DOMINIC CHANG '18 APPLIES THEORY TO REALITY WITH BLACK HOLE RESEARCH
BLACK HOLE SON
Dominic Chang ’18 applies theory to reality with black hole research at Harvard University.

BY SCOTT WHITNEY / PHOTOGRAPHY BY TONY RINALDO
A SMOOTH TRANSITION
Sometimes change can be hard, but this year’s change in Commencement location—from the Quad to the DCU Center—is receiving favorable reviews from the WPI community. Special touches, like the inclusion of the Centennial Walk on the rug leading into the arena and the viewing of a video of the Earle Bridge crossing that happened two days prior, offered respectful nods to tradition. Robed faculty lined the tunnel entrance to give a familiar, final salute to their hard-working charges. The climate-controlled and spacious DCU Center eliminated the drama of New England’s unpredictable weather and allowed space for more family and friends to cheer on their graduates.

Another benefit was the absence of the tent over the Quad, a gigantic contraption that needed to be installed weeks before Commencement and remained up for weeks into the summer. Students took full advantage of the tent-less Quad through the final days of D-Term, soaking up the fine weather and enjoying lawn games and other fun activities, such as the communal viewing of the total solar eclipse in April.

Much work was done by many people to make this transition as seamless as possible, especially the Core Commencement Committee, led by Director of Events Bill Battelle, Director of Presidential and Institutional Events Jennifer Paradis-Porti, and Assistant Vice President for Student Affairs Greg Snoddy. Lessons were learned that will make subsequent Commencements even better.

A Place to Be Heard
On page 64, check out the transcript of the undergraduate student address delivered by Sam Levitan ’24. This thoughtful commentary on what it means to belong kicks off a new first-person essay section called “Corresponding Authors.” Any member of the WPI community may submit an essay for consideration, as long as the subject is related to WPI. (Send your 800-word essay to wpijournal@wpi.edu.)

In Gratitude
Big thanks to the communications professionals at the Harvard Radcliffe Institute who graciously allowed us to use their new photo studio to take portraits of Harvard PhD student Dominic Chang ’18. The multimedia studio in Byerly Hall is also where the Institute produces its BornCurious podcast.

Each year the Harvard Radcliffe Institute, also known as the Radcliffe Institute for Advanced Study, invites distinguished fellows to collaborate and innovate in a year-long journey of interdisciplinary study. WPI’s own Erin Treacy Solovey, associate professor of computer science, was accepted as a member of the 2024-2025 fellowship class. According to the official press release, “At Radcliffe, she plans to work at the intersection of human-computer interaction, artificial intelligence, and neuroscience, leveraging recent advancements in brain-computer interfaces to understand and adapt to a person’s changing cognitive state in real-world contexts.”

Best wishes to Erin for what looks to be a memorable year.

—Kris O’Reilly, Editor

NURTURING LEADERS
Summer is here. Our iconic beech tree, a gift from the Class of 1943, stands beautifully in front of Alden Memorial, a witness to the many activities underway. In addition to the nearby renovations of the Bartlett Center and Stratton Hall—which will wrap up in time for faculty, staff, and students to move back in for the fall—summer programs have kept the campus busy. We’ve been welcoming hundreds of incoming first-year, transfer, and graduate students, as well as prospective students and their families as they visit campus to get to know their way around, and learn about the exciting WPI journey ahead.

In May we celebrated WPI’s 150th Commencement. The DCU Center in downtown Worcester transformed into a hub of pride and joy as more than 3,000 Class of 2024 graduates were charged to dream boldly and enjoy their journey. As they set off to change the world, our hearts are filled with confidence and optimism. (Read undergraduate speaker Sam Levitan’s remarks on page 64.)

On the heels of Commencement, we welcomed our alumni back to The Hill for Reunion Weekend. This year’s event was heartwarming, fun, and inspirational, and it was a personal pleasure for me to meet so many of our amazing alumni. Although much has changed and decades have gone, WPI’s distinctive, empowering, and impactful STEM education continues to stand the test of time and position our alumni for success, no matter their fields.

Today, technologies are penetrating almost all business sectors—from manufacturing, financial services, transportation, utilities, and retail to education and healthcare, changing the nature of work and the workplace, creating new types of jobs, and even enabling completely new business models. We must equip our students with leading-edge knowledge and skills and empower them to learn how to learn and think. This year, we launched programs in artificial intelligence, financial technology, global health, and explosion protection engineering, all with a goal of broadening horizons and preparing students for the careers of the future in fields that matter to society. Through our project-based learning, WPI students learn to inquire, work in teams, think critically, understand cultures, communicate well, solve problems, act ethically, and lead.

An education is a journey. It is an opportunity not only to acquire knowledge and skills, but also to explore, to grow, and to learn how to learn and think.

The impact of WPI education is profound—here, we inspire dreamers, empower doers, and nurture leaders.

Sincerely,
Grace

We must equip our students with leading-edge knowledge and skills and empower them to learn how to learn and think.
FREE AI TUTOR WILL HELP ADDRESS MATH LEARNING GAPS

WPI researcher Neil Heffernan has been awarded a three-year grant from the U.S. Department of Education’s (DOE’s) Institute of Education Sciences to develop an artificial intelligence tutor that can help middle-school students learn math while doing homework. Heffernan is the William B. Smith Professor of Computer Science and director of the Learning Sciences and Technologies Program.

Under a cost-sharing agreement, the DOE’s Institute of Education Sciences will contribute $3,749,600, or 90.89 percent of the funding, to the $4.1 million project, and WPI will contribute $375,815, or the remaining $91.1 percent. The project will integrate the AI tutor into ASSISTments, a free digital learning platform that has been used by more than one million students across the country and was developed by Heffernan and his wife, Cristina Heffernan, a former math teacher.

The project aims to address the needs of students who have fallen behind in class but cannot afford private tutoring services.

“Tutors are very effective at helping students learn math and succeed in class, but the cost of private tutoring services is beyond students from low-income backgrounds,” Neil Heffernan says. “This leads to a persistent learning gap between lower-income students and students from families that can afford tutoring. A free AI tutor that students could access after school while doing homework would help address this gap and enable lower-income students who have fallen behind in class to catch up to their peers, be more engaged with their lessons, and succeed as they learn the concepts needed to advance to higher-level math.”

Heffernan will lead a team of psychology and learning science researchers, teachers, and education experts to develop CAIT (pronounced “Kate”), a Conversational AI Tutor that they will integrate into ASSISTments and then test in classroom settings. ASSISTments previously has been shown to positively impact students’ math achievement and educational equity in an independent evaluation of nearly 6,000 middle-school students in North Carolina. In addition to Heffernan, WPI researchers involved in the project will include Assistant Professor Stacy Shaw of the Department of Social Science and Policy Studies, Computer Science Research Scientist Li Cheng, and Assistant Professor Adam Sales of the Department of Mathematical Sciences. The WPI team will work with the ASSISTments Foundation, an independent nonprofit organization founded by the Heffernans to manage and market the platform. WPI’s education research organization, will also partner to research and develop the use of CAIT in educational settings.

The project is possible because of recent advances in generative AI, a type of artificial intelligence that uses complex algorithms and trained to find patterns in data in order to create new material. CAIT will have a “conversational interface” powered by natural language processing, a field of AI that enables machines to understand and generate human language. As a result, students will be able to speak or write questions for CAIT, and CAIT will respond with personalized replies. By monitoring students’ work, CAIT will be able to identify challenges each student is encountering and provide encouragement and additional problems for students to solve.

- Lisa Eckelbecker

Support for Clean Iron and Steel Innovation

WPI has been awarded a $1.2 million grant from the U.S. Department of Energy’s Advanced Research Projects Agency-Energy under the Revolutionizing Ore to Steel to Impact Emissions (ROSIE) program. The DOE funding aims to propel advancements in zero-process-emission ironmaking and ultra-low life cycle emissions steelmaking.

Led by Yan Wang, William B. Smith Professor of Mechanical & Materials Engineering, alongside collaborators Brajendra Mishra, Kenneth G. Merriam Distinguished Professor of Mechanical & Materials Engineering and director of the Metal Processing Institute, and Adam Powell, associate professor of mechanical and materials engineering, the team will strive into manufacturing technologies for low-carbon electrolyzed iron powder. This specialized powder is integral to the production of iron-silicon electrical steel, a crucial component in various industries.

This initiative underscores the urgency for cleaner iron and steel production methods in the United States. With mounting concerns over environmental impact and climate change, transitioning to low-emission steelmaking processes is imperative. The ROSIE program represents a significant step toward achieving this goal. WPI’s project is among the 13 selected nationwide, with a combined funding allocation of $28 million. By fostering innovation and research in sustainable steel production, initiatives like ROSIE pave the way for a greener, more resilient industrial landscape.
CONCERT BAND PERFORMS PREMIERE OF THE RIDE, INSPIRED BY CYCLING WORLD CHAMPION

The story of Marshall Walker “Major” Taylor, the second African American athlete to win a world championship in any sport, has gone largely untold. On April 20, WPI’s Concert Band shined a spotlight on “The Worcester Whirlwind,” as Taylor was known, when it performed a world premiere musical composition titled The Ride. The piece was inspired by the 1899 world cycling champion, who was born in Indianapolis, made Worcester his home, battled racism, and triumphed in sport and spirit.

The Concert Band, directed by Mitchell Lutch, assistant teaching professor in WPI’s Department of Humanities & Arts, commissioned the piece from Thomas O’Toole, composer/music educator, and director of performing arts for Shrewsbury Public Schools, who was driven by a desire to inform more people about Major Taylor’s story and his ties to Worcester.

O’Toole happened to fill in for an ill trombone player at the Concert Band’s 2023 spring performance. On a walk during his pre-show lunch break, he discovered the Major Taylor Museum, which opened in 2021 on Main Street in downtown Worcester. At that moment, he was motivated to compose a musical tribute and soon suggested to Lutch that a piece for the concert band would help students and the public learn about the history of this champion.

“The seed for this piece was planted literally 365 days ago, from this room,” Lutch told the audience when introducing O’Toole, who conducted the piece during the 2024 spring performance by WPI’s Concert Band and Brass Ensemble at the Worcester Area Mission Society.

Members of the Concert Band spent part of the past year learning about Taylor’s story as they prepared for the performance. Some band members viewed a documentary about the cycling champion from WTUJ, Indiana Public Media, and visited the Major Taylor Museum. Others participated in a Zoom conference with O’Toole and Lutch last summer that solicited ideas from the students to incorporate into the composition.

“The Ride” details musically four events from Taylor’s life that help illustrate his strength in overcoming challenges. Each is established from Thomas’ life that help illustrate his strength in overcoming challenges. Each is established as a hobby, and as a young Black/African American man, I take pride in discovering the positive contributions and success of other influential Black/African American individuals in society.”

—John Cain

First-in-the-Nation FinTech PhD

Building on its established bachelor’s and master’s degree programs and aiming to meet industry trends and demands, WPI has introduced the nation’s first PhD program in Financial Technology (PefTech). The new program underscores WPI’s dedication to advanced education and research in this rapidly expanding sector, making it the only university in the country to offer all degree levels in this field.

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Hidden away in the back of WPI’s Sagamore facility, the Formula SAE Club’s headquarters has the look and feel of a true motor sports operation. That’s because it is.

Every year, the club’s annual Major Qualifying Project (MQP) group takes on the monumental task of building a race car to compete in the annual Formula Hybrid + Electric inter collegiate competition at New Hampshire Motor Speedway in Loudon, N.H. Along the way, club members gain valuable hands-on skills doing everything from fabrication and welding to circuit board design and embedded computer programming.

This year’s team finished just outside the top 10 against the 22 other colleges and universities competing in the electric vehicle category and brought home the Institute of Electrical and Electronics Engineers (IEEE) Excellence in EV Engineering Award, given annually to the team that emphasizes preparation, team dynamics, attention to details, and establishing or continuing a legacy.

“I think that this year’s car was one of the best-designed FSAE cars we’ve built to date,” says faculty advisor Bill Michelson, professor of robotics engineering. “The craftsmanship, design, and analytics that went into this year’s car was truly outstanding.” With support from various subgroups in the club, the MQP team took a bare tube-frame chassis and developed nearly every system on the electric-powered race machine from the ground up. From the battery to the brake rotors, much of the work was done in-house, on state-of-the-art machining equipment in the Washburn Shops or with a welding torch in the Sagamore shop.

The completed car was then loaded into a trailer and hauled to the competition, where over the course of those days in late April the team competed in several events, including an autocross course and an endurance challenge. Active since 1985, WPI’s FSAE team has also made the trek to Michigan for the FSAE national competition. But in recent years, the team has focused its efforts on Formula Hybrid + Electric.

“We switched to electric for a few reasons,” says Harris Brancozzo ’24, a member of the MQP team. “But one of the main reasons was that sustainable transportation is really important, and it’s something we think students should be learning about at WPI.”

