SPRING 22

CE IMPACT

LYLES SCHOOL OF CIVIL ENGINEERING

Is the Water Safe to Drink?

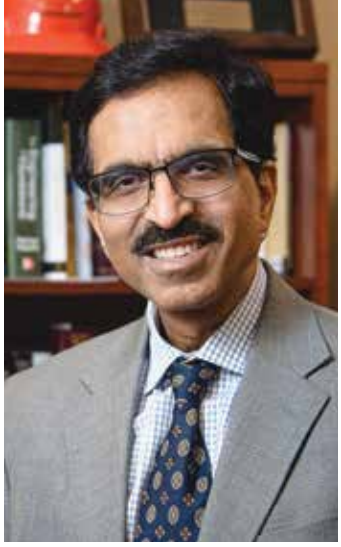
FIRST OF ITS KIND PLUMBING TESTING FACILITY GATHERS DATA TO FIND OUT PAGE 4

PURDUE UNIVERSITY

Lyles School of Civil Engineering

BUILT ENVIRONMENTS PLAY A ROLE IN MITIGATING DISEASE | PAGE 6

MESSAGE FROM THE HEAD



The spring season has only just begun, yet the spring semester's end is already in sight.

For our students, I suspect, both prospects are largely seen as positives as they look forward to what the future holds in store for them. As for me, I cannot help but find myself looking back on the days and events that brought us to this point in the school year.

When students returned to campus last fall, I daresay there was some apprehension felt by most everyone. Just a few months earlier, we were cautiously optimistic that campus life — and life in general — would return to normal (or close to it) as we appeared to make it through the pandemic. Then came the delta variant and Purdue University had to swiftly switch gears.

Thankfully, our university and its students handled — and continue to handle — the pandemic remarkably well. In-person classes continued. Research continued. Life continued. And now, in spring, we are seeing the fruits of our labor ripen and flourish.

In just a matter of weeks, we expect to see about 150 of our undergraduate and graduate students earn their degrees and begin the next phases of their lives, be it in the practice of engineering, furthering their education or an entirely different endeavor. Regardless, I have full confidence that they are as prepared as any student can be thanks to their efforts and accomplishments — and that of our faculty and staff who have been there to guide and support them along the way.

While the school year may already be drawing to a close, our focus on ensuring our students receive the best education possible and are afforded ample opportunities to gain crucial experience through guidance, research and industry experiences never ceases. We owe it to them to meet and exceed their expectations as we all engage in the persistent pursuit for a better future for all.

In this edition of *IMPACT*, you will gain greater understanding of what the Lyles School of Civil Engineering is doing to maintain our commitment of continued excellence. Stories include student-assisted research on critically-important issues such as water quality, infrastructure, and further development in Purdue's work to establish livable habitats for humans in outer space.

Our work and research are many and varied, and we aim to further extend our reach and expand our efforts. The future here is bright — and the efforts we make today as we prepare our students to become tomorrow's leaders continues ever onward.

All the best,

Rao S. Govindaraju
Bowen Engineering Head of Civil Engineering
and Christopher B. and Susan S. Burke Professor of Civil Engineering

IN THIS ISSUE:

02 SURF
Summer fellowship offers undergraduates interdisciplinary research experience

04 MEASURING WATER QUALITY AT SCALE
First-of-its-kind integrated plumbing system replicates real-world conditions

06 BUILT ENVIRONMENT PLAYS A ROLE IN MITIGATING DISEASE
Examining how the pandemic affected operations in meatpacking plants may lead to infrastructure changes

08 ENGINEERING FOR THE FUTURE
Developing algorithms to detect damage on smart structures
Using virtual reality to train bridge inspectors

10 ON THE RUN
Alumnus competes in marathons in support of Muscular Dystrophy Association

12 STUDENT-ALUMNI MENTORSHIP
Newly established program connects undergraduates with civil engineering grads

13 STUDENT ORGANIZATIONS
The student groups active in the Lyles School of Civil Engineering are organizations students can be proud to join

ON THE COVER

A team of undergraduate and graduate students worked for three years to construct a multi-plumbing system in the basement of Hampton Hall. The first-of-its kind facility allows researchers to measure water quality changes at-scale.

