



A HUNGER SATISFIED

Misael Diaz '10 defines
his own destiny.



A HUNGER SATISFIED

Once a poor teenager with audacious dreams, Misael Diaz '10 defines his own destiny.

BY AMY CRAWFORD | PHOTOGRAPHY BY TERRI GLANGER

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WPI

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In the years since Jeremy Trilling '22 arrived on campus in a flying electric vehicle he built himself, he has been exploring all options for air travel.

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GLOBAL IMPACT

Students scheduled to travel to project centers in South Africa and Albania last fall were redirected to the Puerto Rico Project Center, where they helped with several community resiliency projects.

THE ARCHIVIST

In 1983, WPI students shared a prototype for a new space glove with 70 NASA administrators, scientists, and engineers.

STUDENT PROJECT

A team of MBA students won Best in Show for their capstone project, a business plan for technology to recycle greywater from hotel laundry.



FACULTY SNAPSHOT

Get to know Peter Hansen, professor of history and international global studies in the School of Arts and Sciences, through items found in his office.

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Harrington Auditorium was rockin' when WPI hosted the first round of the Division III NCAA Men's Basketball Tournament.

ALUMNI NEWS

Find out what's up in the world of alumni and advancement.

TURNING POINT: Paul Dagle '82

Paul Dagle '82 and his wife, Ann, honor the memory of their son with their work at Brian's Healing Hearts Center for Hope and Healing.

ALUMNI PROFILE: Loree Griffin Burns '91

Loree Griffin Burns '91 uses her passion for science as a children's book writer, a career path that surprised even herself.

DONOR PROFILE: LARRY HERSHOFF

Larry Hershoff honors the legacy of his late father, Len Hershoff '43, by paying it forward.

DONOR PROFILE: Curtis '67 and Dudley Carlson

Curtis Carlson '67 and his wife, Dudley, focus their philanthropy on value creation and innovation. They believe WPI is a unique university, providing the education today's graduates need to thrive.

CLASS NOTES

Catch up on fellow alums—then send *your* news to classnotes@wpi.edu.

IN MEMORIAM

In memory of alumni, faculty, and other members of the WPI community

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LETTERS

Letters to the editor may be altered for length, clarity, and accuracy. We ask that letters offer the reader's opinion without rancor. Letters that mock or insult will not be published. Opinions expressed do not necessarily reflect the views of WPI. Send your letters to wpjjournal@wpi.edu.



THREE STUDENTS IN THE SNOW

A photo in the Winter 2022 *WPI Journal* of three chilly WPI students from years past evoked a number of inquisitive emails from readers who were transported back in time. A query to archivist Arthur Carlson, who pulls vintage photos from his files for use in the magazine, revealed something of a mystery.

“We found the original but there isn’t any additional information on the back,” writes Carlson. “According to our metadata spreadsheet, the title is ‘Three Students in the Snow’ and circa 1960s. They are obviously seniors as they are wearing Skull caps. If our alumni readers figure it out, please let us know and we’ll update the historical record!”

David Speirs ’68 offered the first clue, since he suspected he was, in fact, one of the students pictured: “I am sure the person on the right is **Jim Raslavsky ’68** and the center is **Bob Woog ’68**. I think the person on the left is myself but I am not positive about that (odd, I know).”

Ted Heidt ’68 was more confident in his identification, confirming Speirs’s suspicions: “Dave Spiers was my roommate freshman year in Morgan Hall. We were on the corner, third floor I think. When I went in there a few years ago, I couldn’t find the room. I think I crossed paths with Bob Woog, but I don’t recall. I do recognize him though, maybe from freshman year. I rowed, if you can call it that, on the crew team for a bit, so I knew Jim Raslavsky from the crew club/team. It is a great photo and I was surprised to see faces I remember from 50+ years ago.”

So, mystery solved, and the information will be passed along to Arthur for posterity. Keep those questions coming!

—Kristen O’Reilly

TO THE EDITOR,

Many thanks for the fine article about WPIWA and the radio club station W1YK (Winter 2022). As a ham (then W1ZBL from CT) and an incoming frosh in 1955, I enjoyed operating W1YK, then located in a tiny “shack” in the attic of the Atwater Kent EE building. Using a 250-watt home-brewed transmitter, a BC348 WW2 surplus receiver, and a long wire antenna stretching across to Salisbury Labs, many overseas contacts were made using CW (Morse code telegraphy). Congrats on your great publication and its many informative articles.

—George Rizzi ’59

now W8GOC, and still on the air in Cincinnati, Ohio

TO THE EDITOR,

Responding to the article “WPI’s Maestro Takes a Final Bow” in the Fall 2021 edition of *WPI Journal*, I am especially pleased by the music program Professor Douglas Weeks established at WPI during the past 40 years. Were I a student at WPI today, I probably could be a happy student due to the music program; I was a very unhappy student at WPI in the 1950s because WPI was a musical nothing then.

If the WPI music program of today did not exist, I would not have been motivated to establish an endowed scholarship at WPI and donate to it my large library of sheet chamber music. Indeed, I probably would not have supported WPI in our estate plan, as I have not supported WPI over the past 60 years. The WPI music program has greatly changed my sentiment toward WPI.

—Glen Smerage ’59

Santa Fe, New Mexico

MAILING LABEL UPDATE

Thank you to several alumnae who alerted us to inaccurate *WPI Journal* mailing labels. This was an unintentional result of a database issue specifically having to do with mailing label names, and we apologize for the error. The problem should be rectified; please let us know of any further issues. As always, if you need to update your mailing or contact information, please email alumni-office@wpi.edu.



A LOOK BACK WITH FONDNESS AND GRATITUDE

Dear WPI Community,

I recently had the opportunity to review the speech I made at my inauguration as WPI’s 16th president back in 2014. I spoke about two wonderful first-year students I met on campus—Lexi and Amanda—and how they were so happy here that they felt they never wanted to leave WPI. My perspective was that while this is a sentiment that I want every WPI student to have, in fact, leaving WPI is an important part of being a member of the WPI community. Taking what you’ve learned out in the world and applying it to address great challenges—that is the essence of what it means to be a part of WPI.

And so I now find that it is my time to leave WPI. My time to take what I have learned—and the lessons have been plentiful—and apply that knowledge for good elsewhere. Just like it is for our students, this moment is bittersweet. While I am certainly excited to lead a storied space exploration organization like the Jet Propulsion Laboratory (you all know I am a space nerd at heart), I have loved being a part of this amazing community, and I will always think of myself as a member of #GoatNation. Even these past two years, which have been some of the most challenging in the history of our beloved institution, have brought many, many moments of joy and hope.

I want to say a special thank you to our students, staff, faculty, board, alumni, and families. I have heard from so many of you in the past few months—wishing me well and with such kind words. It has been heartening and overwhelming. I know that our successes have come only through collaboration and a willingness to do things that were, at times, very difficult. I am so grateful to have been a part of such a committed team. Know that I believe in you. Unequivocally. You make me confident that anything is possible at WPI.

Looking back, the past eight years have been full of great accomplishment, and I’m so proud of what we have achieved together: Increasing the diversity of our student body and leadership team; scaling up our impactful Global Projects Program, making it accessible to all students through global scholarships, and launching The Global School; doubling research, and significantly growing our endowment; launching Centers for Project-Based Learning, Innovation & Entrepreneurship, and Well-Being; increasing student aid; opening two beautiful new buildings on campus: the Innovation Studio/ Messenger Hall and Unity Hall; launching the Women’s Impact Network; revamping our faculty rewards system to better align with our values; updating our mission and values; and, just this spring, receiving our 10-year institutional re-accreditation.

These achievements not only move this great university ahead, they position it for a bright future. And so, as I prepare to “graduate” in my own way, I urge this community to keep dreaming big, and then, as Robert Goddard said best, make those dreams the “reality of tomorrow.” WPI is the institution that it is because of our incredible faculty, staff, and students. Keep moving forward—and doing what you do best—and I know this place will attract its next great leader. I look forward to cheering all of you on!

As I close, I look back to my sentiments to Lexi and Amanda on that special day in 2014. While I’m leaving WPI, I know that WPI will never leave me. This place. This commitment. These people. I will always carry my time on the Hill with me and look back on it with the deepest fondness and gratitude for you all, and for this amazing place.

Fondly, **Laurie**

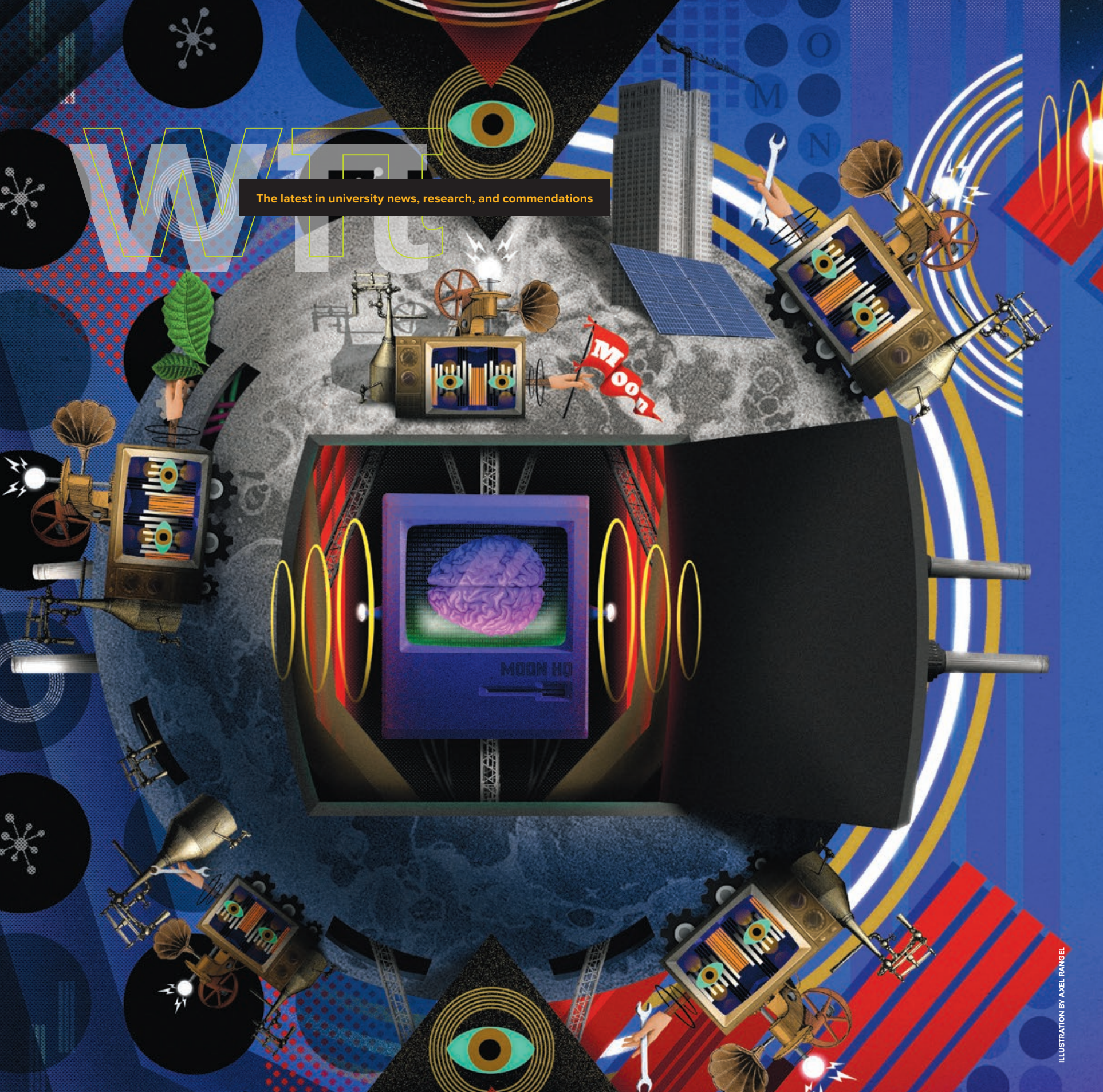


ILLUSTRATION BY AXEL RANGEL

The latest in university news, research, and commendations

TEAMWORK IN SPACE

Mechanical rovers can travel through space, land on other planets, and beam extraordinary photos of alien landscapes back to Earth. But it turns out they could use a little help working together.

That's why NASA is funding early-stage research—in a project that includes **Carlo Pincirolì**—to develop “swarm” capabilities that would allow teams of robots to collaborate and coordinate their efforts while exploring the moon and collecting mineral samples.

“We want to create a common data structure, similar to a whiteboard that team members could scribble upon, so that four to 10 robots at a time could complete scientific missions established by human controllers on Earth,” says Pincirolì, assistant professor in the Department of Robotics Engineering. “The goal is to establish decentralized coordination for mechanized explorers so that a swarm of robots could communicate with one another, assign tasks to one another, and successfully complete missions, even if one or more robots deteriorates.” Pincirolì is a subcontractor on the 13-month project, which is being led by Charles River Analytics Inc. of Cambridge. The project is funded with a Phase I \$125,000 Small Business Technology Transfer contract from NASA's Lunar Exploration Program.

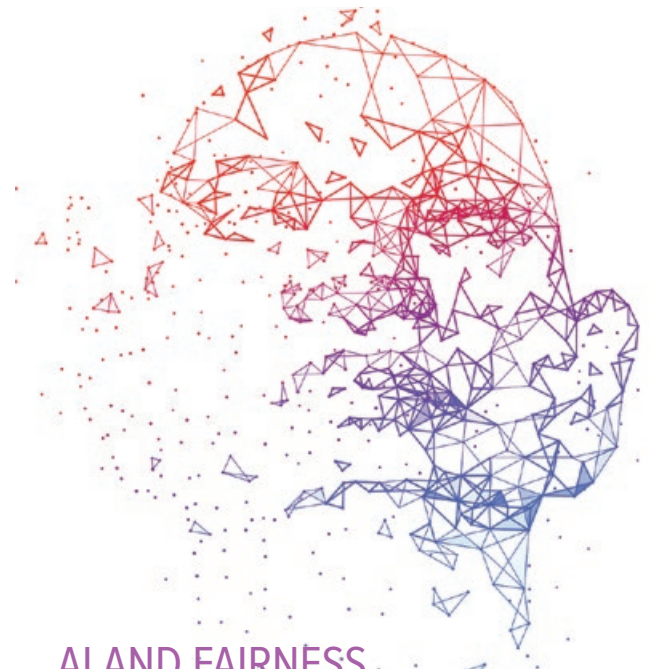
Charles River and Pincirolì will develop technology to enable robots to respond autonomously to unexpected situations, swarm to achieve tasks, and manage faults as vehicles degrade over time. The goal is to deploy the technology on advanced hardware platforms during future research.

Robots are poised to play an important role in future moon missions because they can explore rugged landscapes in the harsh environment of space. But the machines possess limitations: They can be damaged by dust, lose power over time, and drop signals when entering lava tubes, caves, and craters.

Enabling a swarm of robots to operate autonomously could address some of those challenges, Pincirolì says. If one robot falters in its tasks, others could take over the work.

“The robots would basically think like ants,” Pincirolì says. “They would not have a central director. They would be independent, and they would have missions to accomplish, which would be to travel to certain sites and collect resources. They would communicate with each other about their health and the status of their tasks.”

—Lisa Eckelbecker



AI AND FAIRNESS

When it comes to fairness, artificial intelligence is imperfect. The algorithms that drive calculations can carry the biases of their human creators, leading to unintended results when AI is used to rank candidates for jobs, scholarships, loans, awards, or other distinctions.

But **Elke Rundensteiner**, William Smith Dean's Professor in the Department of Computer Science, and her students are developing a way to address fairness with algorithms that could help decision makers who want to rank diverse individuals—people who may possess multiple characteristics—without discrimination.

Rankings are everywhere, and they can be created by aggregating the preferences of individual decision makers. Making sure that those combined rankings fairly distribute resources or honors to different groups of people, however, can be tricky and even raise questions about what represents fairness.

Caitlin Kuhlman '20 (PhD) previously worked with Rundensteiner to develop a way to generate fair rankings while considering a single “protected attribute” among candidates. U.S. law prohibits discrimination against individuals on the basis of protected attributes such as gender, age, and race.

Now Rundensteiner, computer science Associate Professor **Lane Harrison**, and PhD candidate **Kathleen Cachel** have extended the work by developing a series of algorithms to tackle the problem of “intersectional bias” that can occur in rankings when candidates possess more than one protected attribute.

“A lot of research makes the critical assumption that protected attributes are binary—male or female, white or non-white,” Cachel said. “But the reality is that humans belong to lots of different groups. We need algorithms to handle multiple categories. Our innovation starts with recognizing that humans are complex and asking how we can ensure fairness with respect to all parts of their identity.”

—Lisa Eckelbecker



PHOTO BY U.S. ARMY

WPI RECOGNIZED FOR TOP ARMY ROTC PROGRAM IN THE NORTHEAST

WPI's Army ROTC program has earned the prestigious 2021 MacArthur Leadership Award for the Top Army ROTC program in the Northeast, one of eight Army ROTC programs from across the country that will receive this award at Fort Knox this spring.

Lt. Col. Adam Heppe, department head and professor of military science, says he is pleased and humbled at the program's being recognized as the best of 41 others in the region. Heppe has mixed emotions as he embarks on his last semester at WPI: excitement over the achievement of the battalion, and sadness over leaving what he describes as his most fulfilling assignment in 20 years as an Army officer. He will retire upon completion of his WPI assignment.

"It is humbling to be recognized among such a stellar group of universities in our region," he says. "The program is strong, and I am confident that it will continue to thrive for the foreseeable future."

The MacArthur awards, presented by Army Cadet Command and the General Douglas MacArthur Foundation, recognize the ideals of "Duty, Honor, Country" as advocated by the late Gen. MacArthur.

The award is based on a combination of the achievement of the university's commissioning mission, its cadets' performance and standing on the command's National Order of Merit list, and its cadet retention rate.

Heppe says the recognition is largely the result of the battalion's performance at this past Cadet Summer Training at Fort Knox in Kentucky, in which WPI's senior class of cadets outperformed every school in the nation—No. 1 out of 274. WPI senior **Cadet Ian Weston** ranked No. 11 out of all cadets in the nation pursuing an active-duty commission. WPI has produced one of the top 12 cadets in the nation three of the last four years.

The battalion's high level of achievement follows a three-year initiative to improve the cadet experience, instill discipline and standards, and develop exceptional leaders, Heppe adds. In particular, he credits the impact of **Master Sgt. Alan Sutton**, who last year was lead tactics instructor for the junior class. "He's without a doubt the most phenomenal non-commissioned officer I've had the pleasure of working with over the last 20 years."

—Martin Luttrell



TWO WPI FACULTY MEMBERS NAMED TO *FORBES* 30 UNDER 30 LIST

Two WPI professors—one new and one incoming—have been named to *Forbes* 30 Under 30 Class of 2022. The magazine's annual feature highlights 30 people under the age of 30, this year from 20 different industries, whom the publication identifies as "the new guard, the young innovators, trailblazers, and disruptors remaking our world."

Making this year's list are entrepreneurs, technologists, and scientists, including **Christina Bailey-Hytholt '15**, an assistant professor in the Department of Chemical Engineering, and **Bashima Islam**, who will soon join the university as an assistant professor in the Department of Electrical and Computer Engineering. This is the first time two members of the WPI community are represented on the annual list.

"Christina and Bashima are both really exceptional people, and I'm excited to have them as members of the WPI faculty," says Bernard M. Gordon Dean of Engineering John McNeill. "They appreciate what's special about WPI and are coming here to be a part of an institution that values balance between research and teaching. I'm sure they will uphold and contribute to those values."

Bailey-Hytholt's research is focused on biomaterials, and on drug and gene delivery, particularly in relation to women's health. Her research seeks to design new therapeutics to treat conditions that impact prenatal and women's health, as well as to develop tools to better understand how molecules, such as pharmaceuticals and environmental toxicants, interact with the placenta.

Islam's research is also focused on solving problems that could have an immediate impact on people's lives, although she is doing so through the Internet of things (IoT). Islam's work is centered on next-gen IoT devices that are both sustainable and scalable, and incorporate artificial intelligence and machine learning. These devices run the gamut from health wearables to smart agriculture.

