THE BRIDGE

Keeping watch on a one-of-a-kind bridge

CEE researchers build a digital twin of the I-90 Homer M. Hadley Memorial Bridge to monitor the world's first floating light rail crossing.

Page 6

Concrete, steel, timber

An inside look at three of CEE's student clubs

Page 14

SPRING 2026

CIVIL & ENVIRONMENTAL ENGINEERING

UNIVERSITY *of* WASHINGTON

MESSAGE FROM THE CHAIR

Welcome to the spring 2026 edition of *The Bridge*. Each issue gives me an opportunity to reflect on the full picture of what our department does. This spring, that picture stretches from Lake Washington to Earth's orbit.

In late March, Sound Transit's 2 Line began carrying passengers across the I-90 Homer Hadley floating bridge on Lake Washington, the world's first light rail crossing on a floating structure. CEE faculty helped make this a reality — Professor John Stanton led years of testing on the rail adhesive and track transition systems now installed on the bridge, and Assistant Professor Travis Thonstad and Professor Michael Motley are leading the development of a digital twin that monitors the structure in real time.

This issue also highlights Associate Professor David Shean's role as a co-investigator on NASA's EDGE satellite mission, research from Professor Mari Winkler's lab applying hydrogel technology to chronic kidney disease and Professor Joe Wartman's building-level model of landslide risk across Seattle. We also remember former professor and chair Neil Hawkins, who shaped the department and the field of structural engineering over a distinguished career.

Our students continue to make CEE proud. This spring, UW's ASCE chapter hosted the Pacific Northwest Concrete Canoe regional competition, and our Timber Strong and Steel Bridge teams competed in their own regional competitions. You'll find their stories in this issue alongside a profile of CEE alumnus and Olympic curler Luc Violette.

Projects like the 2 Line reflect what we hear from industry partners across the state: the demand for civil and environmental engineers is strong. The department is responding. Undergraduate enrollment is up, we held our inaugural Capstone and Research Showcase, welcomed students back to Engineering Discovery Days and reestablished our External Advisory Board to strengthen ties with our professional community.

Thank you for being part of what makes CEE work. The range of stories in this issue reflects the breadth of this community, and I hope you enjoy reading them.

Bart Nijssen
Chair & Professor

Department honors

Associate Professor Paolo Calvi received the 2025 Anti-Seismic Systems International Society's Global Design and Innovation Award in the research category as part of an international team. The group conducted a first-of-its-kind test on a building in L'Aquila, Italy, that was built on special devices designed to absorb earthquake shaking, after a major earthquake struck the city in 2009. The test offered rare real-world data on how these protective systems hold up over time.

Professor Jim Thomson was part of a research team that received the 2025 Excellence in Partnering Award from the National Oceanographic Partnership Program (NOPP) for their NOPP Hurricane Coastal Impacts project. The effort brings together researchers from across academia, government and industry to better predict how hurricanes damage coastlines, including effects like beach erosion, barrier island breaching and property damage.

DEPARTMENT NEWS

CEE launches inaugural Capstone & Research Showcase

This spring, CEE held its first-ever Capstone & Research Showcase, marking a milestone for the department. The event, held May 27, brought together students, faculty and guests to celebrate the work of graduating seniors.

In capstone projects, student teams tackle an engineering problem, taking it through the full design process — from problem definition to prototype and presentation. The showcase featured teams presenting their work through posters, demos and presentations. Projects included both faculty-led research and work developed in partnership with industry, government and nonprofit sponsors, including the Washington State Department of Transportation, Snohomish County Public Utility District, Bechtel, Amazon, Lid I-5 and BHC Consultants.

The department plans to grow the program in the coming years, expanding opportunities for students and building new partnerships with industry, government and community organizations.

Engineering Discovery Days brings future engineers to campus

On April 30 and May 1, the UW campus opened its doors to thousands of elementary and middle school students for Engineering Discovery Days — a free, two-day event where students, teachers and families explore the world of engineering through hands-on activities.

Hosted by the UW College of Engineering, the event featured exhibitor booths from departments across the college, including CEE. Young visitors had the chance to build, experiment and ask questions alongside the students and faculty behind the work.

A campus tradition for more than a century, Engineering Discovery Days connects Washington communities to engineering and sparks curiosity in future problem-solvers. From shake tables and water quality experiments to drones, robots and edible bridges, the event shows young Washingtonians what engineers do and why it matters.

Photo by Mark Stone

Professor John Stanton delivers graduation keynote

On June 6, CEE held its graduation celebration at Alaska Airlines Arena in Hec Edmundson Pavilion, honoring students receiving bachelor's, master's and doctorate degrees. Professor John Stanton served as the keynote speaker for the event.