RAO S. GOVINDARAJU
Head

AYHAN IRFANOGLU
Associate Head

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DREW STONE
Director of Marketing and Communications

SUE KHALIFAH
Director of Student Experience

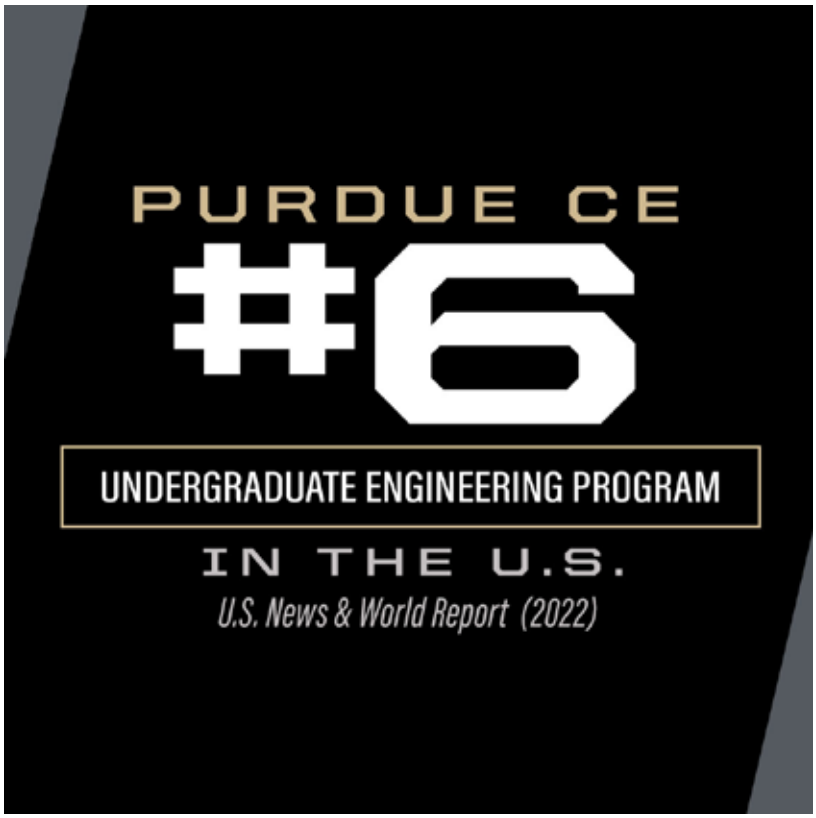
L. SCOTT HINKEL
Director of Development

KATHY HEATH
Program Administration Manager

EA/EOU
Produced in collaboration with The ESC Plan, LLC

Designers: Paul Sadler, Kat Braz | Contributing writer: Kat Braz
Contributing photographer: Charles Jischke

NEWS & EVENTS



The Lyles School of Civil Engineering remains a top 10 civil engineering undergraduate program in the United States.

U.S. News & World Report has released its national rankings of undergraduate programs for 2022 with Purdue Civil Engineering ranked No. 6 in the nation. The rankings are computed from the responses to a survey sent to deans, heads and selected senior faculty.

Purdue Civil Engineering has been consistently ranked in the top 10 by *U.S. News & World Report* for over a decade.

"I am incredibly proud of our students, faculty, staff and alumni whose outstanding work continues to be recognized as some of the best in the world," said Rao S. Govindaraju, Bowen Engineering Head of Civil Engineering and the Christopher B. and Susan S. Burke Professor of Civil Engineering.

Overall, Purdue University's College of Engineering undergraduate program was ranked 10th in the nation.

WINTER GRADUATION

Congratulations to our 80-plus graduate and undergraduate students who earned their degrees from the Lyles School of Civil Engineering in December! We wish you the very best and look forward to your return visits to campus.

PURDUE UNIVERSITY | Lyles School of Civil Engineering

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MOVING? SEND CHANGE OF ADDRESS TO:

Lyles School of Civil Engineering
Delon and Elizabeth Hampton Hall
550 Stadium Mall Drive
West Lafayette, IN 47907-2051

Or email: heathk@purdue.edu
Or call: 765-494-2166

SURF

SUMMER FELLOWSHIP OFFERS UNDERGRADUATES INTERDISCIPLINARY RESEARCH EXPERIENCE

To learn more about the SURF program, visit:
engineering.purdue.edu/Engr/Research/EURO/SURF

The Lyles School of Civil Engineering's commitment to educate and prepare its undergraduates to make their next giant leap extends far beyond what is taught in the classroom.

The College of Engineering's Summer Undergraduate Research Fellowship (SURF) program provides an action-oriented research experience for undergraduate students to stimulate their interest in advanced education and research careers. Civil engineering staff and faculty have participated since the program's inception.

SURF matches selected undergraduates with a faculty member and graduate student mentor who introduce them to the research tools used on the cutting edges of science, engineering and technology. This competitive fellowship is a paid, 10-week, immersive summer research program guided by the faculty and graduate student mentors.

Undergraduate Wahab William Akanbi joined Assistant Professor Sogand Hasanzadeh's research team to work on an interdisciplinary research project about construction safety and wearable technologies.

