarantining those who have been exposed and then isolating them if they test positive.

"Contact tracing helps stop the spread of the virus," says **JEN HAPGOOD-WHITE**, WPI's Isolation/Quarantine Coordinator. "It enables us to alert someone else that they might have the virus. We know that, on average, one infected person infects four others, and each one of them infects four more people. If we could contact those first four, we could lessen the spread."

Hapgood-White, who was experienced with contact tracing before joining WPI in August, is following the contact trail on campus. She is the primary contact and advocate for all students in WPI isolation and quarantine, supporting their health and recovery, and helping them with day-to-day support.

—SHARON GAUDIN

PROJECTS

See how WPI students put theory into practice through projects.

THE BIG IDEA

Make an adaptation of the Les Paulverizer using modern technology that can be affixed to or embedded within a guitar. This includes sending MIDI information to a computer (via wired or wireless technology), playing audio clips, and adjusting levels inside of a Digital Audio Workstation (DAW) on Mac or Windows computers.

THE LES PAULVERIZER

The capstone project is a Humanities & Arts requirement designed to support a student's self-designed and independent scholarly research. The Les Paulverizer project was part of the "Les Paul: Experiencing the Innovative Process" series in VJ Manzo's practicum Developing Technology for Music.

STUDENTS

JOSEPH CALCASOLA '22 (ME), ETHAN CAMPBELL '21 (ME), THEODORE CAMPBELL '22 (CS), JUSTIN MOY '22 (BCB)

ADVISORS

VJ MANZO, SCOTT BURTON, JEFF DUQUETTE

OBJECTIVES

Explore the original Les Paulverizer; how did Les Paul use this device live? How did it *really* work originally?

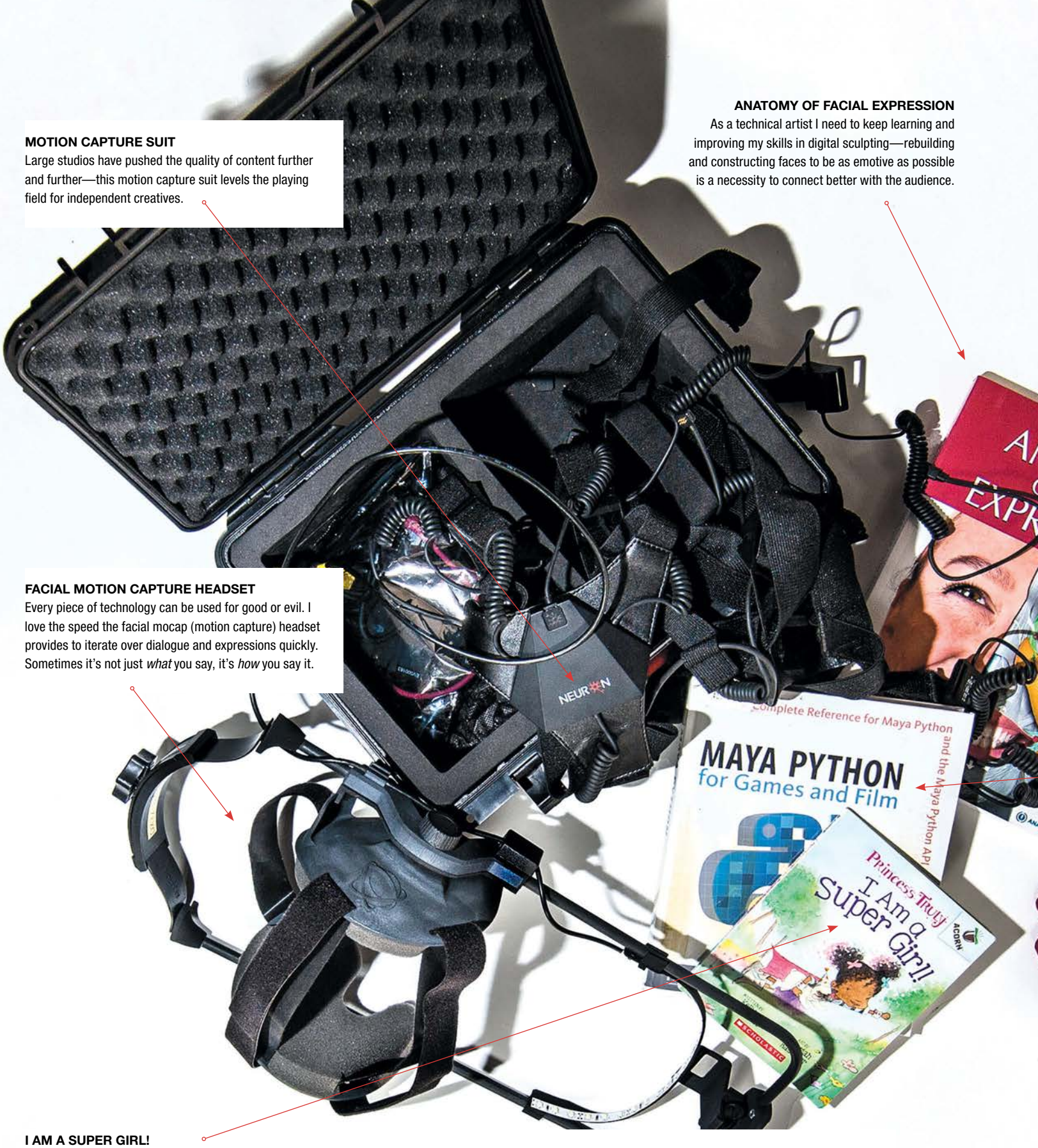
DELIVERABLE

The complete project consists of a fully playable, self-contained, ready-to-go Les Paulverizer that can be attached to an instrument and used to play back audio from a computer.

ADAPTATIONS

Students analyzing the Les Paulverizer initially explored modern-day adaptations. The purpose of this approach was to allow students to focus on developing a system that could easily be adapted to other operating systems and expanded to include additional features. This allows the users to readily integrate the technology into their own music performance and composition ideas, as Les Paul ultimately did on stage with the Les Paulverizer.

PHOTO BY TODD VERLANDER



MOTION CAPTURE SUIT
Large studios have pushed the quality of content further and further—this motion capture suit levels the playing field for independent creatives.

ANATOMY OF FACIAL EXPRESSION
As a technical artist I need to keep learning and improving my skills in digital sculpting—rebuilding and constructing faces to be as emotive as possible is a necessity to connect better with the audience.

FACIAL MOTION CAPTURE HEADSET
Every piece of technology can be used for good or evil. I love the speed the facial mocap (motion capture) headset provides to iterate over dialogue and expressions quickly. Sometimes it's not just *what* you say, it's *how* you say it.

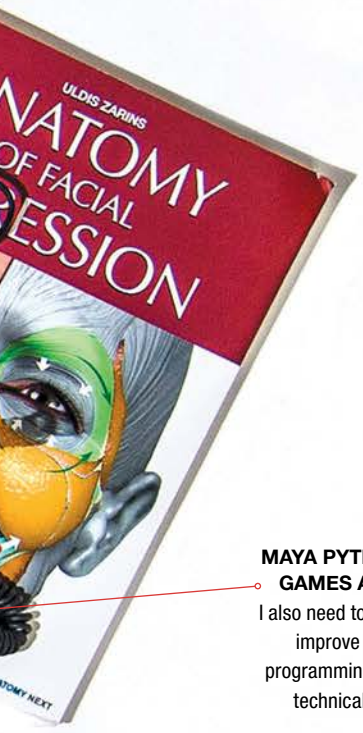
I AM A SUPER GIRL!
As part of my main project for the next few years, this book means a lot. "Rigs of color" is how I combine my technical, production, and artistic skills to improve representation in media. I'm crafting various diverse casts of characters with my students for the animation community. There are roughly 12 black and brown characters vs over 2,000 humanoid characters available. This book inspired one of the characters from my daughter and son's book collection. Once they are modeled and rigged, we can apply motion capture to them to bring storytelling back to the diverse shared experience people used to listen to around late-night campfires.

PHOTO BY TODD VERLANDER

FACULTY SNAPSHOT

Farley James Chery

ASSISTANT TEACHING PROFESSOR, COMPUTER SCIENCE



MAYA PYTHON FOR GAMES AND FILM

I also need to constantly improve my skills in programming and other technical aspects of my work.

DRAWING GLOVES

I always have these drawing gloves on my desk, and usually in my pockets. They make working on digital displays so much easier, gliding across surfaces and not smudging the graphite or the screen. These gloves = love!

PHOTO BY MATTHEW BURGOS

TURNING POINT

Carla Ferrara ’83

Twenty years ago **CARLA FERRARA ’83 (EE)** approached her ill health with the mind of an engineer, leading her to a turning point in both her career and well-being.

Making the transition from a systems design engineer to a health and wellness practitioner was a convoluted journey, says Ferrara, one that began after a decade of engineering jobs and the births of her two children. After having health challenges, first with autoimmunity and then with Lyme disease, she was frustrated with the limited answers doctors had available. With her love for science emboldening her, Ferrara set forth to use theory and practice to uncover the solutions she needed.

“I had to pretty much do some digging and learning about so many different aspects of health and techniques or approaches to healing,” she explains. “An engineering mind is curious—and that’s what kept me going.”

JOURNEY

The more she learned, the more Ferrara yearned to share her knowledge. “Functional medicine tries to look at the big picture of what is going on, where everything matters, while finding the root to these problems,” she clarifies.

She started with personal training certification and practice to study movement and how it can help healing. After graduating in 2010 from the Institute of Integrative Nutrition, she became a certified health coach. With further study she became a certified Functional Nutrition and Lifestyle Practitioner through the Functional Nutrition Alliance, with added Hashimoto’s Disease [autoimmune disorder] training. She began to heal and to teach health and wellness classes and workshops locally to teachers, children, and the general public.

From there, she became certified as a yoga instructor, and most recently completed a Holistic Lyme Practitioner Mentorship program through Uprooting Lyme, focusing on treatment for Lyme and chronic complex diseases.

“Keeping curiosity alive can help minimize the fear and hopelessness that can come with chronic health challenges,” she says. “This all leads me to the question I try to keep in mind: ‘How can we use the power of our innate body intelligence in combination with the latest science to make headway in treating chronic disease?’”

Today, Ferrara helps educate people to take small and simple steps toward better health through online programs and private sessions, helping clients discover the hidden reasons they don’t feel their best, so they can make life-giving changes.

ORIGINS

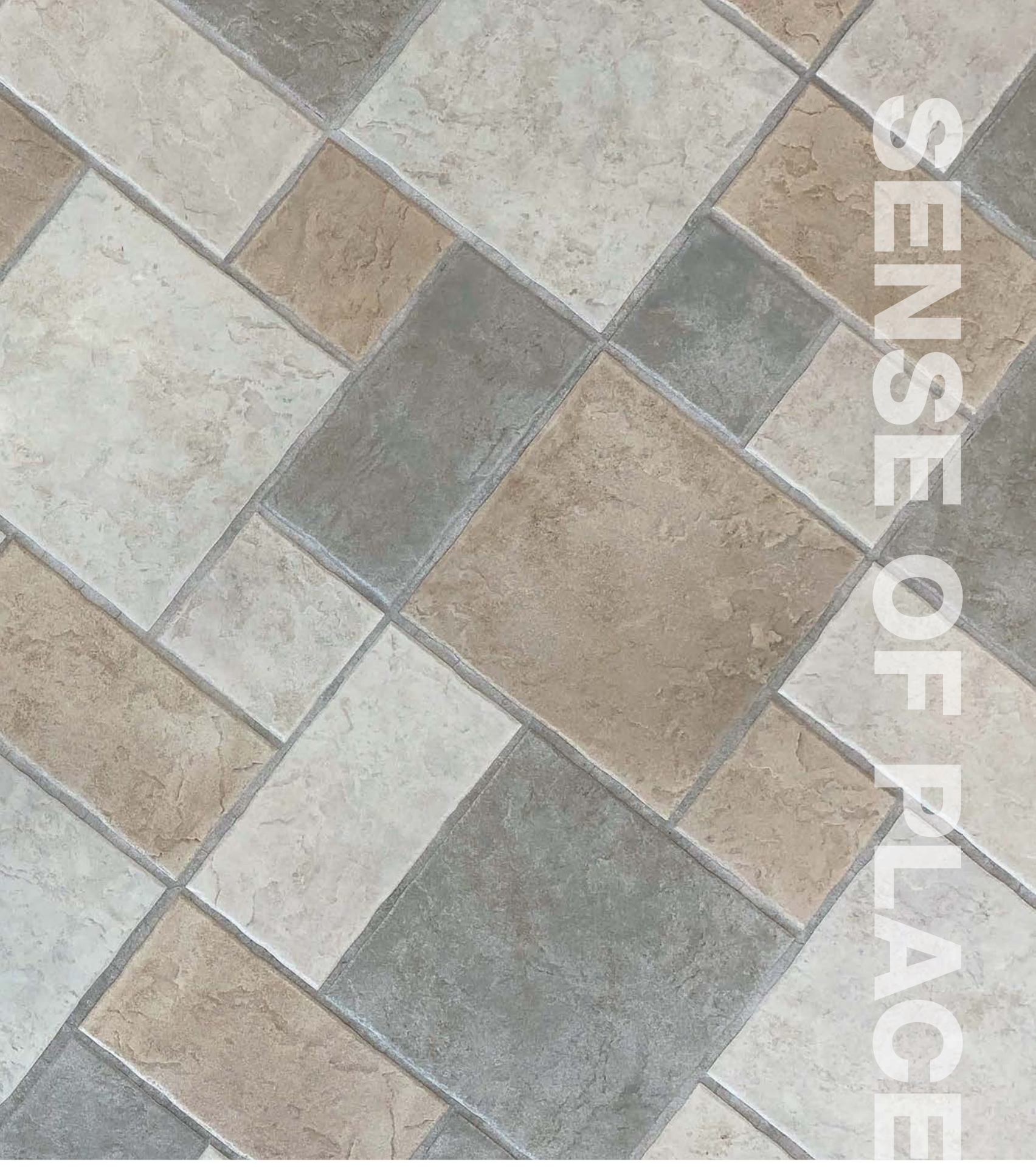
With a love for math and science, Ferrara came to WPI hoping to learn more about where she wanted life to take her. “I liked the challenges, both intellectually and socially, of working in a mostly male environment. Yet my lack of confidence stood out to me and I knew I needed to work on that.” She says her MQP was a struggle, but she uncovered the need to work closer with her team to in order to seek a deeper understanding of the technology involved. “I learned to own the responsibility to reach out,” she recalls. “I felt I successfully achieved this in one of my most fulfilling systems design engineering jobs at GTE, where I worked very closely with an incredible team on a fast-paced project.”