Stanton joined the UW faculty in 1978 and has spent more than four decades teaching and conducting research in structural engineering, with a focus on seismic engineering, bridge design and precast concrete framing systems for buildings. A respected voice in the department, Stanton was selected as the 2016 Steve and Sylvia Burges Endowed Lecturer, where he spoke on the science and art behind bridge design and construction.

Stanton is retiring at the end of this summer, making the keynote a fitting capstone to a career dedicated to the department and its students. During his address, he shared reflections from his career and words of encouragement for the graduating class.

Edward McCormack retires after decades of service to CEE

Research Associate Professor Edward McCormack retired this winter after a career spanning more than 35 years at the UW. McCormack served as director of the Master of Sustainable Transportation program and built a research portfolio focused on using technology to improve freight mobility. His work ranged from developing truck performance measures for WSDOT and the Norwegian Public Roads Administration to testing unpiloted aircraft for avalanche monitoring and evaluating freight technology for the U.S. Department of Transportation. He also contributed to three National Academy of Engineering projects on truck bottlenecks, smart growth and freight data. McCormack will remain connected to the department in an emeritus role.

CEE expands External Advisory Board

The Department of Civil and Environmental Engineering has expanded its External Advisory Board, bringing together leaders from industry, government and consulting to provide strategic guidance and strengthen connections between the department and the profession.

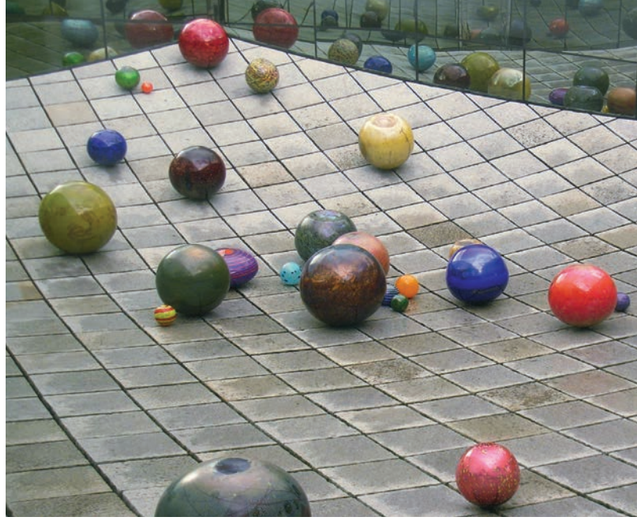
Expanding the board was a priority for Bart Nijssen when he took on the role of department chair. In 2023, he formed a departmental External Engagement Committee, whose main charge was growing the board's membership. A newly expanded board met during the 2024-25 academic year, and eight new members joined during the 2025-26 academic year, bringing the board to full capacity.

The board meets quarterly and advises the department on topics including curriculum development, research directions, outreach, student career pathways and alignment with the department's strategic plan. Members also serve as ambassadors for CEE, helping build visibility for its programs and connecting the department with the broader engineering community.

The board's membership spans structural, geotechnical, transportation and environmental engineering as well as water resources, construction, public infrastructure and technology.

Current members are:

- **Eric Albright,** *Principal, Landau Associates*
- **Michele Campbell,** *President, RH2 Engineering*
- **Dongho Chang,** *State Traffic Engineer and Director of Transportation Operations, Washington State Department of Transportation*
- **Wiley Coffin,** *Principal Delivery Manager, Bechtel Corporation*
- **Megan Dunn,** *Project Manager, Guy F. Atkinson Construction*
- **Mark Gaines,** *Director, Development Division, Washington State Department of Transportation*
- **Amy J. Haugerud,** *Consultant/Principal, RoseWater Advisors LLC*
- **Anna Henolson,** *Principal Consultant, Trinity Consultants*
- **Cindy Hirsch,** *Lead Civil Engineer, Federal Aviation Administration*
- **Larry Karpack,** *Senior Hydrologist, Watershed Science & Engineering*
- **Doulaye Kone,** *Director, Water, Sanitation & Hygiene, Gates Foundation*
- **Mo Malakoutian,** *Executive Director, Consulting and Business Development Center, UW Foster School of Business*
- **Yegor Malinovskiy,** *Senior Software Development Manager, Amazon*
- **Sara Marxen,** *Hydrology, Hydraulics and Coastal Engineering Branch Chief, U.S. Army Corps of Engineers, Seattle District*
- **Kris Overleese,** *President & CEO, KBA, Inc.*
- **Sujan Punyamurthula,** *Senior Vice President, Growth and Strategy Leader, Stantec*
- **Stacie Sire,** *Vice President & Managing Director, Boeing Engineering India; Chief Engineer, Boeing India*
- **David Swanson,** *Principal Civil/Structural Engineer, Microsoft*



