Spring 2025

MESSENGER

MECHANICAL ENGINEERING | UNIVERSITY of WASHINGTON

Mechanical engineers in sustainability, pages 6-7

W

CHAIR'S MESSAGE

Committed to students and research

Over the past few months, the UW has been navigating state and federal funding uncertainties. Throughout these challenging times, our department remains committed to providing world-class education to our students to match the demand for engineers in Washington state and the nation, and continuing vital research that has implications for medicine, manufacturing, electrification, transportation, renewable energy and more. We are focused on sustaining our high-quality education and research.

For example, in this issue, we share how ME researchers are addressing sustainability by using environmentally friendly manufacturing processes, improving renewable energy technologies and developing recyclable plastics. We also highlight Professor Emeritus Albert Kobayashi's outstanding career in fracture mechanics, student and faculty discoveries in brain mechanics, and a new certificate program focused on data-driven dynamic systems and controls.

We have a lot to celebrate this spring. The Interdisciplinary Engineering Building, where some of our educational labs on manufacturing and mechatronics will take place, has opened, and we are graduating our largest class yet. In the fall, we will welcome a record-breaking junior class of more than 230 students. This includes more than 65 community college transfer students, continuing our long-standing commitment to access to education for every student in Washington state.

Thank you for being part of our community and supporting engineering education.

Alberto Aliseda
Mechanical Engineering Chair
PACCAR Endowed Professor

DEPARTMENT HIGHLIGHTS

ME Professor **Junlan Wang** has been named the editor-in-chief of Experimental Mechanics, an international journal integrating experimental methods with the mechanical behavior of materials and structures.

External advisory board member **Mekonnen Kassa** (BSME '94), a Principal Group Product Manager in Microsoft's Security organization, received the UW College of Engineering Diamond Award for his commitment to diversity, equity and inclusion.

Washington Research Foundation Innovation Professor in Clean Energy and ME Professor **Corie L. Cobb** was named a 2024 National Academy of Inventors Fellow, the highest professional distinction awarded solely to inventors.

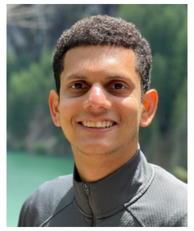
ME Professor **Jonathan Liu** was inducted into the American Institute for Medical and Biological Engineering (AIMBE) College of Fellows. Election to the AIMBE College of Fellows is among the highest professional distinctions accorded to medical and biological engineers. Liu was elected for inventing and commercializing open-top light-sheet microscopy and integrating it with AI for non-destructive 3D pathology.

Welcome new faculty

Stefania Fresca will join ME in September as an assistant professor in physics-based machine learning. Her research interests include scientific machine learning, reduced order modeling, deep learning, digital twins and numerical approximation of partial differential equations. Previously, Fresca was a visiting faculty member at the University of Cambridge. Before that, Fresca was an assistant professor in numerical analysis and a postdoctoral research fellow at MOX (Laboratory for Modeling and Scientific Computing) in the mathematics department at Politecnico di Milano, Italy. She earned her Ph.D. cum laude in 2021 from Politecnico di Milano, where she focused on cardiac modeling.

Yaodong Li will join ME as an assistant professor in quantum information science and technology. His research combines theoretical and numerical tools, as well as collaborations with experimental groups. Previously, he was a Bloch Postdoctoral Fellow at Stanford University, where he studied various aspects of condensed matter physics and quantum error correction. He was also an intern at IBM Research. Li earned his Ph.D. in physics from UC Santa Barbara, where his work focused on quantum many-body dynamics, including the measurement-induced phase transitions.

Sirine Maalej is a new assistant teaching professor with a background in micromechanics and computational mechanics and extensive professional experience in mechanical design. Previously, Maalej was faculty and program head at the British Columbia Institute of Technology in Canada, where she helped advance the mechanical engineering bachelor's degree program and cross-disciplinary research initiatives. Maalej holds a master's in computational mechanics from École Polytechnique de Tunisie, and a Ph.D. in mechanical engineering from Centrale Lille in France. She is also a licensed professional engineer in Canada.