Another influence from her undergrad years that still resonates today is crew. “Movement and team sports was a big part of my life. Crew is very much based on balance, full-body strength, and working with your boatmates. Crew helped me understand more deeply the importance of movement, and was not merely a stress relief or strength enhancer for health’s sake. It also helped me understand how much our connection to each other matters—both in and out of the boat.”

—DOREEN MANNING

PHOTO BY DOREEN MANNING


PLEASE WAIT HERE
Thank You For Practicing Social Distancing



SENSE OF PLACE

A SEAT AT THE LAB BENCH

BY ALLISON RACICOT
PHOTOGRAPHY BY TODD VERLANDER

Remember the first time you "saw yourself" in something? Whether it was in a piece of media, a career path, or even something as simple as a Wikipedia article, there's a certain high that comes from representation and knowing you're not alone in your identity or emotions—that someone gets it, gets *you*.

It's an invaluable feeling, one that's difficult to describe and impossible to replicate. The importance of representation in all areas of life has been advocated for—more than ever before—in everything from pop culture to professional arenas, so much so that it can be all too easy to overlook the environments (like STEM) that are still sorely lacking.

JANELLE DRAKE '11, **JOLENE COTNOIR '10**, both transgender women, and **JAMES IMPERIALI '13**, a transgender man, are taking steps to change that—by just being themselves.

THE WIDE WORLD OF STEM

JAMES IMPERIALI '13

For Imperiali, his passion for STEM started with a kids' restaurant menu.

"I knew I wanted to be an electrical engineer since second grade," he says. "My dad is one too, and he got me really interested in math and science. We'd go out to restaurants and he'd write out equations for me to solve on the coloring sheets," he recalls with a laugh. "I loved it, it was so much fun."

Over the years, Imperiali's taken those crayon equations and transferred them to actual trains—he's now an electrical engineer for CRRC MA, building new trains for the Red and Orange lines in Boston. He credits his time at WPI for helping him come into his own both professionally and personally, thanks in particular to project work and his involvement in Alpha Phi Omega (APO), WPI's co-ed service fraternity, of which Drake and Cotnoir were also members. "Gradually, through my time at WPI, I learned and became more confident," he says. "Before, I kept to myself; I was very quiet, shy, and anxious. It all definitely helped me grow into who I am today."

Cotnoir, on the other hand, has kept things a bit closer to home as an instructional technology specialist in WPI's Academic Technology Center. As the resident Zoom expert, she has had a busy year. (Chances are if you had any trouble with Zoom during COVID-19, she was the one who helped you out.)

Though her initial major was computer science, she switched to Interactive Media and Game Development after helping friends with their homework and really enjoying what they were working on. "I liked the idea of constantly having to learn about new tech and apply it to situations," she says, adding that her interest in audio and instruments was a nice added touch and brought everything full circle. "It all came together and now I'm very much in my element."

Like her peers, Drake, who works as a mechanical engineer at Setra Systems, always had an interest in STEM—albeit one that shifted over the years. She began with a passion for biology in middle school before being drawn to machining and manufacturing in high school. During a visit to WPI to explore the new CNC lab, some well-timed advice from her machine shop teacher prompted her to consider mechanical engineering, and the rest is history.

"I almost fell into it, in a way," she recalls. "But it was a combination of everything I'd been doing and enjoying." Now Drake's career has her working with electrical and software engineers to develop fully functioning mechanical products, such as equipment for measuring weight, temperature, humidity, and air pressure. She's currently working on a project to help schools and businesses provide clean isolation rooms in a continued effort to mitigate the effects of COVID-19.


JANELLE DRAKE '11

Cotnoir and Drake were also in the Pep Band together, regularly treating the WPI community to the sounds of the mellophone and alto sax, respectively. They also had a chance to reconnect at an Alumni Association event just a few days before Cotnoir had been planning to come out at work.

"I hadn't seen [Janelle] for a while and I knew she was queer, but I didn't know she was trans. I was thrilled to death [to see her], but the timing was absolutely ridiculous," she says with a laugh.

A PERSONAL STORY

Drake, Cotnoir, and Imperiali all began exploring concepts of gender more deeply in college (Cotnoir even wrote a paper on sexuality for her Humanities and Arts Requirement), but didn't come out until years later. While each story is different, all resonate with a feeling of needing to, and being relieved to, live in a way that feels most like themselves.

"I didn't know anyone else who was going through what I was, so it was hard for me to place those feelings in a way that made sense," Cotnoir says. "But as time went on and I saw younger folks exploring their gender much more freely, it was like a big eye-opener for me."

Imperiali knew he was trans, but didn't realize he needed to medically transition until this year. "I thought I could just live my life as it was and just get through it, but I decided that no, I can't. Why was I doing that to myself? I decided to just go for it," he says. After coming out to his parents in early April, he began hormone treatments and hasn't looked back since.

Drake began playing with gender expression briefly at the age of 10 of 12, but didn't really start exploring terms and identities until she got to college, where she began putting different terms to what she was feeling. "I started identifying as a cross-dresser my junior and senior year, then more as gender-fluid a couple years after college." What really drove things home for her, though, was playing the role of Santa Claus at a holiday party at work for employees' children in 2017.

"That night as I was getting dressed for the role, I realized all of a sudden, 'Oh my god, I really don't want to grow up to be an old man. It's not who I am,'" she explains. The situation was made more difficult by the fact that she had already come out to her family as gender-fluid, and didn't want to come out again as trans during the holidays. Instead, she kept it to herself for the rest of the year before exploring her options more deeply in the new year.

FINDING FOOTING AND MOVING FORWARD

There's no question that Drake, Cotnoir, and Imperiali are good at what they do professionally. But merging a professional life with the deeply personal process of coming out can be challenging. In the best of circumstances, the process can be mentally and emotionally exhausting to the highest degree, but doing so in a field that's inherently biased against you? It's got the potential to make it all ten times worse.

However, Imperiali, who left a past job due to rampant sexism in the workplace, wasn't going to let said biases get in the way of the passion that he'd had since the second grade.

"Sure, I was kind of nervous, especially because the industry I work in is even more traditional than usual—it's a bit of a good old boys club," he says. "But my reasoning was, 'What's transitioning going to do? People already treated me differently before, it's just more of the same, just a different flavor.'"

"I REALIZED I WASN'T BEING A VERY GOOD ROLE MODEL IF I WAS STUCK IN THE CLOSET, YOU KNOW?"

JOLENE COTNOIR '10

As it turns out, Imperiali had no need to worry—since coming out publicly in June of this year, he's experienced nothing but support from friends, family, and his employer.

Drake also considers herself lucky to have been in a friendly work environment when she began seeking assistance for socially transitioning at work. She had been working for her previous company for four and a half years when she started to come out to her bosses and the human resources department, then eventually her colleagues.

There's no such thing as a life without curveballs, though, and Drake was handed one at a pretty inopportune time, having her first day at work as herself after months of preparations before receiving unexpected news shortly thereafter. "They were going through financial trouble, so unfortunately two weeks after I came out, I got laid off," she says. "That put me headfirst into the job market as trans with only two weeks of experience working as trans."

As Drake's job search progressed over the summer, she found herself trying to anticipate how people would interpret her resume (which still noted her as reaching Eagle Scout) or how people would accept her. "I didn't know how people would react to me," she says. But she also knew she wanted to be open so that she would find a workplace that valued her. "My LinkedIn profile says that I'm trans," she adds. "I just wanted to be open with people in case that was a problem; then I could screen [employers] out more quickly as a place I didn't want to work."

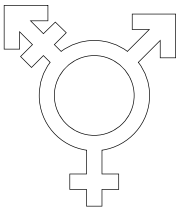
Her approach mirrored what she took from her WPI education as well. "The best way to frame a problem starts up front," she says. "How you frame the problem up front can help solve a lot of things more creatively as you go deeper into projects."

While support was abundant for Drake, Cotnoir, and Imperiali, and career issues were averted, there are other issues that, frankly, most are privileged enough to not have to even have to think about. For example, if a cisgender person who wears makeup decides to forego it for a day, someone may comment that they look tired. Not ideal, sure, but also not the end of the world. But if Cotnoir decides not to wear makeup, she explains that there's a risk people may not see her as a woman.

"Some days I really wish I could just roll out of bed and go to work, but I have to think, especially now when I'm going to be on camera, how will I look?" she says. "It's not that I'll look sloppy, it's that people might regard me as male, and I really don't want that. Even people who know me, they'll slip up more, so I feel like I have to, to some degree."

Cotnoir was also faced with a task that seems simple, but ended up being Herculean: getting her name changed in Outlook.

"A lot of our systems aren't entirely coded to handle transitions, name changes, things like that," she explains, adding that the issue



isn't even just for queer people; it also applies to those who change their name after marriage and other similar scenarios. "It took a lot of back and forth to get Outlook to stop changing my name back to my old name. Eventually they had to rework how some of the things pull in information."

While the experience was more frustrating than anything else ("I had people messaging me … calling me two different names in email chains. Students would come to the office and not know who to look for …"). Systems have been amended, and Cotnoir says she was able to find some entertainment when folks didn't recognize her, giving her the chance to reintroduce herself.

"Some people commented, 'what happened to that nice boy who used to work here?' Those were my favorites because they legitimately didn't recognize me, they thought I was somebody new." She pauses, then adds with a laugh, "I should've said, 'I don't know, was he cute?'"

LIFE AFTER COMING OUT

Remember how Drake, Cotnoir, and Imperiali were all members of APO? That desire to help and support others—especially queer students and peers in STEM—is still going strong, whether that's through pride flags on display in offices, mentoring groups of local LGBTQ+ teens, or advocating for fellow trans coworkers who may not have the same resources when it comes to insurance and coverage.

"I'm definitely using my trans identity to advocate for others when I can now," Drake says.

Imperiali's got a similar outlook. "I really like helping people," he says simply. "If my story, my life, what I do, helps someone, that's great, and I'm glad that I can. It's cool."

Growing up and figuring out her identity, Cotnoir didn't really see a future, she didn't have a plan. Now that she does, it's something she wants to share.

"I realized I wasn't being a very good role model if I was stuck in the closet, you know?" she says. "Whether or not I'm role model material, I don't really care, but the important thing I want people to know is that, hey, I'm queer. I have a full-time job, I'm doing something I enjoy, and I'm doing it well. I'm happy.

"There's something to be said for seeing somebody like you who's made it to a place that you want to get to. It's … it's good."

Seeing "somebody like you" who has achieved a sense of accomplishment, of belonging, and maybe, finally, feels an authentic sense of self is inspiring, but when that 'somebody' is the face you see in the mirror, it's even better." [J]

QUEER SUPPORT AT WPI

WPI'S DIVERSITY & INCLUSION TEAM is focused on creating an environment that's not only welcoming and where acceptance and respect are expected, but most important, where people can be their most authentic selves. They do it all through open dialogue, education, and learning from the lived experiences of all.