A sculptor in the department

How Burges Visiting Professor Richard Rhodes connected art, stone and engineering at CEE

By Julia Davis

For more than 5,000 years, humans have turned to stone when they want to say something that lasts. It is the material of temples, cathedrals and monuments — the way civilizations have spoken to the future. And yet, when sculptor and master stonemason Richard Rhodes arrived at CEE as the 2025-26 Burges Visiting Professor, he found that most students had never studied it.

That gap is part of what made Rhodes such a distinctive fit for the Burges Endowed Visiting Professorship, which brings leaders from outside the UW with unique expertise to collaborate with CEE faculty and students. Rhodes brought a career spent working at the intersection of material, structure, history and art — and a conviction that creative thinking can strengthen civil and environmental engineering in ways that complement its existing rigor.

"The creative process can add so much value to the engineering process," Rhodes says.

His own path to stone was anything but direct. After studying medieval drama in graduate school, he traveled to Italy for his thesis, hoping to document the traditions of Europe's oldest labor guilds. Instead, the work itself drew him in. He became the first non-Italian admitted into Siena's masonic guild in 726 years.

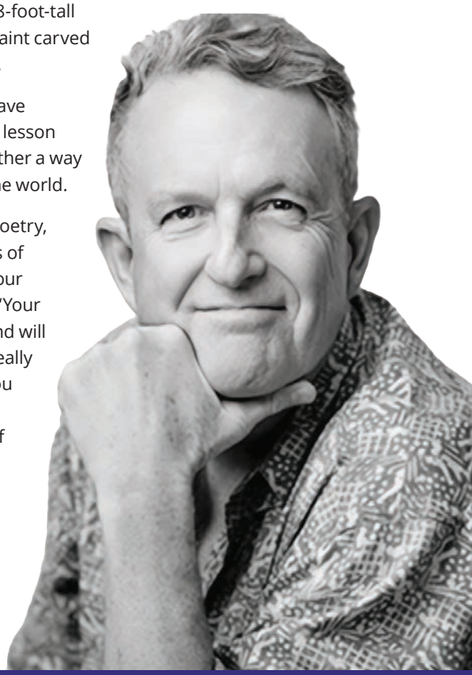
If there is a single project that illustrates why a sculptor belongs in CEE, it is Rhodes' Resolute Arch sculpture. The piece — 20 feet tall, 27 feet wide and weighing 25 tons — reimagines the traditional stone arch by leaving a gap in the form. A segment is missing, yet the structure stands. Originally built for Burning Man, the arch required eight years of work and a close collaboration with structural engineer and CEE alum Robert Baxter (MSCE '02).

Rhodes regards this project as a model of how artists and engineers can collaborate to produce great things. That experience shaped his message to students: civil and environmental engineering is strongest when it makes room for creative thinking.

During his time at the UW, Rhodes has lectured in structural analysis courses, met with faculty across the department and connected with the UW's Grand Challenges Impact Lab study abroad group in Bangalore, India, where he took students to see a 58-foot-tall sculpture of a Jain saint carved from a single stone.

Rhodes hopes to leave students not with a lesson about stone, but rather a way of thinking about the world.

"You have to read poetry, listen to other kinds of music … broaden your universe," he says. "Your brain is powerful and will get you far, but to really get into mastery, you have to engage all those other parts of yourself, too."



Top left: The Resolute Arch, a 25-ton granite sculpture shown here on the playa at Burning Man, won top honors at the festival. Top right: Rhodes' stone wave installation at the Tacoma Art Museum, shown with Dale Chihuly's glass companion piece. Bottom: Richard Rhodes. Photos courtesy of Richard Rhodes.

Keeping watch on a one-of-a-kind bridge

By Julia Davis | Photos courtesy of Sound Transit

CEE researchers build a digital twin of the I-90 Homer M. Hadley Memorial Bridge to monitor the world's first floating light rail crossing

The I-90 Homer M. Hadley Memorial Bridge is, in a sense, a boat. Its concrete pontoons float on Lake Washington between Seattle and Mercer Island, rising and falling with the seasons, drifting with wind and water, expanding and contracting with temperature. More than 150,000 people cross the twin I-90 spans daily. For 35 years, that movement has been manageable. The bridge carries cars, after all, and cars don't mind a little give. But light rail is different.