Ashish Manohar is joining ME as an assistant professor in medical imaging physics. His research focuses on developing robust imaging algorithms that leverage the high spatial resolution and three-dimensional capabilities of computed tomography (CT) imaging for the accurate, precise quantification of cardiac structure and function. Previously, Manohar was a postdoctoral scholar in the Division of Cardiovascular Medicine at Stanford University. He earned his Ph.D. in mechanical engineering from UC San Diego, and received both predoctoral and postdoctoral fellowships from the American Heart Association.

Building updates

The IEB opens

After a soft opening this spring, the Interdisciplinary Engineering Building (IEB) — which includes classrooms, teaching labs, rooms for student clubs and teams, social spaces, academic advising and career services — is already a hub for engineering undergraduates. ME students are attending classes in the IEB, and using the new machine shop for projects and extracurriculars. The IEB's second-floor AI Engineering Institute will be led by ME Professor Steve Brunton and ME Assistant Professor Stefania Fresca. The $106 million construction of the 76,000-square-foot facility was funded by a public-private partnership.

First steps toward new ME building

Starting this spring, the department is participating in a study with Mahlum Architects to determine the feasibility of replacing the current Mechanical Engineering Building, constructed in 1959. Facility modernization is critical to provide a best-in-class learning and teaching experience and enhances our ability to attract faculty and students. This study is a critical first step for the department. Stay tuned for updates and information on how to support this work.

Adapting toys for local families

HuskyADAPT's toy adaptation events provide accessible toys to families and equip students with engineering skills.

HuskyADAPT, a UW student organization dedicated to supporting accessible design and inclusive play technology, has adapted a record number of toys this academic year — from a baseball pitching machine and spinning art kit to lava lamps, remote control cars and a bilingual play drum.

As of April, HuskyADAPT held 13 toy adaptation events where team members and volunteers successfully adapted 136 toys, surpassing the organization's previous record of 115 for an entire academic year.

At the events, HuskyADAPT teaches volunteers how to connect toys to switches so children with disabilities can activate them — for example, by pressing a button, moving their head or blowing air. For instance, a child with spinal muscular atrophy, a genetic disease that impacts muscle strength, could activate an adapted toy by moving a finger or tilting their head instead of pressing a small button on the toy.

HuskyADAPT members say that toy adaptation events play an important role in providing accessible toys to families, fostering an inclusive environment and equipping students with engineering skills.

"Every kid deserves to play, and play is an important part of a child's development, but many commercial toys aren't accessible right away," says ME Ph.D. student Mia Hoffman, who leads HuskyADAPT. "We work to adapt toys to a switch that a child is already comfortable using, such as turning on lights at home. For younger kids, switch-adaptive toys are key to learning concepts such as cause and effect."

Since commercial switches can be expensive, HuskyADAPT members have been developing their own low-cost switches that can be made by anyone for less than $5.

HuskyADAPT's toy adaptation workshops at the UW and across the greater Seattle area are open to students and community members, including parents, educators and physical therapists. Working across campus and with organizations such as Microsoft and the King County Library System, they teach participants of all skill levels how to adapt toys, including disassembly, soldering, basic circuit analysis and troubleshooting broken toys.

Those interested in supporting HuskyADAPT's mission can get involved in events or donate. A donation of $25 can purchase a toy that can be adapted and provided to a child in the Seattle area free of charge. ■

A recent HuskyADAPT toy adaptation event, where members teach volunteers how to connect toys to switches so children with disabilities can activate them. Photo provided by HuskyADAPT

Learn more: huskyadapt.me.uw.edu

Taking networking to new heights

ME senior Connor Fallot recently participated in a College of Engineering Fireside Chat on campus with Dean Nancy Allbritton and Blue Origin CEO Dave Limp. Inspired by Limp's advice to take risks and reach out to potential mentors, Fallot took a chance and asked to have lunch with the CEO.