"We care deeply about developing educational opportunities for our students, staff, and faculty that promote identity development and a deeper level of cultural proficiency," says Rame Hanna, director of Diversity and Inclusive Excellence. They go on to add that diversity, equity, and inclusion (DEI) programs are "developed with an intersectional lens to promote greater representation and meet each community member where they are at in their lifelong journey to self-awareness."

Their efforts, as well as those of the entire DEI team, aren't going unnoticed. "Those are huge," Jolene Cotnoir says. Whether it's outreach during the COVID-19 pandemic, virtual or in-person events when they were possible on campus, or the general sense of welcome from DEI, Cotnoir says this kind of getting in touch makes an impact and is an invaluable step toward continued community building and change.

"More is great," she says. "Anything to elevate queer voices is absolutely fantastic. Uplifting queer voices, voices of color, voices of the differently abled … the first step is usually sharing those experiences. Once you hear about what somebody has to go through, you start to sympathize with them, and you start to think, 'OK, what can I do?'"

As more people are encouraged—and have a safe space—to share experiences, the script changes, says Cotnoir. "Everyone has a chance to tell their story and everyone can actually change something."

IN A WORLD TURNED UPSIDE DOWN,

WE ARE STILL WPI.

Edited by Michael Dorsey with contributions from
Lisa Eckelbecker, Sharon Gaudin, and Jessica Messier
Photography by Matthew Burgos

The University Confronts an Unprecedented Challenge: How to Offer Its Unique, Hands-On Approach to Education While Making Health and Safety a Priority

Late January 2020 seems like an eternity ago. That's when COVID-19 first crossed the Pacific and landed in the American Northwest. As the virus spread steadily across the country and around the globe, and as isolated outbreaks coalesced into a global pandemic, life changed in extraordinary ways.

At WPI, the changes began in early March as the university's Coronavirus Emergency Response Team (CERT), guided by state and federal recommendations, first suspended international travel by faculty, students, and staff, and then required employees who could do so to work from home.

As COVID-19 gained a firm grip on the Northeast, and the risks of exposure to the virus became clearer, CERT's attention focused on WPI's core mission: educating students. The basic need was one WPI shared with virtually every other college and university: keeping the academic operation running while doing whatever was necessary to help students, faculty, and staff stay safe.

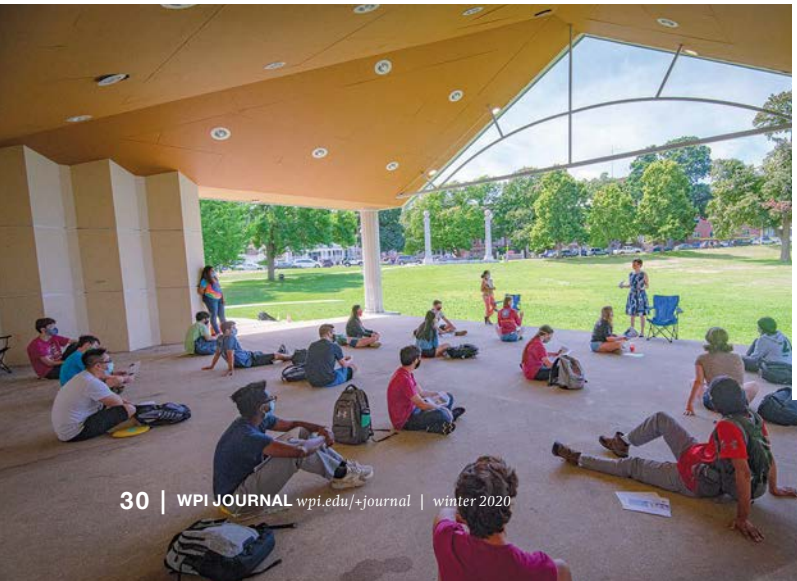
But the underlying challenge was uniquely WPI: maintaining the hands-on, personal, and interactive nature of the university's distinctive approach to undergraduate teaching and learning when some or all of that learning might have to be conducted remotely, and when even on-campus instruction would be shaped by the need for students and instructors to protect themselves from the virus.

On March 18, President Laurie Leshin announced CERT's decision that all D-Term undergraduate and fall-semester graduate classes would be moved online. The announcement that E-Term (summer) classes would also be held remotely followed soon after. The changes posed immediate challenges for faculty and staff, and for students and their families.

But an even greater challenge lay ahead. After considerable deliberation and study, CERT decided that while graduate classes would remain mostly online for at least the first half of the 2020–21 academic year, undergraduate classes would follow a model that offered in-person and remote classes, as well as some classes that were a hybrid of the two approaches.

"These are uncharted waters," Leshin wrote in an email to the campus, "but this community is strong. We are problem solvers and together we will weather this storm."

This is the story, in pictures and words, of how a problem-solving community took on one of the greatest challenges it has faced since its founding.



USING TECHNOLOGY TO CREATE FLEXIBILITY

Taking what works in a classroom or teaching lab and making it work online is a challenge. Doing so in a way that gives faculty, staff, and students the flexibility to balance their work, lives, and health is even harder. The solution was a program that uses technology to provide flexibility. With this approach, courses may be delivered fully online, in-person, or with a combination of those approaches. WPI drew on its deep experience with online graduate education and the deep commitment of its faculty to connecting with their students. Over the years, WPI's learning technologies teams have taught faculty to integrate the latest technologies—web, videoconferencing, recordings, simulations, virtual chat, and discussion boards—into their courses. "WPI was prepared for this moment," says Dean of Engineering **JOHN MCNEILL**, who led the implementation of the new program. "We are recognized as a leading innovator in delivering diverse learning modes, and this approach played to our strengths."

PREPARING PANDEMIC-ADAPTED CLASSROOMS

Classrooms, with students seated elbow-to-elbow and instructors lecturing just a few feet from the front row, were not designed for pandemics. Over the summer, WPI's educators and facilities staff set to work to adapt classrooms and lecture halls. The changes ranged from the simple (marking which seats could be occupied and which must be left empty to accommodate social distancing), to the complex (upgrading HVAC systems to increase ventilation, or keeping windows open if upgrades were not possible—even in cold weather). Movable Plexiglas barriers in many classrooms provided an added layer of protection for faculty and students. The goal of these and other changes was simple: promoting personal safety while still enabling the personal connections that come from face-to-face classroom interactions.

BRINGING THE CLASSROOM OUTDOORS

It's well-known that being outside, where there is natural ventilation and where social distancing is easier, reduces the risk of spreading microbial infections. WPI's campus and the open spaces around it offer many spots that are well-suited to educational pursuits, when the weather permits. This past fall, someone strolling the grounds might have come across a music ensemble rehearsing on the lawn behind Higgins House, **KATE MCINTYRE** leading a discussion in her creative writing class on a grassy spot near Salisbury Labs, or **LISA STODDARD**'s socially distanced Great Problems Seminar (at left) underway in the Institute Park band shell. Dozens of Adirondack chairs were spread through the campus to provide outdoor study spots, while tables and chairs were set up under tents to create perfect spaces for group study or project team meetings.

DOING LABS WHEN YOU'RE NOT IN THE LAB

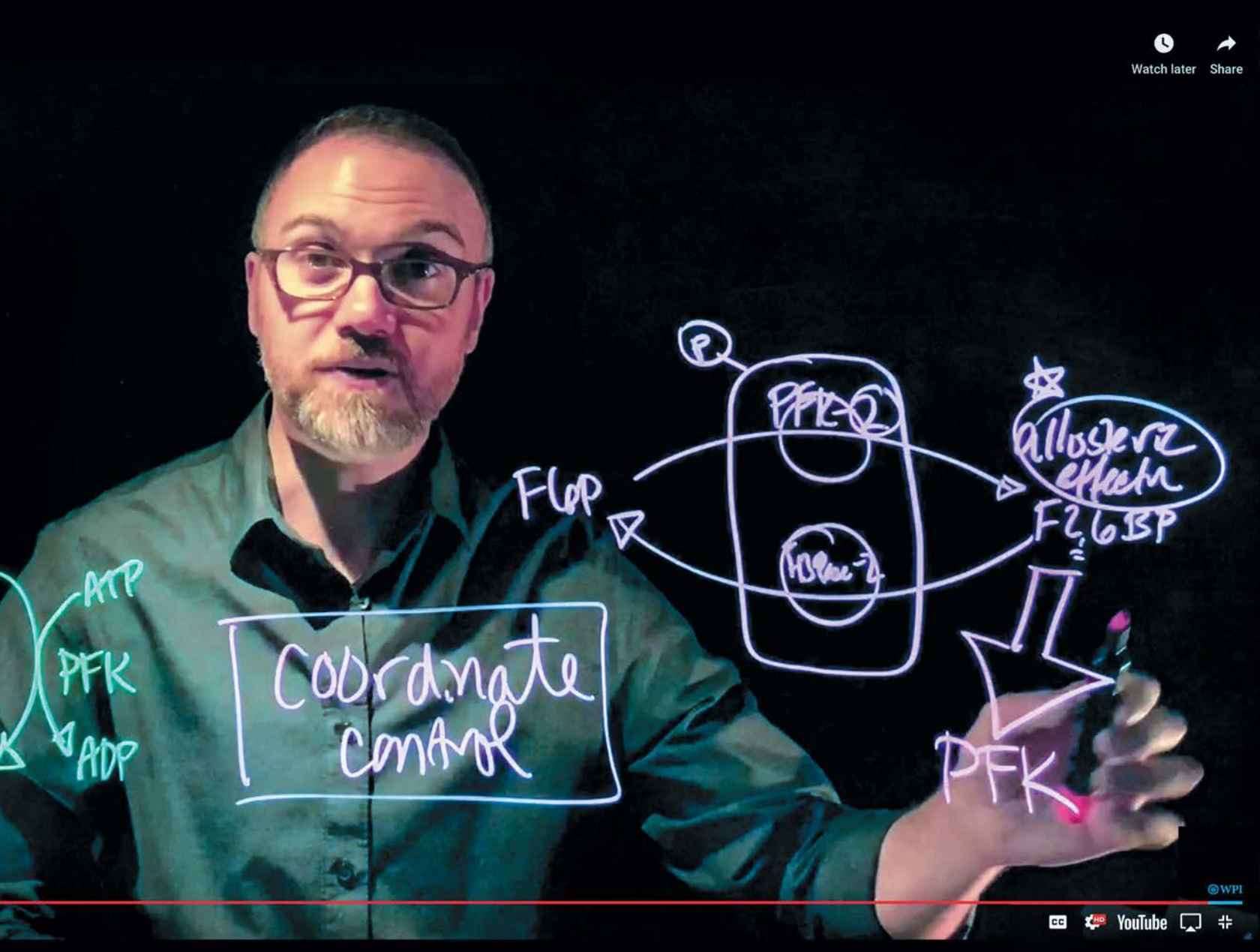
Hands-on labs are essential in many science and engineering disciplines, especially at WPI, where courses and labs are stepping-stones to project work. But how do you do labs when you can't be *in* the lab? WPI faculty rose to that challenge in a number of creative ways. For example, students wearing augmented reality glasses and using video chat and screen sharing brought other students into **ANDREW TEIXEIRA**'s Virtual Lab Experience for Chemical Engineering. In Chemistry and Biochemistry, **ROBERT DEMPSKI** and **JOSÉ ARGUELLO** created a classroom module that let undergraduates use augmented reality to visualize biomolecules. And high-res cameras let students see and participate in the operation of equipment in the "de-densified" 6,000-square-foot Chemical Engineering Senior Lab in Goddard Hall. "Remote students were able to fully participate in the lab and operate the equipment safely," says **STEPHEN KMIOTEK**, professor of practice.

BEHIND THE TEACHING: TESTING AND TRACING

Among the keys to being able to return to the WPI campus in August, in the midst of a pandemic, were health and safety protocols that emphasized reducing viral spread (masks, social distancing, hand washing), knowing quickly if anyone was infected (testing, contact tracing), and isolating and quarantining those who do test positive (*see Conversation with the President, page 3*). WPI's comprehensive testing program requires those working or living on campus to be tested prior to arriving and then tested regularly after that. Results from tests, processed by the Broad Institute and other partners, are returned quickly. Daily entries in a symptom tracker app (developed by WPI's IT Services and its COVID Health Behaviors Group; *see page 14*) provide an early warning for the onset or progression of COVID-19 symptoms. By late fall, the program and its rigorous application had kept COVID-19 cases low at WPI and, most important, kept everyone focused on what matters most: teaching and learning.