"It is a fantastic program and I was excited to be a part of it," Hasanzadeh said. "Besides learning more about engineering, students also gain vital experience and a greater understanding of what it's like to be on a team and see what they learned in class is used every day in the research field."

In addition to research activities, students also participate in weekly professional development workshops. The program culminates with a student research symposium where all fellows present a technical poster or an oral talk.

Undergraduate Hannah Tomkins joined Associate Professor Cary Troy's research team over the summer studying coastal erosion at Lake Michigan. Tomkins said the experience was eye-opening.

"I never realized how interdisciplinary research often becomes," she said. "Especially in civil engineering where it's so wide-reaching, you learn so much working with students and professors in other engineering disciplines."

Environmental and ecological engineering undergraduate Ben Nelson-Mercer was another member of the interdisciplinary research team.

"Prior to participating in SURF, I wasn't certain I was interested in pursuing research," Nelson-Mercer said. "The summer program was perfect for me to learn more through research and I discovered it was something I truly enjoyed being a part of."

For both Tomkins and Nelson-Mercer, their experiences led to earning ongoing research positions on Troy's team.

"The SURF program has always been a great place to find new research assistants for more than just over the summer," Troy said. "This program does an incredible job finding the best, most motivated students — and it's so well-structured in how it prepares them."

> "THIS PROGRAM DOES AN INCREDIBLE JOB FINDING THE BEST, MOST MOTIVATED STUDENTS – AND IT'S SO WELL-STRUCTURED IN HOW IT PREPARES THEM."
>
> ***—Cary Troy***
> *Associate Professor, Lyles School of Civil Engineering*

Undergraduate Hannah Tomkins assists Ayman Habib, the Thomas A. Page Professor of Civil Engineering, survey Lake Michigan.

MEASURING WATER QUALITY AT SCALE

First-of-its-kind integrated plumbing system replicates real-world conditions

A research team, led by Andrew Whelton, professor of civil engineering and environmental and ecological engineering, wanted to study the safety of drinking water in new homes and buildings. However, conducting these tests in inhabited buildings across the country was impossible — so, Whelton's team aimed to correct that.

"One of the biggest questions I have had since I started researching water quality is: How does water quality change when you start a new water system?" Whelton said. "If you build 12 replicate new homes, will the water quality be the same in all of them, at every tap? These questions haven't really been answered before because all the tests before have been done in older buildings or at a much smaller scale."

Given these questions, Whelton's team opted instead to construct a large multi-plumbing system in the Burke Hydraulics and Hydrology Research and Teaching Lab in the basement of Hampton Hall. The facility includes four identical walls fitted with real-time online water quality monitoring systems, automatic flushing systems and an online data acquisition system.

"We constructed the facility to answer questions at scale," Whelton said. "There's nothing else like this. And, with this capability, we can now gain a greater understanding about how water quality changes in building plumbing."

Whelton said at-scale plumbing testing is something that has been sorely needed and he is excited to be able to conduct research that could result in a dramatic discovery with drinking water health and safety.

More than 20 undergraduate and graduate students over the past three years helped to build everything from constructing the walls to joining pipes to wiring and calibrating electronic monitoring equipment. William Schmidt, an engineering technician, was instrumental in training and supervising the student crew. Whelton learned a lot from Schmidt, too, he said.

"Plumbing is critical to the health, security and viability of the nation," Whelton said. "Here at Purdue, we are working on understanding how to better design buildings; how building plumbing affects water safety so we can make advancements to improve human health and well-being in the nation."

Lauren Gustafson, a civil engineering undergraduate researcher, said both the ongoing research and the efforts made to even achieve such results have been eye-opening.

"This is just one of those things where you assume that there must be some facility out there already for testing like this, but there wasn't — and there's such a great need for research at this scale to be conducted," Gustafson said. "Water — especially in our homes — is critical to our health and safety."

TOP: Professor Andrew Whelton prepares to gather samples with (from left) Purdue Civil Engineering undergraduate Laura Gustafson, Environmental and Ecological Engineering PhD student Aliya Ehde, and Environmental and Ecological Engineering master's student Caroline Jankowski.

Environmental and Ecological Engineering PhD student Aliya Ehde (left) and Civil Engineering master's student Maria Palmegiani review the collected water samples.

Starting in the fall of 2021, Whelton's team took to studying the effects of water softeners on plumbing systems. In the initial months of operation, Whelton said his team discovered that there are significant changes to building water safety in plumbing that is designed and operated in the exact same way and receive water from the exact same source.

"What we're looking at now is the degree new water softeners leach chemicals into drinking water," Whelton said. "There are tens of millions of water softener systems installed nationwide. These remove hardness or minerals from water but nobody has really reported on the types of chemicals they impart to the water."