Islam will direct the Bringing Awareness through Systems for Humans (BASH) Lab at WPI.

—Jack Levy

SENSOR-EQUIPPED GLOVE TO ALLOW REMOTE OPERATION

WPI researchers **Pratap Rao**, **Cagdas Onal**, and **Zhi Li** have been awarded \$1,764,938 in federal and state funds to develop a soft, lightweight glove equipped with printed sensors and electronic circuits that will enable a user to tele-operate or train robotic systems.

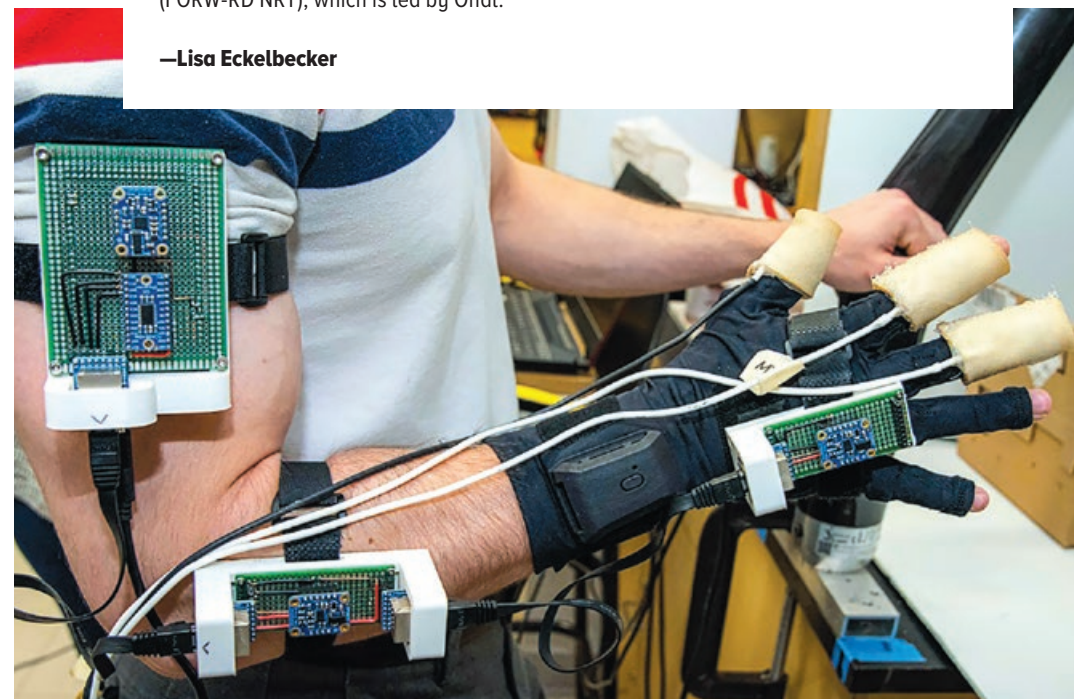
SEMI-FlexTech, a consortium working to advance manufacturing of printed flexible electronics, has awarded \$920,696 in federal funds from a cooperative agreement with the Army Research Laboratory for development of the glove. The Massachusetts Manufacturing Innovation Initiative (M2I2), a state effort to advance manufacturing innovations and job growth through industry-academic collaborations, has awarded an additional \$844,242 for the purchase of equipment at WPI and UMass Lowell that will be used to produce and test a prototype glove.

Rao, associate professor in the Department of Mechanical and Materials Engineering and principal investigator on the grants, says researchers will produce a prototype glove within 18 months. The glove will be flexible and washable, with integrated circuits printed onto stretchable fabric. Inflatable pockets around the fingers will fill with air to give a user feedback and the sensation of grasping an object; the glove will be powered with a battery that sits in the pocket of a garment worn by the user.

"A fully integrated glove that allows a human to operate or train a robotic system could be used in advanced manufacturing settings, warehouses, remote health care, hazardous situations, and other applications," says Rao. "In addition, the production methods and wearable technologies we develop will benefit Massachusetts by expanding the state's manufacturing capabilities and the expertise of Massachusetts workers."

The project builds on a glove designed by Onal, associate professor in the Department of Robotics Engineering. Onal and Li, assistant professor in the Department of Robotics Engineering, are co-PIs on the SEMI-FlexTech and M2I2 grants. The three professors are training graduate students in interdisciplinary research through WPI's National Science Foundation Future of Robots in the Workplace—Research and Development program (FORW-RD NRT), which is led by Onal.

—Lisa Eckelbecker



CONVERTING BAMBOO INTO FUEL

Could one of the fastest growing plants on Earth offer a solution to some countries' reliance on gasoline? A team of researchers at WPI and around the globe has co-developed a process to convert bamboo into an ethanol fuel for powering cars and trucks.

The research is funded in part by the National Science Foundation (NSF), the World Bank African Centers of Excellence program through the Pan African Materials Institute (PAMI), and the Tertiary Education Trust Fund of Nigeria (TETFund). The findings show that in countries with an abundant supply of bamboo, this new biofuel process could significantly reduce fossil fuel use—a major source of air pollution impacting health, economic development, and climate change.

Through processing using ball milling, which grinds up the bamboo, and an enzyme treatment, the researchers were able to convert the bamboo into simple sugars, which can then be fermented to create ethanol. Ball milling increases sugar yields obtained from the enzyme step by an order of magnitude, compared with the yields obtained without ball milling. In addition, the ball milling does not generate any new chemical wastes, unlike other methods used to make biofuels.

"We've shown that ball milling has the potential as a waste-free method, while using abundant resources in developing nations to offset their liquid fuel use as part of a sustainable approach to lowering their greenhouse gas emissions," says Chemical Engineering Professor Michael Timko.

The researchers used Nigeria as a case study for implementing the fuel made from bamboo after Nigerian researcher Nneka "Blessing" Ekwe came to WPI to develop technologies to use bamboo for biofuel production. The team found the bamboo could be effective in creating a sustainable system that also helps decarbonize that country's economy.

—Jack Levy



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WPI'S EVOLVING MENTAL HEALTH AND WELL-BEING RESPONSE

WPI's Mental Health & Well-Being Task Force (MHWBTF), led by Jean King, Peterson Family Dean of Arts & Sciences, and Matt Barry, assistant director of Student Development & Counseling, gathered feedback from the community about mental health concerns. MHWBTF has completed its work and shared recommendations for how to best support wellness on campus. The reports, posted on the WPI Be Well Together web page [www.wpi.edu/student-experience/resources/be-well-together], form the foundation of work by the Mental Health Implementation Team (MHIT).

Led by Senior Vice President of Student Affairs Philip Clay and Director of Emergency Management Ron Bashista, MHIT is charged with evaluating and ensuring progress on recommendations from the MHWBTF reports and other sources, including the Riverside Trauma Center. Clay and Bashista worked with partners across campus to manage the university's COVID response and will employ the same partnership model in MHIT.

Initial work by MHIT will be conducted by sub-teams focused on priority areas that emerged from the initial student-centered report completed in January. These include student life; academics; programs, training, and services (including the Center for Well-Being); first year experience; and communications.

Sub-teams are composed of staff, faculty, and undergraduate and graduate students, and will liaise with parents. MHIT's work will expand to address the needs of underrepresented student populations as well as faculty and staff. Updates will be shared with the community through the Be Well Together website and biweekly email.

—Alison Duffy



DIRECTOR NAMED FOR THE NEW CENTER FOR WELL-BEING



Paula Fitzpatrick, PhD, joined WPI in February as the inaugural director of the new Center for Well-Being, which will provide wellness programming and support for the campus community.

As part of a holistic approach to wellness, spanning academic and non-academic aspects of the student experience and work/life balance, the Center will apply evidence-based practices to promote well-being for students and the broader WPI campus community, recognizing the importance of faculty and staff in creating, maintaining, and modeling a healthier environment for all.

"I am delighted that Paula will help make the university's vision of wellness on campus a reality by leading the efforts to create both the physical space for the Center and new programming that aims to help students develop the tools they need for their overall well-being as they successfully navigate college life," says Charles Morse, LMHC, associate dean and director of WPI's Student Development and Counseling Center. "WPI planned the Center for Well-Being as part of its 2021–2026 Strategic Plan: Lead with Purpose, and the current national climate surrounding mental health and well-being has made it even more critical that we implement that vision now."

Fitzpatrick joins WPI from Assumption University where she was the dean of the D'Amour College of Liberal Arts and Sciences, a professor of psychology, and a certified mindfulness meditation teacher. While at Assumption, she forged campus-wide collaborations between residential life, academics, and student success, and strengthened its programming for first-year students, while providing vision and leadership for the university and its faculty. She has taught many courses on psychology, including Positive Psychology: Neuroscience of Well-being, Psychology of Art, and general cognitive and experimental psychology. She is certified as a Koru Mindfulness Teacher and an MSBR Mindfulness Teacher and has taught courses including Mindfulness-Based Stress Reduction (MBSR), Koru Mindfulness, and Perception. She will join WPI as an affiliate faculty member in the Psychological and Cognitive Science program.

At WPI, Fitzpatrick will work closely with a team tasked by the university to implement recommendations developed by the Mental Health and Well-Being Task Force, a group convened last fall to assess student, faculty, and staff mental health needs in the wake of a number of student deaths at WPI. She will also collaborate with key campus partners in the university's counseling, health services, marketing communications, physical education/athletics, residential services, and dining services offices. She will work closely with academic departments to develop opportunities for student project-based learning experiences aimed at improving campus well-being.

—Diana Fiorentino



UNITY HALL DESIGNED TO BUILD CONNECTIONS

WPI's newest addition to campus, the 100,000-square-foot academic and student academic services building known as Unity Hall, opened in January at the beginning of C-Term. The name reflects, in part, a growing focus throughout the university on social justice and inclusion. It also suggests the many ways that the stunning structure—designed by global architecture, design, and planning firm Gensler—builds connections that will benefit the university community and the world.

Within its five floors, the building brings together several computationally intensive academic and research disciplines that are hallmarks of what has become known as the fourth industrial revolution. It pulls together several student services, previously

spread across the campus, creating the Oliver Student Academic Services Center: a “one-stop-shopping” nexus for students seeking everything from academic advising to career planning.

The building also provides a convenient and accessible link between the main campus, which sits atop Boynton Hill, and the lower campus, particularly the student residences on the eastern part of the campus and the academic and research programs at Gateway Park. In addition, Unity Hall, with its project-based academic programs and cutting-edge research activities aimed at addressing complex global issues and preparing students for careers that may not yet exist, will help the university forge strong connections with partners in industry, academia, and government—in the United States and around the world.

“Unity Hall, one of the most significant buildings on the growing WPI campus, represents a historic commitment by this university to the future of purpose-driven STEM education and research and to meeting the needs of our students and the greater WPI community,” says President Laurie Leshin.

“This magnificent building is also a reflection of the growing importance of collaboration in this increasingly



interconnected and interdependent world, where the nature of work and the needs of the workforce are changing in profound and unpredictable ways. To prepare students to excel in a future where the majority of occupations have yet to be invented and to help our researchers tackle problems across a spectrum of emerging disciplines, we need to be able to bring together expertise, ideas, and innovation in new and groundbreaking combinations. That is the central idea embodied in Unity Hall.”

The new building has received significant philanthropic support from alumni, trustees, and friends, including foundations and trusts. In total, WPI has received more than \$19 million from 419 donors to the new building, all in support of Beyond These Towers: The Campaign for WPI, the university's \$500 million campaign. These commitments include a \$5 million pledge from the Alden Trust in the form of the Alden Trust Challenge. The trust will fulfill the pledge when WPI raises \$20 million from alumni and trustees; just over \$13 million has been raised for the challenge to date. Commitments to the new building also include those from alumni to name the John P. van Alstyne Academic Advising Suite in the new Oliver Student Academic Services Center.

—Michael Dorsey



FOR CONDUCTOR ABIGAIL KOO, MUSIC MAKES THE WORLD A BETTER PLACE

Five years before joining the WPI Orchestra as its new conductor, Abigail Koo was building a career as an award-winning musician, with the talent and educational pedigree needed to command prestigious podiums around the world—such as those in Lucerne, Salzburg, Moscow, and Seoul—and across the United States. A prolific solo pianist, chamber musician, orchestral violinist, and conductor, she studied and collaborated with eminent conductors and kept up a rigorous performing schedule.



PHOTO BY

But in 2016, she put a pause on her career and moved to Cambodia with her husband and two young children, committing to five years of humanitarian work to serve others and putting her Christian faith into action.

“I don’t believe in art for art’s sake. There are greater, more important things in the world,” she says. “Life is not about your career or even performing beautiful music in concert halls. It’s about making a difference in people’s lives and making the world a better place.”

She particularly wanted to help those suffering from the aftermath of war, “because they need healing in their hearts. And that’s what music does,” she says.

In those five years, Koo founded two music schools for disadvantaged children, one in Battambang, Cambodia, and one by the eastern border of Myanmar, where internally displaced people live in harsh conditions. In addition to supporting music and fine arts education, she raised (and continues to raise) money from around the world for scholarships for young women, as well as for food, shelter, and musical instruments, successfully establishing programs that can be supported from a distance.

“What touched me the most was the resilient strength of the people of Cambodia and Myanmar after what they’ve been through,” says Koo, whose parents grew up in post-war Korea. “I’m still relatively young, and my kids are young enough, so focusing on this project at this point in of our lives seemed right.”

Breaking the Gender Barrier

Koo received her undergraduate degree in piano performance from the Manhattan School of Music and her master of music degree and performance diploma for postgraduate study at Indiana University. She also undertook doctoral studies in orchestral conducting as a Dean’s Merit Scholarship recipient.

Throughout her studies and in her career, Koo has been undeterred by the gender biases she has encountered in an industry dominated by men, an imbalance shown starkly in the fact that the top 25 orchestras in the United States are all currently led by male conductors.

“I’m quite short in stature, too, which doesn’t really help when someone is looking for this grand maestro on the podium,” she says. “But I’m not deterred by the naysayers because if you are passionate about something, you shouldn’t let society, or your family, or anyone dictate what you do. Musicians are the first ones to know who is genuine or not. They are the first ones to know who is faking up there and who is actually making music.”

Koo says she can relate to the challenges faced by women in science fields traditionally dominated by men, and hopes she can offer a positive example of success.

“Don’t let gender bias deter you from what you want from life. It’s going to take hard work and determination—there’s no way around that. Because of your gender, there may be more obstacles. But don’t wait until those paths are cleared for you to go forward,” she says. “And as you go forward, other people will get inspired.”

The Appeal of WPI

Upon returning from Cambodia, Koo made the deliberate decision not to return to the insular classical music world of conservatories and professional orchestras. WPI’s project-based learning appealed to her, especially the emphasis on how STEM interacts with the world.

“Many classical musicians focus on preserving music as if it was in a museum. Music is supposed to connect to other parts of life, such as literature and technology,” she says. “At WPI, students are not just learning from their textbooks and in their classrooms. Their whole education is about going to places and making real-life changes.”

Koo is leveraging the orchestra’s endowment, established by generous alumni who recognize how important music was to their STEM education, to invite guest musicians and master instructors to campus so students can learn from the industry’s best talent.

“At WPI, I envision a place where students can connect with world-class musicians and get conservatory-level training,” she says. Some examples: Boston Symphony Orchestra’s assistant principal cellist Oliver Aldort taught a master class this spring; internationally acclaimed trumpeter Christopher Coletti served as a guest soloist at the orchestra’s performance in February; and violinist Gary Levinson, associate principal concertmaster of the Dallas Symphony Orchestra, visited in April.

“These instructors are top-notch musicians. They are also excited to have an influence on the students who will be making the world run once they graduate,” Koo says. “I want students see that you really can excel in both music and science.”

She is also hoping to establish a more formal relationship between the Boston Symphony Orchestra (BSO) and WPI, creating a pipeline for more master instructors and guest performers, in addition to establishing a partner for future Interactive Qualifying Projects.

“The BSO is interested in making an impact beyond their community. What better way than to connect with the future technology innovators at WPI,” she says. “And WPI will be the only STEM school to partner with a major symphony orchestra.”

—Kristen O’Reilly

INSIDER

JEREMY TRILLING '22

A CREATIVE VISION TAKES FLIGHT

Jeremy Trilling '22 has the kind of imagination that's exciting and a little mind-boggling—one that envisions a future where the jet stream moves packages, and people, around the world.

"Having this third dimension of traveling will enable a lot more use of space and evoke more awe in everything," he says. "People will be awestruck by the world we live in."

Keeping up with Trilling's lightning-fast thought process can shift most people into perpetual catch-up mode as they try to grasp the nebulous ideas he sees as nearly concrete. And while that might be an intimidating trait in some, Trilling's affable, kind, and exceptionally easy-going manner pulls others into the realm of possibilities. He wants you to see what he envisions because that's half the fun of it.

In the years since Trilling's unconventional arrival at WPI in a flying electric vehicle he built and nicknamed "the pumpkin carriage," he has been a tireless maker, using all the tools at his disposal—some of his own creation—to expand the realm of air travel.

Trilling found unexpected academic and professional opportunities despite the pandemic's arrival in the middle of his WPI years. With remote

courses and two summers and a semester-long co-op at aerospace manufacturer BETA Technologies in Burlington, Vt., he did a lot of hybrid learning. "It was an amazing learning opportunity I didn't expect," he says.

He worked with BETA's fleet of helicopters and fixed-wing airplanes to help advance the company's mission to manufacture electric vertical take-off and landing (eVTOL) aircraft, says Trilling, which gave him purposeful hands-on experience.

"I'm taking a standard two-person helicopter and converting it to electric propulsion," he says. "It's lots of deep learning." He has also helped BETA create a six-person capacity eVTOL with fixed wings and rotors. Not content to understand only the ground operations, Trilling recently earned his full private helicopter pilot's license.

He also dove into WPI's innovation and entrepreneurship ecosystem, tapping into WinterSession, Value Creation Initiative, Tinkerbox programs, and the I-Corps program. "It's a blessing to be part of a student community to help me through design projects," he says, noting that the programs also offered connections with I&E leaders, business leaders, and alumni who have guided his path and who share his enthusiasm.

Trilling's robotics engineering major augments all the technical details. "The curriculum has done a nice job of overlapping the kinds of

things I wanted to learn," says the California native. "The amount of creative confidence and skills I've acquired has been noticeable, for sure. I have learned other skills to help me create the things I want to see in the world."

When Trilling talks about flying vehicles, he doesn't just mean airplanes, or even typical things you'd see when you look up. His focus is now on lighter-than-air aircraft and how to access and use the airspace at about 30,000 to 50,000 feet. At that point, the jet stream takes over and can move things quickly around the world in the west-to-east 100 mph currents, he says.

Getting to those heights begins a little closer to the ground. His recent work focuses on developing an electric propulsion system to allow the pilot of a hot air balloon to retain full lateral control of the balloon's position while still maintaining altitude control with the propane burner, he says. He's also working on developing a 50-foot vertical airship-lifting envelope that can be attached to heavier objects to supplement lift with less motor use.

Linking his fascination with air travel to watching the magical animation movies of Hayao Miyazaki in Studio Ghibli, Trilling's imagination embraces cargo, airships, and even tiny flying homes moving in that space. "If you float up there you can go around the world in about 10 days with no real energy usage," he says. "I can foresee this being a very low-cost and green way to transport very large goods domestically and internationally."

On campus, Trilling is easily spotted getting around on any one of his electric vehicles (he's also retrofitted a 40-foot-long, solar- and electric-powered bus—basically a machine shop on wheels). It's a great way to meet people in what he calls WPI's "delightful community" and to find personal satisfaction. "It just adds to a general enhancement of your day," he says.

He's so committed to WPI's maker community that his IQP team's project focused on developing a comprehensive list of where to go and who to talk to for all the campus maker spaces. For his MQP, Trilling will work on a precision aerial drop device for safely detonating and disposing of hazardous land mines. The project is appealing for its immediate use, but he's even more interested in the potential. "I can see this for package delivery," he says, "and getting things from the air to the ground."