ME student Connor Fallot at the Blue Origin headquarters

To Fallot's pleasant surprise, Limp agreed. A member of the university recruiting team for Blue Origin reached out to Fallot, who ended up meeting Limp for breakfast and receiving a tour of the company's headquarters in Kent, Washington.

"It was an incredible opportunity to talk with Dave about the direction of the company and to get his perspective on Blue Origin's engineering goals and milestones," Fallot says.

Fallot also met with five engineers in various roles at Blue Origin, including employees who work on launch operations and mission control.

Fallot says that tour provided him with a new perspective on his career path as he prepares to graduate, helping him to see himself in the engineering world.

An engineering lead in the UW student organization Society for Advanced Rocket Propulsion, Fallot has been interested in career opportunities in the aerospace industry, particularly rocketry. He made his aspirations clear at the tour, where he wore a shirt with his resume on it. Limp ended up signing the shirt.

"I'm interested in space exploration, and rockets are probably the largest and fastest missions we operate," Fallot says. "I liked learning how Blue Origin is tackling challenges and trying new things, such as using cryogenic fuels, to improve future spacecraft development."

In April, Fallot accepted an offer from Blue Origin for a thermal/fluids test engineer role on the Lunar Permanence team. He plans to continue to take risks when it comes to networking: "It's worked out well so far." ■

Innovation wins

ME student teams took home prizes from this year's innovation challenges hosted by the Buerk Center for Entrepreneurship at the UW Foster School of Business.

Team VISTA (pictured below), a group of ME and otolaryngology students, earned second place in the Hollomon Health Innovation Challenge. The team aims to improve the safety and efficiency of surgical outcomes worldwide, including for adults with chronic rhinosinusitis — an inflammatory sinus disease.

At the Environmental Innovation Challenge, **Elementrailer** won the Reimagine Prize for its motorized electric utility trailer designed to address range anxiety — the fear that an electric vehicle lacks sufficient energy to reach its destination. **CureXsco** received the Spark Award for its cost-effective, sustainable solution to regenerate PFAS-laden filters, reducing landfill waste and operating costs for water filtration.

Team Elementrailer

Team CureXsco

Mechanical engineers in sustainability

We highlight ME researchers who are using next-generation methods to make manufacturing processes more environmentally friendly, improve renewable energy technologies and reduce plastic waste.

By Lyra Fontaine

3D printing for clean energy

At the UW Clean Energy Institute's Washington Clean Energy Testbeds (WCET), ME researchers are using new 3D printing methods to develop energy devices, including solar cells, batteries and quantum materials. These processes reduce carbon footprints while improving scalability and efficiency.

"Producing more solar cells by reducing the capital cost of manufacturing would be a big step toward more widespread clean energy adoption," says Devin MacKenzie, the Washington Research Foundation Professor of Clean Energy, associate professor in ME and Materials Science and Engineering, and WCET Technical Director.

Ph.D. candidate Ethan Schwartz works on increasing solar cell manufacturing in MacKenzie's lab. He uses perovskites, a printable semiconductor material with properties that can be tuned for high performance and easy-to-scale manufacturing.

Schwartz identifies perovskite materials ingredients and "recipes" to improve efficiency and prevent defects. Real-time sensors and a machine learning (ML) algorithm optimize the manufacturing process by predicting performance, correcting flaws and reducing waste.

This photo: Photoactive materials used to 3D print quantum dots. Above: Ethan Schwartz, left, and Devin MacKenzie, right, use a slot die coater to print films used in solar cells. Photos by Dennis Wise/University of Washington

ME Ph.D. candidate Greg Guymon holds photoactive materials used to 3D print quantum dots for more sustainable nanoscale manufacturing. Photo by Dennis Wise/University of Washington

"An optimal solar cell could depend on various factors — chemical composition, deposition speed, temperature, humidity and more," Schwartz says. "We don't have time to test each variable individually. ML accelerates discovery, helping us better predict a solar cell's performance and lifespan."

The researchers hope to improve solar panels' efficiency at converting light into electrical power.

Beyond solar cells, researchers in MacKenzie's lab are also 3D printing quantum dots. These tiny semiconductors are the foundation for photonic-based quantum devices. Ph.D. candidate Greg Guymon uses a high-resolution electrohydrodynamic printer that applies electric fields to position and integrate these nanomaterials.