In March, Sound Transit's 2 Line light rail extension began carrying passengers across the Homer Hadley, the first time light rail has ever operated on a floating bridge. As trains began crossing the lake, a team of UW researchers had already been at work on another first: a digital twin of the bridge built specifically for operations, maintenance and asset management.

A living replica

A digital twin is a virtual replica of a physical thing that uses real data. The concept isn't new: NASA kept a duplicate of the Mars rover on Earth to test commands before sending them to the one they could never get back.

But no one has used the approach to manage the maintenance and operations of a floating bridge before. The I-90 digital twin connects sensors placed inside the floating pontoons to a computer model that pulls in weather data, GPS positions of the pontoons, anchor cable tension readings and other measurements. The information travels to the cloud, where maintenance staff can review a 3D model of the bridge, click on a sensor location and see real-time conditions at that spot.

The project is led by CEE Assistant Professor Travis Thonstad and Professor Michael Motley, in collaboration with UW Mobility Innovation Center Director Bart Treece and Construction Management Professor Carrie Sturts Dossick.

Among the first to put the technology to use is Vince Horn, a Washington State Department of Transportation bridge keeper who knows every nook and cranny of the I-90 floating bridges. Horn has built what amounts to a virtual inspector, with custom alerts that notify him when wind speeds spike or conditions shift. During a storm, for example, crews previously had to go out on the water to check wave height. But now, the sensors can detect anchor cable strain and pontoon movement in near real time, potentially keeping crews out of hazardous conditions.

Rail on water

The need for monitoring is rooted in the engineering challenges behind the light rail crossing itself. Lake Washington is too deep, and the soil beneath the lake bed too poor, for a conventional bridge, which is why Washington state turned to floating bridges and is now home to most of the world's longest ones. But there were several challenges engineers had to contend with in running light rail across a floating structure.

Top: The Homer M. Hadley Memorial Bridge from above.

Among them: how to deal with the transition between the floating portion and the fixed section on land. For cars, the joint between those two sections is no big deal. Drivers just hear a clunk as they roll over it. For rails, which need to be continuously supported, it's a much harder problem. A rail forced over a sharp angle leads to all the stress being concentrated at one point.

"It's like bending a paperclip over and over," Thonstad says. "Eventually, the paperclip wears out."

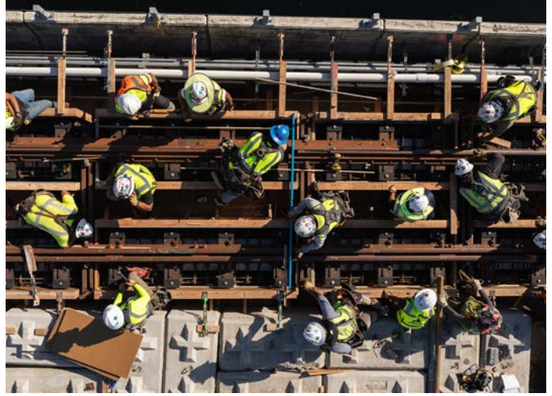
British engineer Andy Foan proposed an elegantly simple system that became the Curved Element Supported Rail System (CESuRa), now installed on the bridge. Rather than forcing the rail over a sharp kink, CESuRa spreads the bend across a longer stretch, keeping the rails fully supported.

CEE Professor John Stanton led years of lab testing to validate the design. For Thonstad, the system is personal. It was the subject of his master's thesis years ago in CEE.

Learning how the bridge breathes

In 2022, Treece approached Thonstad about collaborating with industry and government partners who were interested in exploring how digital twins could be useful for critical infrastructure. They needed to pick a bridge, and the Homer Hadley came to mind immediately. Lake levels rise and fall 2 feet annually, requiring anchor cable adjustments. Storms raise questions about whether to close the bridge. And light rail was about to introduce forces the 35-year-old structure had never experienced.

Since deploying sensors in May 2025, the data has revealed surprises. One pontoon shows a daily vertical fluctuation tied to thermal expansion; the other, anchored by 12 cables instead of 4, barely moves. The team can track how the structure responds to trains, anchor cable adjustments and weather patterns, down to millimeters of accuracy.



Workers prepare forms and pour concrete for the light rail track plinths on the I-90 floating bridge in September 2024.

"The most surprising thing for me has been learning how the bridge behaves on a day-to-day basis at the level of precision that we were never able to before," Thonstad says.

That baseline understanding is the foundation for what comes next: anomaly detection and physics-based models that can forecast the bridge's future condition. Think of it as a weather forecast for infrastructure.