Whelton said his team's focus is on the plastic resin beads within water softeners and the plastic components that help transport water through the device. Now that the team has identified leaching as a problem, they are working to determine the health concerns these chemicals may pose.

"Ultimately, what we hope to gain from our work is to finally answer the question we all have," Whelton said. "Whether it's turning on the tap, starting the washing machine or walking up to a water fountain, we all want to know: Is this water safe?"

FUTURE RESEARCH

One of the greatest assets to the new facility, Whelton said, is that it affords his team and collaborators the opportunity to research many more issues facing water quality. In the coming months, Whelton said his collaborator Caitlin Proctor, professor of agricultural and biological engineering and environmental and ecological engineering, aims to also study the effects sitting water has on water quality.

"Globally, there are excellent researchers who have been studying how water quality changes when it's left to set for a while, but there's no real way to test these in real-time at-scale," Whelton said. "People go on vacations or just go away for the weekend — but, when they come back, how much has the water changed? Are there legitimate health and safety risks? That's what my colleague Professor Proctor is now exploring at the facility."

Whelton and Proctor are director and associate director of the Health Plumbing Consortium, a group of leading plumbing companies. More information about this work can be found at www.PlumbingSafety.org

From left: Julio Ramirez, Raquel Ruiz and Julia Olson

BUILT ENVIRONMENT PLAYS A ROLE IN MITIGATING DISEASE

Examining how the pandemic affected operations in meatpacking plants may lead to infrastructure changes

In the early months of the COVID-19 pandemic, many businesses migrated to remote work or paused operations entirely unless their services were deemed essential. Meatpacking plants, an essential link in the grocery supply chain, remained in operation. With workers standing in close proximity to one another for long hours often in messy conditions, the industry was among the hardest hit by COVID-19 in terms of infection and mortality rates.

"With so many people indoors, sharing the same space, the built environment played a significant role in the spread of COVID-19," said Julia Olson, an undergraduate research assistant who interviewed the leadership of a local meatpacking plant. "We're looking at changes that could be made to the infrastructure in a general sense as well as this particular plant and its workflow to help reduce the spread of disease."

Olson, a junior in civil engineering from Chaska, Minnesota, is working with Julio Ramirez, the Karl H. Kettelhut Professor in Civil Engineering and director of the Natural Hazards Engineering Research Infrastructure Center-Network Coordination Office. Ramirez is co-principal investigator on a study of joint hazard mitigation in the era of COVID-19. The multi-disciplinary study involves engineers and social scientists from Purdue, Rensselaer Polytechnic Institute, Georgia State University and the University of Notre Dame and is funded under a grant from the National Science Foundation awarded in August 2020.

The Purdue team's component of the project focuses on the impact COVID-19 had on the workflow within several types of environments, including schools, health care facilities and meatpacking plants. While Olson focuses on meatpacking plants, master's student Raquel Ruiz, another member of the research team, is working with a psychiatric unit in the Chicago area to collect information about a specific aspect of the health care industry.

"Much emphasis during the response to the ongoing COVID-19 pandemic has rightly been on traditional public health efforts to control it; however, less prominent but no less vital is the role of the built environment itself in both amplifying and suppressing the spread of COVID-19," Ramirez said. "We must examine things from a multi-disciplinary perspective because there are lessons to be learned from temporary and permanent changes made due to the pandemic that will influence the future of infrastructure."

Implementing recommended precautions — such as maintaining six feet between another person or wearing masks — was challenging in meatpacking plants where workers often stand shoulder to shoulder wearing fluid-soaked masks. Through her research, Olson learned how plant operations and processes were affected by the pandemic.

"In some cases, larger plants in the area were forced to shut down due to outbreaks," Olson said. "That meant the smaller plants had to increase production in order to meet supply chain demands. Smaller operators felt trapped in the system."