This additive printing method minimizes toxic heavy-metal and solvent use, Guymon says, and could make nanoscale manufacturing more cost-effective, sustainable and accessible than conventional processes.

Making waves in marine energy

Marine energy technologies could significantly contribute to U.S. energy needs. ME Professor Brian Polagye and his team hope to optimize devices such as wave energy converters (WECs), which capture wave energy and convert it to electricity. Applications for WECs could include generating energy for ocean sensors or remote coastal communities.

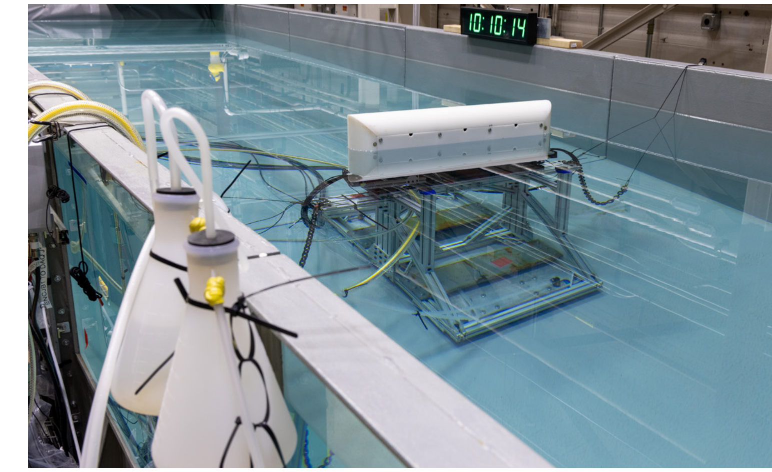
"We're working to make wave energy conversion more reliable and cost-effective," Polagye says. "There's still much to learn, and we're tackling those challenges."

In Polagye's lab, which is affiliated with the Pacific Marine Energy Center, Ph.D. student Sarah May Palmer is modeling how WECs move through waves to absorb power. Since WECs are relatively new, they lack a standard design. One common type is a floating buoy that harnesses energy from waves' vertical and horizontal movement.

Palmer is testing different buoy shapes to analyze their interactions with waves. She then compares her findings to computer simulations.

"This research combines my interests in fluid mechanics and renewable energy," Palmer says. "There are so many different deviations from simulations that can happen in experiments, some of which haven't been documented until now."

Also charting new waters in the field is Ph.D. candidate Brittany Lydon, who uses data science to create faster, more accurate models of WEC dynamics. Instead of using traditional linear equations, Lydon applies algorithms that can describe nonlinear, changing conditions.

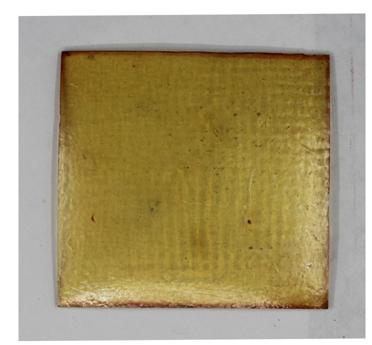


A model WEC in a wave tank at the National Renewable Energy Laboratory. Photo by Gregory Cooper/NREL

Using a scale model WEC in a wave tank, Lydon collected data at the National Renewable Energy Laboratory in Colorado to test the algorithms.

"We saw interesting nonlinear behavior in this device from things like friction or buoyancy," says Lydon. "It's not easy to model these behaviors with equations, but they can be described with some of our data-driven models. This implies that we're getting closer to understanding the dynamics of the system."

Designing recyclable polymers with AI



Recyclable polymers created from vitrimers in Assistant Professor Aniruddh Vashisth's lab. Photo by Agni Biswal

Plastics, a type of polymer, are used in everything from cars and wind turbines to smartphones and medical devices. However, since they are difficult to recycle and prone to degradation, plastics contribute to about 280 million tons of global waste produced each year, according to the United Nations.