AN OBSESSIVE FOCUS ON KEEPING THINGS CLEAN

It was not unusual this past fall to see people in full hazmat suits working in classrooms and other public spaces on campus. It was part of a campuswide effort to mitigate the spread of the COVID-19 virus. In addition to providing cleaning and disinfecting supplies for students, faculty, and staff to use on desks, tables, and other areas before and after use, enhanced cleaning routines, including regular fogging, were carried out by Facilities crews. Whenever a community member tested positive for the virus, specially trained staff wearing coveralls, booties, and N95 respirators did a deep cleaning of the affected areas. "Deep cleaning is not vacuuming or dusting away cobwebs," says **DANIEL SARACHICK**, director of environmental health and safety. "Our goal is to sanitize."



GLOBAL PROJECTS IN AN INACCESSIBLE WORLD

WPI has earned a reputation as a pioneer and leader in global project-based education. Its network of more than 50 undergraduate project centers on six continents is without peer. But what happens to a global projects program when a global pandemic makes global travel impossible? When off-campus travel was cancelled for this academic year, WPI students and faculty responded as you might expect, creatively refocusing and reimagining planned project work. Some student teams completed their planned projects remotely. Others found new, domestic projects to tackle. Some chose to study the pandemic itself, including a team that had planned to study ecotourism in India, but instead created an archive of pandemic stories they collected. "The students have more capacity to be resilient than they probably realize," says **SARAH STANLICK**, who was set to take students to the Berlin Project Center. "Working under an emergency situation and pivoting … that is a great lesson to learn."

A PANDEMIC INSPIRES TEACHING INNOVATIONS

The prospect of teaching remotely, potentially for the better part of a year, prompted WPI's faculty to rethink how they deliver online classes. One goal was to retain the personal interaction between student and teacher that is a hallmark of in-person instruction, particularly at WPI. For example, **DESTIN HEILMAN**, teaching professor of chemistry and biochemistry, was inspired to develop an innovative light board (above) that allowed him to face students while writing material on the board. "There is growing evidence that online lectures that include the lecturer's face result in better student attention and learning outcomes," he says. For **NANCY BURNHAM**, professor of physics, the aim was giving students in General Physics–Mechanics, the second largest class at WPI, a robust learning experience, whether they participated remotely or in person. She delivered lectures remotely to nearly 500 students and held conferences with smaller groups. She also used a sophisticated software platform to deliver quizzes.

LIVING TOGETHER, BUT SPREAD APART

De-densification. In essence, it means spreading people apart to reduce the close contact that can lead to the transmission of a virus. That idea was a guiding principle behind much of WPI's approach to operating during a pandemic. One place where it was particularly evident was in repopulating its residence halls. In addition to reducing the number of students per room, the plan for residential living also included a ban on visitors and limits on the number of students allowed in bathrooms and elevators (one rider at a time). Lounges and other common areas were closed, and students were required to wear face coverings when outside of their rooms. They were also required to clean and disinfect shared bathrooms and kitchens after using them. To compensate for the capacity lost due to de-densification, the university rented the nearby Hampton Inn and transformed it into a temporary residence hall.

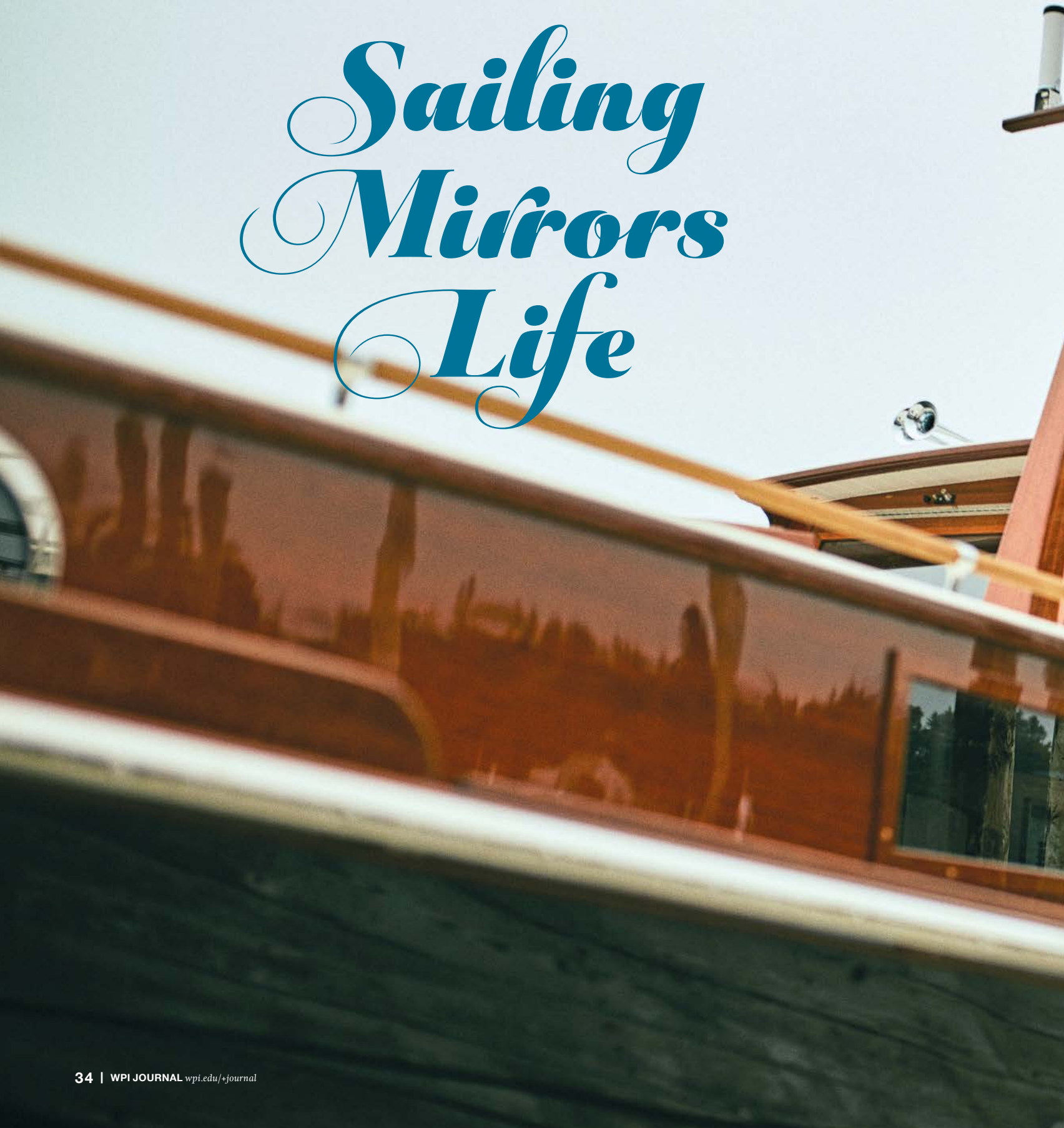
DISCOVERY COULDN'T WAIT FOR THE PANDEMIC TO END

When faculty members and students went home in the early days of the pandemic, the university's critical research continued. Research is no small enterprise at WPI. There was no way it could stop; it just changed locations. To make the switch from using state-of-the-art laboratories to working at home in their basements or kitchens, researchers redesigned their projects, analyzed data they'd already collected, wrote grant proposals and papers, and made plans for the days when they could return to campus. And when they did return during the summer—under tightly controlled conditions and in alignment with state and federal public health guidelines—they jumped back in with loads of newly analyzed data, newly crafted research plans, and a wealth of submitted research proposals.

SUPPORTING THE COMMUNITY IN UNCERTAIN TIMES

In a survey conducted by WPI's Morgan Teaching and Learning Center, more than half of the WPI faculty reported feeling stressed and overwhelmed. Stress and loneliness are understandable responses to the looming threat of infection, to the changes that have upended much of what was once "normal," and to the constant need to keep our distance from those with whom we long to engage. In addition to a variety of services offered to students by the university's Student Development and Counseling Center, WPI is responding to all members of the community who need help coping. That response includes the School of Arts and Sciences's Be Well Together program, with virtual yoga and mindfulness sessions, therapy dogs, including visits from President Leshin's corgi "space pup" Hudson, and fun student activities that let students socialize and let off steam, safely. If there is a theme to it all, it is simply this: we're all in this together, and together we'll get through it. [J]

Sailing Mirrors Life



Wes Wheeler ’78
Navigates an Uncharted Path

By Julia Quinn-Szcesuil
Photography by Matt Furman

WES WHEELER says he never thought of himself as a turnaround guy. But the pull to reinvigorate something forgotten, foundering, or just not living up to its potential has always been too strong to resist. Whether it's a company or something as personal as a legendary boat from his family history, he sets his sights on something and finds a way.

In December 2019, when Wheeler accepted the role of president of UPS Healthcare, a new vertical business unit of UPS, he was looking forward to the challenge. As an experienced pharmaceutical industry leader, he was focused on running a new unit with more than 100 global locations, 6,000 employees, and a continued devotion to improving healthcare on a global scale. Then came COVID-19.

"I started in January," he says, "and then the whole world went crazy."

UPS Healthcare is now deeply involved in COVID-19 resources, and although each day brings a new challenge or problem, Wheeler is using a tactic that has served him well since his days at WPI. Part of his approach is how Wheeler thinks (how all engineers think, really, he says) of identifying a problem, breaking it down, and solving it successfully. The problem-solving process, especially when it has a successful impact, delivers the kind of satisfaction and results that led Wheeler to major in mechanical engineering at WPI.

His goal was clear from the start. "I wanted to be an engineer and wanted to go to a really top school," he says. From his hometown of Port Chester, N.Y., Wheeler cast a wide net of college applications—from the University of Michigan to Syracuse.

"My dad [**WESLEY WHEELER '54**] was a graduate of WPI," he says, recalling his familiarity with the school. "WPI was a top choice, and then it came in with a scholarship," he says, noting that he put himself through school. "The scholarship was the deciding factor."

WPI gave Wheeler the education he wanted and enjoyed. "I am humbled to have been a part of it," he says. "It had a lot to do with how I started out." The rigorous curriculum also developed his ability to plan and assess for the long term. Wheeler bucked family pressure to continue a marine-oriented career path, choosing instead to chart his own course.

Wheeler's great-grandfather founded the Brooklyn, N.Y.,–based Wheeler Shipyard Corporation (now Wheeler Yacht Company), which is most famous for its meticulous craftsmanship and legendary for designing and building Ernest Hemingway's beloved *Pilar*, a 38-foot Wheeler Playmate on which he wrote *The Old Man and the Sea* and spent the last couple of decades of his life.

A devastating 1963 fire was the beginning of a quick end to the company's operation, but the family legacy continued and clearly shaped how Wheeler has lived his life. "My family is a boating family," he says, so he knows even the most well-planned journey can veer off course almost instantaneously.

About 10 years ago, an unexpected call began a domino effect that has led to the most remarkable outcome. Hilary Hemingway, niece of the author, was working on a movie about her uncle and needed a replica of his boat—fast. The movie was never completed but Wheeler's ability to find a boat and have it restored for the movie sparked a flame for him. He and Hilary even traveled to Cuba to verify the authenticity of the original *Pilar* at the Hemingway museum, which he did with a series of precise measurements.

"When I was done, I realized the measurements gave me an exact copy of the boat, to the inch" says Wheeler, noting the original plans were lost in the fire, but with reverse engineering he could recreate it exactly. "I said, 'I'm going to build one!'"

Thus began the dovetail of an intense career with an equally intense side interest.

Personal Attention and Rigorous Work

Although Wheeler Shipyards closed while Wes was still young, his father pursued a marine-focused consulting business and expected Wes to follow in his footsteps. But despite his lifelong passion for the ocean, boats, and sailing, this plan didn't steer his overall career.

"I didn't want to do that," he says. "The marine business is a difficult one. It's cyclical, and it's not recession proof. I didn't want to do what my dad did." Instead, Wheeler followed his interests in

mechanical engineering and fascination with thermofluids for the hybrid education for which WPI is so well known.

At WPI he also received the kind of one-on-one encouragement that made a profound difference in his college years. "Jim Boyd was my advisor," he says, "and he had more to do with my education than anyone else. He always made time for me."

Boyd offered a distinctly engineering-based life perspective. "He brought everything back to the first law of thermodynamics," says Wheeler. "It's a simple equation of the conservation of energy. He made everything so simple, even though it was complicated, and I loved that about him."

Like many WPI alums, Wheeler's experience with the Competency Exam (Comp) presented a meaningful demarcation from college student to professional engineer. "The Comp was one of the defining moments of my life," he says. "It was tough, but I'll tell you what—it defined me." The long (and internet-free) preparation for the "pass-or-do-not-graduate exam" was combined with the expectation of a precise oral defense.

"I was sorry to see it go," he says. "It was an important part of the WPI Plan, and it all culminated in that. It made college meaningful. It wasn't just about the technical side—it was about learning to control your time, putting together a document you could talk about. It had to be professionally written, defended, and presented. It was the equivalent of taking the bar to become a lawyer."