And as a prolific creator, Trilling says his inevitable failures offered lessons along the way. A particularly nasty hot air propulsion system test that went wrong resulted in a shattered propeller that landed frighteningly close to Trilling's eye. "That taught me to take it slower, to be more cognizant, and to not rely on others for your own safety," he says. "It calmed the pace a little."

Trilling arrived on campus hoping to find others as motivated as he was to explore what's possible. He wasn't disappointed. "A few days ago I went through some awesome design work with friends and professors," he says. "The hype of foreseeing a future that's creatable is the awesome part of this community—and having the freedom to create and the tools to do so."

—Julia Quinn-Szcesuil

PHOTO BY DAVID SEEVER

STEM EDUCATION CENTER DIRECTOR KATHY CHEN

As the center celebrates its 10-year anniversary, how has your mission evolved?

The STEM Education Center grew out of the WPI K–12 Outreach Office, led by Martha Cyr. Her approach was to focus on the educator/teacher as one of the most effective and impactful ways to support STEM education for K–12 students. As our center has grown in offering high-quality professional development (PD) for educators and is now managing the undergraduate Teacher Preparation Program (TPP) at WPI, we've also been able to extend our ways of supporting STEM education by looking beyond the classroom. K–12 students spend more hours of their lives outside the classroom, and we take a systems approach to how people learn in different contexts to inform our work. We purposefully collaborate with the local community (such as after-school programs) to support engaging STEM learning opportunities that they might not otherwise have access to. Our vision is a world in which empowered educators guide relevant, integrated, and inclusive STEM with their students and community.

Teachers in general are under great stress. How are you supporting STEM educators in these difficult times?

When everything went virtual back in March of 2020, we immediately began the process of searching for online resources to better guide educators in teaching virtually, ultimately creating our Teacher Resources webpage (which has since expanded). We also converted our in-person

STEM Club to an online format and began holding weekly Virtual STEM Meet-ups, where we would share various resources to offer tools and support for educators. In addition, during the summer of 2020, we offered both introductory and advanced online teaching PD sessions for educators. Throughout the pandemic, we built in time and space for teachers to share their experiences, their struggles, and their triumphs. Knowing that they weren't alone and having the opportunity to just be in a supportive space together has often brought comfort during these challenging times.

How is the Center working to diversify both STEM learners and educators?

We spent a considerable amount of time doing our own homework to learn and have critical conversations about the systemic barriers that exclude different groups from STEM. And we are still learning! We continue to examine how we can shift our own practices to be equitable and anti-racist, and how we can help others along in that journey. One of our most well-attended PDs in summer 2021 was on equity, inclusion, and anti-racism for high-quality STEM learning. We infuse culturally relevant pedagogy into many of our trainings to encourage educators to be more equity-minded, which leads to better learning for all students. To diversify STEM learners and educators, it's not just about numbers and representation; we must create an inclusive system where people can thrive by being their authentic selves.

Our Teacher Preparation Program is actively trying to get the word out about how inclusive teachers can make a significant difference in the lives of younger students, and we recently received a National Science Foundation (NSF) Noyce grant to help diversify the teacher workforce. We are also part of the Worcester area ASPIRE Regional Collaborative to develop inclusive and diverse STEM faculty across the nation by preparing graduate students to teach at community colleges.

What STEM Education Center research projects excite you?

We've recently received a number of grants from the NSF and from the Massachusetts Department of Elementary & Secondary Education (DESE) that further our work in transforming STEM education. Mia Dubosarsky is the principal investigator (PI) on the research about Partnerships for Advancing Computational Thinking in PreK-5 Classrooms, and Shari Weaver is the PI on a Noyce project on Cultivating University-School-Community Partnerships in Preparing STEM Undergraduates to Teach in Urban Environments. Our Professional Development Team (Mia Dubosarsky and Donna Taylor) is currently working with DESE in a statewide initiative for innovative assessment and is using the open-source curriculum OpenSciEd. Most recently we announced applications for our NSF Research Experience for Teachers (RET) Site—Engineering for People and the Planet: Research Experiences to Teach Integrated STEM. This particular grant pulls together our entire staff, in addition to working with WPI faculty, to provide an incredible experience for pre-service (i.e., our TPP students) and in-service (classroom) teachers in our area.

What might someone be surprised to learn about the Center?

There are only five full-time staff members that make up the STEM Education Center, yet we do a lot! We work with over 500 teachers on an annual basis and around the world. We've partnered with the state of Nevada and a team of educators in the Philippines. We also work locally with Worcester community-based organizations (through the Worcester Education Collaborative Woo-Labs initiative) in providing project-based learning experiences for K-6 students. We also have a dog in the office.

What will be the biggest challenge in STEM education over the next 10 years?

The next 10 years will require that STEM education be more culturally responsive and meaningful to all students—both in content and pedagogy (i.e., how concepts/skills are taught). Rather than upholding systems that have excluded and marginalized several groups from STEM, we have the obligation to enable a system and culture where diversity in assets, life experiences, and funds of knowledge are valued and utilized in STEM.

With the world's complex problems intensifying, STEM education needs to adapt to be more holistic and grounded in local context that includes other disciplines, such as the humanities and social sciences. The next generation of problem solvers won't necessarily be drawn to specific fields but to ways in which they can be authentic change agents in their communities and across the world.

Visit the WPI Journal online for extended answers, [WPI.edu/+ChenQA](https://wpi.edu/+ChenQA)

PHOTO BY MATTHEW BURGOS

GLOBAL IMPACT

DISPLACED TEAMS ADVANCE RESILIENCY PROJECTS IN PUERTO RICO

In Spring 2021, sensing that pandemic-fueled international travel restrictions were not going away anytime soon, Professor Emeritus Scott Jiusto and Associate Professor Gbetonmasse Somasse began looking for an alternative travel experience for students scheduled to head to the Cape Town, South Africa, Project Center they co-direct. They weren't alone. Many global project center directors were faced with the same conundrum, recognizing that—for many students—leaving campus and traveling abroad are essential parts of the distinctive Interactive Qualifying Project experience.

They considered all domestic alternatives and were intrigued by the Puerto Rico Project Center (PRPC), a well-established center that has hosted groups of WPI students for more than 30 years.

"The Puerto Rico Project Center offered an opportunity for a cross-cultural experience and to do the same kind of community-engaged work we do in

South Africa," says Jiusto. He approached Assistant Teaching Professor John-Michael Davis, in his first year as the PRPC director, who jumped at the chance to collaborate and learn from the more experienced Jiusto.

The team worked with Kent Rissmiller and the Global Experience Office to ensure travel to Puerto Rico was even possible. Then in June 2021, Jiusto and Davis, now co-directors of PRPC, headed to the U.S. territory to meet with local nonprofit groups to identify 11 or 12 new projects for displaced students, including some who were also being redirected from the Albania Project Center.

"Many were new sponsors because we knew the regular cycle of Puerto Rico students come in D-Term and we didn't want to overwhelm those sponsors by asking them to do it twice," says Jiusto. They met with many small, grassroots organizations that were working on similar themes: resilience in the face of environmental disasters brought on by climate change; and repurposing of the hundreds of abandoned schools throughout the island, buildings closed due to residents migrating to mainland United States, government austerity measures, or occasional corruption.

Puerto Rico

"These schools were shut down in a very top-down manner with little community engagement. Some are being sold to developers, but it's causing all sorts of access problems," says Davis. "It's really inspiring to see all these small organizations pull together to reclaim schools that have been in their communities, in some cases over 100 years."

Community Resiliency

Two student teams worked with local leaders who dreamed of turning an abandoned school into the Cubuy-Lomas Community Services & Development Center, where residents can access health care, education and job training, computer services, and clean water, especially in emergencies.

"The center will provide the community with resources to become more resilient, particularly to natural disasters such as hurricanes, and also to provide additional services to community members on a day-to-day basis," says Somasse, who served as an advisor to both projects.

One team focused on ways to harvest clean, potable water and generate off-grid power in the case of emergencies. A second team built a website for the center that includes videos, a 360-degree tour, and computer-aided design models to promote the center and aid in fundraising.

"When we first came down and saw them in July, it was just a building and two guys who had a vision. There wasn't even paint on the walls," says Davis. Due to the tenacity of the sponsors, the building is now ready to host businesses, such as a pharmacy or health care center.

Talia Mamayek '23, whose team worked on the water and power resiliency project, says the spirit of the local residents is what she will remember most.

"The best part of my experience was having the opportunity to meet such inspiring and ambitious people such as our project sponsors, who truly have big hearts," she says. "I was also exposed to the complexities and challenges that most nonprofits face with gaining support for their initiatives, spreading the word, and envisioning the long-term social

impact of their work, such as reducing vulnerability and building resilience for their community."

Serving as a Network

Robert Hersh, instructor/lecturer, and Leslie Dodson, assistant teaching professor, advised other PRPC teams that worked on emergency preparedness, mangrove reforestation outreach, and recycling efforts in the town of Piñones; helped strengthen the volunteer program in the Caño Martín Peña area; provided GIS data for Para La Naturaleza, an organization working to conserve natural protected areas; analyzed the El Yunque National Forest visitor experience in the Rio Sabana Recreation Area; and advised the Museo de San Juan on website development to better share the history and culture of Puerto Rico.

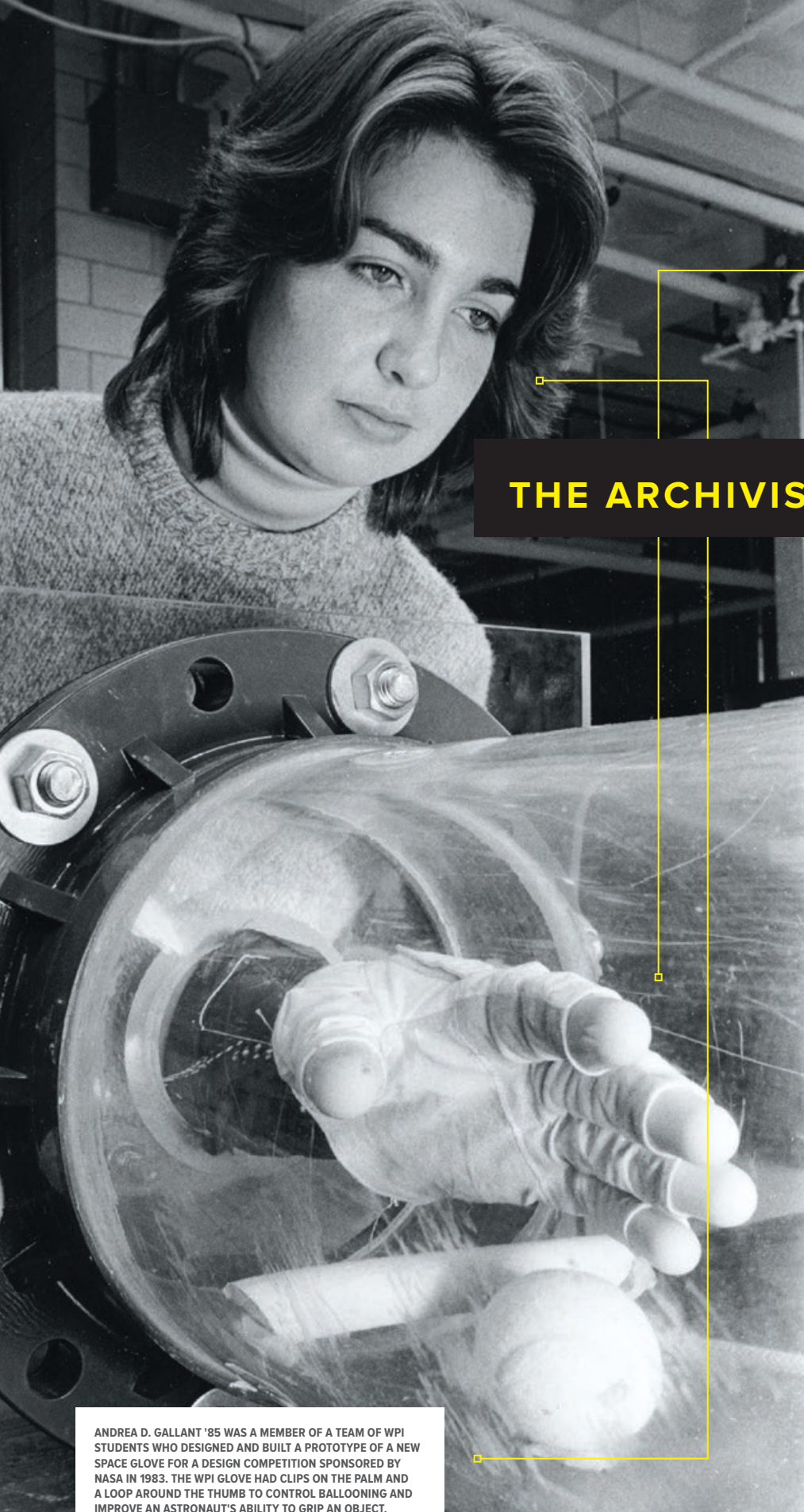
"We know that students get a great experience when they work with tiny organizations that value their presence," says Jiusto. "And we want some thematic foci of what we do, consistent with the Global School's vision to have more impact with our project centers."

Six teams are scheduled to return in D-Term, working in four different communities that are wrestling with similar issues.

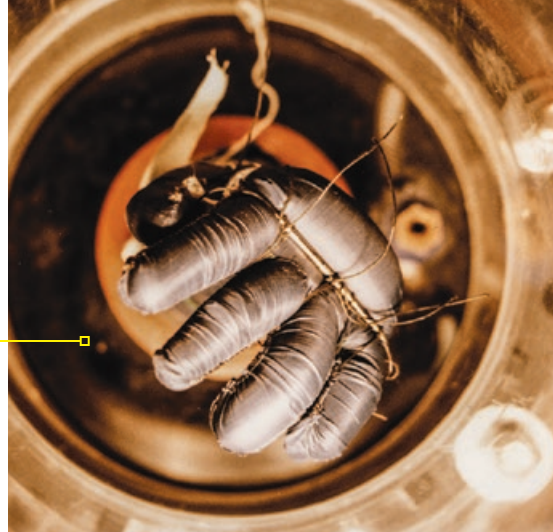
"One of the cool things is that we're able to serve as a network and bring these different communities that are struggling with the same challenges into conversation with each other," Davis says, especially the many groups working to reclaim abandoned schools so they can share ideas and work collectively on policy decisions.

"It's such a welcoming place, which is part of why we got excited," says Davis, who notes that going forward they are planning to send teams in both C- and D-Terms, possibly for students in the community climate adaptation master's program. "The sponsors were really excited and saw the value in just having enthusiastic students showing up on site and pushing the ball forward."

—Kristen O'Reilly



ANDREA D. GALLANT '85 WAS A MEMBER OF A TEAM OF WPI STUDENTS WHO DESIGNED AND BUILT A PROTOTYPE OF A NEW SPACE GLOVE FOR A DESIGN COMPETITION SPONSORED BY NASA IN 1983. THE WPI GLOVE HAD CLIPS ON THE PALM AND A LOOP AROUND THE THUMB TO CONTROL BALLOONING AND IMPROVE AN ASTRONAUT'S ABILITY TO GRIP AN OBJECT.



THE ARCHIVIST | Helping NASA Reach for the Stars

In 1983, nine WPI students along with their faculty advisors traveled to Washington, D.C., to share their prototype for a new space glove with 70 NASA administrators, scientists, and engineers. WPI was one of four schools to appear, after being selected from a nationwide challenge issued by NASA and sponsored by the American Association for Engineering Education (AAEE).

Students were challenged to design a space glove that could both withstand 8 psi and permit astronauts to retain the manual dexterity needed to complete complex tasks. Prior space suits used in extravehicular activity were pressurized only to about 4.3 psi. At this lower pressure, astronauts underwent lengthy decompression procedures upon their return to the space shuttle to prevent decompression sickness.

With a grant award of \$30,000, WPI faculty organized an Major Qualifying Project team of 11 students under overall project director Professor William R. Durgin. The primary requirement of the glove was the ability to grasp a 1½" diameter cylinder. The WPI team instead chose to design a glove that could pass not only that test, but also other tasks that functioned for all six grasping patterns: cylindrical grasp, tip, hook, palmar, spherical grasp, and lateral. The MQP team designed various tests for each of these patterns and tested them in a custom pressurized tube.

NASA officials, impressed with innovation shared by the students, invited the MQP team along with fellow finalists from MIT, Oklahoma State, and Kansas State to Cape Canaveral to experience a shuttle launch as VIP guests. Now housed in the WPI Archives, the prototype glove is one of WPI's many contributions to space exploration and innovation.

—University Archivist Arthur Carlson, assistant director of George C. Gordon Library

RECLAIMING HOTEL LAUNDRY WASTEWATER

Winners of Best in Show in The Business School's MBA Capstone pitch competition in Fall 2021.

THE STUDENTS

Justin Deveau, Chris Dunn, Tim Ellsworth, Tyler Gibbs, and Alex Witkin

THE BACKGROUND

Water scarcity is a growing problem. In the US, drought-like conditions have become more severe in western and southern states such as California, Oregon, Nevada, and Texas. At the same time, water prices have become more expensive year after year. Within the hotel industry, laundry is the top contributor to water waste. With more than 85,000 hotels in the United States, imagine the impact that can be made to preserve water and save hotels money if there was a way to improve their water use?

THE SOLUTION

The solution is Reclaim, which uses tangential flow filtration (TFF) technology to recycle greywater from laundry, resulting in up to 95% water reuse. Reclaim is the first to integrate TFF—already being used by pharmaceutical companies—into a filtration system. This technology's hollow fiber structures allow for more efficient filtration and, most important, fewer filter changes compared to current filtration systems on the market. Reclaim's product is easy to use and is affordable to operate and maintain. It also fits within the footprint of existing commercial laundry machine systems.

See how WPI students put theory into practice through projects.

[WPI] PROJECTS

THE EVOLUTION OF AN IDEA

Our project evolved tremendously over two semesters, but our company's mission didn't. We were always focused on finding a solution that helped prevent water waste. Initially, we couldn't figure out how our idea differed from others on the market, but then we shifted a bit in hopes of being successful in the market. We began researching water scarcity and seeing what industries and what parts of the country face it the most. We then narrowed in on hotel water use, then laundry greywater, and—with more research—we learned about the benefits of TFF, a different system from filtration, which is already on the market.

THE PITCH

We had a great time presenting in front of the judges. They provided helpful insight about ways to move forward as a company as well as suggesting some markets to explore. They also were impressed with our go-to-market strategy and that our product focused on a market and environmental need. Ultimately, we decided not to continue with the idea after class ended, but we do see opportunities for this idea to work. Greywater recycling at hotels was just the beginning of what we had in mind for Reclaim and in our mission to see a world without water waste.

Peter Hansen

PROFESSOR OF HISTORY AND INTERNATIONAL AND GLOBAL STUDIES

SOCCER BALL

I love classes on global sports and projects on the U.N. Sustainable Development Goals (SDG). Scoring a “goal” with SDGs feels like winning the World Cup of theory and practice!

TIBETAN PRAYER FLAGS

Flags fluttering in the wind release auspicious prayers for health, fortune, compassion, and peace in the Himalayas and beyond.

LYON LION

A dynamic city and capital of gastronomy, Lyon offers great projects, a taste of the French art of living, and the Alps on the horizon.

THE SUMMITS OF MODERN MAN

This book was the culmination of decades of research around the world on mountaineering and modernity since the first recorded ascent of Mont Blanc in the 18th century.

BATTLE FOR THE HIMALAYAS DVD

I’ve appeared on several BBC television shows ... this one was about filmmakers on Mount Everest.

MAPS

A lifelong map geek, I look for old-school maps at project centers. They’re handy when your phone battery runs down.

PRESIDING GENIUS OF THE PLACE

A change agent and first dean of undergraduate studies, Bill Grogan brought the WPI Plan to life in 1970, launching project-based learning around the world.

PHOTO BY TODD VERLANDER



FACULTY

SNAPSHOT

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

A RUN FOR THE
RECORD BOOKS

Harrington Auditorium was rockin' on March 4 and 5 as WPI hosted the first round of the Division III NCAA Men's Basketball Tournament. The Engineers, the NEWMAC Conference regular season and tournament champions, won both games that weekend, and went on to beat RPI in the sectional finals to qualify for the NCAA Division III Quarterfinals for the first time since 1985. The team finished its season 27-3, the most wins in WPI men's basketball history.