In addition to making the move from internal combustion engines to fully electric power, the club has adjusted its structure to ensure that the institutional knowledge gained through the FSAE race car building experience does not leave with graduating seniors. Club members not on the MQP team can complete various projects and tasks that support the race team in some way, as they earn independent study class credit. One subgroup worked on the steering wheel design for the car this year; another fabricated a tool to move the car around in the pits at the track.

“Next year those students will be on the MQP team, and will have all of that knowledge,” Brancozzo says. “Plus, that way we can use the same base car over multiple years.”

—Steve Fiskett
Celebrating 45 Years of Fire Protection Engineering Excellence

For three days in May, WPI hosted a “Who’s Who in FPE” as the university celebrated the 45th anniversary of its renowned Fire Protection Engineering program. Since its inception in 1979, the program has been a leader in innovation and education, significantly advancing the field of fire protection engineering. As the first university to offer a graduate program in FPE, WPI has also established itself as a premier institution for producing highly skilled practitioners and pioneering new knowledge that enhances global safety.

“As we celebrate this milestone,” said Albert Simeoni, professor and fire protection engineering department chair, “we reflect on the incredible journey that began with the vision of Dave Lucht and Bob Fitzgerald. These pioneers’ dedication to excellence shaped not only the FPE curriculum but propelled advancements in life-saving technologies, mitigation techniques, and a new understanding of fire dynamics.”

Over the past 45 years, WPI’s FPE program has grown into a thriving graduate program with a robust research agenda and strong industry partnerships. With more than 1,000 alumni across the globe, WPI’s influence is widespread in the field of fire protection engineering. As the first university to offer a graduate program in FPE, WPI has also been at the forefront of research, and the future of the field with the dawn of new disruptive technologies such as artificial intelligence.

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For many people who require the use of wheelchairs, current methods of training don’t provide enough time and immersive practice in common and challenging settings. To address deficiencies in current methods, a team of faculty and students from WPI and UMass Lowell has created a virtual reality-based simulator that provides effective training in safe settings.

“Our project addresses training limitations that negatively affect wheelchair users’ ability to choose the best wheelchair for their needs and skills to make patients feel comfortable when they sit in powered wheelchairs in public spaces,” says Robert Dempski, co-principal investigator and associate professor in the Department of Electrical and Computer Engineering, one of the leaders in interactive media and game development (IMGD) Program, and managing director of the Interactive Design Studio.

The team’s project, “WheelUp! Engaging Community in the Development of a Wheelchair Training Simulator for Diverse Bodies,” has generated a simulator with high-resolution graphics, interactive technology, and game elements. With a joystick and an immersive virtual reality headset or a computer monitor, users can practice navigating a wheelchair in challenging virtual settings, such as a noisy restaurant or crowded room, and familiar environments. With furniture and other obstacles to avoid, users can choose the simulated home or a physical therapist’s office. The WheelUp! project has the additional goal of creating more awareness about the need for greater accessibility, according to co-principal investigator Yunus Doğan Telliel, assistant professor of anthropology in the Department of Humanities and Arts and IMDG Program. “It is in part of our work ‘exploratory’ design work. We want to bring into the public spaces that are actually not conducive to people with disabilities, and to contribute to efforts to make our society more accessible to everyone.”

Wheelchair training modules include Yihang Xu ‘23, a computer science and IMDG double major, who was the lead game designer on the project and is now a graduate student at the University of California, Berkeley, and Claire Li ‘17 and Max Chen, PhD students in computational media.

—Jon Cain

A New Spin on Wheelchair Training

Farny Receives CAREER Award to Study Environmental Cleanup Bacteria

WPI researcher Natalie Farny is launching a $512,000, five-year project that could advance the use of bacteria for environmental cleanups by determining how a critical biological process regulates genes in bacteria as they adapt to conditions outside of laboratories.

Farny, an assistant professor in the Department of Biology and Biotechnology, will examine the role of methylation on gene expression in Pseudomonas putida, a soil bacteria that was first identified in Japan and is considered a versatile organism for industrial and environmental engineering. The National Science Foundation has awarded her a prestigious CAREER Award to fund the project, which will provide research opportunities for WPI students and generate new undergrad- ate educational resources focused on synthetic biology, a field that applies engineering design principles to build novel biological systems for use in fields such as medicine, manufacturing, and agriculture.

“Genetically engineered bacteria have the potential to break down contaminants in soil, whether they are explosive materials deposited on military firing ranges or chemicals left behind by industry,” she says. “To engineer stable bacteria that behave in predictable and desirable ways once they are released into the environment, however, it will be essential to better understand how their genes are impacted by the environment.”

Farny’s project focuses on methylation, a biological process that can be triggered by environmental factors. Methylation adds a chemical, known as a methyl group, to an organism’s genome. This addition can influence how the organism’s genes are expressed in bacteria, which are single-cell organisms abundant in nature, methylation is a key factor in regulating gene expression.

She will investigate the impact of methylation on gene expression of P. putida in soil and in a laboratory system that uses a liquid containing organic matter extracted from soil. She will also build genetic circuits, which are networks of genes and regulatory elements that interact with each other, to test engineered P. putida under soil-like conditions.

As part of her project, Farny will create free educational resources to introduce undergraduate students to synthetic biology, develop material for her synthetic biology course, and integrate synthetic biology into research projects for undergraduates in her lab. Project funds will also support at least two graduate students a year in their work, as well as summer research opportunities for two or three undergraduates a year.

—Lisa Eckelbecker

Andrew Sears Named Provost

Following a comprehensive and competitive nationwide search, President Grace Wang has appointed Andrew Sears as WPI’s new provost and senior vice president. A successful academic leader, administrator, and distinguished computer scientist, Sears brings over 30 years of experience in higher education to WPI.

“Dr. Andrew Sears is an accomplished educator, researcher, and leader who has earned a reputation as a true collaborator, innovator, and change maker,” says President Wang. “He is known for his deep commitment to supporting faculty, staff, and students, as well as for his ability to focus on vision, mission, and priorities. I am excited to welcome Andrew to the WPI community. His knowledge, experience, and leadership will help WPI further advance our transformative STEM education and raise the stature and impact of our academic enterprise.”

Sears will serve as WPI’s chief academic officer. He will be charged with championing excellence across the university’s academic enterprise, overseeing all aspects of academic affairs, and managing the associated curricula, human, financial, and physical resources. Additionally, he will lead efforts to recruit and support outstanding educators, scholars, and staff, and will promote a positive, inclusive, and immersive academic experience for all students.

“I am a first-generation student whose life was transformed by higher education,” says Sears. “When I was in high school, a mentor introduced me to WPI because this university values both knowledge and the importance of putting it into action to help people and the world. My career in academia now spans three decades, and my respect for WPI has only grown over the years.”

Sears previously served as professor and dean of the School of Information Technology (School) at Syracuse University.

—Colleen Bamford Wamback
The Threat to Panama’s Diablos Rojos

Grant Burrier, associate professor of teaching in The Global School, and Sarah Saeed ’25, a civil engineering major, wrote about the cultural significance of Panama City’s iconic heritage bus system, the Diablos Rojos, and the threat it faces as the country modernizes. The article, “Beyond Transportation, Panama’s Diablos Rojos Are Treasured Rolling Artwork,” was published on NACLA.org.

Diablos rojos are old school buses that individual drivers purchase, intricately decorate, and convert into private transportation for Panamanian communities. Burrier and Saeed, along with a team of four other WPI students (Leah Kolb ’25, architectural engineering; Anna Callaghan ’25, biomedical engineering; Sam Ollari ’25, computer science; and Micah Vargas ’25, computer science and interactive media and game design) traveled to Panama in fall 2023 to complete their Interactive Qualifying Project (IQP), “Diablos Rojos: A Window into Panamanian Identity.”

They collected stories, photographs, video, and ethnographic notes from the communities surrounding Diablos Rojos. They also interviewed Peter Szok, author of Wolf Tracks: Popular Art and Re-Africanization in Twentieth-Century Panama, and Aarti Madan, associate professor of Spanish and international studies in the Department of Humanities & Arts. They spoke with bus drivers, artists, mechanics, and passengers to understand how these buses grew out of a subaltern population of non-mestizo Panamanians—largely Afro-Panamanians and the working class.

The research prioritized cultural sensitivity, as the team focused on amplifying Panamanian stories rather than projecting assumptions and biases onto their work. After completing the IQP and returning from Panama, Burrier and Saeed are continuing to explore the relevance of Diablos Rojos as upcoming elections further threaten the existence of these buses. As bus artist Piri puts it, Panama without Diablos Rojos would be “like a garden without roses. A sky without stars.”

NOW OPEN FOR BUSINESS: THE WPI SCHOOL OF INDUSTRIAL MANAGEMENT

As the clock ticked closer to 7 p.m. on the first Tuesday of October 1949, 22 sets of eyes nervously examined their surroundings as they awaited the arrival of their instructor. For a few students, the familiar sight of this classroom on The Hill was welcome, but for many, it was their first experience on campus. They’d been selected by their employers to take part in a new program intended to foster innovation and development in Central Massachusetts.

This was the inaugural class of the WPI School of Industrial Management, founded by some of the nation’s preeminent entrepreneurs. WPI had included elements of business education in the curriculum from its beginning in 1865, but by 1922, an alumni committee recommended that it add dedicated business courses, an effort aided by a $20,000 gift from WPI trustee T. Edward Wilder, Class of 1874.

Initially just a single required course for seniors, the subject’s popularity necessitated the hiring of two additional faculty members in 1937. Over the next decade, as Worcester industries continued to thrive, industrial leaders and the WPI administration fostered the idea of a management education program that would strengthen the foundational educational platform for which Worcester Polytechnic Institute had always been recognized.

Professor Albert J. Schwieger directed the program and designed courses so that sponsoring corporations would present a practical challenge drawn from a real-world scenario. Team members would coordinate a solution with faculty and their peers, helping analyze the outcome of the company’s decisions.

The program would continue to grow due to popular demand; the BS and MSM degrees were added in 1970 and a full MBA in 1980. In 2003 The Business School was accredited, it joined Engineering and Arts & Sciences as a fully recognized division within WPI.

The program’s history was the subject of a recent Interactive Qualifying Project directed by Dean of The Business School Debora Jackson, Harry G. Stoddard Professor of Management. The team’s final presentation was given to an impressed audience, including Worcester Mayor Joseph Petty.

—University Archivist Arthur Carlson, assistant director, George C. Gordon Library
FOR RUNNER GRACE HADLEY, THE TEAM MAKES TRAINING WORTHWHILE

Grace Hadley ’23, MS ’24, was one of the fastest Division III milers in the country in the 2023-24 indoor and outdoor track seasons, but that doesn’t mean she limited herself to just one distance. She competed in everything from the 800m to the 10K and found success in most as she stayed healthy and injury free in her final year of collegiate racing.

“The 10K is more strength-based, and the 800 is good to practice for speed work,” she says. In addition to the mile (including the outdoor equivalent 1,500 meters), she also qualified for the NCAAs in the 3K (indoor), and 5K (outdoor), and was a member of the WPI cross country team that went to the NCAAAs in Fall 2023 and finished seventh overall, the team’s best finish ever. (She does, draw the line at running the steeplechase: “I tried it once and I had bruises all over my knees. It really hurt.”)

And while running can be an intensely individual endeavor, she says being on a team adds a layer of enjoyment that makes the long hours of training worth it.

To wit: You might think her wire-to-wire victory in the mile run at the NCAA Division III indoor track championships in March—where she ran her personal best and the second-fastest women’s Division III championship mile ever—would be her favorite memory of that weekend in Virginia Beach. But her dramatic come-from-behind distance medley relay (DMR) was just as thrilling, she says, especially as she embraced her crying-with-joy teammates—who happen to be her best friends—at the end.

“The whole weekend was a great experience. The facility was amazing and Division III has gotten so deep with talent,” she says. When she took the baton on the DMR anchor leg, she was half a track behind the leaders after her teammates’ 400-, 800-, and 1,200-meter legs. “Because I was the anchor, I could watch most of it before running. We were in 10th place when I got the baton. All our girls were running fast times—it was such a fast race,” she says. She focused on passing each runner in front of her, and then charged past the tiring leaders on the final turn to catch them at the wire. “All my teammates were crying and were super excited at the end. We thought we could win it if everything went well, but it’s another thing to actually do it.”

Hadley says staying healthy and training consistently were keys to her success running as a graduate student. “A lot of it is just putting in the work you need every day and not any more than that,” she says, adding that she ate well, got lots of sleep, and was able to avoid some of the injuries she suffered in her undergraduate years. “That uninterrupted, consistent work got me excited to compete and train. It’s what I looked forward to every day.”

A SOCCER START

Hadley was a high school junior varsity soccer player who started running to increase her endurance on the soccer pitch. She transitioned over to track when she found success in middle-distance races and then expanded to longer races. She visited different types of colleges as a track recruit and found a comfortable fit at WPI.

Originally a biology major on the pre-health track, Hadley discovered an interest in the bench side of medicine. She earned her BS and MS in biochemistry through the five-year program, interned at two pharmaceutical companies, and hopes to eventually work in research and development or regulatory safety. “It’s rewarding to see how developments in the lab can greatly improve patients’ lives. And the sky’s the limit on what you can do.”