Launching a Professional Journey

The confidence and knowledge gained from that professional-level challenge polished Wheeler's problem-solving and presentation skills. He entered the job market with a clear idea of what he wanted.

"My dream job was to design power plants," he says, yet he found himself accepting an offer with Exxon. The move was a powerful influence on his future career, and his devotion to Exxon is still evident as he reflects upon that journey. "I loved Exxon, and I cried when I left there," he says. "I learned how to manage big, massive projects—including the memorable installation of two 35,000-ton oil platforms—and it defined my approach to my professional life."

During his 12 years at Exxon, Wheeler rose through the ranks, relying upon the organization and self-discipline he learned on project work like his IQP and MQP.

Eventually, Wheeler felt stuck professionally. So when he received an out-of-the-blue call from a 919 area code ("I had to look it up in the telephone book. It was North Carolina—a place to stop for gas on the way to Florida," he quips) and an offer from a small company called Glaxo, he was interested. "I took a pay cut and I took a chance," he says, about the company *and* the pharmaceutical industry.

Pharmaceutical Work Leads to COVID-19

While at Glaxo, Wheeler helped launch 24 products and kicked off his own next phase. "Engineers don't make it far in pharma," he says. "So I got my MBA and crossed into the business side."

As Wheeler navigated his career, he realized that his natural take-charge approach worked in many business applications. Moving

"We're preparing for what we think might happen."

into a CEO role for DSM Pharma in the Netherlands, Wheeler knew he was joining a company that had a plant that had been warned about poor quality practices. Rather than be intimidated or discouraged, he was invigorated by the idea of finding a solution. "I thought, 'Maybe I'll be a turnaround guy and fix it.'" Thus, his path became clearer.

Wheeler assumed the director of engineering role at Glaxo and then became vice president of marketing at GlaxoWellcome. He then held executive leadership roles at GlaxoSmithKline and Valeant Pharmaceuticals before becoming CEO of both Patheon and Marken, which is now a subsidiary of UPS Healthcare.

He finds the pharmaceutical industry distinctive in both its product and process. "You're talking about human health, so what you're doing really matters," he says. "You're moving drugs, biologics, samples, and blood." Because of his deep experience with large technical projects and his industry knowledge, he knew the role was a big opportunity. "It's clinical and commercial. It's a challenge. It's something I know I can do," he says, "and I can speak the C-level language about what healthcare's about."

Within a month of joining UPS Healthcare, Wheeler held Zoom calls all day to figure out the logistics of getting supplies around the world. As part of President Trump's Task Force called Project Airbridge, UPS Healthcare jumped in in a big way, moving 20,000 tons of PPE from China and Asia on 230 chartered 747 freighter flights with FEMA.

"Every day we checked the latest—who needs PPE, what companies are doing test kits, where labs are located," he says. "Meanwhile we're trying to set up a division from scratch and develop a strategy. But we had to drop our pencils and go to work on COVID."

Now, months later, Wheeler focuses on the efficient and safe global transport of tests, test kits, vaccines, and treatments—the timing, location, and scale of which are dynamic. UPS Healthcare is mapping out supply and trade routes and distribution plans to get vaccines out of countries where they are produced and into areas where clinical trials happen and—eventually—to the public. "We're preparing for what we *think* might happen," he says.

With some vaccines requiring constant storage and transport temperatures of -80°, logistics are complicated. UPS adopted the phrase "freezer farm" to describe the ways it uses equipment to manage the storage.

He didn't expect to jump into the firestorm, but he relishes it. "I never thought I would be a turnaround guy, but it's what I'm known for," he says. "I know I could never take a job and turn the crank every day. I love being the CEO." During a time of his life when many of his friends and colleagues are debating or pursuing retirement, Wheeler takes an opposite approach. In addition to leading UPS Healthcare through its initial year, he is also chairman of the board for Bushu Pharmaceuticals in Japan.

Boats, Pharma, and the Pursuit of Happiness

During all of his career moves, Wheeler has remained steadfastly devoted to recreating one of the most celebrated sportsfishing boats to ever exist. "You can't not think of the Wheeler legacy when you're in the family," he says. "I wish my dad was alive to see this."

His mission to create a modern version of the *Pilar* led him to Bruce Marek and Bill Prince, yacht designers, and then to the Brooklin Boat Yard in Maine. He and his team have brought many custom pieces such as a searchlight from the Netherlands, a horn from the UK, and compass and gauges that look like the old pieces. Even the boat's mahogany came from just two trees.

The attention to detail is both astounding and a love letter to the fine craftsmanship and elegance of a past era. It's also a family affair as Wheeler's wife, Marianne, chooses the details that upgrade the boat to the most modern environment with obvious roots in its storied past. "Everything on the boat was built by hand," Wheeler says.

Last September, the boat took its first East Coast journey with Steve White, Brooklin Boat Yard's owner, captaining and Wheeler joining for part of the time. In a twist of literary powerhouses, White happens to be the grandson of literary icon and Hemingway contemporary E.B. White, author of many popular books for children, including *Charlotte's Web* and *Stuart Little*.

Although COVID has become all-consuming right now, Wheeler says this project might lead to a new career. "I hope I can do this once I've left my day job," he says. "This is the coolest thing I've ever done in my life." [J]

PHOTO BY DOREEN MANNING

College Is a Team Sport

KAREN DZIALO FREY '82 (EE), '85 MS (EE), '91 PHD (EE) and her husband, **ROBERT DANIEL (DAN) FREY JR. '82 (EE), '90 MS (EE)** weren't surprised when their son, **MATTHEW '22**, chose WPI; he always was curious about how things operated. But they were especially delighted when their daughter, **NATALIE '24**, announced her interest.

It was Dan's favorite uncle, **C. CHAPIN CUTLER '37**, who influenced his decision to study electrical engineering at WPI, as he often shared stories of working on radar development during WWII and his contributions to the Telstar satellite.

Currently an engineering fellow at BAE Systems in Nashua, N.H. Dan claims that it was the WPI Plan—with its emphasis on projects, teamwork, and presentation—that were key to his subsequent success in industry. "I fondly remember the challenge of the Comp [Competency Exam]," he says. "It provided an experience that closely matched the process of solving a problem, generating a report, and presenting the initial and final solutions." A bonus of his education: Dan met Karen while they worked on the same IQP.

Karen says that the allure of the WPI Plan was also a considering factor. "When I was looking at schools in 1978, the Plan stood out as an innovative way to learn," she says. Also, Sue Chapman, the women's basketball and softball coach at the time, connected with the high school athlete during her admissions interview. With that outreach, a tour of the campus, and the small college feel, she says, "I was hooked!"

Currently program engineering manager/chief engineer at BAE Systems, Karen says her degree journey held more than a few challenges. One of the first was the male-dominated environment. "When I started in the fall of '78, there were 13 male students for every female student," she says. She recalls that varsity volleyball, basketball, and softball helped her connect with other young women at the time, as well as her Phi Sigma Sigma sisters. "The other big challenge was the Comp," she admits. "I saw numerous sorority sisters of mine struggle with it, and I was no exception. I was elated when I finally passed."

After a stint at Texas Instruments in Dallas, Karen felt the need to continue her education, and returned to WPI for her MS, as well as a teaching assistant position. "I enjoyed being a TA and the chance to work with some wonderful mentors, including EE professor Jim Demetry. After I finished, I decided I wanted to teach and stayed for my PhD." That all transitioned when she discovered she was pregnant with Matthew, and instead she chose a career at BAE systems.

Matthew says despite COVID-19 concerns, remote learning has gone smoothly for him. "I enjoyed the transition because it allowed me to do things when I wanted, rather than relying on the preset schedule," he explains. Now back on campus, he says so far it's not much different than normal, "with the exception of my sister occasionally dropping by to make use of our kitchen."

Natalie admits that her family was a big influence when choosing a college. "Hearing about their WPI experiences helped me get a good picture of what WPI was all about, which I couldn't quite get with the other colleges I was looking at," she says.

Even with her insider's edge, she admits that going into her freshman year during a pandemic is a rather unusual experience, but that "WPI has been really good about sharing all the information and what they are planning with us—so that helps make the transition a little easier."

Karen hopes her children inherit a few life lessons from their time at WPI, just as she has. "I learned a lot at WPI but the biggest lesson is that they really taught us *how* to learn—and that we never stop learning," she says. "Another big one is working as a team. Whether it was the IQP, the MQP, or participating in athletics, a team can achieve more than the individuals alone."

—DOREEN MANNING

Endowing Innovations for a Better World

SAM TETLOW '93 believes life happens *for* him, not *to* him. In this vein, WPI afforded the best opportunity for his undergraduate education. He was attracted to the flexibility of the academic program, as well as the university's overarching mission of harnessing the power of engineering, science, and technology for the good of society. That WPI ideal is one he has carried forward in his own life and career, and it is one of the reasons he recently endowed a fund in innovation and entrepreneurship at his alma mater.

Upon graduating with an honors degree in aerospace engineering, Tetlow joined General Electric's Technical Leadership Program. After his training program, he joined its elite Corporate Audit staff and completed global assignments at Power Systems, Aircraft Engines, GE Capital, and Appliances, where he gained a breadth of experience in sales, financials, and mergers and acquisitions.

"It turns out, GE was a good place to have worked," he says.

Having grown up with his parents as entrepreneurial role models, Tetlow eventually decided to turn back to his roots. He started a small consulting firm and then worked at a venture capital firm for seven years while earning his MBA at the University of North Carolina, Chapel Hill. After graduating, he joined the firm full-time, focusing on life sciences. It is clear to him that the 21st century is about biology and the life sciences while the 20th century was about physics. In his role as a life science–focused venture capitalist, he delivered on the full cycle of early stage investing from finding great deals through successful exit. While there, he generated excellent investment returns.

"I learned along the way that I loved being inside and managing companies. I really wanted to build companies."

Since 2007, Tetlow has built seven companies as either CEO or lead director. Maintaining his focus on innovation and technology to improve society and save lives, his current organizations include Grant Engine, which helps biotech companies earn grant funding from entities such as the National Institutes of Health and Defense Advanced Research Projects Agency (DARPA) with the mission to help save lives through creating innovative healthcare delivery devices and products. Another is Prime Neuro, which is developing functional MRI technology to predict, as early as six months of age, whether a child will progress to the autism spectrum.

Tetlow values his WPI education: the intangible lessons that came from working in teams, studying in groups, working on projects in a team environment—and the very tangible lessons of how innovation and technology impact society that came from his Interactive Qualifying Project experience evaluating the marketing plan for GM's first electric car, the GM Impact.

The importance WPI places on the humanities also stands out for him. "It was a clear signal that it's about being a well-rounded person." He has taken that lesson to heart as well, pushing his own mental and physical boundaries to achieve his personal best. He meditates daily and is a competitive runner and triathlete who competed in Iron Man Germany in 2001. He is also an avid expedition explorer who is planning a summit bid for Mt. Everest in May 2021 following a trip to Base Camp in May 2018.

Whether leading a company or on a mountain expedition, Tetlow is not afraid to push beyond what may seem possible to achieve new innovations and achievements. He remains driven by his passion for innovation and entrepreneurship and hopes his endowed fund will inspire and support future generations of WPI students.

"It's about paying it forward," he says, "so that others can have the same experience of that incredible growth."

—JUDITH JAEGER

ILLUSTRATION BY HELENA PEREZ GARCIA

ILLUSTRATION BY IVANA BESEVIC

A Challenge to Give Back

When **Beth Schweinsberg '00** looks back on her WPI experience, it abounded with opportunities for learning and also leadership, friendship, and expanding her horizons through new activities.

Schweinsberg was attracted to this aspect of WPI from the recruitment mailings she received after taking her PSAT.

"What struck me was how well-rounded it was," says Schweinsberg, who knew she was going to be a computer science major. "I knew there would be lots of opportunities to learn and also do the things I enjoyed outside the classroom."

And she did. She played in the orchestra for two years, ran cross country for four years, rowed crew for a couple of seasons, and was on the ski team for a few years. She was a member of Alpha Phi Omega, participated in SocComm—eventually chairing its movie program, and was involved with student government. Phi Sigma Sigma sorority was by far the most influential part of her WPI years, she says, and where she developed her long and deep friendships.

The leadership skills she developed along the way have proven useful to her career since graduation. After working in web development, she earned a master's degree from Carnegie Mellon University. She has since built an impressive career in digital forensics and incidence response, working for well-known companies many people interact with every day.

"I have always been complimented on my leadership," she says. "Having that balance at WPI definitely helped me in my career."

Schweinsberg also points to her time beyond campus completing her IQP in London as "another huge moment of growth." Going away, being surrounded by new people, working on a team, all contributed significantly to her education.

"That is something I wanted to make happen for other people."