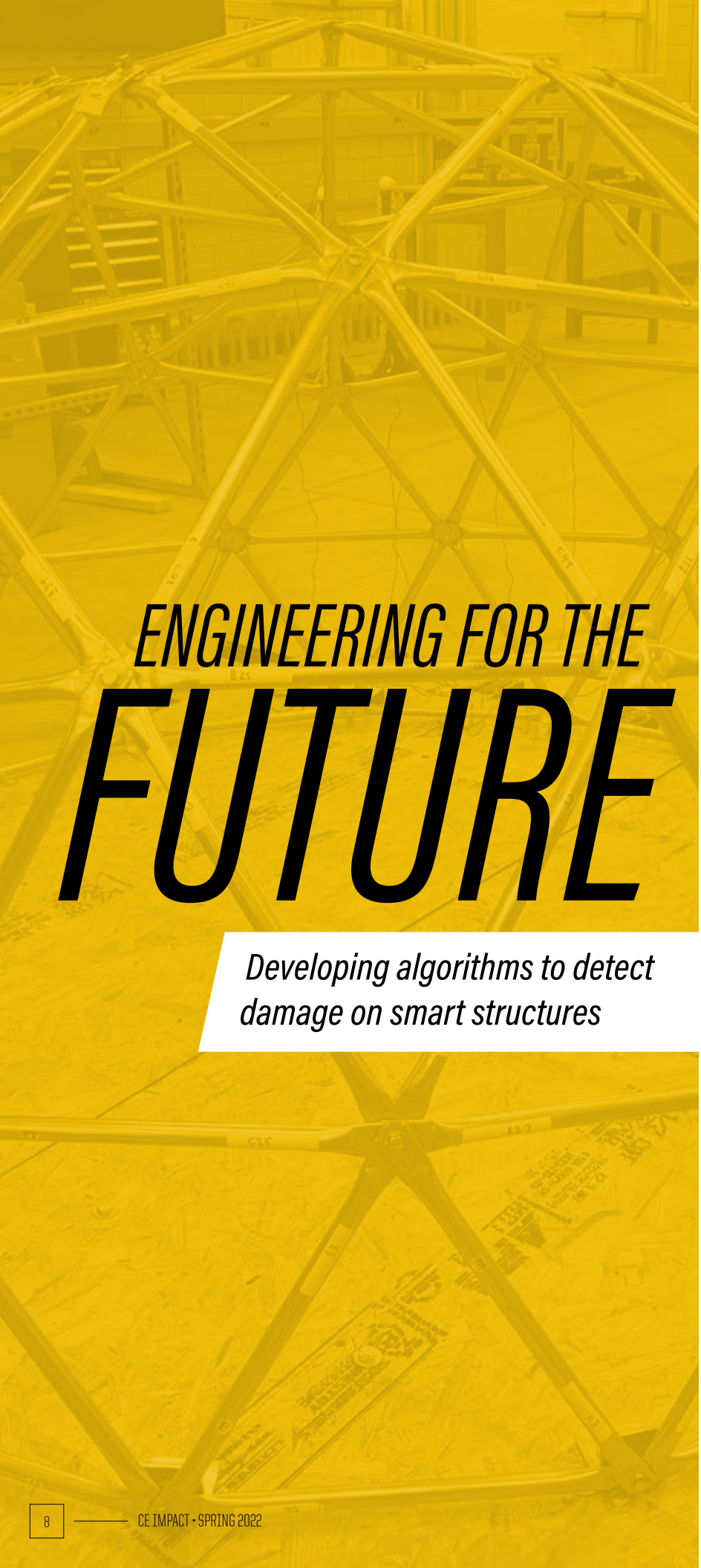
Identifying flexibility within systematic workflow is key to reducing disease spread. Ramirez points to the large number of jobs that transitioned to telework in 2020 — approximately 72% of individuals in white-collar jobs were working remotely according to Gallup (2021) — as an example of flexibility within workflow. For many, their residence became their office and sometimes, a classroom for their children, almost overnight. But for most blue-collar jobs, remote work is not an option.

"In the meatpacking plants, we see this division of flexibility of workflow," Ramirez said. "Some administrative positions, such as finance or human resources employees can work remotely. But the process of preparing the meat, packaging it and shipping it, the job cannot be done unless a worker is physically there. That's why we need to look at changes to the infrastructure so we can be proactive in advance of the next pandemic, rather than reactive.

"There were some industries, such as health care, that had planned and prepared for such an eventuality and yet the system is still strained because none of the infrastructure was designed to withstand a pandemic of this magnitude. We are looking at precisely what transitions took place to allow industries to continue to operate and how successful they were. Reacting to the pandemic has been a very painful adjustment, emotionally, physically and economically. Everyone managed the best they could, but there is much to learn."

Contributing to the research project has further cemented Olson's passion for civil engineering and developed her empathy for others, a leadership trait that the ROTC midshipman will espouse as a Naval officer.

"It's really eye-opening to hear first-hand how difficult navigating the pandemic has been for these business owners," Olson said. "As engineers, we must consider the human factor. Working on this research project helped develop my critical thinking skills. Understanding the issues faced in meatpacking plants helps us to form conclusions and consider how proposed changes to infrastructure might impact people."



ENGINEERING FOR THE FUTURE

Developing algorithms to detect damage on smart structures

When one thinks of "futuristic research," two of the most common associations made are in the realms of space travel and virtual reality. Mohammad Jahanshahi, associate professor of civil engineering, is conducting research on both topics.