The crazy-busy summer and fall after her undergraduate years proved to be a blessing in disguise for consistency in training. “There were a lot of changes in my life, with my friends and boyfriend graduating. I moved to Somerville to work full time in Boston at a co-op, while still attending classes in Worcester and training.” Running helped her cope with the stress and gave her confidence in her endurance.

Working and competing in a varsity sport at an academically challenging university also required her to plan her day intentionally. “Being a student-athlete forces you into a schedule because you have to be efficient with your time. It can be tough to manage. But I had my routine, and I knew I had to be on top of it,” she says. “I have a tendency to procrastinate, but I knew I couldn’t because I didn’t want to be staying up late to finish assignments.”

Even with her collegiate racing days over, running will always be an important part of Hadley’s life. “I’m hoping to still compete in some aspect,” she says. “There are a lot of club teams you can join, so we’ll see.”

—Kristen O’Reilly
Contrary to popular belief, the sweetest thing about Switzerland isn’t necessarily the chocolate—for WPI students, it’s the opportunity to collaborate with their peers on projects in a country that shares the same intergalactic scenery as they do.

Having spent six years working and researching in Lausanne and Zurich, professor of physics and project center director Nancy Burnham had had her eye on Switzerland as an ideal project center location. She saw the potential opportunities Switzerland had to offer WPI students—and she was right. After a few stalled starts, the Zurich Project Center took root in 2016.

The center is one of the few to host both Interdisciplinary Qualifying Projects (IQP) and Major Qualifying Projects (MQP). Burnham takes advantage of the professional networks she’d fostered all those years ago to organize diverse projects ranging from enhancing visitor experiences at local museums and ensuring optimal organization of medical research data to raising awareness of myriad specialties and experiences to offer, the main thing students can expect as "minimal invasive surgery." Beck says, going on to explain that the database they created will allow future stakeholders to keep information up-to-date within the field of neurotechnology. "We learned a great deal about how the work we did would help scientists better communicate findings, and eventually help people with diseases and other medical conditions affecting the brain." While the 10+ project centers within WPI’s Global Projects Program have myriad specialties and experiences to offer, the main thing students can expect wherever they go is an invaluable experience that helps them grow as researchers, as professionals, and as people. For Beck, his time in Switzerland helped him to do just that. "I believe that interacting with as many people as possible from as many backgrounds as possible makes you a more informed and kinder global citizen," he explains. "Being in a place I had never been to before allowed me to be part of other people’s routines and, in turn, put into practice that belief I’ve held for so long."

—Allison Racicot

**THE BACKGROUND:**
Kleiman was inspired to develop a prototype of a robotic surgical instrument for his Major Qualifying Project by his friend Charles Manger ’23, who started the project in 2022 with Professor Sajid Nisar at Kyoto University of Advanced Science in the Novel Intelligent Systems & Advanced Robotics Laboratory. Kleiman asked Crane, Johannessen, and Page to join the team to update the design and address functional challenges. The goal was to model, test, and ultimately build a prototype of the cable-driven robotic surgical instrument.

**THE METHODOLOGY:**
Given the seven-week time frame for the project, the students relied heavily on rapid prototyping to construct models and identify areas where changes needed to be made. To source parts, they used 3D printed objects, models and identify areas where changes needed to be made. To source parts, they used 3D printed objects, and others in the lab who were there doing different research. "We worked in a foreign environment, in a lab full of international students from Asia, Europe, and the Americas," says Johannessen. "I was proud of how our team adapted to the environment of being in a completely different culture on the other side of the world without any connection or having been there before."

—Jon Cain

**THE RESULT:**
The novel design is comparable to a human arm, which allows a surgeon to operate the robotic system remotely and move it in five independent ways. A baseplate houses motors, gears, and cables that drive joints in the instrument. These parts allow the shoulder to roll, the elbow to pivot, and the wrist to curl. Axles and gears in the wrist joint allow two forceps to be manipulated to open, close, and grip. The high degree of independent movement allows for precision, dexterity, and versatility, all of which are critical components of minimally invasive surgery. Page says the design allows the tool to reach around obstructions, “which can really open the window to new opportunities. This tool could create an avenue for minimally invasive robotic surgery in parts of the body where maybe before a procedure would’ve had to be done by a traditional surgery method.” The team says other design benefits include the separate baseplate and arm, which allows for a smaller incision and easier sterilization.

**THE FUTURE:**
Nisar says the next steps will be to further develop the prototype at his lab in Japan, with a focus on miniaturizing the instrument to provide access to hard-to-reach areas during surgeries. He envisions a collaboration with medical professionals and industry to integrate the technology into robot-assisted surgeries.

—Jon Cain
Dean of Students Emily Perlow, on addressing issues important to students.

What do you think it’s like to be a student on campus these days?
On any day of the week, you’d find students studying with friends in the Rubin Campus Center (RCC) lounge, or reading on the newly opened hammock park behind the RCC (thanks to the generosity of the Class of 2022), prototyping in the Innovation Studio makerspace, attending choir practice, meeting an employer in the Heeber Career Development Center, or raising awareness about their clubs at a table near the fountain. One of the things I often tell prospective students and parents is that this is a place where students—no matter their interest, identity, faith, or hobby—can find “their people.” And while many things have changed over the years, WPI is still the place where smart, multi-talented people gather to make the world a better place.

What issues are important to today’s students, and how is WPI addressing these issues?
Today’s student body is the most diverse in our history. As the university becomes more diverse, it becomes equally important that opportunities are created for commonality building, connection, and a sense of belonging. WPI students bring with them a spectrum of cultures, genders, nationalities, and religious faiths. They are also more socially active around this generation.

The students help make WPI better by encouraging the institution to consider new and different strategies to meet their needs. To make sure all solutions include student voices, this year we started hosting Herd Huddles—events that focus on a topic or two that are important to students—and we discuss ways to enhance student experiences. We’ve discussed a range of topics, including the experiences of women students, the campus shuttle, the dining program, and mental health supports. This year, thanks to student voices, we’re launching a composting program. We’ve also worked to ensure there is a gender-inclusive restroom in every academic building on campus.

How do co-curricular activities mirror the project-based learning that students experience in the classroom?
WPI teaches graduates to solve the world’s problems together in groups. That means they must learn to collaborate, take on such tasks as booking barber appointments, taking the car in for an oil change, or cooking a meal for the family once in a while. As a result of these efforts, we’ve seen great gains. When we conducted the survey again in 2023, we found more students were sleeping regularly, more were taking time to eat healthy meals, and fewer were reporting high levels of stress and anxiety. On a measure of well-being, they reported they’re on track to meet their goals.

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What recent initiatives have been successful in supporting student mental health?
Every few years, WPI conducts a survey of our students that asks about satisfaction with campus resources as well as with student habits. In 2019, the data told us that at times some students were staying up all night to do academic work, skipping meals, and feeling overwhelmed and stressed. Since then, WPI has opened a Center for Well-Being, which offers many programs and initiatives to support student wellness. What we’ve learned is that WPI students bring with them a spectrum of cultures, genders, nationalities, and religious faiths. They are also more socially active around this generation.

This is also an opportunity to teach students design-thinking strategies such as prototyping. As a student might do in a class project, sometimes the first effort to machine a part or develop code or run the experiment doesn’t produce the desired results. What matters is what you do in that moment to modify the prototype and try again after taking in all the information.

How can parents help students become more resilient?
The concept of prototyping plays a big role for students in their personal journeys, too. There’s a lot of pressure in high school to get the best grades, participate in a lot of activities, and never make a mistake. When students come to WPI, we tell them there are no failing grades and we encourage them to take risks, try things that are hard to do, and be open to pivoting when things aren’t going as planned. This means practicing good communication, taking time to listen to others’ needs, and weighing the pros and cons of all possible options.

The ability to unlearn everything from high school and be open to prototyping requires psychological flexibility and resilience. For instance, if they’ve only ever walked a one-way path to success in high school, if things don’t go well at WPI at first try, they fail that first calculus or physics test, it can cause them a lot of stress for fear of failing or falling behind. The best thing parents can do is to start building this psychological flexibility and resilience among middle school and high school-age children. Rather than pushing for perfection or making success feel like a zero-sum game, consider ways to help students reflect on what they might do differently. I’d also encourage parents to challenge their children to take some calculated risks—rather than taking the class where they know they’ll get an A, encourage them to take the most challenging class. Learning to connect with their peers in healthy ways is really important, too. Parents can help by talking about what healthy friendships and dating relationships look like and helping their kids practice meeting new people and striking up conversations. They can build independence by asking their kids to take on such tasks as booking barber appointments, taking the car in for an oil change, or cooking a meal for the family once in a while.

What recent initiatives have been successful in supporting student mental health?
How can parents help students become more resilient?

How do co-curricular activities mirror the project-based learning that students experience in the classroom?

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REBECCA MOODY
ASSISTANT PROFESSOR OF TEACHING, ARTS & SCIENCES

BOOK
Sara Ahmed’s book represents who I am as a thinker and a teacher. It was formative in helping me understand who I am and what I want to be. I love watching students experience similar “Ah ha!” moments.

CARD
As a professor of religion and gender, sexuality & women’s studies, I never thought I would be teaching on a STEM campus. In fact, at first, I had no clue how it would work. Turns out I love it here and am thrilled being “bad at math” set me on this path. I like to think we’re all nerds together.

WOODEN PLAQUE
Students in my first cohort at the Morocco Humanities & Arts Project Center in C-Term 2020 commissioned this in the Rabat Medina. “Morocco Baby” represents the “It’s Morocco, anything can happen!” carefree attitude we all adopted. It’s surrounded by their favorite Moroccan Arabic phrases.

INK DRAWING
A student in my Introduction to Philosophy & Religion course sketched Karl Marx while we read one of his essays as a way of processing the information. It reminds me that students learn in many ways, none more valid than others.

FLower
A professor gave this to me at a very low point in my academic life. I was a first-generation college student and my first semester at Oklahoma State University was rough. My history professor gave out random awards; this was for “Most Improved.” It gave me just enough encouragement to get me through that moment.

RAINBOW
A member of my “Queer Council” 3D printed this for me. One day in their first year, six students stuck around after class, we’ve met every week since to simply chat. I love connecting with students around cool, technical things that they understand far better than I do.

FACULTY SNAPSHOT
Get to know faculty through items they have in their offices.

PHOTO BY JAMES CASEY
A NEW TRADITION

Commencement ceremonies moved to the DCU Center on May 9 and 10, allowing more capacity for family and friends to cheer on their graduates in a climate-controlled atmosphere with improved amenities. WPI awarded 1,169 undergraduate degrees, 788 master’s degrees, and 69 doctoral degrees over the two days. Nancy Pimental ’87, executive producer and writer of the television series Shameless, gave the undergraduate address; Greg Tucker ’92, entrepreneur and co-founder of ProAmpac, spoke at the graduate school ceremony.

Despite the new location, cherished traditions were retained. Earlier in the week, undergraduate students crossed Earle Bridge, receiving applause from marshals lining its pathway, before processed to Convocation (formerly called Baccalaureate). Graduates stepped on a Centennial Seal replica woven into the rug on the DCU floor, and gave a 3D-printed Gompei statue one last touch for good luck as they entered the arena.

Also new this year, Reunion activities began on Friday, May 10, as the Alumni Association welcomed the newest members into the fold.
DOMINIC CHANG ’18
APPLIES THEORY TO REALITY
WITH BLACK HOLE RESEARCH

BY SCOTT WHITNEY | PHOTOGRAPHY BY TONY RINALDO
and black mass splashed across news sites around the globe.

One morning in April 2019, the world awoke to an orange and black hole image—a black hole from Messier-87 (M87) galaxy, forever changing our understanding of physics, the cosmos, and our place in it. What had once been intriguing fodder for sci-fi movies became visible evidence for scientists to start dissecting.

Dominic Chang ’18 recalls feeling both disconcerted and thrilled by the fuzzy image of M87’s black hole. “I’ve been working with black holes mathematically for a long time, so I thought I understood them very well. But then, when I saw the actual image, I realized, ‘I don’t even know what I’m looking at,’ ” he says. Like many theoretical physicists, he had long used black holes as material for speculative thought experiments—but there was nothing theoretical about where his black hole research would take him next.

Chang chose the medical route but had second thoughts after completing his Bachelor of Science in WPI’s biomedical engineering program. Once he arrived on the campus, two encounters pushed him toward less traditional endeavors. “I met a guy at Institute Hall who was already reading graduate-level books on general relativity, which sounded really interesting,” he recalls. “I thought that there was nothing stopping that improvement from continuing in the future,” says Chang. “I think that experience made me want to do physics more, if anything.”

In preparation for an independent study project, he asked his would-be mentor for a recommendation on a research topic. Philipps confided he was considering retiring so Chang asked if there were any topics Philipps would like to work on. “I’ve always wanted to work on quantum gravity,” he replied. Chang dove headlong into the field, which seeks to reconcile gravity according to the principles of quantum mechanics. This led him to the Black hole Information Paradox, a research topic first described by renowned theoretical physicist Stephen Hawking.