She is challenging her class to support global projects for their Reunion Class Gift. The Class of 2000 will celebrate its 20th reunion at the end of May 2021—along with classes ending in 1 and 6—if health and safety conditions allow. So, there is still plenty of time to give.

Schweinsberg has committed up to $40,000 in hopes of enticing her peers to give back and celebrate the long and proud tradition of philanthropy at WPI, which she has honored through her annual giving and through the Schweinsberg Globe Trotter Endowed Scholarship she established. Through the Beth Schweinsberg '00 Reunion Class Challenge, she will match gifts to WPI's areas of greatest need up to $15,000 and will match dollar for dollar any gifts to Global Projects for All, up to $25,000.

She decided to challenge her class after seeing the success of WPI's Giving Days and the Goat Nation Giving Challenge in support of athletics. She noticed more people participate when there are challenge dollars to be earned.

"And I kind of want to outraise the Class of 1999," she says, "and thought this would be a fun way to do it."

In addition to supporting her Reunion Giving Challenge, Schweinsberg challenges her classmates and other alumni to consider their time at WPI, what it has given them, and what they may be able to give back to support WPI students today and in the future.

In California, where she now lives and works, she says the people who know WPI know what amazing students graduate from the university.

"We just need more of that in the world."

—JUDITH JAEGER

ALUMNI NEWS

From the Desk of

MARK MACAULAY '89, '94 MS
ALUMNI ASSOCIATION PRESIDENT

Our worldwide Goat Nation is the best! Despite the pandemic, this fall we found ways to connect with each other, celebrate our traditions, and support our alma mater.

418

Alumni, parents, and friends who supported WPI student-athletes through the Goat Nation Giving Challenge in August—200 were first-time donors!

NEARLY $60,000

Gifts from generous alumni, parents, and friends to the Goat Nation Giving Challenge

755

Virtual event attendees in A and B Terms

12TH

Best alumni network in the U.S.! (Princeton Review 2020)

1

Goat's Head Award presented during Homecoming—to Janet Begin Richardson, retired vice president for student affairs and campus life

1

Giving Day, Oct. 1—WPI's biggest day of giving back (see page 4)

3

Number of things all great alumni do

PARTICIPATE IN EVENTS

GO TO WPI VIRTUAL EVENTS

GIVE TO WPI

Another number that matters: students seeking financial aid. Your gift to WPI, of any amount, helps these students close the gap between their dream of a WPI education and making it a reality. Consider also a gift to the WPI Emergency Assistance Fund, which helps students and WPI community members experiencing negative financial impacts from the pandemic.

wpi.edu/+alumni | wpi.edu/+give

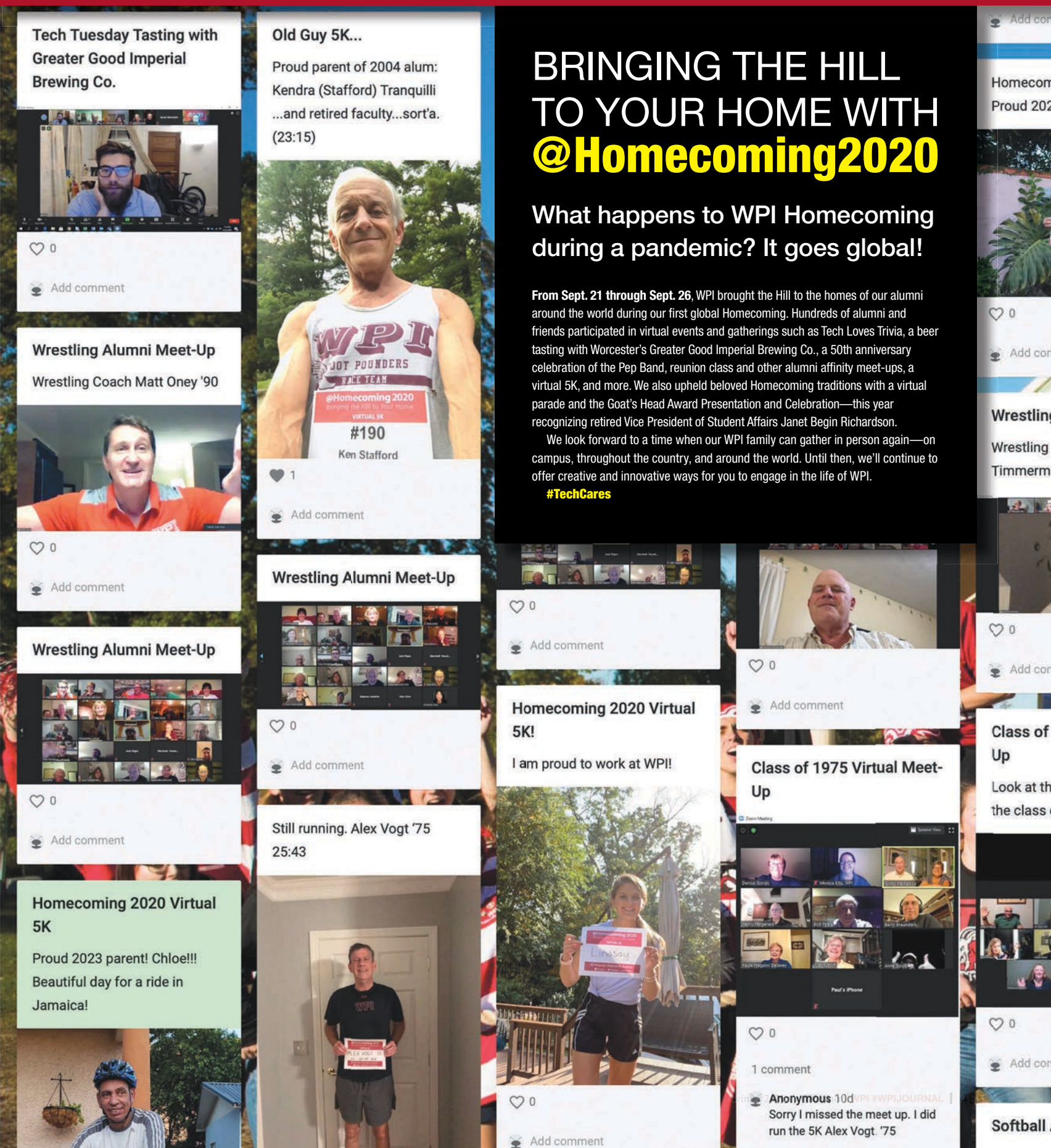
BRINGING THE HILL TO YOUR HOME WITH @Homecoming2020

What happens to WPI Homecoming during a pandemic? It goes global!

From Sept. 21 through Sept. 26, WPI brought the Hill to the homes of our alumni around the world during our first global Homecoming. Hundreds of alumni and friends participated in virtual events and gatherings such as Tech Loves Trivia, a beer tasting with Worcester's Greater Good Imperial Brewing Co., a 50th anniversary celebration of the Pep Band, reunion class and other alumni affinity meet-ups, a virtual 5K, and more. We also upheld beloved Homecoming traditions with a virtual parade and the Goat's Head Award Presentation and Celebration—this year recognizing retired Vice President of Student Affairs Janet Begin Richardson.

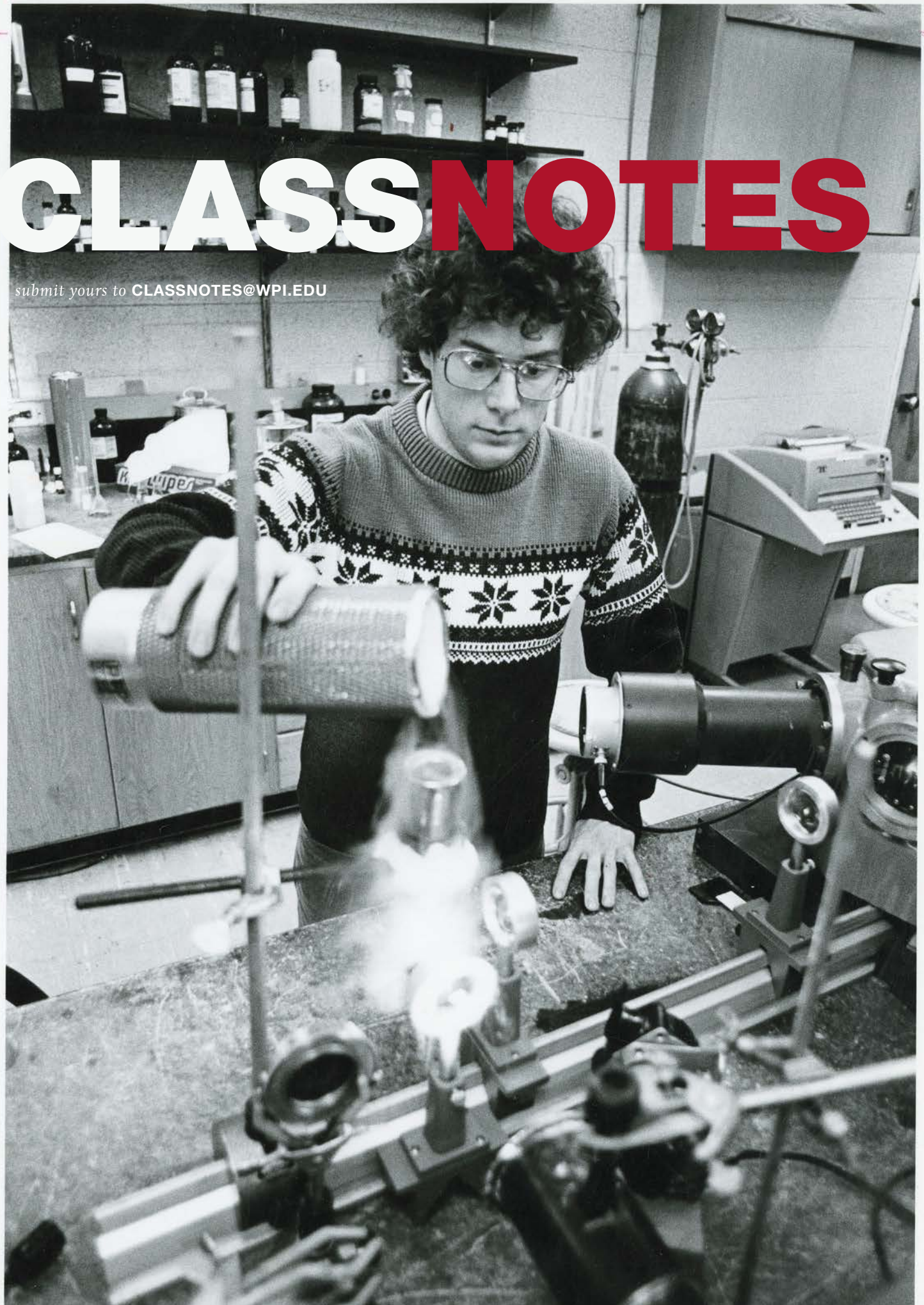
We look forward to a time when our WPI family can gather in person again—on campus, throughout the country, and around the world. Until then, we'll continue to offer creative and innovative ways for you to engage in the life of WPI.

#TechCares



CLASSNOTES

submit yours to **CLASSNOTES@WPI.EDU**



1945

Irving Goldstein succumbed to COVID-19 in May, after a short illness. "I can see from his papers that he supported and valued his WPI education," writes his daughter, Leslie. In his 41-year career with Raytheon Co., he designed everything from microwave equipment to missiles—including the Sparrow, Hawk, and Patriot missile systems—and emerging technologies such as infrared sensors, lasers, and aerospace technology for NASA. Irving retired from Raytheon in 1988. His pursuits ranged from antique clock repair to sculpture. He also enjoyed sharing his knowledge of art as a docent at the Worcester Art Museum.

1952

Edward Olson's wife, Margaret, shares the news of his passing in July 2020. After graduation he served as an instructor at WPI for a year before being drafted for U.S. Army service at the White Sands Proving Ground in New Mexico. He received a PhD in astronomy from Indiana University in 1961, and taught at Smith College, RPI, and then the University of Illinois at Urbana–Champaign from 1966 until his retirement in 1994. In addition to Margaret, he leaves two sons, seven grandchildren, three step-grandchildren, and three great-grandchildren.

1953

Walter Lueft's daughter, Diane Shingledecker, shares the news of his passing on July 1, 2020.

1956 R

Donald Lathrop wrote a commentary for his local paper, the (Pittsfield, Mass.) *Berkshire Eagle*, on the topic of prejudice, which he points out, is not innate at birth. Relating his own experiences with the Never Again campaign, which brought speakers from Japan to the U.S. and Canada to share stories of A-Bomb survivors in Hiroshima and Nagasaki, and with the Berkshire chapter of the NAACP, he opines, "If it can be taught and learned, then it can be unlearned." A portion of Don's story appeared as a Letter to the Editor in the Fall 2020 issue of the *WPI Journal*.