Jahanshahi is a member of Purdue University's Resilient Extra-Terrestrial Habitat Institute (RETHi) led by Professor Shirley Dyke. Established in 2017, the multidisciplinary effort seeks to establish habitats on other extra-terrestrial locations such as Mars and the moon and pursue three research thrusts: anticipating and adapting to possible threats; building networks of sensors that can actively learn, detect and diagnose issues; and developing autonomous robots that can operate independently and collaborate with humans.

Jahanshahi's current research involves developing artificial intelligence algorithms for damage detection on smart structures. To this end, he is working on a geodesic dome — which his team assembled and instrumented with accelerometers — and using structural dynamics and machine learning to detect when damage occurs to the structure.

The dome, Jahanshahi said, acts as a scale model that would protect the extra-terrestrial habitat within it. Through a series of hammer tests (literally striking the structure with hammers at various points and with varying force), the sensors measure the vibrations and record and report the damage sustained.

"This is a very challenging problem as we're collecting data that isn't just 'plug-and-play,'" Jahanshahi said. "We need to have a strong computer to collect up to 200 different data points from these accelerometers. It must then assess the amount of damage sustained, pinpoint exactly where it occurred and issue a report so that repairs can be made."

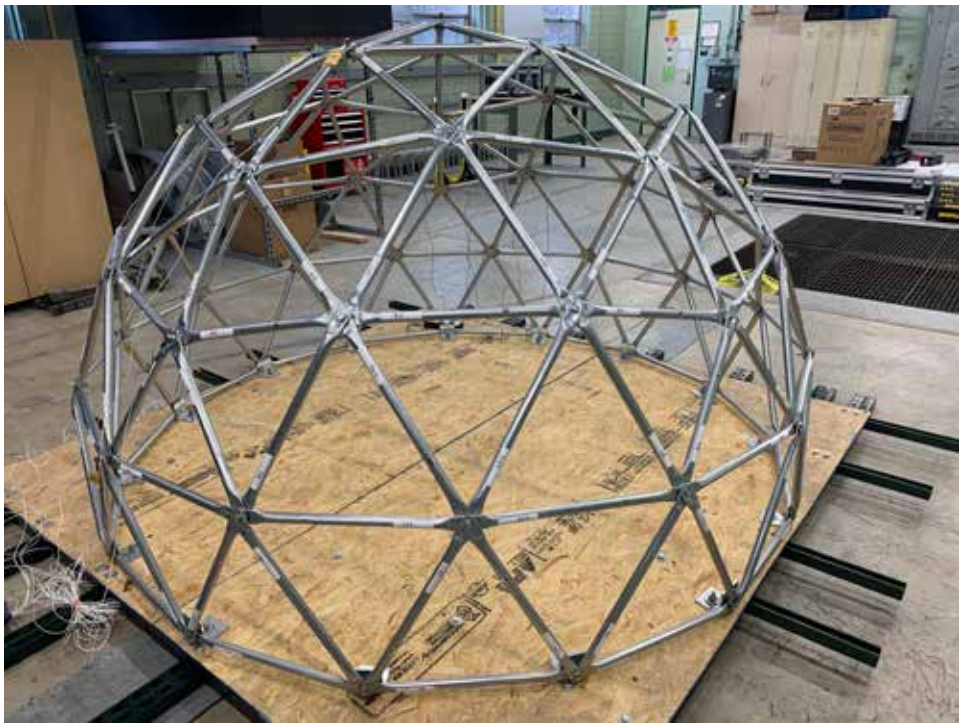
Aiding in the data collection are civil engineering undergraduate researchers Harrison Kuszmaul and Wonsang Cho.

"It's been a challenging process as we are doing something that really hasn't been done before," Cho said.

Kuszmaul echoed Cho, adding that while this has been a challenge, it has also been a rewarding and exciting endeavor and he looks forward to where the project leads.

"When I heard about RETHi, I knew this was something I wanted to be involved with," Kuszmaul said. "We're working toward a future where people can live in outer space — and it's being done right here, right now, at Purdue."

Jahanshahi said the next phase in their research will be to perform damage assessment on a new cyber-physical testbed that will be assembled within Herrick lab his summer.



INDOT Assistant Statewide Maintenance Operations Engineer Andrew Blackburn (left) tests the VR module with Purdue civil engineering PhD student Yu-Ting Huang.

Using virtual reality to identify inconsistencies in bridge inspectors

In the realm of more Earthly damage assessments, Jahanshahi's research team is developing a virtual reality training program for the Indiana Department of Transportation's (INDOT) bridge inspectors.

"Bridge inspection is vital to ensure safety — but there is a huge inconsistency among different inspectors due to the subjectivity of the task," Jahanshahi said.

His team is working on generating high-resolution, 3D models of bridges that can be pushed into a VR headset and allow bridge inspectors to assess the structure in an immersive photo-realistic environment. Then, INDOT can evaluate the performance of different inspectors and update the training procedures.