A second phase beginning this summer will fold in Sound Transit's rail sensors and additional monitoring systems.

The Homer Hadley needs to last decades more. "We have to maintain the structure well, we have to make good decisions," Thonstad says. The digital twin is one more set of eyes helping make sure they do.

This project is funded by the Federal Highway Administration's State Transportation Innovation Council through WSDOT, with support from Challenge Seattle, Microsoft, T-Mobile, Bentley Systems, Semtech Wireless, Compass IoT and WSP USA.

Left: A light rail vehicle crosses the bridge at night. Right: (left to right) CEE Assistant Professor Travis Thonstad, WSDOT bridge keeper Vince Horn and CEE graduate student Tim Bernard next to one of the sensor stations on the bridge.

NASA selects EDGE satellite mission

By Julia Davis

In February, NASA selected the Earth Dynamics Geodetic Explorer (EDGE) mission for development, with CEE Associate Professor David Shean serving as a co-investigator on the science team.

The selection means EDGE will proceed to full mission development under NASA's Earth System Explorers Program. EDGE will use laser measurements to create high-resolution, 3D maps of the Earth's surface and track how it changes over time. The project is led by researchers from the University of California San Diego in collaboration with several institutions around the world, including the UW.

EDGE will observe the 3D structure of terrestrial ecosystems, such as how tall and dense forests are, and the surface topography of ice sheets, glaciers and sea ice. It builds on measurements from NASA's ICESat-2 and GEDI missions, which also use lasers to measure Earth's surface. Unlike ICESat-2, which uses six laser beams, EDGE will use 40, dramatically increasing how much of Earth's surface it can measure in each pass and turning repeated passes into detailed maps of change.

"I think this mission is going to be an important milestone in terms of what we can do to understand what's happening on our planet ... The Earth's surface is constantly changing, and we need missions like EDGE to understand what's happening and why."

– ASSOCIATE PROFESSOR DAVID SHEAN

"We're going to be able to see things in new detail with remarkable precision and accuracy," Shean says. "And that means we can measure very subtle changes in the Earth's surface due to processes like ice melt, snow accumulation, landslide motion and volcanic deformation."

Those measurements have broad implications for sea level rise, natural hazards monitoring, water resource and forest management, and wildfire response. Researchers will also be able to connect EDGE data with two decades of past NASA missions to separate short-term swings, like seasonal snow cycles, from longer-term shifts like net ice loss over years and decades.

Shean's role on the team includes developing data-fusion approaches to combine EDGE's precise elevation measurements with information from other satellite data.

"I think this mission is going to be an important milestone in terms of what we can do to understand what's happening on our planet," Shean says. "That priority isn't going to go away; the Earth's surface is constantly changing, and we need missions like EDGE to understand what's happening and why."

With EDGE selected, Shean says the hard work shifts from proposal mode to building the hardware and data processing pipelines needed to support rapid scientific use once the satellite is in orbit. NASA and the EDGE team are aiming for a 2030 launch.

He also sees the mission as a training opportunity for students at the UW, not only to analyze the EDGE data, but to learn firsthand about how large, interdisciplinary NASA satellite missions come together.

"I'm excited to bring students onto the EDGE team and train the next generation of UW researchers who will do amazing things with EDGE data in the coming decades," he says.

Streams and rivers flow over the Greenland ice sheet during spring and summer. Photo courtesy of NASA's Goddard Space Flight Center / Maria-José Viñas.

A bubble tea approach to kidney disease

By Julia Davis

CEE research offers a new option for patients

A new treatment for chronic kidney disease (CKD) emerging from CEE research might look more like a trip to a boba shop than a visit to the doctor. The concept: swallow tiny gel beads similar to the tapioca pearls in bubble tea, but loaded with bacteria designed to intercept harmful toxins in the gut before they ever reach the bloodstream. For the roughly 37 million Americans living with CKD, it could mean managing the disease earlier and reducing reliance on dialysis.

The research originated in the Winkler Lab, where Professor Mari Winkler's environmental engineering group has spent years developing hydrogel bead technology for wastewater treatment applications. The kidney disease project applies that same encapsulation expertise to a new problem.

"We are using wastewater treatment principles to clean the gut so that kidney patients have fewer toxins go into the blood," says Winkler.

Most uremic toxins, the harmful substances that build up when kidneys can't filter properly, are produced by bacteria living in the gut. Patients currently rely on medication and dialysis to manage these toxins, but some can bind tightly to proteins in the blood, making them nearly impossible to filter out with existing treatments.