The paradox contrasts two seemingly irreconcilable principles: On one hand, Hawking proved that black holes evaporate over time. Conversely, physics has long asserted that information (in this case, the contents of a black hole) cannot be destroyed. This conundrum captured Chang’s imagination, pitting the rules of one physics discipline against those of another. “That’s what makes the black hole information paradox so special,” he says. “It creates a link between general relativity, thermodynamics, and quantum mechanics.”

Chang continued his research on black holes with his Major Qualifying Project, supervised by then-WPI professors Shaibani and Leo Rodriguez. “The basic problem was to calculate the number of states that could exist for a given black hole,” he says. In his final presentation, he explained the traditional (and highly complex) means of calculating the emission of Hawking radiation from black holes. He went on to demonstrate that by using the holographic principle, a theory that the information trapped in a black hole is also encoded on its two-dimensional surface, one could much more easily calculate the emission of radiation for both spinning and non-spinning black holes. “Technically, it was a solved problem, but I was using a different technique than how it’s traditionally done.”

He knew that pursuing a theoretical topic for his MQP, rather than one he could touchably demonstrate, could diminish the “wow factor” of his presentation. However, the significance of his work and the rigor with which he approached it was not lost on those in the audience. One professor remarked that it was the best MQP presentation he’d seen to date. And his theoretical research began opening doors in the real world.

CAREER ACCELERATION

Following graduation, Chang stood at a crossroads. “I was thinking about applying to grad school, but I was pretty broke and couldn’t afford to take the GRE,” he recalls. With the help of a generous friend, he took the exam and applied to five schools—the maximum number he could afford to take the GRE,” he recalls. With the help of a generous friend, he took the exam and applied to five schools—the maximum number his budget would allow. Harvard University was among them. Word of his impressive MQP project preceded him, and Harvard invited him to pursue his doctorate at one of the world’s most prestigious academic institutions. “That MQP definitely helped me get where I am now,” he says.

Unsure where he wanted to focus his academic efforts, he ultimately followed the breadcrumbs of his MQP research on Quantum Field Theory (QFT), which introduced him to the field of particle physics. “QFT isn’t a course that’s available at WPI, so this was mostly self-
DOMINIC CHANG ’18 IS DETERMINED TO BRING THE THEORETICAL NATURE OF PHYSICS INTO REAL-WORLD APPLICATIONS.

At CERN, you’re getting petabytes of data and you’ve got to replace the entire equipment, so the silicone chips have to be replaced at the end of their shelf life,” he explains. “I worked on the upgrades.

The LHC represents the largest and most powerful particle collider in the world, and it’s famous for its cutting-edge research. In 2012, it was used to detect the Higgs boson particle.

Despite his theoretical research, Chang enjoyed the transition to practical research, a far cry from the swiss Alps he calls home. “I had a lot of time to meditate,” he recalls. “I enjoyed the experiments back in Cambridge, he went on a professional walkabout, taking inventory of his passions, his aspirations, and where the science would lead him next. His personal exploration also took place against the backdrop of a historical breakthrough. Several months prior, the Event Horizon Telescope team had released the world’s first image of a black hole, turning his attention back to his first love. “That was when I decided that I wanted to come back and work on black holes, but not in the way I was doing before,” he says. “This time, I wanted to work on theoretical physics that was closer to observations.”

Chang knows the feeling. “If you asked me a question about a black hole, I could easily find the answer through [scientific] formalism. But when I actually saw the image, I had no idea what I was looking at,” he recalled. “Theory and experiment are just two different realms; they should meet more.”

For Chang, theory and experiment met in a superlative way at the Black Hole Initiative (BHI), a research center at Harvard University focused exclusively on space’s darkest corners. In need of more general relativists specialists, the BHI team welcomed him in 2020—and he was certainly in good company. The first center of its kind, BHI hosted Stephen Hawking at its inaugural celebration in 2016 and now boasts a world-class network of scientists, over time he found the work’s precision and predictability lacking in adventure. “CERN is such a well-oiled machine, but that also means that the analysis pipelines are set in stone,” he says. “That’s appealing to some because you have a sense of security. But for me, it took a bit of the fun out of a PhD.”


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That’s one reason that BHI exists; the concept of a black hole links the two fields so well. Theorists have long been fascinated by the idea of a black hole, a place where the laws of physics break down and where gravity becomes so strong that nothing can escape its grip. But until recently, there was no direct evidence of their existence. In 2019, the Event Horizon Telescope team released the world’s first image of a black hole, a feat that required years of planning, data collection, and analysis. The resulting image was a black dot with a bright ring around it, a result that confirmed predictions made by Albert Einstein’s theory of general relativity.

But even with this historic breakthrough, there are still many mysteries surrounding black holes. One of the biggest questions is how they form. Scientists believe that black holes are created when massive stars collapse under their own gravity, but they are not sure how they manage to form in such a dense and compact space. Another question is how black holes interact with their surroundings. Do they emit radiation, or do they remain totally dark? These are just a few of the many questions that are still unanswered.

For Chang, the challenge of black hole research is precisely this level of complexity that makes it so appealing. “It’s a puzzle that requires a lot of creativity and innovation,” he says. “I enjoy the excitement of being on the cutting edge of science.”

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MAUREEN McCAFFREY ’86 AND AMY PRANGE ’07 TRANSFORM CITY NEIGHBORHOODS AND COUNTER THE GENDER IMBALANCE IN COMMERCIAL REAL ESTATE.

RESHAPING URBAN LIFE

BY AMY CRAWFORD | PHOTOGRAPHY BY FAITH NINIVAGGI
IN THE EARLY 20TH CENTURY, a bustling wharf district sat just across Fort Point Channel from Downtown Boston. Each day, dozens of fishing boats unloaded their catch, while sugar, molasses, and other commodities were stocked in massive warehouses. Shops and restaurants catered to the revolving shifts of dockyard workers.

But by the 1990s this once-boastful neighborhood had succumbed to industrial decline, leaving little more than a wasteland of windswept parking lots. Bostonians could be forgiven for thinking Mayor Tom Menino was being overly optimistic when, in 1997, he declared the city’s intention to redevelop the depressed waterfront into a hub for 21st century innovation.

“Those 1,100 acres are among the most prized real estate in the East Coast,” the mayor insisted. “And we intend to put them to good use.”

More than a quarter century later, that vision has finally come true. Now popularly known as the Seaport District, the area hosts multiple Fortune 500 companies and more research lab space than anywhere else in the city. Glittering high-rise condominiums and apartment buildings house nearly 4,000 people, making the once desolate spot a trendy, 24-hour neighborhood. Destinations—including the Institute of Contemporary Art and the Boston Convention & Exhibition Center—draw plenty of visitors, who stay to sample the hip nightlife or simply to take in views of the city skyline and Boston harbor.

It’s a radical transformation, and Amy (LeBlanc) Prange ’97 has been there nearly every step of the way. “I feel like I’ve been involved in the Seaport my entire career,” says Prange, whose first job after graduating from WPI was as a civil engineer with Nitsch Engineering in Boston, and who now serves as a vice president at WS Development, where she is responsible for the mixed-use developer’s Seaport projects. “I used to park here for $11 a day and walk over the channel when I worked at Nitsch. It’s incredible to think that now there is a fully functioning neighborhood here.”

Prange has helped oversee a massive transformation of Boston’s built environment in a little more than a decade. She also has been part of a transformation within commercial real estate, as more and more women take on important roles in a business that is reshaping urban life and spurring economic growth and innovation throughout Greater Boston.

BIG DIG ORIGINS

“I entered this industry 22 years ago,” says Maureen McCaffrey ’86, “and I was the only woman in my office. I was the only woman at all my project meetings. We were doing one million-square-foot redevelopments, and all the architects, all the engineers, the entire project team for every single one of those buildings were men. At the time, I didn’t find it peculiar.”

Like Prange, McCaffrey began her career as a civil engineer. In the 1990s, she worked for a contractor on the “Big Dig,” another multi-decade project that transformed Boston by replacing the elevated Central Artery of I-93 with tunnels, removing a barrier that had once cut the city’s central neighborhoods off from one another.

“I came from heavy construction, so I was used to being the only woman for a long time,” McCaffrey says. “And we made great progress in the group I worked for. By the time I left, we had quite a few women engineers, which was super.”

McCaffrey made the jump to the owner’s side in 2002, and since then she has worked for MITIMCo (Massachusetts Institute of Technology Investment Management Company), which stewards MIT’s endowment.

As a director on the real estate team, McCaffrey has helped redevelop another neighborhood—Kendall Square—from underutilized postindustrial low-rises and parking lots into a biotech mecca—“the most innovative square mile on earth,” according to Boston Consulting Group. It’s a role that has included everything from planning and development to tenant fit-ups for over 2 million square feet of life science labs, along with office, residential, and ground-floor retail and restaurants that make a neighborhood feel truly dynamic. (MITIMCo has another 1 million square feet of projects in the pipeline.)

Like the Big Dig and the Seaport District, the new Kendall Square has been a long time in the making. As McCaffrey’s experience shows, success in commercial real estate requires not only technical and business knowledge, but also patience, organizational skills, and emotional intelligence. “There are years and years of planning and permitting that go into every single building, especially in an urban environment, because there are so many stakeholders to engage,” she explains. “You’re meeting with city staff to get alignment on the architecture and you’re having community engagement meetings, and your design will invariably evolve. It may be years of community engagement before you finally go through the planning board.”

Getting that official stamp of approval feels like a weight has been lifted, she says, but that doesn’t mean groundbreaking gets immediately scheduled. The project’s leaders still have to get it through underwriting, work out finances and timing, and line up tenants who will be ready and eager to occupy the new space.

“So when you finally stick a shovel in the ground and it starts coming to life, it’s really, really rewarding,” McCaffrey says. “When you get to the point where you can actually see the tenants’ spaces come to life, and you get to see how much enthusiasm they have for the place, and for this science that they’re going to advance—well, that’s probably the most compelling part of the experience.”

The Seaport is part of what people think of when they think of Boston now. It’s the new place to be, and it’s pretty incredible.

Amy (LeBlanc) Prange

As vice president at WS Development, Amy (LeBlanc) Prange ’97 has oversaw some 11 million square feet of office and lab space in the Seaport over the last eight years.
Another thing McCaffrey has learned over more than 30 years, first in heavy construction and then in commercial real estate, is that with so much at stake—and so many who are interested with spaces, all of us come to the table with different experiences,” she says.

“There was often the only woman in a class. After graduation, Prange sought a job with Nitsch Engineering, which has worked on several large commercial projects. “You do get results and leadership roles within CREW, including serving as its current president, Nitsch worked to get McCaffrey on WPI’s Board of Trustees in 2022.

“We needed someone who knew how to build things, and she’s doing an amazing job,” the engineer enthuses, explaining that McCaffrey’s experience at MIT gives her insights into developing WPI’s own built environment.

Nitsch and Prange go back even further: Nitsch mentored the younger woman when Prange was at WPI. On a campus that has always skewed male, Prange valued the connection to a successful female role model, and when she was considering a change of majors, it was Nitsch who encouraged her to stick with civil engineering, even though she was often the only woman in a class.

After graduation, Prange sought a job with Nitsch Engineering, where she worked on site design, stormwater master-planning for clients that included her current manager at WS Development—which eventually recruited Prange to join its own team. ("How cool… you’re going to be a client," Nitsch remembers, secretly glad she hadn’t lost the young star to a competitor.)

For Prange, it’s the latest addition to a growing portfolio of projects she has overseen for WS, some 1.1 million square feet of office and lab space delivered to tenants in the last eight years. She is also leading the team for the Seaport’s Harbor Way, a new pedestrian promenade lined with mature trees that spans four city blocks—an incredible concept for anyone who remembers the windswept parking lots of the 2000s.

“I knew when I started at WS Development, this was a once-in-a-lifetime opportunity to work on a project like this for one landlord that’s all ground-up construction,” she says. "And it’s pretty amazing to see what we’ve done in eight years. We have a lot more to do, but it’s already a real draw now, for people all over Greater Boston. The Seaport is part of what people think of when they think of Boston now. It’s the new place to be, and it’s pretty incredible.”

Prange spends every workday at the Seaport, but she still thrills to see the change. She also enjoys visiting Boston’s newest neighborhood with her two young daughters, who will grow up in a world where it’s taken for granted that women can build skyscrapers.

“Many of them are like they tell people that I build buildings myself with my own two hands," Prange says with a laugh. "They’re very proud of me. We’ll be driving down the Pike, and they will say, ‘Mommy, did you build that building?’ It’s funny, but I’m so glad to be able to expose them to this industry. And they’ve already started to ask questions that are urban-planning related. My older daughter is a typical Type A older child. I think she’s going to be an engineer!"

THE BENEFITS OF DIVERSE TEAMS

When you think about all of the aspects of design and how people interact with spaces, all of us come to the table with different experiences.