"These VR modules allow inspectors to experience something much more immersive than observing a broken structure," said Yu-Ting Huang, a doctoral student in civil engineering. "You can see the structure from all angles in greater detail than from limited views afforded from on-site visits."

VR modules also create a higher degree of uniformity in both training and damage assessment, Jahanshahi said.

"When it comes to bridge inspections, there is an unavoidable degree of subjectivity to it," he said. "Two inspectors can have two completely different responses when coming across a small crack. With this program, you can create a checklist and score the assessments, which will lead to greater uniformity amongst inspectors in the future."

ON THE RUN

ALUMNUS COMPETES IN MARATHONS IN SUPPORT OF MUSCULAR DYSTROPHY ASSOCIATION

Through his connections to his school and his family, this civil engineering alumnus continues to seek opportunities to pay it forward.

Jamie Shinneman (BSCE '96) is the senior vice president of commercial development at Weihe Engineers in Indianapolis. He joined the company in 2002 and has been a part of many residential, commercial and educational developments throughout the Midwest.

A native of Noblesville, Indiana, Shinneman said he always knew he wanted to work in the civil engineering or architectural field. Like many other civil engineers, that interest was sparked by a fascination with building and creating things as a child.

"When I was a kid, I always loved building things like forts," he said. "It's just something that always stuck with me — to come up with an idea and work to make it happen in real life. From there, I had a great interest in pursuing a career where I could create homes and buildings for a living."

When it came time for college, Shinneman looked to Purdue to prepare him to make his dream a reality.

"I knew Purdue was a great place to study engineering — both from growing up in Indiana and knowing about it and from my grandfather, Jim Kenney, who got his degree as a metallurgical engineer in 1949," Shinneman said. "And when I started taking my first civil engineering classes, I knew this is where I wanted to be."

In addition to what he learned from the faculty, Shinneman credited the Civil Engineering Co-operative Education Program with providing him with the necessary skills and experience to pursue his career goals.

"It was something I started after my freshman year," he said. "I worked for the Tippecanoe County Highway Department and it's where I gained a tremendous amount of experience. That gave me a real understanding of what my future in civil engineering could be like."

Shinneman remains a strong supporter of the program to this day.

"The co-op program is one that I strongly believe in and I want to see it continue to grow because I know how instrumental it can be to a civil engineering student," Shinneman said. "Not only does it develop your skills as a civil engineer, it also sets you up for your career. You make contacts and learn what you really like about civil engineering. Honestly, I can't speak highly enough about the program."

TEAM MOMENTUM

Muscular Dystrophy Association

Another organization Shinneman has been actively involved with is the Muscular Dystrophy Association's Team Momentum. The team competes in marathons and half-marathons in an effort to raise a greater awareness for muscular dystrophy. In November 2021, he completed the New York Marathon — his eighth marathon to date.

Shinneman's involvement with the MDA is a personal one. His wife, Amy, was diagnosed with a neuromuscular disease a few years ago.

"We were high school sweethearts. She's always had muscle weakness since birth and she always wondered why," he said. "Her parents — then, later, she and I — went to several doctors over the years and no one could tell us the cause. Even the Mayo Clinic couldn't figure it out when she was younger. Eventually, her current neurologist ordered a genetic test, and that's when they discovered she had a rare form of muscular dystrophy. I remember it being such an elating feeling for us both. While it was certainly not the kind of news someone might wish for, it was also a relief to finally know what we are dealing with after all these years. We could finally move forward, knowing what we were facing."

And move forward they did — at a runner's pace.

Their sons, Luke and Jack, both play sports and participate in cross country and track and field. From there, Shinneman said, the whole family developed an interest in running.

"It just started with us running together through the neighborhood," he said. "I ended up really enjoying myself and then it went from joining 5k runs to a half-marathon — and then it continued to grow. It was then I decided I wanted to use my abilities to help others and started running for World Vision, which seeks to provide water for children in Africa. But then, after Amy's diagnosis, I sought to partner with Team Momentum for the Muscular Dystrophy Association."

Over the last three years, Shinneman represented Team Momentum in marathons in New York, Boston and Chicago. In November, his son, Luke — now 18 (and recently accepted into Purdue), was able to join him for the first time in New York.

"It was just an amazing experience to be able to do that with my son," he said. "To be there with Amy and Luke the entire way is something I'll never forget."

As for the future, Shinneman said he wants them to participate in the other Abbott World Major Marathons held in Berlin, London and Tokyo. For now, though, he said, he plans to rest a bit and enjoy training in the comfort of his own neighborhood.