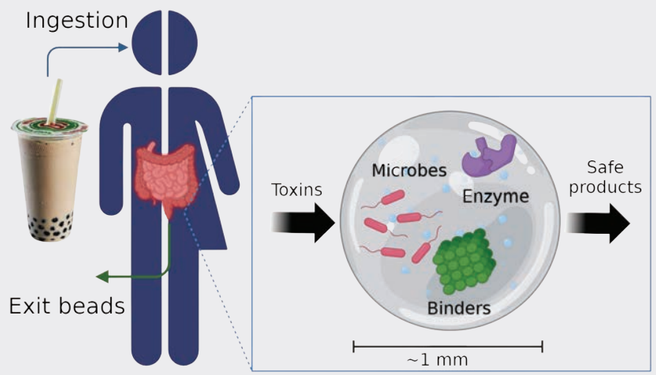
The Winkler Lab approaches the problem from a different direction: rather than trying to remove toxins from the blood after the fact, the gel beads work upstream in the digestive system. The gel is porous, so as the beads travel through the gut, toxins pass through the gel wall and into the bead, where the bacteria inside break them down. The bacteria themselves never leave — they stay contained in the bead, protected from stomach acid and digestive enzymes, and the beads eventually pass through the body naturally.

CEE doctoral student Pei-Hsin Wang has spent more than three years testing how different bacterial strains remove various toxins. The research has since been spun into a company called Thera-T, with a team of CEE and Foster School of Business students working to move the technology toward patients.

In November, Wang pitched the work at the CoMotion Innovator Showcase, where attendees voted it the top project out of five UW research presentations. The Thera-T team built on that momentum at the 2026 Hollomon Health Innovation Challenge, where they earned the $10,000 WRF Capital Second Place Prize.

"There is a gap between the lab and the market; you have to convey your research in a way people can really understand," Wang says. "Seeing people get excited about the idea showed me that this is a need in kidney disease treatment, and people want other technologies in this space."

Bottom right: A diagram shows how the hydrogel beads work: after ingestion, toxins pass into the bead, where microbes, enzymes and binders break them down into safe products. Photo courtesy of the Winkler Lab; Top: CEE doctoral student Pei-Hsin Wang pitching during the CoMotion Innovator Showcase in 2025.



New UW model maps Seattle's landslide risk building by building

By Julia Davis

For the first time, UW researchers have produced building-level landslide risk maps for the city of Seattle, the kind of quantitative risk mapping experts have called for since the deadly 2014 Oso landslide in Washington state, which killed 43 people.

The study introduces a model called MM3 that goes beyond the susceptibility maps Seattle currently uses to guide land use decisions. Those maps show where slopes may be unstable, but don't account for the timing of failures, the path of debris or the consequences for people and property. MM3 estimates all of those factors for every building in the city.

"A big limitation to the way landslide hazard maps have traditionally been developed is that they identify the source, but not what happens after a landslide starts to move," says CEE Professor Joseph Wartman, who co-led the study. "You can have a house that is not in a landslide zone that gets impacted by a landslide."

When debris runout is included, the area potentially affected by landslides expands by roughly 80%. And many of the buildings at risk aren't where you'd expect: about 58% of those flagged by MM3 as carrying substantial risk fall outside Seattle's current landslide-prone designations.

The study also highlights how sharply risk can differ between neighboring properties. During Hurricane Helene, for example, residents reported that their homes were hit by landslides while neighbors just 100 feet away were untouched. That's because landslides "channelize" and follow narrow paths shaped by the terrain, making their impacts hyper-local. A home at the base of a slope may face fast-moving debris slides, the type most dangerous to people, while a home near the crest faces slower failures that undercut foundations.

"If the risk in Seattle is controlled by precipitation-induced landslides, the best value for our mitigation efforts and policies would be to focus on those."

– PROFESSOR JOSEPH WARTMAN

The study also answers whether Seattle's landslide risk is driven more by rainfall or by earthquakes. Frequent, rain-triggered landslides account for about 62% of the threat to human life and 70% of structural damage over time. During Seattle's wet winters, rainfall seeps through loose glacial soil until it hits a denser layer it can't penetrate, building up water pressure that weakens the ground and can trigger a slide.

That doesn't mean earthquakes aren't a concern, but because they are rare, the response is more about emergency preparedness, like planning evacuation routes, rather than ongoing slope-by-slope mitigation efforts that address rain-triggered risk.

"If the risk in Seattle is controlled by precipitation-induced landslides, the best value for our mitigation efforts and policies would be to focus on those," Wartman says.