PHOTO BY MATTHEW BURGOS

SENSE OF PLACE



A HUNGER SATISFIED

Once a poor teenager with audacious dreams, Misael Diaz '10 defines his own destiny and finds success as an entrepreneur and leadership coach.

BY AMY CRAWFORD
PHOTOS BY TERRI GLANGER

W

hen Misael Diaz was getting his business started, for the first few years he carried two smartphones. On one he was Misael Diaz, bilingual certified leadership coach, speaker, and trainer, with clients around the United States and Latin America. On the other he was his own assistant, “Sarah,” who set up meetings and coordinated his schedule via text messages and email.

“I was a solopreneur for a long time,” Diaz says. “I was working 16, 17 hours a day. I was doing it all. I couldn’t afford an assistant, so I came up with the idea of having two phones just to give the feeling of a real business.”

Over time, he recruited a real team—or, rather, a team coalesced around him. First came a content creator based in Spain, who had started off following Diaz’s inspirational social media streams before reaching out with an offer to contribute. Then came graphic designers in Venezuela, a director of operations in the Dominican Republic, a salesperson in Canada, and—eventually—a real executive assistant in Dallas, where Diaz now lives, which meant he no longer had to carry two phones.

Today, his company, Advanced Leadership Consulting, has nine employees, all of whom work remotely, helping to market and sell Diaz’s skills as a leadership coach to clients including Starbucks, AT&T, and Avon, with a focus on the Spanish-speaking business world. He spends much of his time traveling, helping managers and regional supervisors from Panama to Miami to Phoenix set goals, invest their companies’ human resources wisely, and identify and meet challenges that may be coming their way.

“I teach principles and systems that bring you a return on investment—strategies that will impact the bottom line of your business through your employees and collaborators,” Diaz says. “It all starts with leadership, and we talk about thinking about possibilities, not problems. When you are challenged, are you seeing a problem, or are you seeing a possibility? Because the whole difference is going to be right there.”

A HUNGRY START

Diaz is the first to admit that his life has brought plenty of challenges—and he didn’t always see them as possibilities. The third of four sons, he grew up in La Romana, a port city near the southeastern tip of the Dominican Republic. His parents had little formal education, but both were very religious and studied the Bible extensively, eventually becoming popular pastors. That fell apart in 1998, when his father’s adulterous affair led to his family being cast out of their church.

“Neither my mom nor my dad knew how to do anything else,” Diaz says. “They never graduated from high school, and they did not know any other activity to earn money. Outside of the church, they had no careers. So, we struggled. I remember emptying my neighbor’s trash for a couple of pesos. We lived near a bakery, and I used to collect the leftovers. When

they made a cake, and they cut it in pieces, sometimes they would throw away little scraps, and that would be our lunch.”

As Diaz and his brothers scrambled to help the family survive by taking odd jobs—polishing shoes on the street, selling produce and candy—his parents’ marriage was falling apart. In 1998, when he was 13, his parents told him they were getting divorced. “It was the scariest moment in my life,” he says. “I felt like my stomach just dropped. I felt abandoned.”

After his father moved out, his mother decided to seek work in Worcester, where she would have the support of a large Dominican community, leaving Diaz and his younger brother in the care of a relative. His mother worked the overnight shift at a warehouse, sending money home to support her boys. But the relative seemed more interested in the money than in the boys, and Diaz, still angry about what he saw as his father’s betrayal, decided to move out and fend for himself. Just 14 years old, he found a job as a caddy at Casa de Campo, a nearby golf resort.

“I worked during the day—all day—and I went to school at night,” he says. “I went to a high school program that was designed for people who had dropped out and wanted to come back and get a high school diploma. I was the youngest kid in that program, and I was there simply because I wanted to work during the day and support myself.”

MAKING CONNECTIONS

Things were tough, but fortunately for Diaz, he wasn’t working at just any golf course. The only resort in the Caribbean to appear regularly in *Golf* magazine’s top courses list, it has long attracted marquee names like Bill Clinton and Michael Bloomberg, as well as successful businesspeople from around the Western Hemisphere. Diaz found these people inspirational, and, in turn, some of them took an interest in the charismatic teen. Jeff Taylor, founder of the online job-search company Monster.com, would become a lifelong friend and mentor, as would the late Pierson Mapes, the former president of NBC, along with Mapes’s friends Mark and Polly Kisiel.

“He had a great smile and was just so inquisitive,” Mark Kisiel remembers. “He was very interested in learning English, speaking English. It was clear that he had a future if he could just get exposed to something other than being a caddy at a country club.”

“We used to be concerned about him—we thought he really needed to be in school,” Polly Kisiel says. “We would ask him about it, and he would just smile and say, ‘Well, I really am the best in my class.’ He was a very inspiring young man, for sure. Regardless of all the family issues and everything stacked against him, that was always clear.”

The Kisiels, Mapes, and Taylor all hailed from New England, and they promised to help Diaz with immigration paperwork and financial needs if he wanted to join his mother in Worcester and pursue an education in the United States. The process took a while, but eventually his mother secured a green card and was able to sponsor him. In 2004, he and his brother flew to Boston.

“Jeff Taylor paid for our tickets, and he sent a limo—a 20-passenger Hummer—to the airport, so I got to ride like a celebrity with my brother,” he remembers.

Shortly after the boys reunited with their mother, Taylor’s executive assistant, the late Karen Langford, who was an alumna of Becker College, gave Diaz a personal tour of Worcester and its myriad college campuses. It would be a fateful day.

“She picked me up and said, ‘I’m going to show you around,’” he remembers. “Part of the tour involved WPI. And she said, ‘This is one of the best schools in this area. If you ever get here, this is your ticket. This is it.’ All I heard was, ‘You will never be poor again if you go to this school.’ And in my mind, I made my decision: ‘I’m going to go to school here. That’s it.’”

Diaz told his American mentors about his plan. They helped him meet with administrators at WPI, but the odds were not in his favor. Although he was fluent when it





"I WAS ON PROJECTS AT WPI WITH PEOPLE FROM VENEZUELA, AFRICA, NEW YORK, CHINA. TODAY I CAN MANEUVER AROUND ALL OF THESE DIFFERENT CULTURES, BECAUSE WPI WAS A GLOBAL CULTURE COURSE."

came to talking about golf, his English needed work, and his high school education had not given him a solid foundation in math.

"I wanted to go to one of the toughest schools in the Northeast and I had never seen calculus before," he says. Somehow he prevailed through sheer determination, convincing the Admissions staff that he was worth a chance. In 2005, he was accepted as part of the Excellence in Mathematics, Science, and Engineering Program, which aims to increase attendance by students from underrepresented minorities. His American friends helped him secure scholarships, contributed to his tuition, and guaranteed his loans. In August 2005, he stepped onto WPI's campus as a freshman.

"I still have the acceptance letter," Diaz says. "I'm the first one in my family to go to college in the United States. Going to WPI is something that my family was extremely proud of. So, everybody was happy. But still, I struggled."

FROM HOMELESSNESS TO STABILITY

His first year at WPI, Diaz lived with his mother, who had remarried. Because his stepfather wanted Diaz to help pay the household bills rather than attending school full time, he and his brother moved out. Their situation was precarious, and he spent the summer of 2006 living in his car while working at Highland Liquors, a block away from campus.

"I would cover everybody's shifts," he says. "I would work at night, from 4 to 11 p.m. I would work weekends. I would open Sundays. I would do my homework right there, just behind the counter."

His housing situation improved during his sophomore year, when he got a position as a resident advisor. That covered meals on campus and a room in Daniels Hall, providing Diaz a level of stability he hadn't known before — and affording him the space to focus on his classes. Downstairs, he also found another champion in Dale Snyder, then the director of academic advising, whose office was on the building's first floor.

"I was still struggling," he remembers. "But Dale was my advocate. She was my defender."

Snyder told Diaz about what was then known as the Colleges of Worcester Consortium, which allowed him to take classes at other campuses. She suggested he shore up his math skills with some introductory classes at Quinsigamond Community College, which would lay a foundation for WPI's tougher coursework. Meanwhile, he honed his English with WPI's English as a Second Language Director Billy McGowan and immersed himself in English-language TV, radio, and books.

"I became a fierce reader," he says. "I still read a lot — I've read 15 books in a year. To this day I read constantly. My vocabulary just went up, and it continues to improve."

Diaz also decided to switch majors, realizing that management engineering suited his talents and interests much more than did his initial choice, civil engineering. It would be in his business classes that he learned many of the skills he uses today, including an ability to collaborate and negotiate with people from many other cultures.

"I was on projects at WPI with people from Venezuela, Africa, New York, China," he says. "Today I can maneuver around all of these different cultures, because WPI was a global culture course."

Serial entrepreneur and WPI affiliate professor of practice Jerome Schaufeld remembers Diaz as a natural at the Business School. After

graduation, Diaz worked at a series of companies around the Boston region as an account representative and manager. Schaufeld says he wasn't surprised when Diaz eventually launched his own business.

"From the beginning, I thought him to be a go-getter, a real entrepreneur type," Schaufeld says. "If I had to pick a theme about him, it would be grit. He always had an idea — he was always talking about some opportunity. His is a great WPI story."

CHOOSING HIS OWN DESTINY

As a leadership coach, Diaz has an ear for catchy sayings that can help guide the thinking of his clients or inspire followers of his podcast and Instagram and YouTube feeds. One has also become a sort of personal motto: "Your past is not your destiny." It's also the theme of his book, *Creando una Nueva Historia*, published in Spanish in 2020, with an English version, *Creating a New Story*, due this year.

"I've been in literal misery," he says. "No money. Eating once a week. But I always dreamed."

It's a message he has also passed on to young men who are where he once was, carrying golf clubs for the rich and famous in La Romana, Dominican Republic.

"I've gone back very many times now, very often to the same golf course where I was a caddy — but now I go back as a golfer," Diaz says. He has also organized events for the caddies, offering his life's wisdom to people who could be his younger self.

"I'll talk with them about the opportunity they have — because in my opinion, being a caddy was the best job in my life," he says. "What I tell them is that we all have the same opportunities. The difference is that many of us do not realize that we are in the place of opportunity. We say you need to be 'in the right place at the right time,' but are you aware that you are in the right place at the right time? Because if you're not aware, then it doesn't make any difference."

Looking back on that poor teenager of 20 years ago, Diaz is proud that he seized every opportunity he could — and grateful for the people who saw his potential, from Taylor, Mapes, and the Kisiels to everyone who guided him through WPI.

"I wasn't just hungry, I was hungry for growth," he says. "I didn't express it that way at the time, but people saw it. I was focused, and people got interested in that and said, 'You know what? This is a person who is worth helping.'" 📌

MODERN MANUFACTURING FINDS A HOME

In the high-tech labs of the Advanced Manufacturing Center on Sagamore Road, WPI researchers are transforming how products are produced, repaired, and recycled.

BY MICHAEL DORSEY

OLD VS. NEW: THE NOISY, GRITTY MANUFACTURING SPACES OF THE WASHBURN SHOPS CONTRAST WITH THE MODERN LAB SPACES OF THE ADVANCED MANUFACTURING CENTER AT 15 SAGAMORE ROAD.

Manufacturing is one of WPI's oldest educational and research disciplines, dating to the Institute's founding and the noisy, gritty world of machine tools and metal foundries within the Washburn Shops. It is also among the university's newest, most cutting-edge fields, occupying an emerging area where computer models, sensors, robotics, and new ways of custom-designing raw materials and custom-building complex structures layer by intricate layer are transforming how products are produced, repaired, and even recycled.

The interdisciplinary world of modern manufacturing at WPI has found a home in the new Advanced Manufacturing Center, which, appropriately enough, is housed in a former manufacturing building a short walk from the WPI campus on Sagamore Road. After WPI acquired the building, an idea emerged to use it as a new research center to address the significant growth of research in additive manufacturing at WPI and the need for specialized space for conducting it. Provost Wole Soboyejo championed the idea and, with Bogdan Vernescu, vice provost for research, secured the funding from WPI to undertake the design and construction.

The new center features bright, modern labs filled with analytical instrumentation and other high-tech equipment that are the hallmarks of what Vernescu calls smart manufacturing, or "manufacturing with people in white coats." He says the Sagamore Road building filled a need for a space where advanced manufacturing research can be conducted efficiently and safely. For example, some of that research involves large devices that need extra room for sensors, cameras, and other auxiliary equipment. And two labs work with fine metal powders that need special storage and handling facilities to safeguard against explosions.

"Manufacturing and materials are among the most active and well-funded areas of research at WPI," Vernescu says, "accounting for over 30 percent of our research funding. The Washburn Shops is where this research has traditionally taken place, but that 150-year-old building is not an appropriate place for today's advanced manufacturing research."

The Advanced Manufacturing Center places WPI within the upper echelon of university manufacturing programs in the United States, which, in addition to burnishing the university's reputation, will help attract outstanding faculty members and graduate students, along with additional research funding, notes John McNeill, the Bernard M. Gordon Dean of Engineering. "It is going to enable large, interdisciplinary, multi-institution awards—some really high-impact grants," he says. "To me, this facility is a sign that WPI is growing up and taking its place among top research universities while continuing to do relevant, real-world work."

SPACE FOR COLD SPRAY

Of the 20,300 square feet of space in the Sagamore Road building, about 6,000 consists of shared areas and 7,300 has been left unfinished to accommodate future expansion, leaving 7,000 square feet



FROM LEFT, BERK CALLI, DANIELLE COTE, LIN CHENG, AND JAMAL YAGOOBI AT THE ADVANCED MANUFACTURING CENTER

for active laboratories. The largest of these is the lab of Danielle Cote, assistant professor of materials engineering, whose work for the U.S. Army Research Laboratory first prompted the search for an off-campus location for advanced manufacturing research.

To date, WPI has received about \$40 million in funding from the Army to pursue work related to a cutting-edge additive manufacturing process known as cold spray, which uses pressurized gas to accelerate powders to near-supersonic speeds. The powders adhere tightly to any metal in their path, making the technique an excellent way to repair broken parts—helicopter engine casings, for instance—or make new ones.

Much of Cote's research has focused on the powders themselves, as their characteristics and quality greatly affect the success of the cold spray process. Her team has developed and extensively studied new powders made from aluminum alloys, refractory metals like titanium and tantalum, and copper, which can be

used to apply antibacterial coatings to metal surfaces. They have also pioneered heat-treating protocols that increase the strength of the finished powders.

To support those studies, a 2019 award from the Army, plus other awards from NASA, has allowed Cote to purchase over four million dollars of specialized analytical equipment, including a scanning electron microscope, scanning calorimeters, and indenters, devices that can apply pressure on samples as small as individual powder grains to test their mechanical properties at the micro- and nano-scales.

"With only 300 square feet of lab space in Washburn, we simply didn't have the room for all of this equipment," Cote says. "But the biggest reason for moving here is to have space for actual 3D printers."

Currently, a cold spray printer, controlled by a robot arm, sits inside a large metal box designed to shield researchers from flying metal particles and the noise of the cold spray process. Beside it is a

concrete pad that will soon support a new wire arc 3D printer, which can produce large parts quickly using metal wires and an electric arc to deposit metal layer by layer.

"This is where the funding has been pushing us," Cote says about working with metal wires. "We're getting our feet wet and are excited to do with metal wire some of the same work we've done with powders."

With its most recent funding award, Cote's team is moving into a new domain: cybersecurity. Typically, information for 3D printers is transmitted to the machines wirelessly, making the process vulnerable to hacking. If part designs are intercepted, they can be altered in subtle ways. All but undetectable though normal inspection, the flaws could make the parts subject to catastrophic failure. "We are looking at ways of preventing such attacks," Cote says, "and detecting them should they occur." The work is being carried out in partnership with cybersecurity experts at WPI and other universities.

EXPERIMENTAL VALIDATION

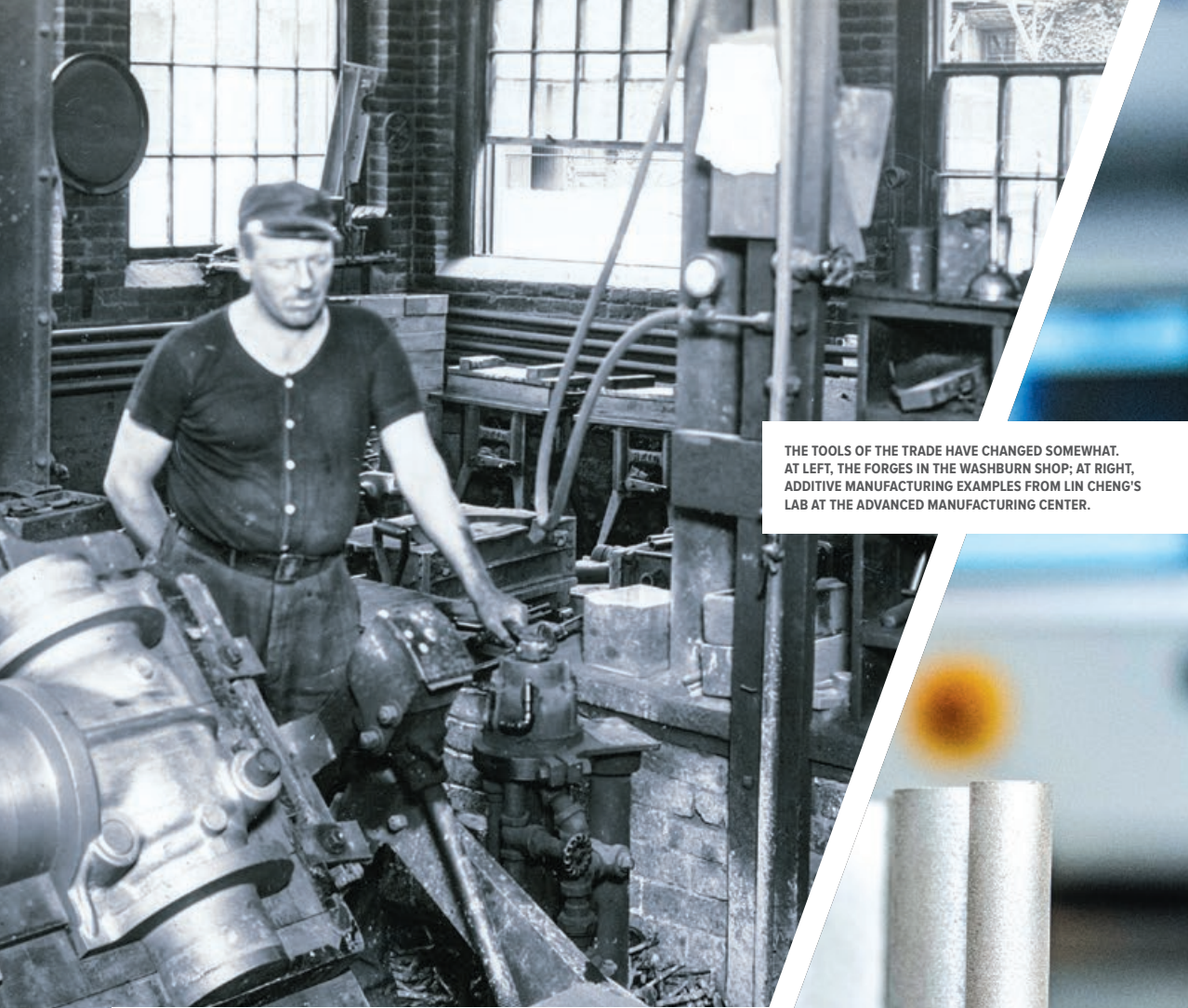
Additive manufacturing is also the focus of research in the Sagamore Road lab of Lin Cheng, assistant professor of mechanical engineering, who joined the WPI faculty in the fall of 2021 in part because of the availability of the facilities in the Advanced Manufacturing Center. His work explores what he calls smart materials, which are metal powders and other metals that are carefully designed to meet specific manufacturing requirements.