The Shinneman family after completing the New York City Marathon in November. From left: Luke, Amy and Jamie

Jack, Jamie, Amy and Luke Shinneman

STUDENT-ALUMNI MENTORSHIP

NEWLY ESTABLISHED PROGRAM CONNECTS UNDERGRADUATES WITH CIVIL ENGINEERING GRADS

Oftentimes the best way to learn about the field you plan to enter is from a professional that is already there.

In addition to preparing its students for careers through education and internship opportunities, the Lyles School of Civil Engineering has also developed a mentorship program to match its undergraduates with alumni. This newly-established mentorship program aims to both better equip students with real-world knowledge and offer its alumni another opportunity to reconnect with their alma mater.

Kathy Heath, program administration manager, said the mentorship program largely came together after speaking with several alumni — all of whom mentioned that they wished such a program was in place when they were still students.

"Many of the companies they work for have mentorship programs established — but it's for new hires and senior employees," Heath said. "They wanted a program for students who still had questions and decisions to make before they chose their profession. And they wanted to help out their school and future Purdue contemporaries."

In 2021, the school kicked off its pilot program where it swiftly received more than a dozen requests from students to participate.

"It was a very encouraging sign," Heath said. "We have learned quite a bit over the past several months and have slowly begun to open the program up even further."

One of the mentor/mentee pairs consists of undergraduate Tyler Sylvia and alumni Bill Bailey, president of Crawford, Murphy & Tilly Inc.

"I heard about the program from a friend who said it was really helping them out," Sylvia said. "I mentioned that I'd like to find a way to speak with someone currently in the industry as I prepare to graduate this spring so I can feel as prepared as possible. I'm very happy this program exists. I just wish I could have joined it even earlier."

Bailey echoed Sylvia's praises for the program and said he looks forward to seeing it develop further in 2022.

"This program is not just beneficial to the students but to the mentors as well," Bailey said. "It provides you with an opportunity to reflect on what brought you to where you are now and what helped you succeed. This is a great program and I look forward to seeing even greater involvement — especially from our younger alumni. I think they would serve as the best mentors as they will have some of the more relatable experiences to share with these students."

Enrollment in the Lyles School of Civil Engineering Mentorship Program is open. Email Kathy Heath at heathk@purdue.edu to participate.

STUDENT ORGANIZATIONS

WHETHER IT BE NETWORKING TO CREATE BUSINESS CONTACTS, ENGAGING IN COMPETITIONS OR INSPIRING PURDUE UNIVERSITY STUDENTS TO HELP OTHERS, THE STUDENT GROUPS ACTIVE IN THE LYLES SCHOOL OF CIVIL ENGINEERING ARE ORGANIZATIONS STUDENTS CAN BE PROUD TO JOIN.

PURDUE ASCE

The Purdue University Chapter of the American Society of Civil Engineers (ASCE) provides Purdue civil engineering students with a network of peers and mentors committed to developing leadership skills, learning outside of the classroom, serving the community and promoting the profession as a whole.

Every year, university student ASCE organizations around the nation compete in events such as the concrete canoe, seismic design and steel bridge competitions. Purdue ASCE also hosts its own event on campus, the annual bridge bust, in which hundreds of high school students from the Midwest come to Purdue to test the carrying capacity of their balsa wood bridges.

PURDUE CESAC

The Civil Engineering Student Advisory Council (CESAC) was founded to increase interaction between engineering students and faculty in the Lyles School. The organization builds partnerships between students, faculty, administrators, alumni and industry to continue pursuing Purdue Engineering's excellence in education, research and service.

The biggest event CESAC hosts is its annual career fair — and it is one of the most attended engineering events at Purdue. Annually, more than 100 employers come to Purdue, all with full-time, internship and co-op positions ready to be filled.

PURDUE CEGSAC

The Civil Engineering Graduate Student Advisory Council (CEGSAC) serves the same core mission as CESAC: to foster and maintain strong relationships with faculty and students — specifically, graduate students.

Events and activities headed by CEGSAC include charity fundraising for disaster relief, student-faculty social events and College of Engineering social events, all of which allow graduate students from various engineering programs to collaborate.

CHI EPSILON

Chi Epsilon, the national civil engineering honor society, is dedicated to maintaining and promoting the status of civil engineering as a profession. Chi Epsilon recognizes the characteristics of the ideal civil engineer, attributes fundamental to the successful pursuit of an engineering career. Members help one another develop those characteristics in themselves.

The organization's objective is to contribute to the improvement of the profession, develop and exercise sound traits of character and technical ability among civil engineers and guide its members toward an ever-higher standard of professional service. Chi Epsilon's public service work includes tutoring, providing school and program information and performing community service.

A full list of our student organizations can be found at https://bit.ly/ce-student-orgs

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