The study was co-led by William Pollock (CEE Ph.D. '20), who developed MM3 over nearly a decade of research at the UW, and was funded by the National Science Foundation.

Remembering former Chair and Professor

Neil Hawkins

Former CEE Chair and Professor Neil Hawkins passed away on February 25, 2026. He will be remembered not only as an outstanding engineer but also as a mentor, an opener of doors and a bottomless source of advice and encouragement.

Hawkins was born in Australia in 1935, graduating from the University of Sydney with degrees in mathematics, physics and engineering. He earned his master's and doctoral degrees in civil engineering at the University of Illinois, and joined the UW in 1968. He served as chair of the department from 1978 to 1987 and as associate dean of the College of Engineering until 1991, before accepting the position of department head at the University of Illinois. He returned to Washington in 2002 and remained an affiliate professor at the UW until nearly the end of his life.

Hawkins' influence on CEE was enormous. In his first decade at the UW, he helped transform the department from a largely teaching establishment into a vibrant top-tier research institution. Together with CEE Professor Alan Mattock, he made the UW a recognized center of concrete engineering, conducting pioneering work in slab-column connections, fracture mechanics, shear-friction and unbonded post-tensioning for seismic applications.

Hawkins became deeply involved in the development of building codes, and his contributions are reflected in key documents from the American Concrete Institute (ACI), the American Society of Civil Engineers (ASCE) and the Building Seismic Safety Commission. His work was recognized with numerous honors, including Distinguished Member of ASCE, Honorary Member of ACI and Titan of the Precast/Prestressed Concrete Institute.

To honor CEE undergraduates more prominently, Hawkins and his wife established the Neil and Ann Hawkins Prize in 1993. The award, which is given to graduating seniors in recognition of their academic and leadership excellence, is a lasting reflection of his passion for helping students.

Hawkins is survived by his wife, Ann; his children, Susan and David; and his four grandchildren.

In Memoriam: Professor Emeritus

Michael Pilat

Professor Emeritus Michael (Mike) Pilat passed away on November 6, 2025. A lifelong Husky, Pilat earned his bachelor's and master's degrees in chemical engineering and his doctorate in civil engineering from the UW, joining the faculty in 1967 and rising to full professor by 1978.

Pilat was a pioneer in air resources engineering and air pollution control, directing the Air Pollution Training Center and leading the department's Air Resources Laboratories. He invented a device for measuring particulates in industrial chimneys — work that took him around the world and made a lasting contribution to environmental protection. Before joining the faculty, he worked at Boeing and the U.S. Public Health Service. Pilat retired in 2009 after more than four decades on the faculty.

SLIDING INTO THE

Olympic spotlight

CEE alum Luc Violette represented Team USA in curling at the 2026 Winter Olympics

At first glance, curling looks like an Olympic sport anyone could do. There are no triple lutzes, no ski gates to navigate at high speed. From the couch, it can feel like a sport you could figure out within a few minutes of stepping onto the ice.

The reality is heavier. Literally. The stone alone weighs 42 pounds. And the footing is nothing like it appears on television.

"People think we're on skates or something," CEE alumnus Luc Violette says. "But basically we're on two different shoes."

One shoe is soft rubber, designed to grip the ice. The other is coated in Teflon — slick with no edges to lean on. Each shot begins like a launch out of a starting block, followed by a deep lunge — the curler's full weight committed to a single point of contact as the stone is released.

"The more skilled you become, the more physically demanding it gets," Violette says.

Violette grew up in Granite Falls, Washington, and first picked up curling at age 5. His father, Tom Violette, is a two-time national champion who represented the United States at two World Curling Championships. He followed in his father's footsteps, building a resume that includes five U.S. Junior Championship titles and silver medals at the 2016 Winter Youth Olympics and the 2017 World Junior Championships.

Violette earned his degree in civil engineering in 2021, navigating the disruptions of the pandemic. He credits the department for shaping both his academic path and his sense of connection during that period. One instructor filmed demonstrations from a concrete lab so students could see the work up close during remote learning. Another professor recognized Violette from class through a shared connection to curling.

During his time in CEE, he also met his fiancée, Kyla, in a capstone course where project teams were formed in Zoom breakout rooms. What began as late-night collaboration grew into a partnership that eventually took them to Minnesota, where Violette trained leading up to the Games.

By day, Violette works full time as a civil design engineer — a balance that sets American curlers apart from international competitors who often train full time with government funding.

This February, Violette and his teammates competed at the Milan Cortina Games as the highest-ranked American men's squad heading into an Olympics, at sixth in the world. The team posted a 4-5 record in round-robin play and narrowly missed advancing to the semifinals.