Cheng develops additive manufacturing models that employ artificial intelligence to teach the computer models about the underlying physics of the manufacturing process. That education begins with the governing equations for a host of physical phenomena related to material properties and the behavior of metals when they are, for example, melted by lasers in an additive manufacturing printer.

Since the governing equations provide only a partial picture of the additive manufacturing process, Cheng collects reams of data in his lab, which includes a 3D metal printer that uses metal powders as starting materials. Multiple sensors and cameras can be installed to collect data as a part is made, and an attached computer drives the machine using Cheng's models.

"We cannot just do simulations and data-driven computational work," says Cheng, who notes that experimental validation helps fill in the gaps in the models and increases their accuracy and predictive power. In an iterative process, the improved models are tested in the lab to generate new insights that further refine the computational tools. He calls this approach physics-informed artificial intelligence. "We integrate the data we have collected," he says, "and let the models discover the governing equations—to discover underlying mechanisms from the complex physics. This is a kind of scientific discovery."

Cheng's physics-informed models will permit the design and manufacturing of complex structures that have, heretofore, been impossible to make. These include items whose microstructure varies from location to location or from the macroscale to the microscale, to precisely meet the requirements for a particular part. They may



THE TOOLS OF THE TRADE HAVE CHANGED SOMEWHAT. AT LEFT, THE FORGES IN THE WASHBURN SHOP; AT RIGHT, ADDITIVE MANUFACTURING EXAMPLES FROM LIN CHENG'S LAB AT THE ADVANCED MANUFACTURING CENTER.

also include new classes of active materials that respond to changes in environmental conditions, such as a wing surface that alters its shape in response to changing stresses.

Cheng is also interested in using his AI models to optimize the way parts are made using additive manufacturing. The goal is to minimize or even eliminate imperfections that can impair performance. “If we can understand the physics of the manufacturing process,” he says, “we can optimize the microstructure—to essentially have programmable microstructure.”

INTELLIGENT DRYING

Additive manufacturing “is more efficient and less wasteful than traditional manufacturing techniques, so it is naturally sustainable,” notes Cote, who says the Advanced Manufacturing Center’s emphasis on sustainability sets it apart from similar endeavors at other universities. The work of **Jamal Yagoobi**, George I. Alden Professor and head of the Mechanical and Materials Engineering Department, exemplifies that focus.

Yagoobi is director of the Center for Advanced Research in Drying (CARD), an Industry University Cooperative Research Center (I/UCRC) funded by the National Science Foundation (NSF) and run jointly with researchers at the University of Illinois. The center was established to develop new technologies to make industrial dry-

ing more energy efficient. Currently, the drying of moist, porous materials—foods, paper and pulp, chemicals, and pharmaceuticals—accounts for about 12 percent of all the energy consumed in manufacturing and between 1.2 and 1.5 percent of all of the energy used in the United States. “But inefficiency in existing methods means that about one-third of the energy used in drying is wasted,” Yagoobi says.

Central to this mission is a drying research test bed designed by Yagoobi and his colleagues in CARD and currently under construction at RBS (Redding Bakery Systems) in Redding, Penn. Funded by a \$4 million award from the U.S. Department of Energy, the 10-meter-long machine can be augmented with cameras and custom-designed sensors that will monitor samples as they move along a conveyor belt and are dried by technologies developed by CARD research teams. “It will all be driven by artificial intelligence algorithms to achieve optimal drying conditions,” he says.

Technologies to be tested include noncontact ultrasonic wave dryers and a dielectrophoresis-based drying system that is an outgrowth of a multi-year, multimillion-dollar NASA contract for work in Yagoobi’s on-campus Multi-Scale Heat Transfer Lab, work that will help keep electronics cool in space.

“The beauty of these technologies,” Yagoobi says, “is that they will not only reduce energy consumption, they will also deliver optimum properties; a better product, with minimal energy consumption—that’s what this test bed will make possible.” The testbed will arrive in time to be featured at the 2022 International Drying Symposium, which will bring industrial drying researchers from around the world to the WPI campus in June (the first time the meeting has been held in the United States since 1986). “This will be an opportunity to showcase this system, which is the only research tool of its kind anywhere in the world,” he says.

CLOSING THE LOOP

Traditionally, the manufacturing process ended with the delivery of finished products, but today it is becoming a closed loop, where used products are recycled to become the raw material for new products. This stage in modern manufacturing is represented by three Sagamore Road labs. The first is that of **Brajendra Mishra**, professor of materials engineering and director of the Center for Resource Recovery and Recycling (CR³), an NSF I/UCRC run jointly by WPI, the Colorado School of Mines, and KU Leuven Belgium. CR³ conducts a broad range of recycling research, including the recovery of rare earth metals from electronics and red mud (waste from aluminum smelting). A second lab is being established by **Yan Wang**, professor of materials engineering, who invented a revolutionary process for recycling lithium-ion batteries. The patented process generates raw materials for new batteries, which outperform the originals. Wang’s research has been translated into a company, Ascend Elements (formerly Battery Resources), that is building a full-scale battery recycling plant in Georgia.

In his Sagamore Road lab, Berk Calli, assistant professor of robotics engineering, is applying his expertise in vision-based robotic manipulation and his interest in developing socially responsible technological solutions to recycling through two projects. In work funded by a \$2.5 million award from the NSF’s Future of Work at the Human-Technology Frontier pro-

gram, he is leading a team that includes co-principal investigator Jacob Whitehill, assistant professor of computer science at WPI, and experts on sustainability and industrial ecology at Yale and Boston universities. Their goal is to improve the accuracy and efficiency of recycling centers that sort and process paper, plastics, and other household recyclables.

Calli says the goal of the project is to develop robots that can work side-by-side with human workers to help them identify items to be sorted and even grab and place items themselves. The work involves using artificial intelligence algorithms “so the cognitive burden is reduced and the accuracy of the recycling is improved,” he says. “It’s a great example of how robots can aid humans in performing a job, rather than simply replacing people with robots.”

To help design the recycling robots, Calli and his team have assembled a conveyor belt test bed to try out sorting algorithms, active perception systems that enable robots to view objects from different viewpoints to extract more information about their size and orientation, and dexterous in-hand manipulation skills that allow a robot to adjust its grip on an object. These are tools that could be used in a wide range of robot applications, Calli says.

In another project, funded by EMR Group as part of an NSF I/UCRC called ROSE-HUB, Calli is working on the world’s first robotic system that will aid workers involved in ship breaking, in which large ships are cut up to recycle their metals. The goal is to develop a mobile robot that can operate an oxygen- and propane-fueled torch to make cuts with guidance from a human expert, freeing the human from often dangerous work.

The human worker will determine the best location for each cut. The robot will then observe the desired pathway and compute the series of movements it will need to make to successfully complete the cutting operation. Testing prototype robot systems requires a large open space and a place to safely store oxygen and propane gases for the torch. When no suitable locations could be found on campus, the Sagamore Road building, which has an outdoor storage shed adjacent to a roomy parking area, offered the perfect spot, Calli says. “Without the Sagamore building, there is no way we would have been able to conduct these experiments safely.”

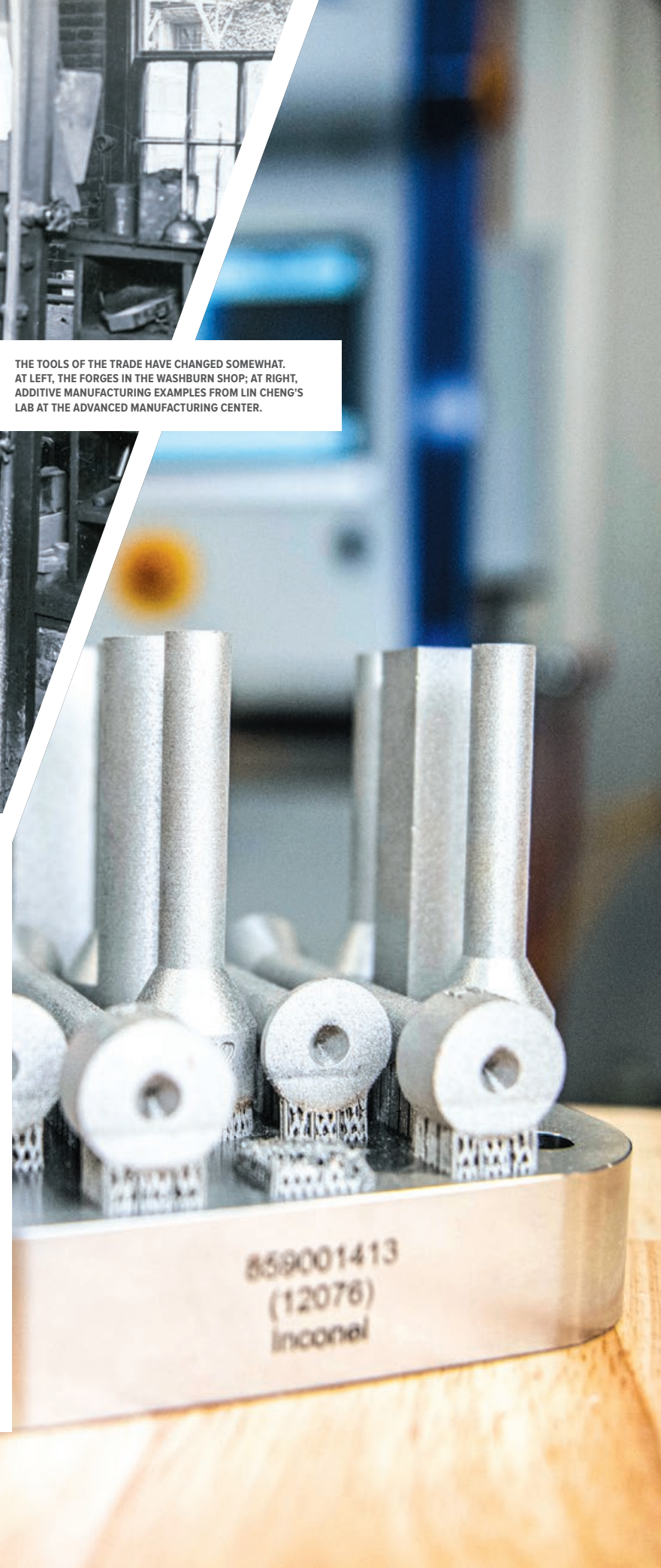
REMOVING BARRIERS

In addition to producing new knowledge and innovative technology, the Advanced Manufacturing Center contributes to the future of manufacturing, locally and beyond, in a number of ways. First and foremost, it is helping educate future manufacturing professionals with the most up-to-date experience, according to McNeill. “Companies know,” he says, “that whatever they have worked on at WPI, our graduates will be conversant with cutting-edge technology.”

In addition, the center will support the local manufacturing community, according to Vernescu. “We want these facilities to contribute to workforce development in the region,” he says. “For example, we can be a resource for universities and community colleges that can’t afford this kind of equipment, to help them train the workforce of the future.”

Cote says her lab enjoys working with local companies that don’t have the advanced technology she has in her lab. “We do small consulting projects,” she says. “It supports our students, and it lets us work with people who may be looking at manufacturing in different ways.”

She says the availability of the Advanced Manufacturing Center has opened up her team to exploring new partnerships and new projects. “I don’t know what is coming next,” she says, “but having this space has removed a lot of barriers and opened the way to try new things.” **1**





Many Giant Leaps for WPI

AS WPI SAYS GOODBYE TO PRESIDENT LAURIE LESHIN, COMMUNITY MEMBERS HIGHLIGHT AREAS OF LASTING IMPACT.

PHOTOGRAPHY BY MATTHEW BURGOS

When Laurie Leshin arrived at WPI in 2014 to serve as WPI's 16th president—a position previously held only by men—she brought with her an esteemed track record as a geochemist and NASA space scientist. Her new assignment was as weighty as it was exciting, even for someone with her formidable academic and leadership experience. With a sharp focus on gender parity in STEM, many eyes were on her.

In eight short years, Leshin's vision and guidance—historically rooted and future focused—have transformed the look and feel of WPI, enhancing and burnishing the university's distinguishing qualities until they shined unmistakably brighter and assumed a more prominent spot in the nation's college landscape.

With the help and support of the WPI community, Leshin purposefully positioned WPI into the orbits of audiences both local and far outside New England. She steadily focused on elevating the essential, immediate foundation of what makes WPI so distinctive: a project-based approach with equal parts teaching and research by devoted faculty and staff. Research funding has more than doubled since 2014, validating the work, caliber, and innovation of ideas pursued here and providing unmatched opportunities for students.

She's also paved the way for others, particularly women, to benefit from opportunities a STEM university provides. Leshin was at the helm when the university achieved a milestone: admitting a class that was close to half women for the first time ever. When she arrived at WPI, 32% of the first-year class were women. Eight years later, that number has grown to nearly 40%, putting WPI among the STEM universities that enroll some of the highest percentages of women. A new and more equitable promotion process has helped more women achieve tenure and/or full professor ranking. And the university was recognized nationally for its progress in other areas. In 2020 and 2021, WPI received the Higher Education Excellence in Diversity Award, which honors U.S. colleges and universities that demonstrate an outstanding commitment to diversity and inclusion.

As a university president, Leshin believes in visibility. Savvy and prolific on social media, she delights in engaging a wide audience to share the pure joy of STEM advances. Whether geeking out over the Mars rover she helped launch, congratulating WPI colleagues for their successes, snapping prez selfies with students, highlighting the growth of the campus infrastructure with the grand openings of new research facilities (Innovation Studio and Unity Hall—and the Seaport District facility in 2018), or throwing in an occasional shot of her beloved Corgi, SpacePup Hudson, Leshin's ease made her, and WPI, approachable.

And as much as WPI welcomed Leshin in the beginning of her term, the feeling remains mutual. With her self-proclaimed identity as a “space nerd” and her genuine excitement about the very things WPI students love—the potential for space travel, the beautiful symmetry of Lego creations, the giddy joy of interacting with robots—she was easily accepted into the Herd.

Her style fits WPI's hands-on approach. Known for her laser-sharp attention to detail, she led the university through the completely unknown territory of a global pandemic and a nationwide racial reckoning. Relying on science and the expertise of her leadership team, Leshin navigated challenges the university community—and she, herself—never could have imagined.

Her unconditional confidence in WPI's capabilities, her tireless enthusiasm for the university community, and her soul-deep conviction that the work done here will make the world better inspires others. Propelled by that ambitious drive, WPI is looking to the future and is now in the public stages of its largest fundraising campaign ever attempted, with a goal of \$500 million from a blend of philanthropy and sponsored research.

As Laurie Leshin readies to leave WPI and become director of the Jet Propulsion Lab at Cal Tech (another first female in the role), her imprint will remain.

—Julia Quinn-Szcesuil



A VISIBLE PRESENCE

By Patti Newcomer-Small '90

Laurie told us that when she first arrived at WPI she was struck by how few women were involved, from leadership at the university to faculty to trustees. She had been a member of a similar organization to the Women's Impact Network at Arizona State and shared a vision for women as advocates/supporters here. Joan Szkutak '79, who had recruited me to Procter & Gamble out of college, reached out to me and others and said that we have this new female president who wants to get more women alums involved. Laurie has been an ardent supporter and actively involved in WIN from the beginning.

She prioritized getting more women involved in other areas, too—including recruiting students and senior leadership. To address some of the barriers female faculty face, she changed the way professors are promoted and how they participate in governance. This focus on diversity has made such a big difference in the culture of WPI.

WPI's profile now versus when she started is crazy amazing. Her leadership during the pandemic and her work on the state level have improved our reputation. I have always lived a flight away from New England and usually nobody in my area has ever heard of WPI. That's beginning to change because of her efforts.

When I was a student, we knew our professors really well, but we barely knew who the president was or what his vision was for WPI. I only know his name from the signature on my diploma. Laurie participates in WPI traditions and is a visible presence on campus. Students know her. She gets them involved in decision making—and that's refreshing.

Newcomer-Small is chief marketing officer at FieldRoutes and a member of the Women's Impact Network.



A PROMOTER OF EQUALITY

By Ama Biney '18

I started as a student at WPI in the same year that Laurie started as president. As a young woman going to school at a mostly male place, I felt like she promoted equality, and the idea that we're all on the same level of importance, no matter what your role is on campus.

I was very involved in athletics—both on the softball and basketball teams—and she would attend our games and tweet about the games or tweet at us directly. It felt great that the president of your college was taking the time to support and understand students.

She is approachable and accessible—our relationship evolved so much so that I asked her to be a reference for graduate school and she wrote a great one.

I am a very visual person and I like that I could see myself being represented in President Leshin. I think more people are interested in WPI because they understand there is opportunity for all here.

Biney is a program supplier quality engineer at Raytheon Missiles and Defense. She received her master's degree in management engineering from The Business School at WPI.



A FOCUS ON RESEARCH

By Bogdan Vernescu

When Laurie came to WPI, she realized from the beginning that we had more potential for research than we were actually achieving at that point. One of the first things we did was fully staff the Office of Sponsored Research to be able to better handle submissions and support growth.

With her previous NASA experience, she suggested we focus on research development to stimulate and support new research. As part of the first strategic plan, she pushed us to set stretch goals for research funding, realizing fully that if we better supported our researchers, those goals would be achievable. She supported the creation of the Research Solutions Institute, our research development group, which is vital for identifying and capturing funding support for new research initiatives. She also suggested and helped fund a seed grant program that created more opportunities for our researchers.

We've more than doubled our research funding over the past eight years—and significantly increased the number of patents and licenses—because we provided the right support for faculty and students to be successful, including expanding our research spaces. Laurie was also extremely good at aligning our research goals with the commonwealth's priorities. Her vision—and her networking—are why we have received millions of dollars from the state of Massachusetts for exciting new facilities such as Practice Point and the Lab for Education and Application Prototypes.

Vernescu is Vice Provost for Research

“It's inspiring for students to come to WPI and see there are successful female faculty here, and it was even better to see a woman running the show.”

A PLACE FOR WOMEN TO ADVANCE

By Suzanne Scarlata

Laurie promoted women faculty research efforts at WPI. She considers research at least equal in value to teaching, which I don't think was the case in the past. She also really made an effort to enhance women's careers through mechanisms like the Women's Impact Network, and hosted a reception for female graduating students and women faculty at her house every year. She made WPI feel like a comfortable place for women.

I never had a female teacher in college or graduate school. It's inspiring for students to come to WPI and see there are successful female faculty here, and it was even better to see a woman running the show.

Suzanne Scarlata is a professor of chemistry and biochemistry



EXPANDING AND RENOVATING CAMPUS INFRASTRUCTURE TO MEET MODERN NEEDS

By Francesca Maltese

Laurie oversaw the construction of two important buildings on campus—Innovation Studio/Messenger Hall and Unity Hall—as well as new research facilities, such as 15 Sagamore Road and the Seaport District facility that connects students, faculty, alumni, and business leaders. These spaces reflect new ways of teaching, researching, learning, and living where collaboration and an open exchange of ideas are valued.

But equally important was her support of renovating and improving many of the older buildings on campus. WPI is an absolute leader in caring for and retrofitting these types of buildings to fit today's needs while still preserving their history. Keeping these buildings in good shape means keeping the legacy of past generations alive. Laurie has made major contributions to the future of the campus.

Maltese, retired development manager of The O'Connell Development Group, is a member of the Facilities and Infrastructure Committee of the WPI Board of Trustees.

EMBRACING A GLOBAL FOCUS

By Kris Wobbe

WPI has a unique focus on developing leaders in science and engineering who have a more global, humanistic, downstream-looking vision. Before Laurie even started officially, she gathered a few of us who were working on various aspects of our project-based education. We talked about the survey of alumni that showed students working on their required projects had better outcomes when they worked off campus or abroad. Laurie left that meeting committed to making sure more students have these transformational opportunities.

Because of that, she supported expanding the number of project centers globally, and also made sure finances weren't a barrier for students to participate. Our global scholarships now enable 100 percent of our students the opportunity to take an immersive project term off campus, locally or around the globe.

Also with Laurie's support, we began sharing our expertise in these transformational experiences with other institutions through the Center for Project-Based Learning. Over the past seven years, we've worked with more than 150 institutions in the U.S. and around the world to aid other faculty who are interested in using this very powerful pedagogy to help their students have more impactful learning experiences and develop those transferrable skills that employers find so valuable.