A new class of sustainable polymers called vitrimers could be a promising solution. Vitrimers can repair themselves without losing viscosity, thanks to chemical bonds that detach and reattach. But limited commercially available monomers or "building blocks" have slowed their development.

ME Assistant Professor Aniruddh Vashisth's lab is working to speed up the discovery of new vitrimer compositions. In collaboration with Microsoft Research and Delft University of Technology, the researchers used artificial intelligence (AI) to design and synthesize recyclable polymers with targeted properties.

"Vitrimers are polymers that can be reused, recycled and reprocessed, and they could make a big difference," Vashisth says. "Our model can design recyclable polymers for any application, including electronics and aerospace composites."

Vashisth's team virtually experimented on vitrimers with different molecular compositions to generate data for the ML model. They focused on glass transition temperature — the point at which the material shifts from a solid to a flexible state. The researchers put the data into an ML model that learned the relationship between the molecular compositions and properties. They then asked the model to provide polymer structures with various glass transition temperatures.

After the user inputs the chosen temperature, the model creates molecular combinations of self-healing polymers.

"This approach significantly accelerates the discovery of sustainable polymers by rapidly identifying novel materials with targeted characteristics beyond traditional experimental methods," says Ph.D. student and project lead Yiwen Zheng. ■

LINKING BLOOD FLOW AND BRAIN HEALTH

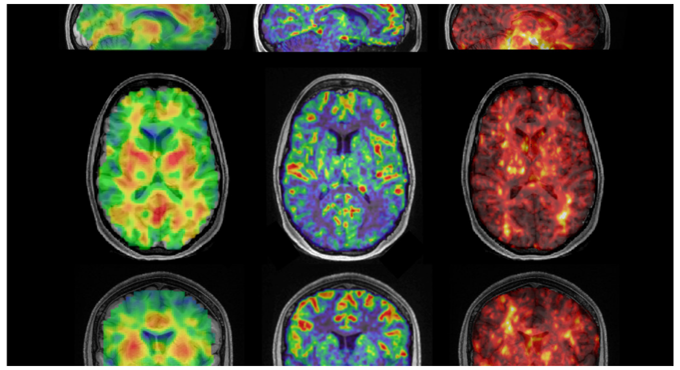
Researchers led by ME Associate Professor Mehmet Kurt are using imaging methods to learn how blood flow may impact the hippocampus.

ME researchers have discovered that increased blood flow leads to stiffness in the hippocampus, a region of the brain that plays important roles in learning and memory. The hippocampus is one of the first areas in the brain affected by Alzheimer's disease, a brain disorder that erodes memory and thinking skills, as well as the ability to do daily tasks.

"For the first time, we found that better blood flow makes the hippocampus area stiffer," says ME Associate Professor Mehmet Kurt, the director of Kurtlab. "This research suggests that one of the factors impacting hippocampus health might be reduced blood flow. This discovery opens up new potential ways to diagnose Alzheimer's before memory loss occurs."

At the UW Center for Human Neuroscience and at the Icahn School of Medicine at Mount Sinai, researchers scanned the brains of 17 volunteers between the ages of 22 and 35 using magnetic resonance elastography (MRE). MRE, which combines magnetic resonance imaging (MRI) with sound waves, provides researchers with information to create detailed images of varying levels of stiffness in the brain.

"We wanted to find out how blood flow could potentially affect brain stiffness through MRE," says ME Ph.D. student Caitlin Neher, who led the study. "The hippocampus is only part of the brain that shows this relationship between blood flow and stiffness. This may be because the hippocampus is a region with strong metabolic demand."



Brain imaging using a combination of magnetic resonance elastography (MRE), measuring blood flow and amplified magnetic resonance imaging (aMRI) helped ME researchers find that blood flow leads to stiffness in the hippocampus. Photo provided by Caitlin Neher

Using factors like blood flow and stiffness components to quantify brain health could help lead to earlier detection of neurological diseases like Alzheimer's, which currently has no cure. Some studies reveal that people with Alzheimer's show softening in the hippocampus. One hypothesis is that in early Alzheimer's, a reduction in blood flow could lead to this change in the brain, Neher says.