"If you're trying to compete at the Olympics — it's teamwork above all else," Violette says. "That's where all the years of practice make the biggest difference."

CLASS OF 2026:

A vote for community

As part of this year's Class Gift Campaign, graduating CEE students reflected on the programs, resources and spaces that shaped their time at the UW — and voted on a department priority for the community to rally behind. The Class of 2026 chose the CEE Facilities Improvement Fund because the everyday spaces in More Hall are where they studied, collaborated and built community. Here's what they had to say.

WHY THEY CHOSE FACILITIES:

"Student spaces are what all students interact with every day, and they help grow our community."

"More Hall needs some love."

"I don't think the CEE facilities are a good representation of our department. Improving More Hall would contribute to greater pride in the program overall and encourage students to use those spaces."

WHAT CEE MEANS TO THEM:

"CEE has given me a community within my education that I didn't know I was missing."

"This has been the most rewarding intellectual challenge that I've ever done. Civil engineering is too fun for me to imagine doing anything else."

"CEE is what made me fall in love with the UW. My professors have been dedicated, welcoming, encouraging and fair. I have felt supported, part of a community and like the people I'm surrounded by believe in me and my ability to succeed. I can confidently say that my experience at the UW was made entirely better by my environmental engineering cohort and the staff who help guide us into our professional careers."

SUPPORT THE CLASS OF 2026

The CEE Facilities Improvement Fund supports upgrades to student spaces and teaching labs in More Hall. If you'd like to participate, consider a gift of any size — or $20.26 in recognition of the Class of 2026. The campaign runs through June 15. **Learn more: ce.uw.edu/facilities**

Concrete, steel, timber

By Kamilla Almazbekova

An inside look at three of CEE's student clubs where coursework meets competition

Concrete Canoe

Each year, the UW's entirely student-run Concrete Canoe Team designs, builds and races a canoe made entirely of concrete. The process begins months before race day, with the team developing and testing concrete mix designs, shaping the hull and constructing the vessel by hand. This year's canoe, "Grand Coulee," is 19.5 feet long and weighs 395 pounds — and floats. It was dedicated to hydroelectric power, the cornerstone of Washington's energy grid, reflecting the team's commitment to sustainable engineering.

The UW hosted the Concrete Canoe Pacific Northwest regional competition. The Huskies took home first place overall and earned podium finishes across multiple categories, earning a trip to the national championship at Fairmont State University in West Virginia.

Top left: The UW co-ed sprint team competes at the Pacific Northwest regional competition in Lake Sammamish, Washington. Top right: A judge evaluates the Grand Coulee's surface finish and visual craftsmanship. Teams are scored not just on race results but on the beauty and design of the canoe itself. Bottom left: The team's "Grand Coulee" canoe. Bottom right: Team members wade into Lake Sammamish to greet the co-ed sprint team after their winning race. Photos courtesy of Peter Mackenzie-Helnwein and the UW Concrete Canoe team.

Steel Bridge

The UW's Steel Bridge team designs, fabricates and assembles a modular steel bridge each year, testing their structural engineering knowledge and construction skills. Teams are judged on stiffness, lightness, construction speed and structural efficiency. This year's challenge featured a 24-foot cantilever bridge, four feet longer than usual. The team's bridge weighed just 219 pounds, but had to support a 2,500-pound load test. They finished second overall out of 12 schools at the Pacific Northwest regional competition, securing a spot at nationals in El Paso, Texas.

Left: Steel Bridge team members construct their bridge at the regional competition at the University of Alaska Anchorage. Right: A team member welds bridge components together during the winter fabrication push.

Timber Strong

Established at the UW in 2024, Timber Strong Design Build challenges students to design and construct a two-story timber structure complete with a four-foot cantilever within 90 minutes. The team designed the building, tested it for strength and safety, then worked together to improve it.

Once they had all of the components finalized, they shipped pieces to the University of Alaska Anchorage by barge three weeks in advance of the regional competition, where they finished second overall. The team predicted they'd finish in 80 minutes — and hit that target almost to the second.

The team assembles their two-story wood structure at the Timber Strong regional competition at the University of Alaska Anchorage.

THE BRIDGE

SPRING / 2026

Bart Nijssen, *Professor & Chair*
CONTENT: Julia Davis

ce.uw.edu
TEL 206.543.2390 FAX 206.543.1543

CIVIL & ENVIRONMENTAL **ENGINEERING**

More Hall, Box 352700, Seattle, WA 98195-2700

Send address corrections, questions and comments by email to ceenews@uw.edu or to the return address above.