And, ultimately, creating The Global School plays a big role in giving this most distinctive aspect of a WPI education the visibility it deserves. It also allowed us to recruit a dean like Mimi Sheller, whose credentials and vision are stellar, and to integrate our global infrastructure into our graduate programs in innovative and creative ways.

Wobbe is director of the Center for Project-Based Learning



PRESIDENT LESHIN SIGNS THE CEREMONIAL FINAL BEAM FOR UNITY HALL, ONE OF TWO BUILDINGS OPENED ON CAMPUS DURING HER TENURE.



PRESIDENT LESHIN AND STUDENTS AT THE BAR HARBOR PROJECT CENTER.



PRESIDENT LESHIN, GEORGE OLIVER '82, AND JACK MOLLEN AT THE BEYOND THESE TOWERS VIRTUAL KICKOFF.

RAISING MILLIONS FOR THE NEXT 150 YEARS

By George Oliver '82

I couldn't be more excited about our campaign, *Beyond These Towers*. It's about how we take all the success we've had as a university and enable even more success. Laurie's leadership over the last eight years has been the foundation for our recent successes and it's why we were so well positioned to launch the largest fundraising campaign in WPI history.

The reason I'm chairing the campaign is because I want others to experience what Karen and I have experienced and why we're so passionate about giving to WPI. We have an incredible alumni community doing great things around the world. Laurie has inspired more passion among more alumni to come together around their alma mater, to support WPI, and to see what we accomplish over the next 150 years.

Oliver is chairman and CEO of Johnson Controls, a WPI trustee, and national chair of the \$500 million Beyond These Towers campaign.

A CRITICAL PARTNER FOR THE COMMONWEALTH

By Karyn Polito

It has been my honor and pleasure to get to know President Leshin and have the ability to work with her over the past eight years. Her vision and thoughtful leadership have made a positive impact at WPI, and also across Massachusetts.



LT. GOVERNOR KARYN POLITO ON ONE OF HER MANY VISITS TO CAMPUS.

From expanding STEM opportunities, especially for women and underrepresented communities, to her commitment to accelerating innovation and workforce development, the commonwealth is fortunate to have had her as a great partner.

Governor Baker and I will also always be truly grateful for her unprecedented service during the COVID-19 pandemic. Her expertise and guidance were critical in helping us navigate our response to the crisis as well as the safe reopening of our colleges and universities.

We wish her all the best and know she will soar in her new position at the Jet Propulsion Lab, but she will always have a home in Massachusetts.

Polito is the lieutenant governor of Massachusetts.



The Interim and the Search

Provost and Senior Vice President **Winston Oluwole "Wole" Soboyejo** will serve as interim president upon President Laurie Leshin's departure in May. A member of the National Academy of Engineering, he is a renowned materials scientist and engineer with more than 30 years in academia and research institutes. Prior to becoming provost in 2019, he served as the Bernard M. Gordon Dean of the School of Engineering at WPI.

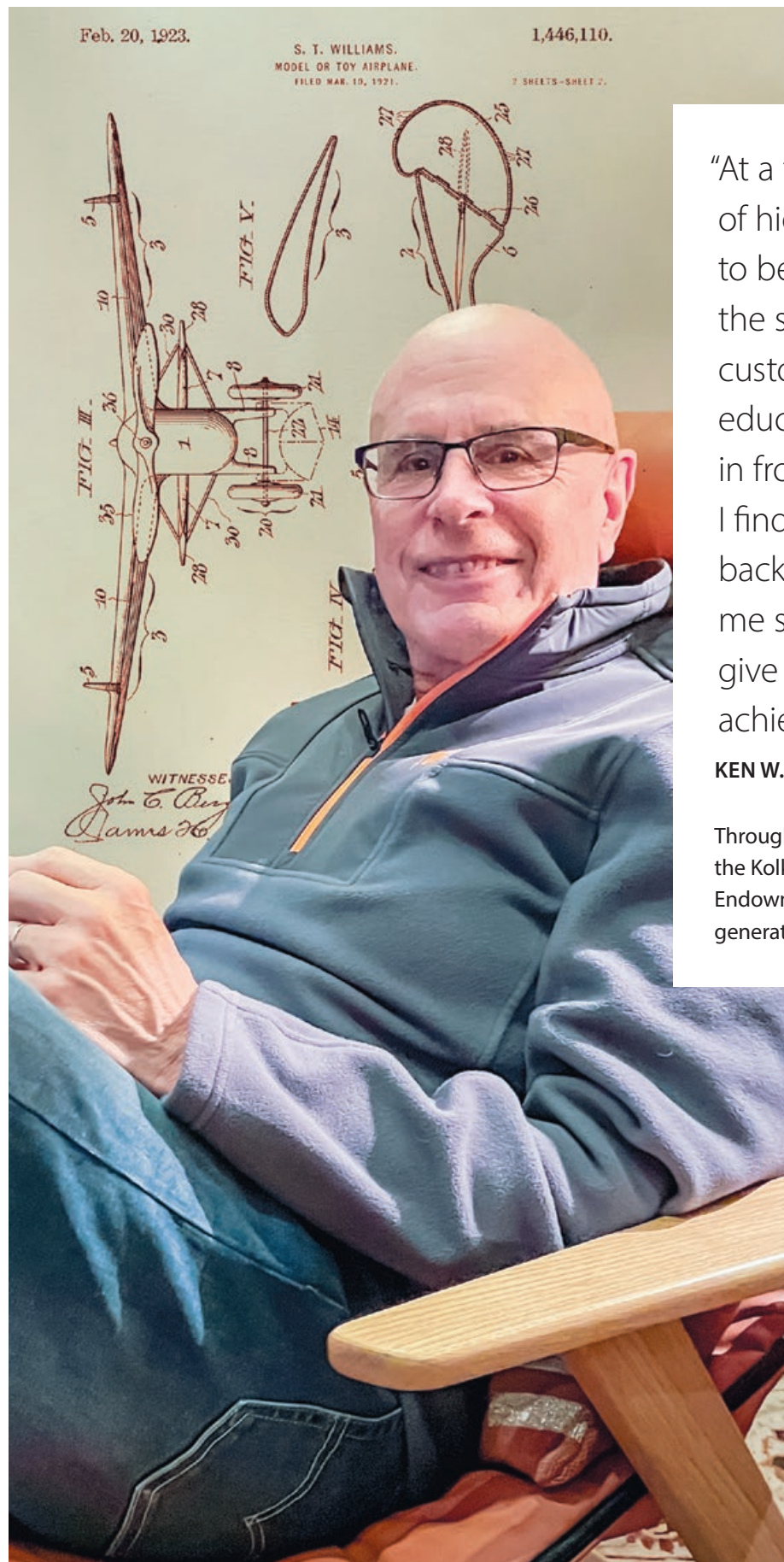
"A wonderful theme emerged during our conversations with Wole: he sees his upcoming period of leadership as a moment of service," says Jack Mollen, chair of the Board of Trustees. "A highly accomplished academic and administrative leader, Wole is known for being a collaborator with a great respect for the knowledge and experience of those around him. This and other qualities make him the ideal leader to help the university in the months ahead."

Previously, Soboyejo served as president and provost of the African University of Science and Technology in Abuja, Nigeria, a Pan-African university founded by the Nelson Mandela Institutions.

"We expect Wole will be able to step in and lead WPI seamlessly, not only because of his experience and capabilities, but because he has full knowledge of the university's most important and pressing issues and opportunities and because he knows and embraces this community and our values and priorities," says Mollen.

The Presidential Search Committee is chaired by Trustee David LePre '74, with support from Lauren Turner, senior vice president for talent & inclusion. In the first months of the process, the committee has been hosting listening sessions with faculty, staff, students, alumni, and trustees to engage the WPI community in the process. For the latest updates, visit: wpi.edu/presidential-search.

► SEND YOUR OWN STORIES OF HOW PRESIDENT LESHIN HAS IMPACTED WPI AND WE MAY ADD THEM TO THE ONLINE VERSION OF THIS STORY: WPIJOURNAL@WPI.EDU.



“At a time when some institutions of higher education do not seem to be delivering much value to the students—who are their customers—I think the kind of education WPI provides is way out in front. Fifty years after graduation, I find myself in a position to give back to the institution that helped me so much, and so I am happy to give in this small way to help WPI achieve its educational mission.”

KEN W. KOLKEBECK '72

Through his generous commitments, Ken established the Kolkebeck-Williams Family Great Minds Scholars Endowment, which will benefit WPI students for generations to come.

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

FOR MORE INFORMATION CONTACT

Lynne Feraco,
Assistant Vice President of Gift Planning
774-239-7326 | lferaco@wpi.edu



ALUMNI NEWS



From the Desk of

PAULA M. DELANEY '75 PRESIDENT, WPI ALUMNI ASSOCIATION

Dear Alumni,

It's finally here! WPI alumni will once again be able to gather in person back on The Hill for Alumni Weekend. If you haven't already done so, be sure to register for this year's celebration (wpi.edu/+alumniweekend), which will take place Thursday, May 19, through Sunday, May 22, 2022.

From start to finish, Alumni Weekend promises to be an especially meaningful experience for all who attend.

I look forward to celebrating with you and sharing pride in our beloved alma mater while we enjoy all that is new at WPI.

Included in the exciting and engaging programming for the weekend ...

- In Touch with Tech, which includes short classes, demonstrations, panels, and roundtable discussions hosted by faculty, students, and alumni, as well as building tours and open houses
- The Alumni Association Annual Meeting, presentation of alumni awards, and a State of the Institute address
- An interactive event with our Alumni Association Award recipients to connect with them one-on-one
- An open house at Unity Hall
- ReuNITE, an all-alumni dinner and party on the Quad
- Reunion celebrations for undergraduate classes ending in 2 and 7, as well as 50th reunion celebrations for the classes of 1970 and 1971
- An alumni outing with the Woo Sox at Worcester's Polar Park

And, of course, throughout the weekend there will be opportunities to celebrate WPI's long-standing traditions and time to reconnect with friends and classmates. Complete information is available online at wpi.edu/+alumniweekend.

I look forward to seeing you there!



"I am grateful to have had all the amazing opportunities that come with being a WPI student, and I cannot tell donors enough about the impact you made on my life and the lives of my peers. I will forever be thankful for my undergraduate education and will be a donor myself."

ALLISON SMITH '22,
BIOMEDICAL ENGINEERING



Donations to WPI support students' dreams of attending and participating in WPI's world-class education. Allison Smith '22 has had an incredible experience at WPI, helped in part by the donations of alumni, parents, and friends. She pursued a degree in biomedical engineering and will further those studies in graduate school. She knows her experiences inside and outside the classroom at WPI have helped her thrive during her internship at UMass Chan Medical School.

Help WPI continue to graduate thoughtful scientists and engineers ready to tackle the world's issues head on. Make your gift in support of scholarships to help students like Allison, to the WPI Areas of Greatest Need, or to the area you are most passionate about. Thank you for your gift!

wpi.edu/+give



HOLLY GALVIN '24, FOUNDER OF THE EQUESTRIAN TEAM

DINA HABBOOSH '22, VOCALIST WITH ALDEN VOICES



Large or Small, All Gifts Matter

Of the many hallowed traditions WPI has enjoyed over its long history, the university's tradition of philanthropic giving is by far the most profound. As most associated with the university know, tinware manufacturer John Boynton donated \$100,000 to establish the university back in 1865. Although the gift was of significant value for the day, it alone could not support the ambitious endeavor. The university came to be only after Boynton shared his ardent wish that others help support the undertaking with whatever amount they could.

As it was in 1865, so it is today; no matter what level of support, all gifts matter. From scholarship, research, and enhanced living and learning spaces to athletics, wellness programs, and student organizations, combined donor giving is the lifeblood the university.

"Every gift, no matter what size, is extremely helpful to the Alden Voices student organization," says Dina Habboosh '22, a vocalist with Alden Voices. "Because of donor support, my fellow vocalists and I get to have a high-quality music experience at WPI that we wouldn't have otherwise. I get to learn more about music, sing with other women, and be part of a supportive community that has given me both a home at WPI and lifelong friends."

The combination of smaller dependable gifts and larger transformational gifts sustains the university and provides students with both a quality education and a healthy social experience.

"Being on the WPI Equestrian Team has helped me integrate into the WPI community more than anything else," says Holly Galvin '24, who founded the team. "I was a freshman during the height of the COVID-19 pandemic, which affected my ability to make friends. Being a part of this team gave me a community of people who I wouldn't have met otherwise, and it has given me a place to escape from the fast pace of WPI and just enjoy riding with my friends and the horses I love."

Goat Nation Giving Challenge (focused on athletics), Giving Day, our crowdfunding initiative Herd Funded, and the launch of *Beyond These Towers: The Campaign for WPI* are model examples of the WPI community coming together to support WPI students. By combining support at all levels of individual giving, donors help WPI meet the world's ever-growing demand for not only a knowledgeable and skilled workforce, but also well-rounded humanist professionals. We're all in this together.



WPI RING CEREMONY: Packed with Tradition and Emotion

Hosted by the Alumni Association, the WPI Ring Ceremony brings alumni back to campus for an especially meaningful and moving alumni engagement event. More than 200 guests enjoy an elegant reception in Alden Memorial and hear a brief address from the Alumni Association president. Ring recipients also have the opportunity to visit with parents, guests, alumni, and key members of the WPI Student Affairs Office.

"The Alumni Association is focused on helping our graduates and students stay connected to the WPI community as they move on in their professional careers. The class ring tradition is a nice reminder of this milestone in their lives and the shared experiences and unity of their graduating class," says Alumni Association President Paula Delaney '75.

During the ceremony, recipients are summoned individually to the podium. Once the rings have been announced and presented, the students open their ring boxes in unison, creating a shared experience of joy and pride among all the event attendees. Tradition has it that the ring is worn with the WPI seal facing inward, but once the student graduates, the ring is turned around to symbolize that the graduate is now ready to face the world.

"I absolutely loved the WPI Ring Ceremony. And although it did feel a little bit surreal to think I was going to be a WPI alumna," says Jennifer Payano '19. "I felt proud of myself for getting through my studies." The WPI Ring Ceremony itself, however, begins long before

the annual March event date. The rings complete a special campus journey meant to represent the student experience at WPI. Based on tradition, the rings enjoy an overnight stay in both Boynton Hall and Washburn Shops to honor the university's founding tenets of theory and practice. They then make two crossings of Earle Bridge; one to symbolize the welcome of first-year students to campus and the second to symbolize the final Earle Bridge crossing WPI seniors make during Commencement.

The stunning custom-crafted ring was designed by the Alumni Association in honor of the university's distinguished history and serves as a lifelong connection to every graduate's experience at WPI.

Shannon Ring '19 says the WPI Ring Ceremony was meaningful to her. "My older sister, who is also a WPI graduate, purchased a ring when she graduated, as did several other alumni whom I met throughout my time in the Student Alumni Society. It was also meaningful that the WPI Alumni Association president presented the ring to me, formally welcoming me into the WPI alumni family," she says. "My WPI ring makes me proud to show the world that I am a WPI graduate."

—Sira Naras Frongillo

The WPI Ring Ceremony has been on hiatus during the pandemic, and we look forward to its return.

TURNING POINT

Paul Dagle '82 Finds Healing Through Helping Others

After 40 years at General Dynamics Electric Boat, **Paul Dagle** will be retiring this summer. And while he's looking forward to having more time for golf and to spend with his grandkids, it won't be a typical retirement. Instead, he'll be continuing the important work of honoring the memory of his son Brian with ongoing suicide education, prevention, and grief support through the Brian Dagle Foundation and Brian's Healing Hearts Center for Hope and Healing.

Dagle and his wife, Ann, lost their youngest son Brian to suicide in November of 2011 when he was a sophomore at Castleton University (formerly Castleton State College). The loss was devastating, leaving the Dagles to grapple with myriad questions — one of the most prevalent: how do you keep going after such a heartbreaking, traumatic loss?

"We didn't know," Dagle answers. "It was devastating. The grief was the most powerful emotion I've ever felt in my life."

He and Ann attended various suicide loss support groups and counselors, all to mixed results. Eventually, Dagle says, Ann began attending a support group at Hope Floats Healing and Wellness Center in Kingston, Mass. From that group came the understanding of how to begin living her life with hope again, despite the pain of losing Brian, as well as the creation of their own nonprofit, the Brian Dagle Foundation, in 2014.

After peer support and other grief training, the foundation started off small as word eventually spread throughout the local community. While Paul didn't attend the support groups in the beginning — "At the time, I was still working through my own grief in my own way," he explains — what prompted him to go was learning from Ann that a father who lost his teenage son would be at the next group meeting, and would be the first man to attend the support group. They didn't want him to feel alone, and once Paul attended to be there for him, he realized just what it was that helped him work toward healing.

"I found helping people to be so beneficial to me, personally," Dagle says. "Helping others has helped us heal. I'm not over it—I'll never be over it—but I'm at a place where I can move forward with my life."

He and Ann haven't just moved forward; they've taken their grief and are using it to help and support others. They're both board members of the Connecticut Chapter of the American Foundation for Suicide Prevention. Paul has recently been appointed chapter chair.

In 2018 they bought a home in Niantic, Conn., and opened Brian's Healing Hearts Center for Hope and Healing. Professional therapists have offices on the home's second floor (the foundation also covers the cost of up to six sessions for those who are seeking professional help). The first floor serves as a meeting space for support groups; in addition to groups for those who have lost a loved one to suicide, Brian's Healing Hearts also hosts groups for spousal loss, loss to addiction, child loss, and the loss of any loved one.

"When you first lose someone, you lose hope," Dagle says. "You don't know how you're going to function, how you'll smile again, but when you do, you have to remember that you're not dishonoring the person you lost. It takes work, and you have to feel the pain and work your way through ... we want to let people know they're not alone, and to help build their hope back."

Niantic may be the foundation's home base, but it's not the only place where support happens. The Dagles also take their resources directly to the local community through suicide education and prevention training presentations, sponsoring mental health speakers at local high schools and community forums, fundraisers, 5Ks, golf tournaments, a Friday night football game, and—in a particular ode to Brian—a lacrosse game.

Called LAX2LIVE, the event takes place each year during a regular-season game using one of Brian's favorite sports to raise awareness about mental health and suicide prevention in local high schools. At each event, there is a pre-game conversation with the players and a halftime conversation with parents and fans as well as a booth that provides resource materials and information about programs for anyone who may be struggling or looking for ways to support others. It's also the source of one of the moments that has stuck with Dagle the most since he started his work with the foundation: hearing from parents that after participating in a LAX2LIVE game, their child confided in them that they needed help.

PHOTO BY MATTHEW BURGOS



PAUL '82 AND ANN DAGLE

"Once they share, there's a much better chance that they can get the help they need," Dagle says. "It pulls on my heart that we've been able to help someone through conversations to identify their concerns and get the support they need."

While the foundation has been spearheaded by the Dagles, it's also a team effort, something Dagle knows about after his time at WPI. "Whether it was on the football team, working on projects, through my time in Phi Kappa Theta, or working on the Interfraternity Council, I learned at WPI that working as a team accomplishes so much more than an individual can on their own."

And accomplish they have—Dagle is proud to share that friends and family who are also WPI alumni raised nearly \$30,000 for the foundation over the past two years. "Guys I played football with, my fraternity brothers, others I interacted with who I haven't seen in decades," he says. "They all donated. WPI doesn't just teach

students to be engineers; it teaches them to be people who contribute to their communities as well."

Dagle's friends and family aren't the only ones who support him; Brian's do as well, from inviting the Dagles to their weddings to regularly helping with fundraisers and other events held by Brian's Healing Hearts (one of them is on the foundation's board of directors). It all shows that not only did Brian choose to surround himself with good people, his friends did the same.

"Brian was everyone's friend," Dagle says simply. "He was the glue that brought people together, and we try to do the same thing. He enriched our lives, and now we're enriching the lives of others through his spirit."

—Allison Racicot



PHOTO BY DERRICK ZELLMANN

Children’s Book Author Loree Griffin Burns ’91 Shares Her Passion for Science

Honeybees, beetles, moths—**Loree Griffin Burns** writes about many different insects, but one she hasn’t covered yet? The bookworm. The reason is pretty simple: instead of writing about them, she writes *for* them.