Maureen McCaffrey

Prange’s latest achievement, the 17-story building topped out last year, and this summer WS will complete construction on a second tower for Amazon, which will take over all 630,000 square feet of the building’s office space. And—in addition to hosting a major employer that’s a household name—the tower will have another claim to fame, as Boston’s largest net-zero carbon office building. For Prange, it’s the latest addition to a growing portfolio of projects she has overseen for WS, some 1.1 million square feet of office and lab space delivered to tenants in the last eight years. She is also leading the team for the Seaport’s Harbor Way, a new pedestrian promenade lined with mature trees that spans four city blocks—an incredible concept for anyone who remembers the windswept parking lots of the 2000s. ("I knew when I started at WS Development, this was a once-in-a-lifetime opportunity to work on a project like this for one landlord that’s all ground-up construction," she says. "And it’s pretty amazing to see what we’ve done in eight years. We have a lot more to do, but it’s already a real draw now, for people all over Greater Boston. The Seaport is part of what people think of when they think of Boston now. It’s the new place to be, and it’s pretty incredible.”)

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According to Boston Consulting Group, Cambridge’s Kendall Square has been transformed into “the most innovative square mile on Earth,” and the Seaport District was once again the only woman in the room—and the only one to have made more vulnerable users feel unsafe.

“I kind of feel like a proud moma!” Nitsch says. “I’ve enjoyed watching her take such a leadership role in the Seaport for WS. She and Maureen being different experiences to the plate, but they’re the real deal. They have exactly what commercial real estate needs. They both know they have to continue to learn. They’re responsible, and they’re smart, and I think they’re both terrific.”

Nitsch felt especially proud in February, when Boston Real Estate Times named both Prange and McCaffrey to its List of Outstanding Women of Commercial Real Estate. It was an honor for the two WPI graduates, and another sign that women are making their mark on the industry, at all levels and in myriad roles.

“The project that I’m working on now, we have a woman structural engineer, a woman environmental engineer,” McCaffrey says. “Our architect lead is a woman. And on my last project, our contractor, project manager, structural engineer, and lead architect were women. I’m seeing more of it every day, and I’m living in more of it every day. And maybe it’s in part just by virtue of my presence as a woman in the room, it shows that there’s an opportunity for others.”

SEEING SEAPORT PROGRESS

For someone whose work involves creating high-end spaces for high-tech companies, Prange’s own workplace is quite the opposite:

“My daughters like to tell people that I build buildings myself with my own two hands," Prange says with a laugh. "They’re very proud of me. We’ll be driving down the Pike, and they will say, ‘Mommy, did you build that building?’ It’s funny, but I’m so glad to be able to expose them to this industry. And they’ve already started to ask questions that are urban-planning related. My older daughter is a typical Type A older child. I think she’s going to be an engineer!"

When you think about all of the aspects of design and how people interact with spaces, all of us come to the table with different experiences.

Maureen McCaffrey

...
Off-Road Brawn with AI Brains

THE AUTONOMOUS VEHICLE MOBILITY INSTITUTE DEVELOPS TECHNOLOGY THAT WILL KEEP TOMORROW’S OFF-ROAD VEHICLES ROLLING ALONG.

BY MICHAEL DORSEY | PHOTOGRAPHY BY MATTHEW BURGOS
The phrase “where the rubber meets the road” has long been used to describe the point where theory is tested in the real world.

For researchers in WPI’s Autonomous Vehicle Mobility Institute (AVMI), the expression is especially apt. They are working on technology for a new generation of autonomous off-road vehicles capable of deftly traversing the roughest terrain to perform all manner of tasks, from engaging in combat to exploring other worlds.

A critical element of this work involves the way a vehicle’s wheels engage with the ground beneath them, and how to control—and even anticipate—that interaction to ensure the vehicle stays in motion and on course, while maximizing safety and minimizing energy consumption. To meet that challenge, the research team draws on a host of advanced engineering and design methodologies and devices, including cutting-edge computer modeling and simulation, artificial intelligence, and the latest in sensor and computing technology.

AVMI was founded by Professor Vladimir Vantsevich and Professor of Practice Lee Moradi, who both joined WPI’s Department of Mechanical and Materials Engineering in 2022. Vantsevich, who earned an ScD in automobile and tractor engineering at the Belarusian National Technical University (where he directed an academic program on wheeled and tracked vehicle engineering and headed a university-industry working group on the modeling, simulation, and design of off-road vehicles and vehicle systems) has more than 40 years of experience in vehicle design and engineering, particularly in the design of innovative drivetrains for multi-wheeled vehicles.

Moradi, who earned his doctorate in civil engineering at the University of Alabama at Birmingham (UAB), worked in industry for nearly two decades before joining the faculty at UAB, where he served as director of research in the School of Engineering and director of the Engineering and Innovative Technology Development (EITD) center. The two engineers began their collaboration after Vantsevich took a position as professor of mechanical engineering at UAB more than a decade ago and began exploring the idea of establishing a research center dedicated to autonomous off-road vehicles. Moradi, as head of EITD, led a team of nearly 40 engineers and quality managers who had, under contract from NASA, developed technology for space exploration, including a series of advanced ultra-cold freezers, many of which are still in service aboard the International Space Station.

“When Dr. Vantsevich came up with his idea,” Moradi recalls, “I said, ‘Why don’t we combine forces? Then you won’t have to build your own group. We can collaborate and build this thing together.’”

A COMPLEX QUEST

AVMI’s mission focuses on two interrelated quests. The first is to develop vehicles and vehicle systems specifically designed for the off-road setting. When vehicles—whether cars, tractors, or tanks—leave the road behind, they enter an unpredictable and far more complex environment. “There are no traffic lights, no lanes, no smooth asphalt or concrete surfaces,” Moradi says. “They have to travel on rough terrains: snow, ice, mud, sand, and so on.”

More than simply conquering these tough conditions, the vehicles AVMI helps develop must clear a high operational bar. “The focus of our research,” says Vantsevich, “is terrain mobility, maneuverability, and energy efficiency, and how these factors intersect with survivability.” In other words, no matter what the terrain, the vehicles must not get stuck, they must not wander from their planned course, and they must get the maximum mileage from their batteries. (While it also works on mechanical drivetrains, AVMI’s specialty is vehicles driven by electric motors.) On top of this, the vehicles, and any human occupants or other payloads, must live to drive another day.

Adding to the complexity of AVMI’s mission is the pursuit of intelligent autonomy. It was said of dancer Ginger Rogers that she did everything Fred Astaire did—only backwards, and in high heels. Likewise, an autonomous vehicle must do everything any other vehicle can do, but without the benefit of a human driver’s brain, sensory systems, and experience. It must sense the environment, anticipate terrain changes, make decisions, and respond appropriately. That’s tough enough for a vehicle that never leaves the relatively predictable confines of roads and highways. It is exponentially more difficult in the untamed expanse of the offroad world.

“When an off-road, autonomous vehicle is moving,” Vantsevich says, “it should know what kind of terrain is under the wheels. So we need to have special sensors, like lidar, radar, cameras, and interior sensors that monitor the behavior of the vehicle and its systems.”
More than sense the terrain, the vehicle must anticipate it to make fine adjustments, millisecond by millisecond, in the position and movement of each wheel to ensure that the vehicle keeps going and stays on course, no matter what kind of mud or man it may encounter. “In these multi-wheeled vehicles, we control each wheel individually with electric motors,” he says. “Even before a wheel starts spinning, we must already have started to control it.”

Vantsevich and Moradi believe the autonomous technologies they are developing can be deployed in a wide range of vehicles, including earth movers, tractors and other farm vehicles, and planetary rovers. “When you encounter a terrain you’ve never driven on before, you must be able to anticipate what will happen,” Vantsevich says. They see the research being applicable beyond the U.S. Army to defense and other off-road applications.

“GVSC is the center of excellence for all types of vehicles for the U.S. Army,” Vantsevich says. “The next generation of military vehicles, manned and unmanned, will have GVSC’s signature on them.” Adds Moradi, “They have a strategy for that next generation. They want to go faster, further, and more efficiently than anything else done before.”

While physical tests are vital to AVMI’s work, much of its research is done virtually, within the confines of high-performance computers. That includes the development of computational models that can simulate every aspect of a vehicle and the environment it must navigate. “Let’s say you have a vehicle moving in a virtual environment,” Moradi says. “The mathematical descriptions of its motion and its interaction with the environment are all physics-based. That means the vehicle is dynamically interacting with the terrain, which is deformable. The vehicle affects the terrain, and all the deflections occur in real time as the vehicle is moving.”

As new vehicles and systems progress from concepts to engineering designs to prototypes, models and simulations enable the AVMI team to test dozens of iterations, in myriad virtual environments, quickly and accurately, without having to build physical devices. “Before you put something into a real vehicle, you can test it here, virtually.”

“The results of computational modeling also help train machine learning algorithms and other kinds of artificial intelligence applications that will be critical to the development of autonomous vehicles and systems that can make accurate predictions about the upcoming terrain and respond quickly enough to avoid getting into trouble,” Moradi says. “Training the AI for an unmanned off-road vehicle will be far more difficult than training for a road vehicle.

“At algorithms will also help us develop robust, secure systems that can quickly detect if a sensor is sending out an anomalous signal or if an adversary has compromised your systems and distorted the sensor information. So, an autonomous system must be intelligent enough to understand when a signal is wrong, to recover the correct signal and discard the wrong one, and to protect sensors from being compromised.”

A FULLY IMMERSE EXPERIENCE

AVMI is experimenting with technology, including virtual reality headsets and wearable haptic feedback devices, that will place users into its 3D simulations to see and feel what it is like to navigate off-road environments in autonomous vehicles and to drive crossed vehicles over rough terrain. Currently in development is a new facility, the Autonomous Systems Lab, funded by a $2 million grant from the Massachusetts Technology Collaborative, which will transform these simulations into fully immersive experiences.

In addition to ordinary walls, the lab will have walls covered in LCD screens that will display a 360-degree view of a simulated vehicle. Researchers will be able to literally step into a simulation and see the operation of a vehicle and its interaction with its environment in a way that will be more realistic than any other type of immersive technology. The lab will also make it possible for researchers in other locations to join in the immersive experience.

“If you are somewhere else in the world,” Moradi says, “you can put on VR goggles and feel as if you are in the lab, participating in the simulations. This will enable us to make AVMI an extension of the Army’s GVSC. People there will be able to run experiments in our lab.”

That kind of connectivity and virtual collaboration will also enhance other collaborations the institute is building or hopes to establish, including those with teams at the University of Hawaii at Manoa, Texas A&M University, and several NATO countries.

The purpose of models and simulations is to refine and perfect vehicle designs, but AVMI’s job does not end there. “The Army likes to work with us because we are not just doing basic research,” Moradi says. “We go further. We go to applied research, then to conceptual and engineering design. Then we use the systems process to build prototypes and, eventually, commercial systems — what the government refers to as TRL 6, or Technology Readiness Level 6, the highest kind.”

“This is what Dr. Moradi actually did at UAB,” Vantsevich says, “and it is what I did throughout my professional career working on off-road trucks, farm tractors, and construction equipment that went into production. That is what GVSC and our corporate partners wants from us, to do the applied research, the engineering design and get our products and go to industry to build the hardware that will go to market.”

And as those advanced autonomous off-road vehicles come off the assembly line and head out to do real work in the real world, it will be research and innovative ideas from AVMI that keeps them rolling along.

“In these multi-wheeled vehicles, we control each wheel individually with electric motors. Even before a wheel starts spinning, we must already have started to control it.”

Wadad Vantsevich

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Vantsevich and Moradi believe the autonomous technologies they are developing can be deployed in a wide range of vehicles, including earth movers, tractors and other farm vehicles, and planetary rovers. (They are in early talks with NASA’s Ames Research Center in California.) Noting that the autonomous aspects of AVMI’s work align well with President Grace Wang’s vision for the future of AI at WPI, Vantsevich and Moradi say they plan to collaborate with many of WPI’s schools and departments, including other researchers who focus on AI.

AVMI’s current interest in mobility, maneuverability, and survivability is driven largely by the researcher’s longstanding association with, and support from, the U.S. Department of Defense. Even before founding AVMI, Vantsevich had been affiliated for more than two decades with the U.S. Army’s Ground Vehicle Systems Center (GVSC) — as well as industry partners in Michigan, Wisconsin, and Western Europe — whose missions include developing advanced ground vehicles (including autonomous vehicles) for military and off-road applications.

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Transformed by, and Grateful for, The WPI Plan

NANCY AND MIKE ABRAMS ’77 CONTINUE THEIR GENEROUS PHILANTHROPIC LEGACY BY SUPPORTING CAPITAL PROJECTS AT WPI.

BY SIRA NARAS FRONGILLO
As a child who dreamed of a career in science and engineering, Mike Abrams ’77 was drawn to this university because of The WPI Plan, which at the time was a dramatic change in STEM education. Fifty years later it continues to stand as a highly reputed global model for project-based learning.