"The study focused on the basic science question of how blood flow and brain stiffness are related," she says. "It would be interesting to eventually apply this to a patient population by collaborating with UW Medicine. We want to better understand this link between brain stiffness and blood flow, and come up with diagnostic criteria." ■

Researcher spotlight

As an ME undergraduate, **Caitlin Neher** specialized in biomechanics. For her senior capstone project, she worked with Swedish Medical Center to help create a device that allows people with neurological diseases to independently move their blankets up and down. Listening to a presentation by ME Associate Professor Mehmet Kurt about modeling nonlinear behavior in the brain piqued her interest. Now, as a Ph.D. candidate and researcher in Kurtlab, Neher is focused on using non-invasive imaging techniques to improve diagnostics for people with brain diseases.

Empowering engineers for the future

Learn more and apply by July 1: me.uw.edu/dddsc

A new graduate certificate will teach engineers to use AI and machine learning to model and control dynamic systems.

From self-driving cars to advanced robotics, dynamic systems are at the heart of cutting-edge engineering fields. This fall, a new Graduate Certificate in Data-Driven Dynamic Systems and Controls for Engineering will prepare students to harness the power of data, artificial intelligence (AI) and machine learning (ML) to model and control these ever-evolving systems.

The certificate is designed for professional engineers who want to advance their skills and careers. It can be taken on its own or combined with a second certificate to work toward a new stacked master's degree in AI & ML for Engineering. Applications are open through July 1.

The instructors include ME Professor Steve Brunton, ME Assistant Professor Krithika Manohar and ME Assistant Teaching Professor Michelle Hickner. Below, Brunton and Hickner share more about the certificate.

What will engineers learn through this program?

Brunton: Engineers will gain hands-on experience with data-driven modeling and control, learning how to optimize system performance using AI and ML techniques. They'll develop strong mathematical and computational skills that will help them adapt to emerging technologies throughout their careers. Students will also learn how to communicate complex data clearly — through visualizations, presentations and written reports.

Hickner: Engineers will move beyond traditional, equation-based approaches to using data for controls and dynamics. They'll learn to apply data directly — to build models, tune controllers, select sensors and tackle other core tasks in dynamics and control engineering.

Why are these skills important?

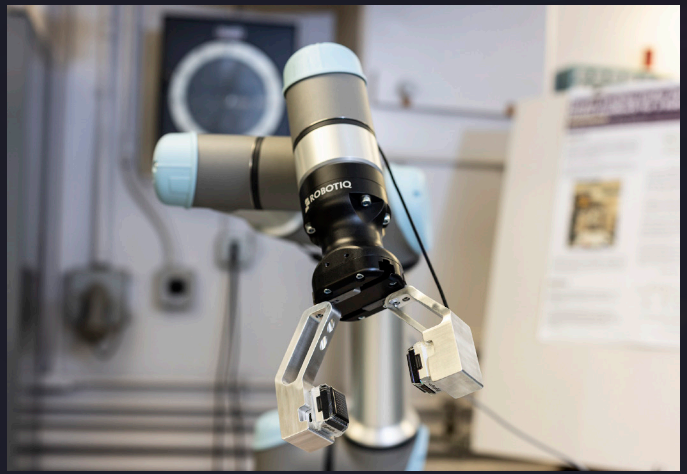
Brunton: Almost every industry is utilizing AI, ML and data-driven decision-making to improve efficiency, accuracy, safety and innovation. Engineers who understand how to integrate these technologies into their field will be at the forefront of solving complex engineering problems.

Hickner: Having a combination of traditional engineering knowledge, coding skills and data fluency can be incredibly valuable for engineers as they seek out career opportunities, whether it's a new job, work project or promotion. Knowing how to leverage companies' existing data makes work more efficient and helps build better products.

What makes this program innovative?

Brunton: This certificate stands out because it combines foundational engineering skills with cutting-edge ML techniques. It focuses on applying AI to model, optimize and control engineering systems broadly, including fluid dynamics, structural design and materials. Plus, it's designed for working professionals, offering an online, part-time format that makes it flexible and accessible.