“Writing was a surprise career for me,” Burns says. “It wasn’t what I set out to do, but I love it. I’m constantly learning about new things I find interesting, and then I get to share with other people who also find those things interesting. That’s really what my job is, and it’s so perfect for me.”

Insects aren’t the only things she writes about either. Since her first book, *Tracking Trash: Flotsam, Jetsam, and the Science of Ocean Motion*, was published in 2007, she’s written children’s books on being a citizen scientist, butterfly farms, the Asian longhorned beetle infestation, the quest to save the honey bees, backyard moth balls, and life on Surtsey, an Icelandic island that just came into being in 1963. Her next book, scheduled for release in May 2022, is *Honeybee Rescue: A Backyard Drama*. It focuses on a man who rescues bee colonies from places people don’t want them, transporting their wax and colonies safely to the apiary in his own backyard.

Like all the best stories, Burns’s path to the printed word wasn’t without a little foreshadowing, even if she didn’t recognize it at the time. While majoring in biology at WPI, her Sufficiency (now known as the Humanities & Arts requirement) was about realism in contemporary children’s literature. She completed a project exploring the idea that novels often labeled as “too difficult” for children are actually giving them access to stories they need and that are important to them. When she moved on to graduate classes at the University of Massachusetts Medical School, that passion for writing followed and she did pro bono work for its public affairs office about faculty research.

Despite seeds of a writing career planted and fostered throughout those years, it wasn’t until she earned her PhD in biochemistry and took a break from academia to start her family that the idea really began to take hold. “I began writing in earnest again, and it finally hit me one day that maybe what I should be writing was not novels or

poetry, but books about science,” she says. “It’s what I was trained in. It’s what I’m passionate about. Stories of science were what I wanted to share with my own kids, and my career grew out of that realization.”

Clearly a passion for the subject matter is essential to Burns’s work as a writer, and she credits her dedication to learning and embracing firsthand experiences to her project-based education from WPI.

“Experiential learning is a big part of what I do in my work and in researching my books, and I learned from my time at WPI that there’s no substitute for firsthand experience,” she explains. “When I wrote my first book about bees, I knew I needed to wear the beekeeper’s gear—to get in there and soak up the experience. It’s a method I still use to this day.”

Better yet, that desire for more sensory details in her writing has also evolved into a new passion. Thanks to her research, Burns has had an apiary in her own backyard and she and her husband have been keeping bees for the past 10 years.

When she’s not writing, she teaches at Montserrat College of Art and Vermont College of Fine Arts—experiences that have helped her understand what’s brought to the classroom by both teacher and learner. “Teaching has given me a new perspective on the education I got at WPI and UMass and the passion my professors had. Sparking other people’s passion requires passion of your own. And while the teacher provides a lot of spark for the learning that happens, the student also brings a lot to the table,” she says. “The learning goes both ways. I find that delightful.”

In addition to being a memoir of how she eventually became a writer and was able to share her passions through her work, Burns’s own story is a great example of a compelling retrospective. “It didn’t make a lot of sense along the way,” she reflects, “but when I look back—especially when I recently pulled out my Sufficiency and looked at the title again—I thought, ‘Boy, I’ve actually been on this trajectory for a long time. It just took me a bit to realize it.’”

—Allison Racicot



LEN HERSHOFF '43 HOLDS A VACUUM TUBE DEVICE HE AND IBM PATENTED IN 1969.

RIPPLE EFFECTS OF A WPI EDUCATION

The son of the late Len Hershoff '43 continues a legacy of paying it forward.

“A quality education can affect the trajectory of your life,” says Larry Hershoff, son of the late **Len Hershoff '43**. He experienced firsthand the positive impact a WPI education had on his father’s life.

“WPI set into motion a lot of things personally, academically, and professionally that allowed my dad to provide for his family,” Larry says, “and he believed in giving back.”

Len Hershoff is described by his son as “a mechanical genius” when he was a young man graduating near the top of his high school class in Brockton, Mass. Len was accepted to WPI, but the tuition was out of reach, despite the family’s efforts. Thanks to a \$200-per-year scholarship from the university, Len graduated with his bachelor’s in electrical engineering.

Larry shares that his father became a vacuum tube expert, worked in the High Voltage Research Laboratory at MIT and at the Lahey Clinic doing cancer radiation research, and then had positions at several companies before settling at IBM in 1964. The generous employee stock purchase program at IBM enabled Len to build his wealth, Larry says, and he always credited WPI for preparing him for his career and life.

“You couldn’t spend five minutes with my dad without him talking about WPI,” says Larry.

Andrea Johnson, Len’s daughter, adds that her father’s support of WPI was never in question. “He really felt a strong connection and credited WPI for his success, and he wanted to give back.”

She remembers her father talking about the Rope Pull at Institute Park, his fraternity experience, and the social life during his WPI years. “He couldn’t say enough about it.”

After graduation, Len maintained his WPI ties. He participated in WPI committees and attended events. He was a regular at Tech Old Timers, the monthly group meeting for retired WPI alumni, faculty, and staff, and he brightened every Alden Society Luncheon and Alumni Weekend with his gregarious personality. Len never forgot the scholarship that made possible his WPI education, his career, and his ability to support his family and provide for his children’s educations, and so he always supported his alma mater.

“He never had a big income, but he was always careful with his money, and WPI was a big part of his budget,” Andrea explains. “He did it because of his dedication.”

When his father neared retirement, Larry talked with him about alternatives in his estate planning. They decided to set up a charitable gift annuity and a charitable remainder trust, funded primarily with IBM stock and other investments, to ensure Len would have adequate income “while partially repaying WPI for the \$200 bet it made on Dad in 1940.”

These planned gifts enabled the establishment of the Len '43 and Mary Hershoff Scholarship Fund, which, with additions from the Hershoff family, has grown to provide \$15,000 per year to a WPI undergraduate to help them achieve their WPI education. Larry recently made a sizeable commitment to the fund by supporting *Beyond These Towers: The Campaign for WPI*, with the aim of one day providing a half-tuition scholarship. Removing financial barriers to a WPI education is a major thrust of the campaign.

Larry explains that his father’s motivation to give back to his alma mater was rooted in the Jewish tradition of tzedakah — charity to others to make the world a better place.

“Charity to others is frequently repaid in one way or another,” he says.

That’s certainly how Larry feels about the scholarship his father received. Larry, a Clark University graduate along with Andrea, credits his education to his father’s success and the preparation he received at WPI. “My father was very generous to me, and he would not have been able to do all the things he did in his life without WPI,” says Larry, who emphasizes the ripple effect that scholarship support at WPI often has. Supporting one student, he says, can positively impact that student’s future family for generations, just as it did for his father, himself, and his sister.

Reflecting on his father’s WPI experience and his own experience at Clark as a graduate, volunteer, and former trustee, Larry notes the responsibility he feels as the son of a WPI graduate.

“The journey doesn’t end with your graduation from the institution — it gets boosted, because you still carry the university’s name,” he explains. “We’re all custodians of what’s happening at the university today, and the university can’t do those things without the support of the community and its alumni.”

—Judith Jaeger



Curt '67 and Dudley Carlson:

PHILANTHROPY FOCUSED ON VALUE CREATION AND INNOVATION

Curtis Carlson '67 and his wife, Dudley, believe WPI is a unique university, providing the education graduates need today to thrive.

“Dudley and I wholeheartedly believe in the mission of WPI. It provides a superb STEM education to solve the world’s complex problems. Students conduct multiple team projects to learn how to work in interdisciplinary teams, along with a global experience to understand different cultures. It provides value creation and innovation skills for graduates to solve problems that matter to others,” says Carlson. “In addition, what makes WPI unique is that it exemplifies core values of respect, integrity, and humility. There are very few schools in the world that do all that WPI does.”

Carlson points out that WPI teaches perseverance and how to succeed. “None of it was easy,” he says, reflecting on his time as a student on The Hill. However, the former physics major also notes how much the school offered him in return. “WPI encouraged me to strive for excellence, whether studying complex math and physics, working on group projects, competing on the swim team, or maintaining my violin practice.

“For example, as a freshman, I went to the physics building to talk to Dr. Heller about becoming a physics major. In his imposing German accent, he warned me that there was no grading curve in physics; you had to master *all* the material. I believed him. Of course, when a student, you don’t think of those as big things, but looking back, you realize all the ways the school was setting the foundation for your professional life,” he says.

Carlson shared that it was his WPI education that allowed him to spend his career in the technical world and be a part of many life-changing innovations and accomplishments, such as HDTV and Siri. And for what WPI has made possible in his life, the Carlsons have generously given back to the university in the form of time, talent, and support.

Beyond his position as a trustee emeritus, distinguished executive-in-residence, and Hall of Luminaries inductee, Carlson and his wife have made significant gifts to help support specific projects. Their most recent gift to *Beyond These Towers: The Campaign for WPI* establishes the Curtis and Dudley Carlson Value-Creation Initiative.

“We have always enjoyed supporting the university,” he says. “So, when Dudley and I discussed major giving, we wanted to support WPI.

And, specifically, to support an expanded value creation curriculum for the university.”

He believes that mastering value creation and innovation — a key priority of *Beyond These Towers* — is fundamental to what it means to be a professional today. “Because of the other educational features of WPI, it is the best place in the world to expand our initiatives in value creation, innovation, and entrepreneurship,” he says.

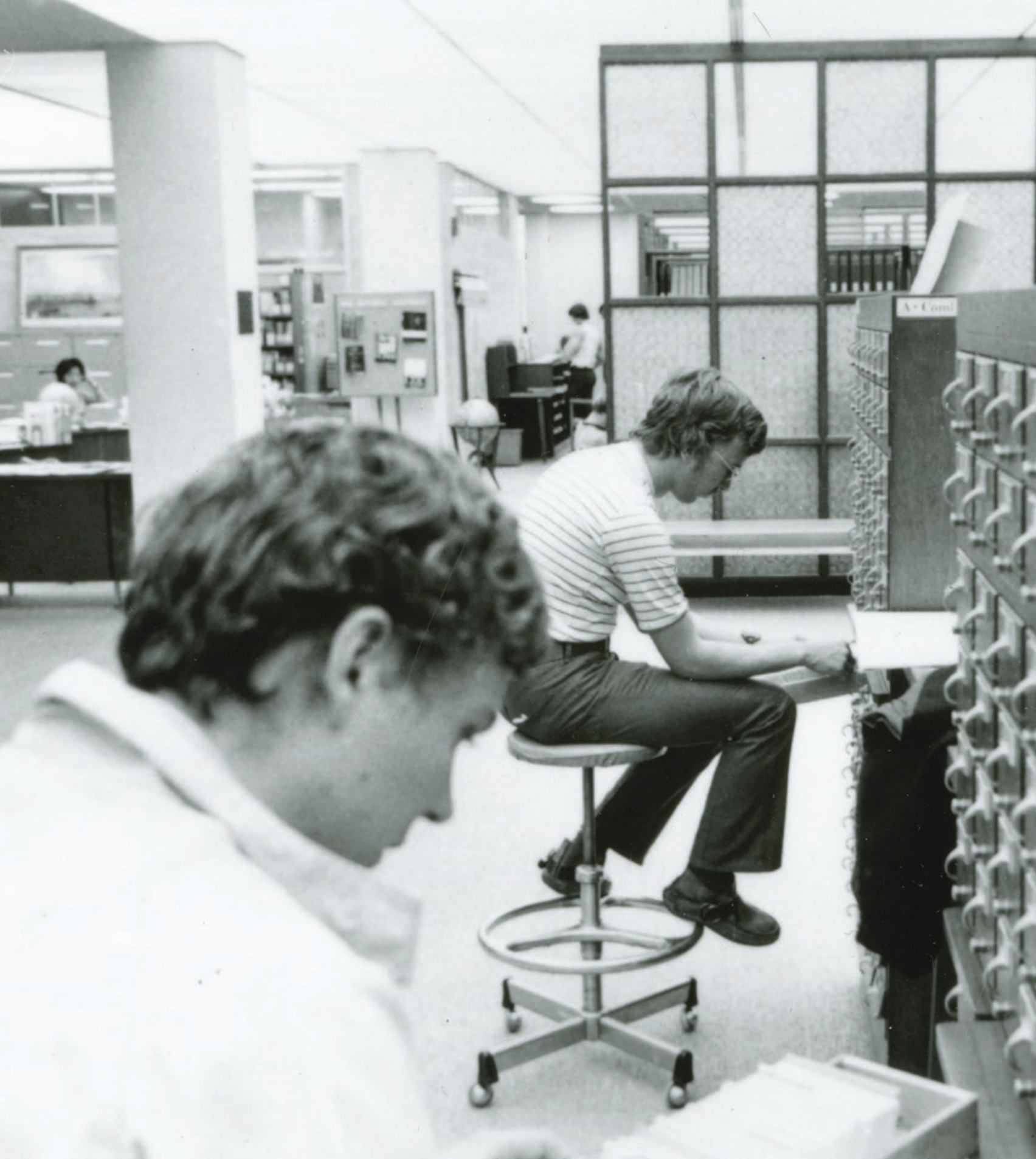
WPI’s founding tenets were theory and practice. Carlson says the natural next step is impact, although his definition of impact goes further than the traditionally accepted definition. For this former president and CEO of SRI International, impact requires mastering value creation, the ability of every professional to solve problems that have meaning for people and society.

“During my career, I worked with superb professionals,” he says, “and I saw the importance of having these value-creation life skills. Others sought out people with these abilities, and they made significant contributions to society. President Leshin added ‘impact’ to our mission, along with theory and practice. Impact means solving problems that have meaning for others,” he says. “They are skills that only become more valuable over a career.”

“I chose to bring the idea of value creation back to WPI because the school has the ideal underpinnings on which to build a value creation and innovation program,” he says. With his partner, Leonard Polizzotto '70, they pioneered the first-of-its-kind Value Creation Initiative program. The curriculum offers skills to WPI’s students and faculty to help them become more efficient and effective at identifying and addressing the world’s most pressing problems.

As WPI moves forward, the Carlsons say they will continue their philanthropic legacy at WPI, a tradition the couple began in the 1970s. Curt looks forward to the day students worldwide master value creation and innovation. Through innovation, the world grows, solves its serious problems, produces jobs, and creates resources for social responsibility. He believes WPI will, as with the original WPI Plan, become another model for schools for graduating professionals who can make a more significant contribution to society.

—Sira Naras Frongillo



CLASSNOTES

submit yours to CLASSNOTES@WPI.EDU



CLASS REUNION FOR YEARS ENDING IN 2 & 7

1958

Dick Hammond writes that after he graduated and got married, “we moved to a sizeable 1769 home in Dublin, N.H. Our home was one of over 250 Dublin homes listed on the National Register of Historic Places. I joined New Hampshire Ball Bearings as an engineer and director of a large quality control department with 250 employees. I met many experts in the U.S. Space Program, including Wernher von Braun.

“I later joined Robertshaw Controls Company as a plant manager, producing temperature and pressure valves. I was also a consultant in the area of forest fuels. I purchased a company, renaming it Hammond Engineering, specializing in energy conservation and heat transfer, and resulting in significant savings for our customers.

“After retiring in 1996, I volunteered for the Town of Dublin Planning Board, helping to design a new fire station, playground, street lighting, and archives. I have lived in Holden, Mass., Dublin, N.H., Peterborough, N.H., and Yarmouthport, Mass. I have traveled to 18 foreign countries. Most important and rewarding are my two marriages and the joy of watching two daughters to this day.”

1968

Michael Sills published a family history in the form of a cookbook, *A Lithuanian Cookbook for My Irish Wife*, which centers around the Lithuanian community in Hartford, Conn.

Peter Stanley reports, “During each summer Pax Gifford, Dave Hall, Gerry D’Amico, and I spend a weekend on a deck overlooking Woods Hole on the Cape. None of us lives in Massachusetts. We plan a new adventure each year then relate stories of past adventures. Some of these stories are actually true.”

1972

Dan David writes, “Fifty years ago, before the first IQPs came to be under the WPI Plan, there was the WPI Urban Vehicle Project. Under the guidance of ME Professor John Mayer, a student engineering team drawn mainly from the classes of ’72 and ’73 designed and built a running prototype that was then entered in the Intercollegiate Urban Vehicle Design Competition held at the General Motors Proving Grounds in Milford, Mich., in August 1972. Features of the dent-resistant, composite plastic-bodied vehicle included three-across seating, a sliding door on the curb side, and a propane-fueled 1275 cc

transverse engine powering the front wheels. The WPI “Urban-car,” as it was known, scored ninth out of 66 entries from around the country. More important for me, though, was the invaluable learning experience gained from being a member of the student project team. It inspired me to pursue what became a fulfilling, 31-year career in the automobile industry and it continues to influence my retirement hobbies—antique cars and home renovation.

1978

Phil Scarrell writes, “42 years working in the chemical industry—loved the chemical plant life. Used my WPI education to build a family, history, travel, and career. Some thought I could not have done it. Beautiful wife of 36 years, Martha, two grown girls with their own families. We traveled the world. Now settling into family life in North Carolina. Next project will be building our home. We’ll be the builders and manage all the contractors. Four years at WPI made this all happen. Daddy Wags, FIJI, Hockey, Herbie, Wayne, Dave, Stephen, The Attic, Tom, Chuck, Bob, John, and Jon—just to name a few WPI wonders. Thanks!”



STEVE RUSCKOWSKI '79

1979

Stephen Rusckowski, Quest Diagnostics’ longtime CEO, will step down from his place at the helm at the end of October. His tenure will end a decade after it began in May 2012, though he’ll stay on through March 2023 as executive chairman of Quest’s board of directors.



1982

George Oliver, CEO of Johnson Controls and a WPI Trustee, says he is proud that Johnson Controls has been selected as one of *Fortune’s* “World’s Most Admired Companies” in 2022. This is the first time Johnson Controls has been named to the list. “Our inclusion on *Fortune’s*

list reflects the significant strides we have made toward our goal of ensuring a healthy, safe, and sustainable world.”

1983

Tom Casale was recently appointed general manager of Quantic's Corry Micronics and TRM Microwave business units.

Paul Cotnoir ('88 MS, '10 PhD) was named by *Worcester Business Journal* as one of “22 people to meet in 2022.” He joined Clark University to oversee its new game design and technology program, inherited when Becker College closed. Starting in 2002 and through its closure this spring, he held several leadership roles at Becker, where he developed and launched new degree programs. The *WBJ* article reads, “His fluency in Worcester's institutions, as well as his long-term experience at Becker, promises insight into what will and will not work to keep colleges strong.”

1985

Enis Konuk ('89 MS CS) was recently named Chief Product Office at Docebo, a leading artificial intelligence-powered learning suite provider. Prior to his role as the leader of Learning Technologies at Google Cloud, Konuk was the CEO of Qwiklabs, a company known as a pioneer in hands-on technical learning, which he founded in 2012. He previously held positions at VMware as vice president of Worldwide Professional Services and Education and Sun Microsystems, where he was responsible for a team of sales engineers, consultants, technical account managers, and trainers.

1986

Kathy Loftus, president of business development at e2s Building Performance, was recently elected chair of the Board of Directors of GBI (Green Building Initiative). Before joining e2s in 2020, she served for 14 years as Whole Foods Market's vice president of sustainability and global leader of sustainable facilities, overseeing Whole Foods' buildings portfolio, including energy, engineering, and facilities management, as well as waste diversion.

Susan Loconto Penta is a founding member of WPI's Women's Impact Network and a founding member of WPI's Collaborative for Entrepreneurship and Innovation. She has served on the Management Executive Council for WPI's Business School and the Technology Advisors Network. She is a co-founder and managing partner at MIDIOR and an executive professor at Northeastern University. She is a frequent speaker on the topics of innovation, entrepreneurship, and product organizations, and has recently been appointed chair for the Women's Network Advisory Board for The Greater Boston Chamber of Commerce.