“The Plan was in tune with the tumult of the early 1970s,” he says. The original Plan included the now-familiar graduation requirements of the Interactive Qualifying Project and Major Qualifying Project, but also Competency Exam, Sufficiency (now known as the Humanities & Arts Requirement), and, of course, the four physical education courses. “There were no other course distribution requirements or, in fact, the requirement to take any courses at all outside of meeting the graduation requirements. We all took plenty of courses, since we had to learn the requisite material to do our projects, but we could go as deep into one area as we wanted. And many of us did. We drank from the fire hose. It was very exciting!”

The WPI Plan provided—and continues to provide—an education that prepares students to be immediately productive in their first job, he says. “All of us who attended WPI together agree that we learned how to learn here. It is a bit of a trope, of course, but that doesn’t mean it isn’t true. The Plan and the projects were all about putting experience, learning, and people together to solve problems. My WPI education was the perfect pathway to learning how to do all those things.”

Abrams describes his WPI experience as highly formative to his early life as well as one that continues to bring him joy today. “The university became a part of me, and the people I met at WPI and the skills I gained there continue to be part of my life no matter how far I may be from The Hill. Through my involvement with the Alumni Association over the last 10 years, I have come to know another generation of faculty, staff, and students. I find them just as impressive and inspiring as when I was a student at WPI.”

A COLORFUL PARACHUTE

Following graduation with a mathematical sciences degree (with high distinction), Abrams’s career followed anything but a straight line. He initially planned to continue to graduate school for mathematics, but, as often happens in life, those plans were postponed.

“I spent a couple of weeks with the book What Color Is Your Parachute and did some serious thinking about what I wanted to be when I grew up,” he says. That introspection led to his decision to pursue a career as an electronics engineer.

Mike married his high school sweetheart, Nancy Bailey, and the couple moved to Houston, Texas. It was 1980 and a perfect time to take advantage of the job market created by a newly booming oil industry. He began work at a company designing seismic data acquisition systems used in the exploration for oil and gas. “I was very lucky in that my boss at that company recognized I could put my mathematics background to good use in signal processing and data analysis,” he says. He slowly worked his way into design engineer roles as he and Nancy attended the University of Houston at night; he earned an MS in electrical engineering and she earned an MS in accounting.

His first job involved software programming, signal processing, hardware design, and firmware programming. Then he was recruited to a smaller company that had ambitious plans to make a big leap forward in seismic data acquisition systems. “I was the second person hired on that team,” he says, “and I had an exciting five years working on that system.”

There he received his first patent for the reduction of power line interference during data acquisition using adaptive filters. After becoming one of the primary testers of the operation of the complete system, he helped the company enter the systems integration phase. His career evolved into technical marketing and customer training, and he traveled the world in support of marketing and installation of new systems, spending a great deal of time in Canada and Europe, as well as traveling to South America and Asia.

Next, Abrams ran a 20-person project team developing a MEMS (micro-electro mechanical system) accelerometer. The team worked on a closed loop sigma delta converter with the custom silicon sensing element inside the loop and a custom analog IC controlling the loop. Abrams describes this technology as “very cool stuff,” and he received four patents for his work in that program.

Following a brief four-year detour into the world of thermal imagers, Abrams eventually went out on his own. As a consultant from 2000 to 2017, he worked on a diverse array of projects, mostly with and for people he had met earlier in his career.

A PHOTOGRAPH

NANCY AND MIKE ’77 ABRAMS IN RUIDOSO, NEW MEXICO. PHOTO BY FELICIA URIBE
"Those projects ranged from marine seismic sources and subsea data acquisition nodes to completely wireless land seismic nodes. And my assignments ranged from digital and analog hardware design, to signal processing and data analysis, to total system design."

**LOVE = SUPPORT**

Abrams acknowledges the role WPI played in his professional success, and he says gratefulness is part of the reason for his and Nancy's generous philanthropic support of the university. “Even with the help of my parents and working part-time jobs during the school year and full-time jobs over the summer, I couldn’t have come to WPI without scholarships and loans. I know the support I received as a student has influenced my giving to WPI over the years.”

His support of WPI began as a young alumnus almost 50 years ago and ranges from generous philanthropic giving, fervent volunteering, and attendance at university events both on campus and nationwide. He served on the Alumni Association Board from 2011 to 2017 and 2021 to 2024, and more recently on the Presidential Search Committee that brought President Grace Wang to WPI. Abrams’s most recent gift to WPI supports Beyond These Towers: The Campaign for WPI.

The Campaign for WPI. The seven-figure commitment to capital projects stands as the fourth-largest gift in university history and was announced as part of President Wang’s inauguration in March. Speaking about the gift, and five others that together total $18.6 million in philanthropic commitments, President Wang said, “Ever since joining WPI a little over a year ago I have been inspired by this community’s passion for our student-centric mission and commitment to our innovative culture. Equally impressive is the passion and commitment of our alumni and friends.”

To date, the Abramses have supported numerous major capital projects on campus, including renovations that created the Alumni Center at Higgins House (resulting in the naming of the Nancy and Mike Abrams ’77 Library in Higgins House), the Nancy and Mike Abrams ’77 Multi-use Lounge and Creative Zone in Unity Hall, and renovations to Stratton Hall, home to the Mathematical Sciences Department. In addition to these significant leadership-level gifts, they are both members of the President’s Circle, WPI’s leadership society for annual giving donors. Their giving has supported, and continues to support, a plethora of university initiatives ranging from academic departments, scholarships, the George C. Gordon Library, and the Emergency Assistance Fund to a wide range of student organizations and varsity athletics and intramural teams.

**A SENSE OF PLACE**

Reflecting on his current relationship with his alma mater, Abrams says, “I enjoy walking around the WPI campus every time I am there. I love looking at the buildings and thinking about the places I went and used when I was a student. I enjoy musing about how the spaces on campus are used by the students today. I observe students to try and learn a bit about their interactions with the campus. The students, faculty, and staff change, but the land and buildings remain. The physical plant needs to change, be renewed, and updated to reflect the needs of the times. Supporting capital projects at WPI satisfies my and Nancy’s desire to help make those needed changes happen.”

Creating space for living and learning on campus remains a priority, he says. “WPI is a relatively compact campus. It is not always possible for students and faculty to find the necessary space for everything they want to accomplish. I hope our gift will help to expand the multiplicity of spaces in which meaningful work, study, and relaxation can occur.”

Looking to the future, Abrams says, “WPI is always changing to meet the times but working hard to stay true to the goals and strengths of The Plan. I am excited to see new leadership at the university who understands and is building on that legacy. I am also excited to see continued growth occur over the next few years. I expect to see even more entrepreneurship and technology transfer come out of WPI. I hope to see it recognized more widely as the leading STEM university that it is. I also hope to see the endowment for WPI grow to hit the $1 billion mark. And, most of all, I remain happy to be a member of the WPI community.”

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Dear Alumni,

On behalf of the Alumni Association Board, I’d like to welcome our newest members into the WPI alumni community. To the Class of 2024, I invite you to get involved with the Alumni Association, stay involved with WPI, and, please remember, you’ll always have a home on The Hill. Best wishes to all!

The past few months have been a very exciting time for our alma mater, and I’m pleased to share a few of the many highlights.

In March, WPI inaugurated its 17th president, Grace Wang, with an exciting and meaningful celebration, which included the dramatic announcement of an astounding $18.6 million in gifts to the university from WPI alumni and friends.

In May, the campus was abuzz with both the Class of 2024 Commencement ceremony and Reunion Weekend. Combining the two events allowed graduates to experience their first Reunion Weekend immediately after graduation and allowed alumni the special opportunity to interact with many “newly minted” graduates.

Over these past summer months, the Alumni Association Board has diligently continued to work toward our established mission, objectives, and strategic priorities. Below are some recent Board accomplishments:

• Engaged alumni through four alumni-driven events
• Supported affinity groups including Graduates of the Last Decade (GOLD), The Women of WPI, and Voyagers
• Supported Pi Day and First-Year Bridge Crossing (with beanies and Tech Bibles)
• Funded a number of student group special requests, including the Student Alumni Society, Society of Women Engineers, National Society of Black Engineers, and Society of Hispanic Professional Engineers
• Supported the Senior Appreciation/Welcome to the Alumni Association event, Homecoming, and Reunion, and a hot cocoa bar at President Wang’s Inauguration
• Hosted an ice cream social for seniors following Convocation (formerly Baccalaureate).

And if the above isn’t remarkable enough, WPI has launched a new master’s degree program in Artificial Intelligence, the Fire Protection Engineering Department celebrated its 45th anniversary, and numerous major research grants have been awarded to WPI faculty in areas ranging from surgical robotics and biomedical engineering wound dressing to advanced wireless research and the performance and privacy of mobile augmented reality systems. It’s a great time to be a member of the WPI alumni community!

Thank you for all you do for our alma mater,

Pamela

FOR MORE INFORMATION
Lynne Feraco
AVP of Charitable Advising
774-239-7326 | lferaco@wpi.edu

MAKE WPI A PART OF YOUR PLAN

HAVE YOU INCLUDED WPI in a will or trust? … in a life income gift? … as a beneficiary of life insurance, IRA, or other retirement account?

The Alden Society is always accepting new members; please join today to help ensure WPI’s future!

Membership is about giving you recognition now for your plans to support WPI in the future. To join, visit plannedgiving.wpi.edu.

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

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ILLUSTRATION BY ZOE PAPPENHEIMER

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ALUMNI AWARDS

CONGRATULATIONS TO OUR 2024 ALUMNI AWARD RECIPIENTS

Recognized by the WPI Alumni Association for their remarkable professional achievements and service to the university, these alumni bring pride to the entire WPI community.

They were celebrated by their classmates, families, and friends during Reunion Weekend, May 10–11. Learn more about the awards at https://www.wpi.edu/alumni/awards/about

ROBERT H. GODDARD ALUMNI AWARD
FOR OUTSTANDING PROFESSIONAL ACHIEVEMENT

GAIL BAKER ’84, JOHN DELANEY ’84, WAYNE MOORE MS ’94, TIMOTHY MURRAY ’74
ALFRED POTVIN ’64, PETER TUNNICLIFFE ’74

ICHABOD WASHBURN YOUNG ALUMNI AWARD FOR PROFESSIONAL ACHIEVEMENT

HILARY ADRAGNA ’09, JENNA BALESTRINI, PHD ’09, AARON BIRT, MS ’14, PHD ’17

HERBERT F. TAYLOR ALUMNI AWARD FOR DISTINGUISHED SERVICE TO WPI

JIM POULIOPOULOS ’84

JOHN BOYNTON YOUNG ALUMNI AWARD FOR SERVICE TO WPI

RICK BARUFFI ’14, MS ’15

WILLIAM R. GROGAN AWARD FOR SUPPORT OF THE MISSION OF WPI

HOLLY AULT ’74, MS ’83, PHD ’88

At-a-Distance Alumni Engage with WPI Beyond These Towers

When President Grace Wang arrived on The Hill, one of her many priorities was to meet the WPI alumni community. To do so, she teamed up with University Advancement to bring WPI to alumni across the country. The Beyond These Towers presidential events, which took place in Massachusetts, New York, Florida, California, and Texas, provided alumni with an opportunity to meet President Wang and learn about her vision for WPI’s future. She also visited alumni and attended alumni events in Hong Kong and Jakarta, Indonesia.

One event took place at NASA’s Jet Propulsion Laboratory (JPL) in Pasadena, Calif., and included a visit with WPI’s 16th president, Laurie Leshin, at the world-class facility. “The JPL event was the perfect opportunity to connect with WPI alumni and engage with fellow members of the aerospace community. Additionally, I was very excited for the chance to meet President Wang and reconnect with Dr. Leshin. Both are impressive female leaders who I admire and aspire to be like someday,” says SpaceX Launch Engineer Bailey Savage ’22. She adds, “It was truly a once-in-a-lifetime event that allowed me to discover how powerful the WPI community can be, even 3,000 miles away from the classroom.”

When asked about her experience as a member of the WPI alumni community, Savage says, “I take a great deal of pride in being a WPI alumna. The school’s focus on building each individual—both inside and outside the classroom—leads to students entering the world with curiosity and preparedness. I was heavily involved in the WPI community, and believe I owe a great deal of my postgraduate success to the lessons learned during my college experience. I am always looking for ways in which I can continue to support the growth and overall impact of the university.”

Jay Bee Oil & Gas COO and Vice President Jon Morgan ’11, who attended the Mountain View, Calif., event held at the Computer History Museum, says, “I try to go to as many WPI events as I can in the Bay area, not only to connect with alumni and faculty but to learn more about how WPI has been improving over the years. The alumni event was a great opportunity to reconnect with alumni I have not seen in years (and others I see more frequently). I always enjoy spending time with my fellow WPI alumni as we always have such fun stories to share, and we all want to see WPI succeed and grow.”

The Beyond These Towers presidential event series will continue during the 2024-25 academic year. More information on locations and dates will be shared in the coming months.