1958

Mike Mullo's wife, Betsy, writes to tell us that he is giving to the Class of 1958 Scholarship Fund. "He is so very proud of WPI," she writes, "and appreciates the fact that he, too, received a scholarship, which resulted in his many lifelong successes. While he has retired from business and no longer can indulge in his hobbies of worldwide travels and marathon running, he is still enjoying WPI friendships. Mike sends his best to the Class of 1958."

1960

Anan Pananda passed away peacefully in August 2020, Charn Pananda informs us, adding, "He always said to me that WPI was his favorite during his undergraduate life."

1964

Richard Healing writes, "After serving as director, Safety and Survivability, Department of the Navy, and a presidential appointment as board member, National Transportation Safety Board, I was appointed commissioner, National Commission on Military Aviation Safety (NCMAS) in 2018, where I serve as vice chairman. The NCMAS is charged with determining the causes and underlying issues related to an increase in military aviation non-combat crashes since 2012 and will report its findings to the Congress and the White House on 1 December 2020."

1966 R

John Gilbert shares this capsule of his life: "Two weeks after graduation from high school, I enlisted in the USAF. I was sent to Syracuse University to study Russian language and some history and culture. From Syracuse I went to Japan for two years to listen to the Russian Air Force radio in the Far East. From there I went to WPI to study mechanical engineering with the Class of '66. I then worked for Pratt & Whitney in Connecticut. Late in my career at P&W, I was asked to start a group to dig into the business of counterfeit manufacture of spare parts being sold as Pratt & Whitney parts. It brought me into cooperative actions with inspectors general, FBI agents, Customs, and other US agencies, as well as folks from similar operations around the globe. It also brought me to court trials to testify about their processes as well as to talk about what these parts did in the engine, plus some comments about what would occur if these counterfeit parts failed. All very interesting for a guy who left the farm, graduated from a country high school, and didn't know what was next."

1968

Cary Palulis enjoyed a summer outing with classmates **Bob Pleines**, **Dave Hopkinson**, and **John Foley**, which included a boat trip and dinner. The four have been Phi Kappa Theta brothers since 1964. "Perfect day all around," Cary says

1970

Bob Anschutz notes the 50th anniversary of the Class's graduation. "Based on a recent email, classes ending in 1 or 6 will celebrate in 2021. I assume this means that the Class of 1970 missed its chance due to COVID. Maybe we can do it in 2030. (Of course, there may be a reduction in attendance with a nominal age of 80.)"

1971 R

News of the passing of **David Farr (MS CE)** in September 2020 was shared by his son, **Stephen Farr '88**.

James Kaufman is now president emeritus at the Laboratory Safety Institute (LSI) in Natick, Mass. He is the founder of the nonprofit educational organization for safety in science, industry, and education. He tells us that over the past 45 years, LSI has educated more than 100,000 scientists and science educators in 30 countries and 130 different types of labs, and that over six million free copies of LSI's publication "Laboratory Safety Guidelines" (in 21 languages) have been given away. "As part of stepping down as president, I have reduced my work hours from 65 to 40 per week!" he adds. With Barbara, his wife of 43 years, Jim established a national award with LSI and the American Chemical Society Division of Chemical Health and Safety for the Principal Investigator with the best lab safety program in her/his research group.

1974

Robert Trotter writes,"I finally retired and moved from Michigan to the Asheville, N.C., area after working 45 years as a fuel injector engineer for American Bosch, Ford, Stanadyne, and then on a urea injector for Tenneco. My job included not only design & development but also application, supplier development, quality, and manufacturing tasks. I interacted with and traveled to many major global engine manufacturers and component suppliers. I also became a lifetime member of the Society of Automotive Engineers. Still doing some consulting, but catching up on many incomplete projects and spending a lot of time enjoying the scenery and climate of my new location—along with hiking,

Bettina is giving back to WPI by establishing endowed funds that support multiple priorities of the university.

ALDEN SOCIETY

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and driving my sports car to events in NC and surrounding states. My wife and I love to travel, and we have much to do on our bucket list."

1975

George Goff writes, "I recently retired after 41 years in the Defense Department; the last 32 on the Naval Base in Newport, R.I. I worked at several Commands on the Base, including the Naval Facilities Engineering Command (NAVFAC), as a small projects manager. I live in North Kingstown with my wife—we have two daughters and three grandsons."

1982

Paula Curry was named to the 2021 list of Best Lawyers in America. She is a partner in the real estate department of Sherin and Lodgen, based in Boston.

Genworth Financial appointed **Brian Haendiges** as executive vice president and chief risk officer. He was previously president and owner of HAE Consulting. Prior to that, he spent nine years at MassMutual, rising to the role of senior vice president of U.S. pricing and product management.

1983

Scott Burton joined Hunt Energy in Dallas as the new chief executive officer of its solar technology company, Hunt Perovskite Technologies. He previously served as CEO of Reel Solar, CEO of Parity Solar, COO of Solibro GmbH, and headed up technology acquisitions for Hanergy Group. His work in solar panel manufacturing includes development, financing, and construction of over 100 photovoltaic projects in China, USA, Germany and Italy. "The development of solar perovskite technology is really the only area of photovoltaics that is truly exciting right now, and HPT is leading the way," he stated in a company press release.

Cynthia Kosciuczyk writes regularly for *Bizcatalyst360*, an online life, culture, and biz new media digest. Her recent columns have focused on how the COVID pandemic has changed our relationship to technology, looking at positive developments such as advances in telecare and the expansion of telecommuting. She adds, "I also write poetry and have one in the 2019 San Diego Poetry Annual."

1984

Storyteller, educator, and author **Jim Pouliopoulos** has published a new book, *How to Be a Well Being: Unofficial Rules to LIVE Every Day*, with Andy Cope and Sanjeev Sandhu. The book aims to help the reader make the most of every single day with 22 rules for life that "just work," he writes.

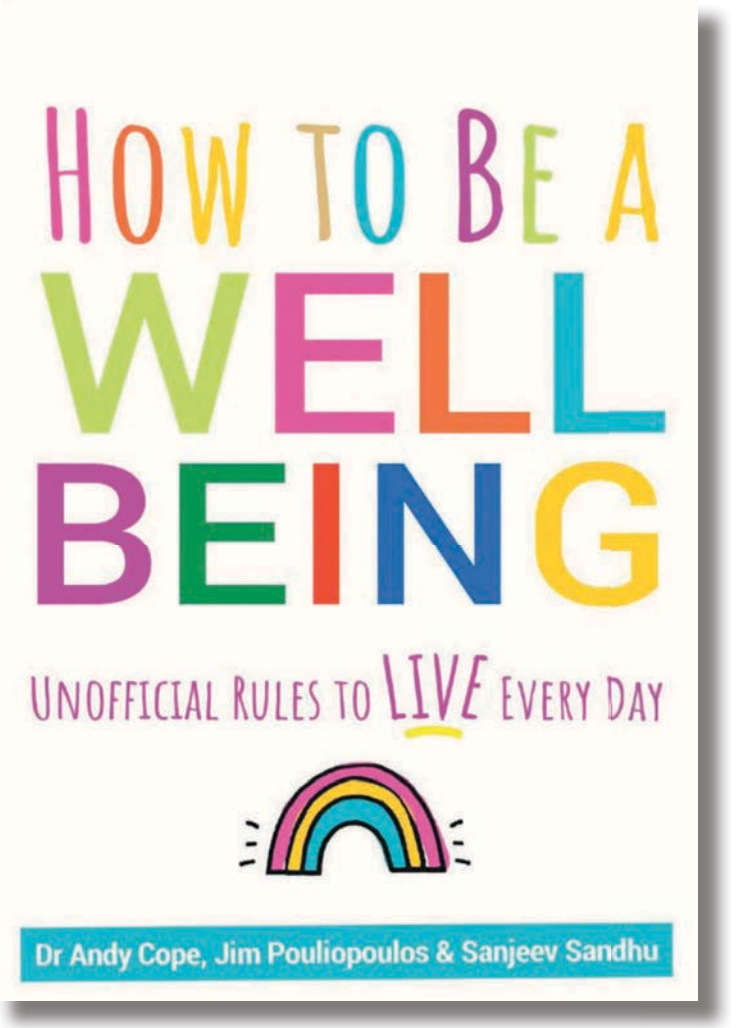
1986 R

Mitra Morgan shares the sad news of the death of her cousin, Mercedeh Mirkazemi Ward in July 2020, from cancer. Mercedeh leaves her husband, Bruce, and their children, Kyle and Ari. WPI highlighted her unique career in the toy industry developing toy lines for girls in *Transformations* (now *WPI Journal*) in 2009.

1987

Patrick Boyle holds the post of vice president of sales and channel development at Andros (formerly CredSimple), helping healthcare organizations build and manage provider data networks.

Marie Hutchinson is a senior manager at Collins Aerospace. She and her husband and two daughters reside in Granby, Conn. "I get together with my Phi Sigma Sigma sisters frequently," she writes.



1990

John Lombardi set up a laboratory in his Tahoe home garage and developed a candidate sprayable waterborne COVID adsorbent face mask coating. He says, "Over a thousand DIY fabric masks have since been treated with the coating I donated to Northern Nevada communities. A significant number of coated masks have since been worn for over a month by medical staff at Renown Hospital in Reno, without incident. One of the hospital medical directors acknowledged my efforts, and a proposal to NSF has since been submitted to further characterize this material." John is CEO of Ventana Research Corp., based in Tucson, Ariz.

1991 R

Erik Ellis is vice president at Bright-Night, in Phoenix, Ariz. His expertise includes technology assessment and valuation of energy storage, electric vehicles, diesel gensets, fuel cells, and solar applications, as well as strategic planning for wind/solar power project development.

Tim St. Germain ('93 MS Environmental Engineering) was promoted to environmental and facility services business line leader at Fuss & O'Neill in Manchester, Conn. As a senior vice president and shareholder of the company, Tim oversees the Compliance, Industrial Plant, Facility, and Remediation Practices, serving clients

in site development in the industrial, manufacturing, municipal, and educational sectors. With his more than 26 years of experience, he has overseen major brownfields investigation, cleanup, and re-purposing projects. His expertise includes environmental compliance, industrial wastewater treatment systems design, and improvements to community water supply systems.

Robert Vary is senior vice president of sales and relationship management at Duke Energy in Charlotte, N.C.

1994

Venkatesh Gopalakrishnan joined Motorola Solutions as director of product management.

1995

Jason Anderson is chief technology officer at BioCentric in Kansas City, Mo.

Jeff Mullen joined Dalton Electric Heating Company as a technical services manager. Located in Ipswich, Mass., Dalton is a worldwide manufacturer of industrial heaters for use in aerospace, automotive, composites, and plastics industries. "In this role am responsible for managing innovation in support of sales and market growth while maintaining focus on manufacturing process improvement and overall quality," he writes. Prior to that, Jeff spent 20 years as a manufacturing engineer in the medical device industry at Boston Scientific, Dentsply Sirona, and Repligen, specializing in lean manufacturing projects.

Lisa Cigal Schletzbaum was recently promoted to assistant state traffic engineer at the MassDOT. She worked her first 12 years with two private transportation engineering consultants, and the past 13 in the MassDOT Headquarters office in Boston. She reports that during the COVID-19 pandemic months she has been working from home with her husband, **Roy ('95)**, and their two high school–age sons.

1996 R

Ernest Ansah serves as senior director of quality at Emulate Inc.

Felix Diaz holds the post of procurement director at Ferrero.

Richard Heidebrecht is vice president of research and development at Glycologix, an emerging glycobiologics company developing novel biomimetic proteoglycan materials with the potential to provide therapeutic solutions to the repair of dermis, cartilage, and other connective tissues damaged by disease and aging. Before that, he was a visiting scholar at Harvard School of Public Health.

1999

Bruce Cox is a senior operations research analyst at The Perduco Group.

Anuja Gokhale ('05 MBA) serves as Director of Engineering at Eze Software, a business unit of SS&C Technologies, where she oversees the creation of investment management software.

2001 R

Bernard Gagnon has joined Clinton Savings Bank as senior vice president/commercial relationship manager of the commercial lending team. He was previously with Country Bank as first vice president and east region team leader, commercial lending division. A board member and chair of the finance committee for WICN Public Radio in Worcester, he resides in Auburn with his wife and daughter.

2007

Raj Basu (MS PH, '10 PhD PH) is a professor of physics at the U.S. Naval Academy. His research areas include interactions between soft matter and nanomaterials, and various phenomena in liquid crystals. His resume lists many awards and diverse research grants. In 2020 he was selected as one of the "Early Career Stars of the Decade" in the research area of Liquid Crystal Science and Technology, with work published in the research journal *Crystal*.