1990

Lou Delzompo (MBA) recently joined Apogee, a leader in higher education managed technology services, as chief technology officer. He is responsible for developing and implementing innovative and effective managed technology services strategies that serve the needs of U.S. higher education, as well as ensuring that the company's



▶ LOU DELZOMPO '90

offerings meet and exceed the needs of its 400-plus higher education customers.

Bob Morales has taken a multi-year assignment at RAF Menwith Hill in North Yorkshire, United Kingdom. He oversees engineering and operations activities for over a dozen satcom terminals and a data center that support the U.S. Air Force and NATO missions. After 23 years in Virginia and an empty nest, he says an overseas tour was a perfectly timed new adventure.

1991

Michael Ferreira ('94 MS FPE) is COO of Vision Solutions AR, a start-up focused on developing augmented reality platforms. **James Lynch '00 ('04 FPE)** is company CEO. They recently released Home Vision AR, their first product for the real estate industry.

1992

Brett Borghetti received the 2021 Air Education and Training Command Civilian Educator of the Year award. He is an associate professor of computer engineering within AFIT's Graduate School of Engineering and Management.

1993

Dayna Cornell-Badhorn, 23-year Avnet veteran, has been named regional president, Americas electronics components. She now



▶ BOB MORALES '90

oversees all activities tie to Avnet's electronics components business in the Americas and manages operations teams supporting business in the region.

Mike Ingram was recently appointed president and CEO of Shadin Avionics. He most recently served as vice president and general manager of the Avionics Business Unit at Honeywell Aerospace.

Walter Miska is now director of Franchise Development at Snapchef, a leader in temporary and permanent foodservice staffing and training. He and the executive team will be leveraging Snapchef's existing national preferred contracts with the world's leading foodservice providers to meet business needs across the country.

Beth Tubbs ('95 MS FPE) was named 2022 President of the Society of Fire Protection Engineering. At the International Code Council (ICC), headquartered in Washington, D.C., she serves as a key engineering resource and contributor to the International Existing Building Code (IEBC), the International Fire Code (IFC), the International Building Code (IBC), and the ICC Performance Code (ICCPC) as a Senior Staff Engineer with the Codes and Standards Development Department.

1995

Christine Hersey has been named director of investor relations at Trulieve. She has over 20 years of

experience working in and covering a variety of sectors including biotech, cannabis, cleantech, and consumer retail at Durant Partners, Efficacy Capital, M.S. Howells, Savitr Capital, and Wedbush Securities. She previously covered global securities, traveling throughout the U.S., Europe, and Asia. Prior to her career in finance, Christine worked as an environmental engineer and project manager.

1996

Steve Franklin is now director of engineering at Montalvo. He has over 25 years of experience as an engineer and 14 years as an engineering manager for a global automation supplier.

1997

Jeb Ledell was recently named chief operating officer of AVEO Oncology; he previously served as COO of Enzyvant Therapeutics.

1998

Jason Mello retired last August after being commissioned as a 2nd Lt. in the WPI AFROTC program and serving 23 years in the United States Air Force. He is now president of the Space Transport Services subsidiary of Firefly Aerospace.

1999

Rainer Reichel was featured in the *Worcester Telegram & Gazette* for building “Treegloos” near the WPI campus using his background in architecture and engineering. Rainer, who holds a bachelor's in biotechnology from WPI and a master's in architecture from Kohn Kaen University in Thailand, often

constructs igloos around pine trees in his yard. One was large enough for several people to stand in and was equipped with benches, candles, and an electrical outlet for a coffemaker or cooker. According to the article, Reichel integrates his igloo design with the natural terrain and the the longest one of his igloos lasted was four months.

2000

Sharad Bhojnagarwala has been promoted to principal at General Atlantic, a leading global growth equity firm. He joined General Atlantic in 2011; before that he was an investment professional at TVS Capital, where he focused on investments in the mid-cap consumer sector.

Victoria (Valentine) De Dominic ('02 MS FPE) has been named to the technical staff at American Fire Sprinkler Association.

James Lynch ('04 MS FPE) is CEO of Vision Solutions AR, a start-up focused on developing augmented reality platforms. **Michael Ferreira '91 ('94 MS FPE)** is company COO. They recently released Home Vision AR, their first product for the real estate industry.

2002

Piti “Todd” Bhirombhakdi was named to Prestige 40 Under 40, “the annual list of 40 brilliant minds in Thailand who are shaping the future.” He is the youngest board member of Boon Rawd Brewery Group and is leading the charge in business transformation through his positions as CEO of BRF Logistics, Food Factors, and SBP Digital Services.

Liz Cash Hitchcock was recently honored among New Hampshire's top female business

leaders. In addition to her role as director of the Board for Minim, she is the developer of Manchester's new live/work space for creators, innovators, and entrepreneurs; developer of The Factory on Willow; and owner of the Bookery, a local independent bookstore. In 2021, she was recognized as one of The New Hampshire 200, the state's most influential business leaders.

2003

John Biagioni (MS) has been named president at Lampin Corporation, a critical component manufacturer in Uxbridge, Mass. John previously served as president at Dynisco. He began his career as a machinist and he has held numerous positions at other companies in the manufacturing sector with significant expertise in procurement and management.

2004

Jeremy Hitchcock and **Liz (Cash) Hitchcock '02**, members of the Minim Board of Directors, were recognized in the New Hampshire 200, the state's most influential business leaders. Jeremy is an active angel investor in the New Hampshire startup community and has led technology development teams to solve security problems at the national, commercial, and consumer levels. Liz is a prominent entrepreneur, philanthropist, and small business owner with an innovative focus on community building, workforce development, and technology. Together, the couple also runs an independent bookstore (Bookery Manchester) and partners with Manchester Moves to improve biking and walkability in the greater Manchester area.

Sharon Medeiros (MS) was recently named chief accounting officer and senior vice president at BankNewport. She joined the bank in 2015 and previously served as senior vice president and controller. She is also a certified public accountant.

2005

Joe Chapman, a cybersecurity lead at MITRE, will work with WPI on a recent \$1 million grant from the commonwealth that will help create a collaborative research and development center in the university's new academic building. The center will work with industry partners to advance secure manufacturing of semiconductor chips and provide workforce development programs to promote better access and opportunities for jobs in the STEM field.

2008

Cheryl (Boquist) Ingram and family happily welcomed a new baby, Myka Joyellen Ingram, in December 2021.



▶ MYKA JOYELLEN INGRAM

2009

Nick Pelletier was named president of the North Central Massachusetts Association of Realtors, whose membership includes more than 550 realtors in a territory that stretches from Orange to Harvard, Mass.



▶ LENA '15 AND JOE BROWN '15 MARRIED IN 2018

2011

Arnold Ndegwa was honored with the Modern-Day Technology Leader Award at the BEYA STEM Conference 2021. Each year, the Black Engineer of the Year Award Conference honors the work of engineers and science, technology, engineering, and mathematics professionals in their industries. Textron spotlighted Arnold on its social media platforms in February 2021.

2012



Katelyn Comeau was named to the 40 Under 40 list by the *New Hampshire Union Leader*. A pharmacy manager at New London Hospital, she received her DPharm from MCPHS. When asked what motivates her to give back to her community, she said, “My parents and the sacrifices that they made to allow me to be where I am today. I could never have accomplished what I have if it weren’t for their selflessness and support. It is because of their example that I try my best to give back to my community.”

2013

Bethany Almeida has been appointed an assistant professor of chemical and biomolecular engineering at Clarkson University. She previously served as an American Society for Engineering Education Postdoctoral Fellow at the Center for Bio/Molecular

Science and Engineering at the U.S. Naval Research Laboratory.

2014

Marissa Capua was recently interviewed in the podcast “Check Your Beer” about her work at Zero Gravity Craft Brewery in Burlington, Vt. She discussed her various roles in the brewing industry and how her different experiences in brewing shaped her current position as a quality assurance technician.

Sean Kelly (MS '16, PhD '18) and **Aaron Birt (MSE '14, PhD '17)** were named to the *Worcester Business Journal* “40 Under Forty.” While they were doctoral students, they founded Solvus Global, a technology solutions provider for the manufacturing industry. In three years, Solvus had secured a research deal with Oxford, Mass., laser manufacturer IPG Photonics, grown to \$5 million in annual revenue, and opened three locations. Its latest location in Leominster, Mass., was awarded a \$1.6-million state grant.

2015

Christina Bailey-Hytholt recently joined WPI as an assistant professor in the Department of Chemical Engineering. Her research focuses on biomaterials, drug and gene delivery, and diagnostics—particularly as it relates to maternal and fetal outcomes. She was recently listed on *Forbes* magazine’s “30 Under



▶ TALI SOLOMON '18 AND MATT MICHAELS '18

30” list as a trailblazer in her field. **Lena** and **Joe Brown** met in their freshman year during VOX’s production of “Into the Woods” and became close friends through their mutual love of music and theater, although apparently not close enough as Joe friend-zoned Lena later that year. Fortunately for both of them, sophomore year they realized they were better together and never looked back. They got married in Worcester in 2018 and now live in Boston with their cat, Striker.

2017



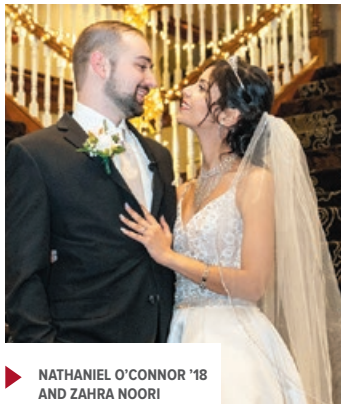
Aaron Birt, PhD (MSE '14) is the first WPI graduate to be named to the *Forbes* “30 Under 30” list for manufacturing and industry. (See *more under Class of 2014*.)

Maggie Russell passed the Patent Bar last year and was sworn into the Connecticut Bar in November. She is now an associate in the Hartford office of Cantor Colburn.

Tali Solomon and **Matt Michaels** recently shared their story of how they met at WPI. “We first met as lab partners in Chem 3 freshmen year. We were friends for most of college until we started dating our senior year. We moved to Boston after school and got engaged in May 2020. We got married last August!”

2018

Ama Biney visited Ghana recently, and volunteered with The Ghana Shock, a local girls’ softball team



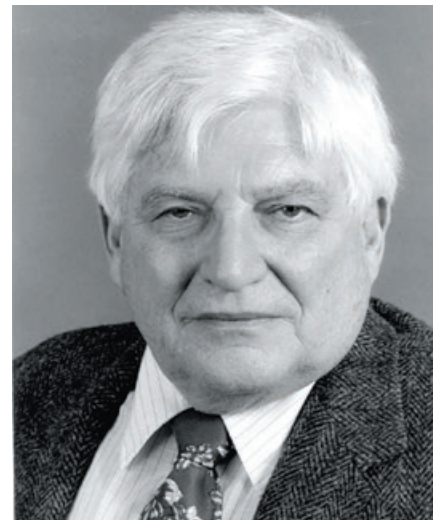
▶ NATHANIEL O'CONNOR '18 AND ZAHRA NOORI

founded in 2017 to introduce the game and create new opportunities for girls ages 8 to 14. She organized a fundraiser and donation drive to assist the team, which so far has raised over \$1,600. Ama was a basketball star in high school and at WPI and was the recipient of the 2019 NCAA Today’s Top 10 award. Now a Worcester resident, she works for Raytheon.

Nathaniel O'Connor and **Zahra Noori**, both current PhD students in the Department of Mechanical and Materials Engineering, were married on Dec. 18, 2021, at the Colonial Hotel in Gardner, Mass. They met in Professor Jamal Yagoobi’s research group in 2017. The wedding was attended by Yagoobi and many other WPI students and staff.

2021

Robert King (PhD) received the first ever Michael A. King, PhD, Research Award from the Department of Radiology at UMass Chan Medical School, where he is an assistant professor.



Alvin Weiss, Chemical Engineering Professor and Global Ambassador

Alvin H. Weiss, professor emeritus of chemical engineering, passed away on March 6, 2022, at the age of 93. He was an authority on catalysis, particularly the use of catalysts such as zeolites in petrochemical production, pollution abatement, and fire protection.

Born in Philadelphia, he earned a BS in

chemical engineering at the University of Pennsylvania and started his career at Fiber Chemical Co., a specialty chemical maker. He served in the Army Chemical Corps during the Korean War. While working for Colgate Palmolive, he earned an MS in chemical engineering at Newark College of Engineering. He then joined Houdry Process and Chemical Co, where he began his research on catalysis.

Professor Emeritus Arthur Gerstenfeld

Distinguished Professor Emeritus **Arthur Gerstenfeld**, who founded WPI’s MBA program, the Namibia Project Center, and the Wall Street Project Center, passed away on Jan. 19, 2022, at the age of 95.

He earned his BME in industrial engineering at RPI and his MS and PhD in management at MIT. He began his WPI career in 1978 and served as the first head of the Department of Management from 1978 through 1984.

He also directed the Wall Street Project Center—the Art Gerstenfeld Endowed Fund for that center was created in 2014 to honor his long service and to strengthen WPI’s presence within the financial sector.

Art was a noted researcher and author. He won substantial grant funding and led numerous applied research projects from the Department of Education, USAID, and NSF. He published 55 articles and authored nine books, one of which was translated into Japanese. He held four patents for his work in Air Traffic Control Systems. He also served as

After earning a PhD in physical chemistry at the University of Pennsylvania, he joined the WPI faculty in 1966. He was one of the founders of WPI’s zeolite research group and also founded the Catalysis Society of New England. He received WPI’s Board of Trustees’ Award for Outstanding Research and Creative Scholarship and was elected a fellow of the American Institute of Chemical Engineers.

Weiss traveled extensively over his career to take part in international research and academic partnerships. Among other honors, he received three Fulbright-Hays awards to lecture in Israel and Turkey; participated twice in the U.S./U.S.S.R. Cooperative Science Program in Chemical Catalysis (once to collaborate in research on applications of catalysis in life support for space missions); and traveled to Argentina, Brazil, China, Italy, and Turkey as a representative of the United Nations Industrial Development Organization. He was also a National Research Council research fellow in Bulgaria and Russia, and took part in a study mission with American Professors for Peace in the Middle East.

He is survived by his wife, Devorah, a daughter, a stepdaughter, a stepson, six grandchildren, and a great-grandchild.

—Michael Dorsey

a manager at NASA’s Cape Canaveral (Cape Kennedy) in the early 1960s.

Despite his accolades and accomplishments, Art will be remembered most for his teaching. He taught courses in the Operations and Industrial Engineering discipline, including Managing Technological Innovation and Production System Design. He also taught an interdisciplinary course in Finance and Technology as well as Entrepreneurship and Innovation. He led PQP and MQP efforts in Namibia, London, New York, Costa Rica, Australia, Puerto Rico, and Washington, D.C. His interdisciplinary seminars, *Learning Language through Music* and *Exploring the World through Music*, brought together his interests in music and technology. A trailblazer, he was engaged in an Industrial Engineering project that sought to realize energy independence by 2015 through a focus on wind power.

Over a WPI career that spanned more than 40 years, Art left an indelible mark on WPI and what is now The Business School.



John Powers

John Powers '61, a dedicated WPI volunteer and supporter, passed away on Dec. 31, 2021.

In the early 1970s, John served as secretary and later as president of the Connecticut Valley Alumni Club. He was also a Civil Engineering Advisory Board member, an alumni admissions volunteer, Alumni Council representative, head class agent, President's Advisory Council solicitor, and a member of his 25th and 40th Anniversary Gift Campaigns. He joined the Alumni Fund Board in 1995 and led the Annual Alumni Fund Committee, organizing and recruiting more than 1,500 class volunteers to launch reunion and anniversary gift campaigns. His

efforts had impressive results, helping to double the Annual Fund over five years and increase alumni participation. He was also a philanthropic leader as a Presidential Founder and Alden Society member.

John had a long and distinguished career at Tighe and Bond, a more than 100-year-old engineering, landscape design, and environmental consulting firm, with strong ties to WPI. Under his leadership, the firm was among the first to contribute to the Rubin Campus Center.

In 2001, John received the Alumni Association's Herbert F. Taylor Award for Distinguished Service to WPI in recognition of his commitment to his alma mater.

Dean Michael O'Donnell, teaching professor in computer science and architect of the IMGD program, passed away while this issue of the *WPI Journal* was being put together. An extended obituary will appear in the next issue.

George Fetherolf, Jr. '44 ME, Hilton Head Island, S.C.
John Barrett '46 CE, Plymouth, Mass.
Otto Kern '48 CE, SIGMA ALPHA EPSILON, Hampden, Mass.
Richard Seagrave '48 ME, SIGMA PHI EPSILON, Springfield, Mo.
Donald Sands '51 CH, Lexington, Ky.
Robert Meyer '52 ME, THETA CHI, Slidell, La.
Robert Chiabrandy '53 ME, Burlington, Vt.
Charles Simonich '54, PHI KAPPA THETA, East Longmeadow, Mass.
Henry Manseau '55 EE, ALPHA TAU OMEGA, Scarborough, Maine
Robert Pearce '55 EE, Juno Beach, Fla.
Joseph Cimerol '56 CHE, Hamden, Conn.
James Clarke '57 CHE, THETA CHI, Stone Mountain, Ga.
John Stinson '57 CE, SIGMA PHI EPSILON, Hanover, N.H.
Richard Wright '57 EE, SIGMA PHI EPSILON, Plymouth, Mass.
George Prozzo '57 EE, Sarasota, Fla.
George Fotiades '59 EE, SIGMA ALPHA EPSILON, Shrewsbury, Mass.
Robert Price '59 ME, MSME, SIM, St. Augustine, Fla.
Douglas Farrand '60 CE, ALPHA TAU OMEGA, Maumee, Ohio
Harold Schmidt '60 CHE, SIGMA ALPHA EPSILON, Hopkinton, Mass.
Kenneth Anusavice '62 ME, Saint Augustine, Fla.
William Belanger '62 MNS, Millbury, Mass.
Raymond Coppa '64 MNS, Cranston, R.I.
Robert Shaughnessy '64 MNS, Fitchburg, Mass.
James Ratches '66 MS PH, PhD PH, Alexandria, Va.

Charles Bergeron '67 EE, PHI SIGMA KAPPA, Saco, Maine
Anna Granquist '67, Holden, Mass.
Thomas Ricchi '67 EE, THETA CHI, Parrish, Fla.
Todd Akin '70 MG, PHI GAMMA DELTA, Wildwood, Mo.
Elden York '70, EE, SIGMA ALPHA EPSILON, Daytona Beach, Fla.
Arthur Geetersloh '72, Greenville, Maine
Vahe Krikorian '72 ME, THETA CHI, Milford, Mass.
Lester Lier '75, Princeton, Mass.
Brian Burd '95 ME, Milford, Mass.
Brett Keisling '95 ME, Hilton Head Island, S.C.
Ryan Byrnes '97 MGE, SIGMA PI, West Bridgewater, Mass.
James Wang '03 CS, San Jose, Calif.
Ronan Banavige '23, Maple Plain, Minn.
Deborah Coleman, Hon. PhD, Portland, Ore.
Valentin Gapontsev, Hon. PhD, Worcester, Mass.

The WPI community also notes the passing of these friends of the university: **Geraldine Miller**, **Elizabeth Tomaszewski**, and **Andrew Ursch**.

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

“My father was very generous to me and others, and he would not have been able to do all the things he did in his life without WPI.”

—**Larry Hershoff**, speaking about **Len Hershoff '43**, and why he is continuing his father's scholarship legacy at WPI by supporting the **Len '43 and Mary Hershoff Scholarship Fund** (see story page 55.)

BEYOND THESE TOWERS

THE CAMPAIGN FOR WPI

WPI likely changed your life in some way. Perhaps a project experience inspired you to take a path you never would have explored. Maybe WPI is the place you found the friends who became your family or a profession that has made things possible that you'd never expected.

Or maybe you're like Larry Hershoff and WPI was such a positive influence on someone else in your life that the ripple effects also propelled you forward.

You can have that kind of impact on someone else's life by supporting a WPI scholarship.

With your help, ***Beyond These Towers: The Campaign for WPI*** will knock down the barriers that prevent some qualified students from accessing WPI's transformative education. Beyond these towers are students who have everything it takes to be at WPI, except the means.

Be their means.

Learn more. Make your gift. wpi.edu/+beyond



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