It was wonderful to welcome so many back to The Hill for Reunion Weekend 2024, as alums returned to revisit favorite campus spots, reunite with friends and classmates, and relive the traditions and memories that made our WPI experience so special. Of the many fun and exciting weekend events, Saturday’s Honoring Our Champions award ceremony was especially meaningful and impactful to all, as the Alumni Association bestowed its notable awards to very deserving alumni.
Helping Massachusetts Manufacturers Succeed

CHRISTINE NOLAN '88

In the heyday of the Industrial Revolution, Massachusetts was known as a hub for manufacturing innovators, including a group of entrepreneurs who founded the Worcester County Free Institute of Industrial Science (now known, of course, as WPI). As the director of the Center for Advanced Manufacturing (CAM) at the Massachusetts Technology Collaborative, Christine Nolan '88 is helping the next generation of innovators recapture that magic, connecting the state’s 7,000 manufacturers with funding and resources needed to stay competitive and create jobs.

“This really is my dream job. It marries both worlds — my manufacturing background as well as my community engagement background,” she says. “I’m inspired by manufacturers’ passion for creating things, solving problems, and working through tough challenges. My job is to ask, ‘How can I use the resources available at the state level to help them succeed?’”

The ability to bring people together, both formally and informally, is one of Nolan’s superpowers. In her 10 years at the Massachusetts Technology Leadership Council, she built communities of interest in the tech industry, whether executive level peer groups or technology clusters such as robotics, cybersecurity, or big data (all before the time of AI). The communities built, strengthened, and encouraged regional collaboration.

In 2012, she co-founded Boston Tech Jam, a fun event to celebrate the successes of the industry that attracted as many as 8,000 participants to Boston’s City Hall Plaza; three years ago she launched the Mass Manufacturing Mash-Up, a similar networking event at Worcester’s Polar Park that has been so successful it will move to Gillette Stadium in September to increase capacity.

CAM, which she has directed for the past three and a half years, has an integral force in the formation of a 170-member regional consortium to help develop critical technologies, from quantum computing, AI hardware, secure Edge/Internet of Things, MG/6G, electromagnetic warfare, and commercial leap-ahead technologies. “Seeing this consortium come together from across academia, industry, and multiple state governments has been very impressive,” she says, noting that WPI played a leading role in the effort.

Connecting large defense manufacturers, like Raytheon, a designer of jet engines, a civil engineering consultant, and multiple math teachers. “We’ve formed a support system for each other throughout our careers, and I’m proud of what we’ve all accomplished,” she says.

Nolan’s particularly grateful to the legendary professor and dean of academic advising Van A (John van Alstyne), who helped her navigate the occasional academic headwinds. “The amount of coaching and time he spent with me to get me through some of those calculus classes was darn impressive,” she says.

Leveraging State Resources

CAM is focused on helping to scale advanced manufacturing, from innovation through production. The Center helps early-stage companies commercialize next generation technologies, helps the supply chain with grants and resources to scale and adopt the latest technologies, and assists with a talent pipeline.

The Center’s M2EI (Massachusetts Manufacturing Innovation Initiative) program has funded some 90 projects (including some at WPI) to help develop critical technologies, from flexible hybrid electronics to functional fabrics, robotics, additive manufacturing, and photonics. A second capital grant program, MMAP (Massachusetts Manufacturing Accelerate Program), addresses a common pain point with smaller manufacturers: how to acquire the latest (usually expensive) equipment to stay competitive.

“Manufacturers are busy, head-down people, not often taking the time to learn about resources available to them,” Nolan says. Once the capital project grant program engages them, manufacturers tend to discover other helpful resources such as the Massfire system to help with hiring needs and the nonprofit MassMEP (Massachusetts Manufacturing Extension Partnership) to help them with growth initiatives or funding to help them with the adoption of new cybersecurity standards.

The Center works across the educational continuum, from K-12 to adult education and community colleges, to assist. Because vocational schools are often oversubscribed, the Center works closely with approximately 60 Innovation Pathways high schools that offer industry-driven programming and provide direct routes to careers.

Nolan says the next challenge for the Center is helping manufacturers in their digital transformation. “It’s hard for manufacturers to find the time and resources to adopt this,” she says. “The challenge for us is to try to help them figure it out.”

—Kristen O’Reilly

The lesson she shares with her two daughters: “You always want to make sure you have a voice, and you’re confident in using your voice.”

In addition to meeting her husband, Steve Nolan ’87, at WPI, she befriended and has stayed close to a group of women who have taken different career paths since graduation: a CEO of a local manufacturing company, a designer of jet engines, a civil engineering consultant, and multiple math teachers. “We’ve formed a support system for each other throughout our careers, and I’m proud of what we’ve all accomplished,” she says.

Nolan says the next challenge for the Center is helping manufacturers in their digital transformation. “It’s hard for manufacturers to find the time and resources to adopt this,” she says. “The challenge for us is to try to help them figure it out.”

—Kristen O’Reilly
For three decades, my wife, Trae, and I have galvanized and supported initiatives to empower women in STEM. This professorship hopes to inspire and enable future generations of WPI students with the fearlessly forward values my mom embodied every day.

—Steve Vassallo ’93

In Memory of a WPI Trailblazer: Helen Vassallo

Q: What drew you to WPI, and how was your overall WPI education experience?
A: Growing up, I was always drawn to building. Whether in the form of sketches, structures, or circuits, I found flow in the creative process of turning ideas into prototypes that I would quickly put to the test and then feverishly improve upon. By the time I began to contemplate college, it was clear that my predilection for building things—together with my strong academic interest in math and physics—would lead me to engineering. And since my mom was a professor here at WPI, with two of my older sisters as happy alums, it felt somewhat inevitable that I would pursue engineering here as well.

Q: How have the education and life skills you gained at WPI served you in your career?
A: WPI was founded on the principle that “every student should blend theory learned in the classroom with practice in the shops.” Nearly 160 years later, this couldn’t be more true, especially if you’re hoping to become an engineer or entrepreneur who nudges the world forward in some meaningful way.

I started my career as a design engineer at the global design firm IDEO. Then I led the development of a broad array of haptic technologies and products for Apple, Microsoft, BMW, and others, and was awarded 77 patents along the way. Now I invest in early-stage start-ups through Foundation Capital, where I’m a general partner.

Q: What do you hope your gift will achieve—either for future generations of students and faculty at WPI, or for individuals and communities beyond our campus, or both?
A: My mom’s North Star was seeing students flourish and grow—nurturing their technical zone of genius, but in every facet of their lives. The goal of the Dr. Helen G. Vassallo Distinguished Presidential Professorship is to extend the gift of my mom’s impact in perpetuity by supporting an outstanding, recently tenured faculty member who embodies her pioneering spirit and has demonstrated excellence in all relevant areas of faculty service and leadership, and advising.

Q: What motivated you and Trae to establish the Dr. Helen G. Vassallo Distinguished Presidential Professorship?
A: We did it to honor my mom and cement her legacy as one of WPI’s most generous and impactful professors. She was a true pioneer at nearly every stage of her life, and in every facet. A clinical biologist turned distinguished professor, mother to 10 children, two-time author, American Businesswoman of the Year, helicopter pilot, patent holder, recipient of the Key to the City of Worcester—her bio clearly needs an intermission—my mom blazed many trails in her lifetime but never sought the limelight. Instead, her focus was always attuned to service, finding ways to help others achieve their goals and find their own personal, academic, and professional success.

When my mom joined WPI, it was a joint appointment in the Department of Management, for which she was the first woman named department head, and the Department of Biology and Biotechnology. Her innate curiosity, breadth of knowledge, and experience allowed her to teach through both lenses, benefiting students in her classes with a unique perspective. In recognition of her excellence, she was the recipient of the 2003 Trustees’ Award for Outstanding Teaching.

Q: What would you say to other alumni and friends to encourage them to stay connected and to support WPI by giving back?
A: My mom would occasionally remind us kids (yes, all 10 of us) that it’s not about what you know, it’s about how enthusiastically you approach the things you don’t. This urgent curiosity—the rush to learn, and to build, and to solve real problems in the world—is the spirit of WPI as well as the spirit of the start-up world I live in today. Entrepreneurs don’t see the world as it is, but rather as it should be. Alumni and friends are welcome and encouraged to contribute to the Dr. Helen G. Vassallo Distinguished Presidential Professorship Fund. Please contact Vice President of University Advancement Donna Stock, dstock@wpi.edu.
CLASSNOTES

THE HERD COMES HOME

HOMECOMING 2024
SEPTEMBER 27 & 28
wpi.edu/+homecoming
housed. Jerry Axelrod provided restaurants, as well as at Jack wives attended events that brothers and a number of their Florida and every summer in January for the last sixtyish years, David Rice

1968

David Rice writes, “Every winter for the last sixtyish years, brothers from Alpha Epsilon Pi fraternity (AEPi) have met in Florida and every summer in Hull, Mass. This year, the event run March 21 to 24. Thirteen brothers and a number of their wives attended events that included golf, a museum visit, a boat tour of Sarasota Bay, and picnicking. Of course, the food was a highlight at local restaurants, as well as at Jack Siegel’s and Butch Lofchie’s houses. Jerry Axelrod provided great songs and music at our event. Those attending the reunion with me were: Jerry Axelrod ’69, Henry Block ’70, Al Breitman ’70, Neil Glickstein ’69, Steve Legomsky ’69, Gary Leventhal ’69, Butch Lofchie ’68, Skip Palter ’70, Steve Phillips ’69, Peter Saltz ’68, and Jack Siegel ’68.”

1967

Dhavel Kikani was interviewed for a story by Automotive Fleet about the evolution of the auto industry. He worked for Ford Motor Company for 40 years before joining National Fleet Services, where he now serves as director of engineering.

1968

Bruce Denton was quoted in “Friends Forever” by Reader’s Digest this past winter. In the article, he said, “I met my best friend, Joe, when he transferred to my high school. There was no logic to our friendship—he was a creative, right-brained person while I was an analytical, left-brained person—but we both felt as if we’d been best friends forever. When Joe told his mom about me, she dug up an old photo and showed it to him. It was Joe and me together as toddlers. It turned out that our families used to live one street apart, before his family moved away, only to return over a decade later. Now, 75 years since that photo was snapped, we are still best friends.” Bruce is a Bronze Star recipient from the Vietnam War. Before retiring, he spent 52 years as a math teacher and worked as a Methodist pastor in Central Massachusetts.

1971

Paul Clancy writes, “I retired as a federal magistrate judge for the Northern District of Oklahoma in 2016 but was recalled to judicial service for each of the past eight years. For more than 20 years, I administered the court’s Mediation and Alternative Dispute Resolution Program, overseeing mediation of more than 2,000 cases. Today, I continue to serve as a court-sponsored mediator and conduct various criminal pre-trial matters as well. My wife, Julie, and I have three children. Our first grandchild was born in 2013.”

1982

George Oliver was named as the 2024–2025 board chair for the United Way of Greater Milwaukee & Waukesha County. He is chairman and chief executive officer at Johnson Controls.

Harvey Stein was a speaker at the FortHall Gablex School of Business QuantVision 2024 Conference. He is an expert in quantitative research, technology, and management within the finance industry. He currently serves as the senior vice president of the Labs group at Two Sigma and teaches risk management at Columbia University.

Elaine (Korana) Ritchie shared her news: “Curling brought together two alumnus in St. Paul, Minn., recently ...”

1983

Cynthia Koscuezky writes, “I recently published my fourth book about the pandemic. I also went to the alumni event at the Jet Propulsion Lab in Pasadena. A fantastic time, as there hadn’t been a local event for about 10 years. Would be happy to have more of these as well. Congratulations to our new president!”

1984

Robert Kilty was named to the 2024 Power 100 list. He is an attorney who specializes in employment litigation that defends corporations and their executives. He previously served in the U.S. Navy as a weapons and tactics instructor who advised senior officers about deployment of air defense tactics.

Lawrence Massaro writes, “I was appointed president and CEO of Tactical Engineering, a Department of Defense firm specializing in information technology, cybersecurity, software engineering, and analysis for the U.S. Navy. In 2021, I decided to knock off an item high on my bucket list and conquered Mt. Kilimanjaro (19,341 ft) via the Lemosho/Grey route. A fantastic time, as there hadn’t been a local event for about 10 years. Would be happy to have more of these as well. Congratulations to our new president!”

I discovered that life without a cell phone or internet for over eight days on the climb was very therapeutic and mind cleansing!”

Jeff White was named to an advisory role at Collective Audience, a multidisciplinary marketing agency. He has over 30 years of experience as an executive, investor, and entrepreneur in the tech and marketing industry. According to the announcement, he is most known for his co-founding of FingerWorks, the “touch screen” technology provider acquired by Apple that served as the foundation for the iPhone.

Karen (Hirst) Spaleta ’00 from St. Paul, Minn., recently shared her news: “Curling was very therapeutic and mind cleansing!”

1968

The WPI Commons in 1964; at right, the same four in 2024.