2009

Allison Smyth won the 2019 Stock Eliminator World Championship in the NHRA Lucas Oil Drag Racing Series, making history as the first-ever female Stock Eliminator Champion. Her husband, Doug, is a former NHRA World Champion. Together they became the first husband and wife NHRA champions.

2011 R

Janelle Drake writes, "I've been working on a project at Setra Systems to help schools and businesses provide clean isolation rooms in the continuing COVID environment. It's great being able to help the community in positive ways. You can learn more in Setra's LinkedIn posts."

Linnea Paton joined ConEdison, NYC's largest utility, as a specialist in its Energy Efficiency and Demand Management Strategy and Planning department. She looks forward to connecting with alumni on working on sustainability and energy efficiency solutions.

2012

Jon Anderson is a senior systems integration engineer for the Vehicle Hardware Platform at Toyota Research Institute. He's also founder of Aeroquatic, a mechanical design consulting firm. Check out his underwater photography at *jonandersonphoto.com*.

Victoria Brown is a senior product manager at Körber Supply Chain.

From Tewksbury, Mass., **Samantha Kuhlwein ('14 MS Physics)** writes, "Hello, class! Mark and I have been back in Mass. now for almost two years and are excited to be close to so many fellow alums. I hope everyone is staying safe during the pandemic, and can't wait to be able to return to in-person alumni events in the future. Stay well and hope to see everyone again soon!"

2013

Evan Doyle is Senior Customer Solutions Manager at Amazon Web Services (AWS) in Exeter, N.H.

2014

Brianna Acheampong (MS) is now Project Engineer II at POWER Engineers. Her expertise includes leading and managing electric distribution system and design projects, ensuring compliance with NEC and NESC code, power quality analysis, fault current analysis, and distributed energy resource analysis for the utility industry.

2016 R

Jinqiang Ning is now a Reliability Engineer at Apple. With a PhD in mechanical engineering from Georgia Institute of Technology, he has a strong research background in analytical modeling of precision machining and metal additive manufacturing.

Chris Villalta (MBA) joined SV Design as architectural designer in the multi-family and commercial team, based in Beverly, Mass. He is also active in the Massachusetts Army National Guard. The company's press release details his architecture background in commercial, institutional, and industrial spaces and says that he enjoys the early design phases leading to design development.

CHRIS VILLALTA '16

values-centric community, I am excited to play a role in a company that makes significant, daily contributions to the medical industry. As I move forward in my career, I hope to be a role model for aspiring computer scientists or software engineers. We may not all fit the mold at first glance, but perseverance, a willingness to learn, and a dedication to making people's lives better will inevitably provide value in evolving STEM fields."

Ayushka Shrestha is now Program Quality lead at Raytheon in Tewksbury, Mass.

2018

Linh Hoang is now a software engineer at NVIDIA. He received a master's degree in computer science from Georgia Institute of Technology in 2020.

Tianyi Xu works for Apple as a silicon validation hardware engineer.

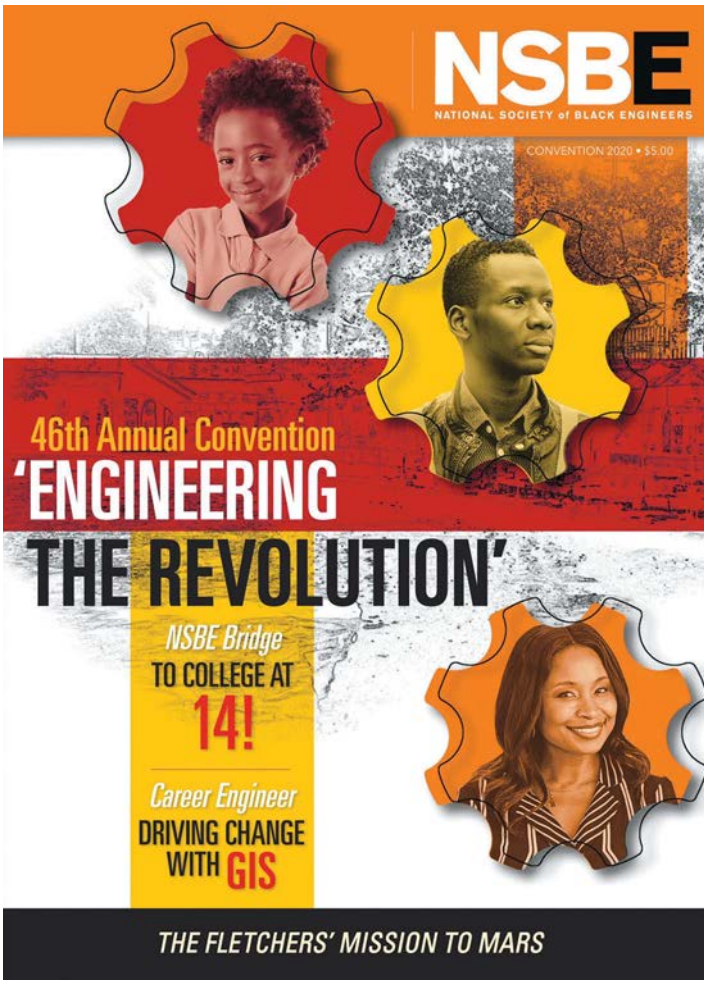
2019

Holly Nguyen shares this update. "In May 2019, after five years at WPI and armed with a BS and MS in Computer Science, I embarked on the journey to find my first full-time job. I knew I wanted to find a company that would allow me to use and develop my technical skills while also contributing to an industry that truly makes people's lives better. While there were other opportunities, Olympus provided the perfect platform to combine these passions. Beginning as a software engineer, I focused on exploring innovative, AI-enabled solutions for the Surgical Integration business. I was motivated by the idea that these solutions had the potential to make a positive impact in improving workflow efficiency, reducing clinician frustration, and enabling a more automatic process to capture medical videos, images, and data. Surrounded by a hard-working,

2020

Ryan Breuer writes, "Over the course of D-Term 2020, as well as the month of May, I volunteered with the Worcester Face Shield Project—a collaborative effort between multiple makerspaces and artisan groups in Worcester, including Technocopia, Worcester Center for Crafts, and New Street Glassworks. The aim was to manufacture and donate free PPE for frontline medical personnel in Worcester and surrounding areas. We manufactured two types of face shields: one with 3D printed frames and acrylic transparency shields, the other with thermoformed polycarbonate shields and foam+elastic bands." The group's work was featured on Boston 25 News and in the Worcester *Telegram & Gazette*. More info can be found at *technocopia.org*. Ryan is employed as a project engineer at G&F Precision Molding in Fiskdale, Mass.

Nicholas Weddington received the NSBE Golden Torch Award for International Academic Leadership. The citation praised his "stellar work" at WPI, including his IQP work at an orphanage in Thailand, and his MQP: a fault-tolerant robotic arm with real-time detachable joints. It also mentioned his paid summer internship at TE Connectivity in Fremont, Calif.



NICHOLAS WEDDINGTON '20

In Memoriam:

Windle Priem ’59, Trustee Emeritus, Exemplified ‘Giving Back’

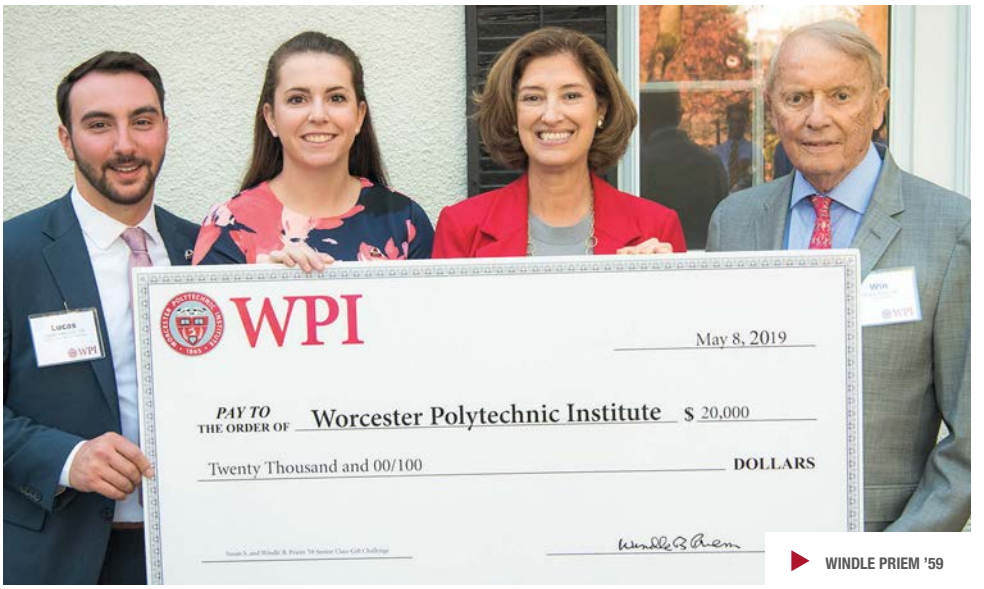
Win Priem, dedicated supporter of the university, passed away August 7, 2020. A Worcester native, he had a long and distinguished career in executive recruiting at the world’s largest executive placement firm, Korn Ferry. He went on to hold several key leadership positions, including president of the North American Region, chief operating officer, and president and chief executive officer. He retired from the firm as vice chairman in December 2003, when it had grown to 2,200 employees at 40 locations in 17 countries.

While achieving professional success, Priem never forgot his alma mater, where he earned his B.S. in mechanical engineering and was a member of Phi Gamma Delta Fraternity, the American Society of Mechanical Engineers, and the Sailing Club. In 1991, he was elected to the WPI Board of Trustees. He gave generously of his time and talent to help guide his alma mater at the highest level until 2009, when he became trustee emeritus.

He also gave generously to inspire WPI’s youngest alumni to adopt the habit of giving back to their alma mater. He focused his efforts on WPI’s Senior Class Gift, a tradition that dates back to 1910 and that has given the university campus and community scholarships and program support, created by fundraising from each graduating class.

In 2019 the Priems made their challenge permanent by establishing the Susan S. and Windle B. Priem ’59 Endowment. To achieve the matching funds, the graduating class needed to reach 40 percent participation and raise $15,000. This generous gift and the inspiration it provides to students and young alumni, is a profound legacy Priem has created at WPI.

The WPI Alumni Association awarded him the 1989 Robert H. Goddard Award for Outstanding Professional Achievement and the 2009 Herbert F. Taylor Award for Distinguished Service to the university.



WINDLE PRIEM ’59

G. Albert Anderson ’51 ME, ALPHA TAU OMEGA, Winchendon, Mass.

Andrew Andersen ’51 EE, PHI KAPPA THETA, Media, Penn.

Irving Orrell ’51 EE, ‘58 MS EE, SIGMA ALPHA EPSILON, Whitinsville, Mass.

Paul Snyder ’53 CHE, SIGMA ALPHA EPSILON, Allentown, Penn.

F. Farnsworth ’59 CHE, ‘61 MS CHE, SIGMA PHI EPSILON, San Antonio, Texas

Walter Gasek ’59 ME, PHI KAPPA THETA, Northborough, Mass.

Franklin Salek ’59 CE, PHI KAPPA THETA, Egg Harbor City, N.J.

William Cannon ’60 CHE, PHI GAMMA DELTA. Stowe, Vt.

Robert Kasprow ’60 ME, PHI KAPPA THETA, Wethersfield, Conn.

Anan Panananda ’60 CE, Bangkok

Louis Rossi ’61 CH, ’63 MS CH, LAMBDA CHI ALPHA, Hardwick, N.J.

Robert Plum ’66 CE, ALPHA EPSILON PI, Bellevue, Wash.

David Farr ’68 MS CE, Brooksville, Fla.

Martyn Strong ’71 EE, North Chelmsford, Mass.

James Briggs ’74 CE, Westville, N.J.

Thomas Bower ’75 CE, TAU KAPPA EPSILON, Ellicott City, Md.

Thomas McLaughlin ’79 MNS, Plantsville, Conn.

Paul Zeolla ’79 MNS, Dedham, Mass.

John Thomas ’88 MS MG, Medfield, Mass.

John Roach ’02 EE, Spring, Texas

Bryan Ferguson ’09 ECE, Charlton, Mass.

Wallace Krumpholz ’13 MS SE, Walpole, Mass.

The WPI community also notes the passing of these friends of the university: **Norman Brust** and **Patrick Morrison**.

Tom Newman ’64, former Alumni Association treasurer and co-chair of the Alden Society with his wife, **Bonnie**, passed away while this issue of the *WPI Journal* was being put together. An extended obituary of Tom will appear in the next issue.

Complete obituaries can usually be found online by searching legacy.com or newspaper websites. *WPI Journal* will assist classmates in locating additional information. Contact *wpijournal@wpi.edu.*

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