Hickner: The curriculum is designed with flexibility in mind. Students come in with different specialties and experiences, so the first quarter focuses on building a shared foundation — whether that means brushing up on differential equations, coding or study skills. By the second quarter, we dive into more rigorous material. From there, students can tailor advanced projects to their own interests and apply what they're learning to real-world challenges. ■



A robotic arm in the MACS Lab, which investigates theories and practices of dynamic systems and controls. Photo by Dennis Wise/University of Washington

A pioneer in fracture mechanics

Professor Emeritus Albert Kobayashi reflects on his prolific career of research, teaching and industry collaboration.

Professor Emeritus Albert Kobayashi, who recently turned 100, has seen ME through decades of change. One of the first UW Engineering researchers to gain global recognition, he's also played a significant role in the department's modernization and expansion.

"Albert's outstanding research contributions helped ME gain a reputation for excellence in the U.S. and across the world," says ME Chair and PACCAR Endowed Professor Alberto Aliseda. "His work in fracture mechanics set the foundation for rigorous theory and application to modern engineering designs, and his work with industry partners paved the way for the department's close collaborations with industry for the last five decades."

Above: ME Professor Emeritus Albert Kobayashi surrounded by current or emeritus ME faculty (standing from left to right: Chair Alberto Aliseda, Professor Joseph Garbini and Professor John Kramlich; seated from left to right: Professor Emeritus James Riley, Boeing-Pennell Endowed Professor Ramulu Mamidala, Kobayashi and Professor Emeritus Norman McCormick).

While collaborating with industry and government partners, Kobayashi became a world-renowned expert in fracture mechanics, which involves studying how crack initiation and propagation determine a material's structural integrity. Fracture mechanics is key to ensuring parts of airplanes, buildings, cars and medical devices are safe for decades in service.

Kobayashi's achievements led to his election to the National Academy of Engineering. He also received the Order of the Rising Sun award, given to individuals who have demonstrated distinguished service to Japan.

A global education

Kobayashi's path to becoming a faculty member at the UW started with studying engineering in Japan. Born in Chicago, Kobayashi and his brother moved to Japan as kindergartners to live with their grandmother. He attended the American School in Japan (ASIJ) and a Japanese private school before enrolling in the University of Tokyo.

The horrors of World War II colored Kobayashi's first year of college. Banned from returning to the U.S., he lived with his uncle, but their home was fire-bombed, forcing them to relocate. During school, Kobayashi remembers going to shelters during the constant air raids, where they played games like mahjong.

Kobayashi had dual citizenship and was almost drafted into the Japanese army. "The government deferred people studying science or engineering until they finished their education," he says.

The war ended, and the rest of his undergraduate education went smoothly. After graduation, he worked briefly as a tool engineer at Konishiroku Photo Industry.

Three years later, when Kobayashi returned to the U.S., he was accepted into the UW for graduate school. He had received a letter of recommendation from his kindergarten teacher from ASIJ — a unique full-circle moment.

"I was the first Japanese student they accepted since the war started," he says.

He went on to receive a master's degree in mathematics. At the UW, he wrote a paper about experimental mechanics that led him to pursue his Ph.D. in the subject at the Illinois Institute of Technology. He took a break from school to get married and work as a design engineer at Illinois Tool Works. He completed his Ph.D. and worked as a research engineer before returning to the UW, this time as a faculty member.

Impact through research and teaching

Kobayashi became a professor in ME in 1965, and received the Boeing-Pennell Professorship in 1989. His pioneering fracture mechanics research focused on crack propagation, also known as metal fatigue, as well as combining experimental and numerical stress analysis techniques.

"You need to be able to test the material to see if it's strong enough, find out when it might break and have procedures to repair it," Kobayashi says.

As a faculty member, Kobayashi did research funded by the National Science Foundation, the Office of Naval Research, the Air Force Office of Scientific Research, the National Eye Institute and The Boeing Company on structural mechanics. Working with Boeing enabled him to gain valuable insights into aerospace industry needs.