AT WPI COMMONS IN 1964; AT RIGHT, THE SAME FOUR IN 2024.
Donors like you provide WPI students with so much. When you donate to WPI, you help make IQP experiences possible. Donations enable students in clubs and organizations to travel to conferences and competitions. And gifts to financial aid and scholarships allow students from all backgrounds to attend WPI and achieve their dreams. Donors like you inspire students like Jayson to become donors themselves and keep the cycle going.

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“This scholarship means I can focus more on my studies and the important aspects of college without worrying as much about the expenses. Your generosity motivates me to continue trying my best and to one day return the favor to another student.”

Jayson Caissie ’25

To all WPI’s donors:
Thank you for enabling WPI students to reach their potential.

Jeff says, “My passion has always been how technology can be applied to solve massive problems and drive out inefficiencies in industries that lag in tech adoption.”

1986
Kathleen Loftus was appointed to the North American Sustainable Refrigeration Council (NASRC) board of directors. She serves as the vice president of strategic construction projects, energy, and facility services at Retail Business Services. She works to optimize productivity and operations for the company’s “Race to Zero” commitment.

Margaret Shinkle writes, “I earned my First-Degree Black Belt in Kenpo Karate from Steve Nugent’s Karate Institute. I love teaching my teen students.”

1987
Steven Cobery was featured in an article by Fall River Reporter for his work as a neurosurgeon. He currently practices at Charlton Memorial Hospital in Fall River, Mass., where he specializes in treating trauma-induced injuries to the head and spine. “I wanted to come home and use the skills I developed over two-plus decades to help people in my hometown,” he said. “I can’t believe it has worked out.”

1989
Peter Polit was appointed one of three new executives at Consumer Safety Technology, a “leader in substance-use safety and detection products and services,” according to the announcement. He previously served in technology-focused leadership roles with Tidel and Sirius XM.

1992
David Cortese was appointed as McGraw Hill’s first chief digital information officer. He will oversee digital platform development, information technology and data analytics for the company, according to the company’s announcement. He has over 30 years’ experience in the technology industry, serving in various leadership roles with companies such as Advantage Solutions, Comscore, Sony Pictures Entertainment, and Accenture.

1993
Peter Cavallo writes, “I recently left the defense industry and joined Air Products as lead aerodynamic engineer for its turbomachinery division, Rotoflow.”

1996
Antonio Delgado returned to San Candido, Italy, this past winter, the location of his Interactive Qualifying Project during his time as an undergraduate in 1994.
In the cannabis industry, especially those in the Worcester area, entrepreneurs like Jason are mentoring budding tincture, which turns any seltzers as well as Good Vibes into a multi-use building, and owner of Manchester Distillery and Bookery in the Manchester, N.H., area. “Continue to grow our city in ways that you want to see it grow,” she says of Manchester.

Spoke at Jeevan Ramapriya 1998, Jennifer was interviewed for an article by Devin Brande 2005 and Melissa (Wojnowski) Aberdale 2019, was featured in an article by Mahesh Kataggi 2017, and a principal at Orbit, a principal at Orbit, She is a principal at Orbit, She is a principal at Orbit." According to the announcement, "Continued to grow our city in ways that you want to see it grow."

In 2024 Jennifer Gallegos was a featured leading participant in SXSW 2024. Co-founder of STEM 3000 and a sales/marketing executive in the climate tech industry, she is a marketing advisor to climate tech companies and has written extensively on emerging technologies.

In 2013 Tuhina Bhattacharya, MBA ‘18, was married this past spring and her 2013 WPI roommates were in attendance, including Sonya Chen, Daniela (Garcia) Hamilton, and Emily Hartzell. They are looking forward to their next get-together.

In 2014 Jillian Chute won gold in her jiu jitsu weight/belt level at the 2024 Pan American Games in March. Kamal Mohamed was promoted to vice president of the entire world build and maintain better transportation infrastructure. "It is a privilege to be working across several high-profile projects," he said. He previously served as chief technology officer and advisor at AIM Medical Robotics, overseeing the development of surgical robots.

In 2009 Greg Cole was named chief innovation officer with Opentrons, "a leader in lab automation and makers of accessible lab robotics," according to the announcement. His role focuses on establishing commercial and academic partnerships with various research institutions and biopharma companies. "Opentrons is propelling future generations of STEM students, submarine builders, and mariners. My achievements and legacy would not have been possible without my mentors, sponsors, family, friends, and colleagues who helped me throughout my journey."
Chris, who majored in mechanical engineering and minored in business, is currently a senior director of product marketing with software company High-Tech Technologies. And Lillian, who majored in environmental engineering and minored in music, is an associate professor of environmental engineering at Roger Williams University (RWU) in Bristol, R.I.

While the couple took very different paths to WPI, both describe meaningful and impactful university experiences that helped form them as individuals and as a couple. “I always liked math and science and wanted to set myself up with a challenging and successful career path. One of my high school math teachers suggested looking into engineering as a career path and mentioned WPI. When I went to tour the WPI campus for the first time it just felt right; the students were happy, the campus seemed cozy, and the project-based approach was unique,” says Chris, adding that he was happy he chose to attend. “Some of my fondest memories and closest friends were made through the extracurricular activities I was involved with.”

Acknowledging the vital role WPI played in his career, he says, “I’ve always enjoyed being in business—generating and customer-facing roles, so product marketing was an area I sought out for my career. WPI’s blend of mechanical engineering and business was a great combination that helped prepare me for the marketing, sales, and product strategy-type roles with manufacturing and tech firms. Ultimately, the engineering knowledge and leadership skills I learned at WPI helped me succeed—first at SPIROL and then at Sensata.”

As a trumpeter, Lillian found WPI through music. She wanted to participate in a band and the campus seemed like a good fit. “And it feels right to pay it forward so that other students can have the same experience. The world needs more WPI engineers!”

Different Paths Led Chris ’10 and Lillian ’11 Jeznach to Each Other

Chris credits WPI’s project-based learning curriculum and Interactive Qualifying Project (IQP) with giving him the opportunity to combine his passions for both science and music. “WPI connected me with things I enjoy. I really like being involved in music. As理解和 experiences inspired me to pursue a career not only in environmental engineering, but specifically in undergraduate engineering education.”

Like Chris, Lillian also acknowledges the valuable role WPI played in her career. “My WPI education not only taught me the technical skills I needed for my career, but also gave me skills like project and team management, leadership, and how to think creatively during the design process through the project-based curriculum.”

With thriving careers, the couple shows gratitude to their alma mater by giving back to the university through donor philanthropy, giving annually since 2010. “WPI has a community of faculty and students like no other and it will always feel like home. I loved my time at WPI—the education I received, the people I met,” says Lillian. “And it feels right to pay it forward so that other students can have the same experience. The world needs more WPI engineers!”

Jeznach ’11

Herbert Slaughter ’46 ME, PHI SIGMA KAPPA, Virginia Beach, Va.
Joseph Burgarella ’50 EE, PHI KAPPA THETA, Sudbury, Mass.
Herbert Hayes ’51 ME, PHI SIGMA KAPPA, Brattleboro, Vt.
Gerald Backlund ’55 CHE, THETA CHI, Plymouth, Mass.
George Long ’57 CHE, PHI GAMMA DELTA, Paso Robles, Pa.
David Braig ’59 CE, ALPHA TAU OMEGA, Anahola, Pa.
Seth Ankelian ’60 CE, MS CE, Holden, Mass.
Daniel Gould ’60 CHE, Masphee, Mass.
John Ryerson ’61 EE, THETA CHI, Greenville, S.C.
Paul MacCalley ’63 ME, Ventura, Calif.
Harry McIntyre ’63 ME, SIGMA ALPHA EPSILON, Cromwell, Conn.
Robert Dream ’64 PHY, BACH, THETA CHI, Orlando, Fla.
Charles Sover ’65 CHE, TAU KAPPA EPSILON, Hickerson, Del.
Gerald Plepecko ’70 ME, LAMBDA CHI ALPHA, Sedona, Ariz.
Howard Levine ’72 PHY, Salem, Mass.
Michael Divis ’73 CHE, Attleboro, Mass.
Deborah Goodwin ’73 MA, Grosclytie, S.C.
James Risetti ’73 EE, PHI KAPPA THETA, North Reading, Mass.
Edward Gordon ’74 CS, ALPHAPSI EPSILON PI, Austin, Texas
Steven McGrath ’74 CHE, Bensalem, Pa.
Poul Happy ’77 SIM, Sterling, Mass.
John Erb ’82 ME, SIGMA ALPHA EPSILON, Gardner, Mass.
Ruth Lampen ’82, MS NS, Brattleboro, Vt.
Daniel Kash ’87 EE, THETA CHI, Port Jefferson, N.Y.
David Bouliangur ’90 CHE, Coventry, R.I.

Complete obituaries can usually be found online by searching legacy.com or Complete obituaries can usually be found online by searching legacy.com.

We Belong

CONTINUED FROM PAGE 64

make a space for all. Belonging is an active process that we have been engaging in since we stepped foot on WPI’s campus. We see it every day, when we embrace our friends and make new ones, when we share our ideas and listen to others; when we stay focused on our common mission toward a better, more just world, when we understand that shared failure leads to shared learning and success by many different metrics. And, overall, that belonging is better when we’re together. We belong.

To learn about cutting-edge technologies and scientific discoveries at WPI take an open mind. But no matter where you go and no matter what you do, an open heart is just as important. Remember that you belong, wherever that may be, and that the people around you are counting on you to believe that they belong too.

As history has shown us, when we stand united in times of trouble—as we have for the last four years—there is no challenge too great for our generation to meet. But it’s not just about raw perseverance through a situation; it’s about how we look for our one another and make sure no one is left behind. And, later, how we reflect on that situation and make change for the better. As in the wake of this campus’s darkest days, the memory of students we so tragically lost reminds us just how important belonging, acceptance, the ability to change the status quo, and an open heart really are.

Before I conclude I’ll leave you with an old saying from where I’m from in New York. Maybe you’ve heard it: “I’m walkin’ here!” Soon you will be walking here—quite literally! But what that saying means is that you have your path, even if it’s not linear. When people try to get in your way, you need to remind them that it’s your journey nonetheless. So, when they tell you that you don’t belong, that you’re not smart enough, that you don’t stand the part, you stand up tall, you remember your grit, your resilience, your strength, and your love, your belonging, and you tell them to fuggadaboudit and proclaim it with me: “I’m walking here!”

Levin is currently working as a medical assistant for a group of primary care physicians before starting a master’s degree program at Columbia University this fall. He also plans to apply to medical school in 2025.
We Belong

BY SAMUEL LEVITAN '24

Levitan, a biology and biotechnology major, gave the following student address at the undergraduate commencement ceremony on May 10 at the DCU Center.

On a cool October evening in 1901, history was quietly made around a dining room table at Booker T. Washington sat with Theodore Roosevelt, becoming one of the first Black guests to dine privately at the White House with a president. The meeting sparked outrage, with headlines essentially reading that this man, a man born into slavery 45 years prior, a man whose ancestors had built the very halls in which he dined and served their inhabitants, did not belong—not in that building, at that table, or with that host.

President Wang, members of the Board of Trustees, esteemed faculty, staff, students past and present, loved ones, and the triumphant Class of 2024, it is my honor to be here today. And it is my privilege to ask you to reflect on this word: belong. Wonder for a moment, what does it mean to belong or to feel a sense of belonging?

I think at least part of that question can be answered by the rest of Booker T. Washington’s story. See, that epic did not end with the outrage of his existence but rather with the prosperity of his work.

Fourteen years after that dinner, he visited our forebears here at WPI. No one was better suited to speak at the ceremony than Washington, a titan of transformative education and the embodiment of WPI’s theory and practice, with his emphasis on the combination of classroom studies and vocational training. At WPI’s 50th Commencement, in 1915, Washington spoke on America’s transformation since the end of slavery. And, while at that point in history America had made great strides toward equity and justice, I’m sure it was lost on no one that there was slavery 45 years prior, a man whose ancestors had built the very halls

In the words of Mister Rogers, “You don’t ever have to do anything sensational for people to love you.” It’s hard for us to see this simple but profound fact, but I’m sure that if you asked your parents or any loved ones here today, they’d agree that it’s true.

But you’re graduating from WPI. You have done something sensational. You truly earned this degree and today is a day to reflect on and celebrate that. Yet it is not your extraordinary efforts that led to you being loved and belonging; rather, it was belonging and love that led to you being extraordinary—love from our parents, teachers, friends, and mentors. Love is the prelude to belonging and belonging is the prelude to great things. Our generation is the most diverse, accepting, and socially conscious generation in history. We have created, and must continue to create, a community around belonging from which we will change the world.

Every gift will help us continue to cultivate an immersive campus experience that values well-being, belonging, and community. Gifts of any size have an immediate impact on WPI’s students, ensuring they have the resources to reach their incredible potential.

“Make your gift at wpi.edu/+give”

CONTINUED ON PAGE 63
GRADUATES WALKED OVER A REPLICA OF THE CENTENNIAL WALKWAY SEAL DURING COMMENCEMENT 2024, BRINGING A FLAVOR OF CAMPUS TO THE DCU CENTER. READ MORE ON PAGE 20.