"Through consulting, I learned about industry problems, which I brought back to campus so we could research solutions," he says.

Many ME faculty members would eventually follow in Kobayashi's footsteps, collaborating with industry to advance their research.

"Albert Kobayashi put the UW and ME research on the map internationally," says Ramulu Mamidala, the current Boeing-Pennell Endowed Professor in ME who was mentored by Kobayashi as a Ph.D. student. "He dedicated his life to fracture mechanics, and was also a pioneer in the intersection of engineering and health."

Tasked with helping to modernize ME's graduate programs, Kobayashi developed and taught courses like plasticity and dynamics. He also applied his expertise to topics such as solid mechanics and biomechanics, including research on the mechanics of the cornea. Throughout his academic career, he published more than 500 papers.

Mamidala remembers his mentor's dedication. Kobayashi worked from early morning until evening, and made sure his students felt welcomed and comfortable.

"I am fortunate that Albert was my mentor," Mamidala says. "He had the ability to encourage his students and educate them on how to do research. He learned words in international students' native languages to teach them concepts."

In 1997, Kobayashi retired and became professor emeritus, though he continued to serve on Ph.D. committees and conduct research for funded projects until 2005. His endowed fund provides support for ME graduate education in engineering mechanics, experimental mechanics and mechanics of materials.

Kobayashi has stayed connected to ME through attending events, tuning into seminars and staying in touch with former colleagues. In recent years, Kobayashi has witnessed the department's research advancements in composites, nanomaterials, biomedical engineering and machine learning. Fracture mechanics is now a core part of engineering education and research.

"When I started out, fracture mechanics was new and on the rise. I was lucky to ride on the wave," he says, adding that fracture mechanics remains important for industry: "You still have to do the work that makes airplanes fly." ■

Kobayashi was elected to the National Academy of Engineering and received the Order of the Rising Sun award.

MECHANICAL ENGINEERING
UNIVERSITY *of* WASHINGTON

Mechanical Engineering Box 352600
Seattle, Washington 98195-2600

Alberto Aliseda, Ph.D.
Department Chair
PACCAR Endowed Professor

Lyra Fontaine
Communications Manager

Monique Heileson
Graphic Design

Send address corrections and comments to: mengr@uw.edu

Read online at me.uw.edu/news/messenger

Find ME on social media!

Connect with ME faculty, friends and alumni and stay up to date on department news and events.

linkedin.com/school/UW-ME

instagram.com/me_at_uw

facebook.com/ uwmechanicalengineering

Thank you, speakers

Chair's Distinguished Industry Lecture Series:

Chen Ling, Toyota Research Institute of North America

Boeing Advanced Research Center Seminar Series:

Shuonan Dong and Scott Gunther, Boeing Advanced Research Collaboration

Leadership Seminar Series:

Mitch Tolson, Ally Robotics; Bryn Miyahara, Sandia National Laboratories; Andrea Striz, TerraPower; Jeff Janicik, Innoflight; Peder Fitch, Philips; Quang Nguyen, Blue Origin; Marco Micheletti, Fresh Consulting; Shijing Sun, UW Mechanical Engineering; Mike Angiulo, Friedman Rubin Trial Lawyers (formerly Microsoft); Ethan Lorimor, Blue Origin

Department Seminar Series:

Adrian Buganza Tepole, Purdue University; Maha Haji, Cornell University; Shawn Shadden, UC Berkeley; Curtis Johnson, University of Delaware; Udunna Anazodo, McGill University; Jonathon Slightam, Sandia National Laboratories; Shaunak D. Bopardikar, Michigan State University; Houssem Kasbaoui, Arizona State University; Per Reinhall, UW Mechanical Engineering; C. Fred Higgs III, Rice University; Lucas Meza, UW Mechanical Engineering; Vikas Patnaik, PoleStar Consulting; Duane Storti, UW Mechanical Engineering; Keith Neeves, University of Colorado Denver; Tom Matula, UW Applied Physics Laboratory