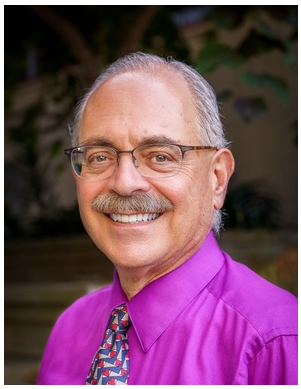
UC San Diego
JACOBS SCHOOL OF ENGINEERING

NEWS
March 2026

Engineering Schools as Engines of Collaboration



Over the last few weeks, I have been part of an effort at the Jacobs School of Engineering to respond to a request for information (RFI) from the U.S. Department of Energy. The information request is about mobilizing talent for the Genesis Mission and advancing AI to accelerate science and engineering in the national interest.

The Department of Energy is looking to increase collaboration across the U.S. national laboratories, universities, industry and philanthropic organizations in order to make the best possible use of AI in shared efforts to drive global competitiveness in science and technology. This will strengthen economic growth, enhance national security, and advance human health and wellbeing.

As an engineering dean, I know firsthand that world-class engineering and computer science schools are **engines of collaboration** in the national interest. We drive collaborations and workforce development efforts that connect U.S. national labs, universities, industry and philanthropic partners.

In fact, one of my most enduring governing mantras is: **the great engineering schools of the next decade will collaborate their way to relevance.** The great engineering schools of the next decade will also find ways to scale these collaborative efforts that drive relevance in the national interest — and my job is to work with everyone in our community to ensure the Jacobs School is one of these great engineering schools.

World-class engineering and computer science schools are, I believe, in strong positions to scale their positive impacts through collaboration.

- We have the innovation workforce of tomorrow in our classrooms and laboratories right now.
- We have long-standing research and teaching relationships with the U.S. national labs right now.
- We have faculty and other researchers with the new, relevant ideas that fuel our engines of collaboration right now.
- We have strong industry partnerships in workforce development and relevant research right now.

Our push to bring fusion engineering more prominently into the national fusion R&D landscape is one example of how the Jacobs School, and UC San Diego overall, are collaborating with multiple national labs, established companies and startups, as well as other universities and philanthropic partners to scale our positive impacts in the national interest.

Engineering schools are engines of collaboration in the national interest. I will continue to drive this message home as plainly and clearly as I can, including when I'm back in Washington, D.C. in late April.

If you have ideas on how we can work together to build capacity to scale our engines of collaboration at the Jacobs School, please get in touch. As always, I can be reached at DeanPisano@ucsd.edu.

Sincerely,

Al

Albert ("Al") P. Pisano
Dean, UC San Diego Jacobs School of Engineering
Special Adviser to the Chancellor for Campus Strategic Initiatives

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Researchers Win $25M Global Cancer Prize

A global team of researchers led by Ludmil Alexandrov, a professor of bioengineering and cellular and molecular medicine, has been selected by Cancer Grand Challenges to receive up to $25M to better understand how cancer begins. Alexandrov and collaborators across the United States, the Netherlands and the United Kingdom will work to decode mutational signatures, which are the DNA "fingerprints" that reveal the causes of cancer development. Their work builds on efforts to better understand early-onset colorectal cancer, lung cancer in never-smokers and more. With the new funding,

the team aims to advance fundamental understanding and translate insights into better solutions for cancer prevention, detection and therapy.

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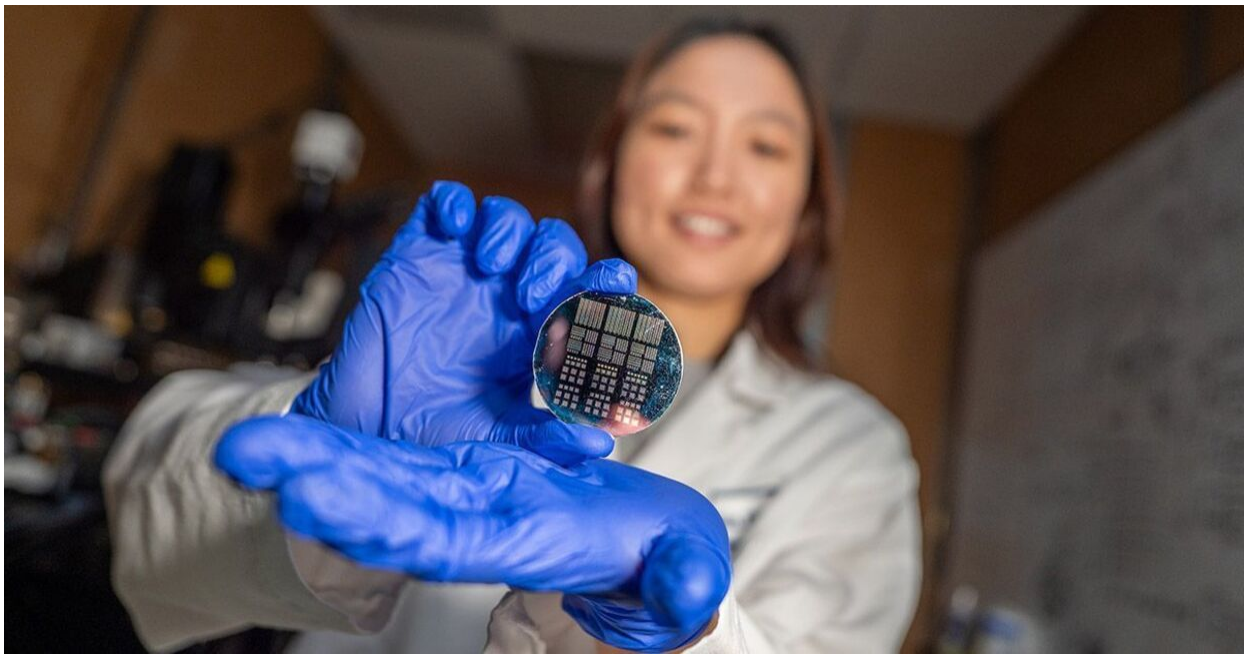

Toward Faster, More Energy-efficient AI Hardware

Drawing inspiration from the brain, electrical engineers have developed a hardware platform that could lead to compact, low-power AI hardware. The platform mimics how the brain processes information by combining memory and computation on the same chip — and allowing its components to interact collectively like neurons in the brain. The brain-inspired platform improved the speed, accuracy and energy efficiency of pattern recognition in two simulated tasks: recognizing spoken digits and detecting epileptic seizures early from brain-wave recordings.

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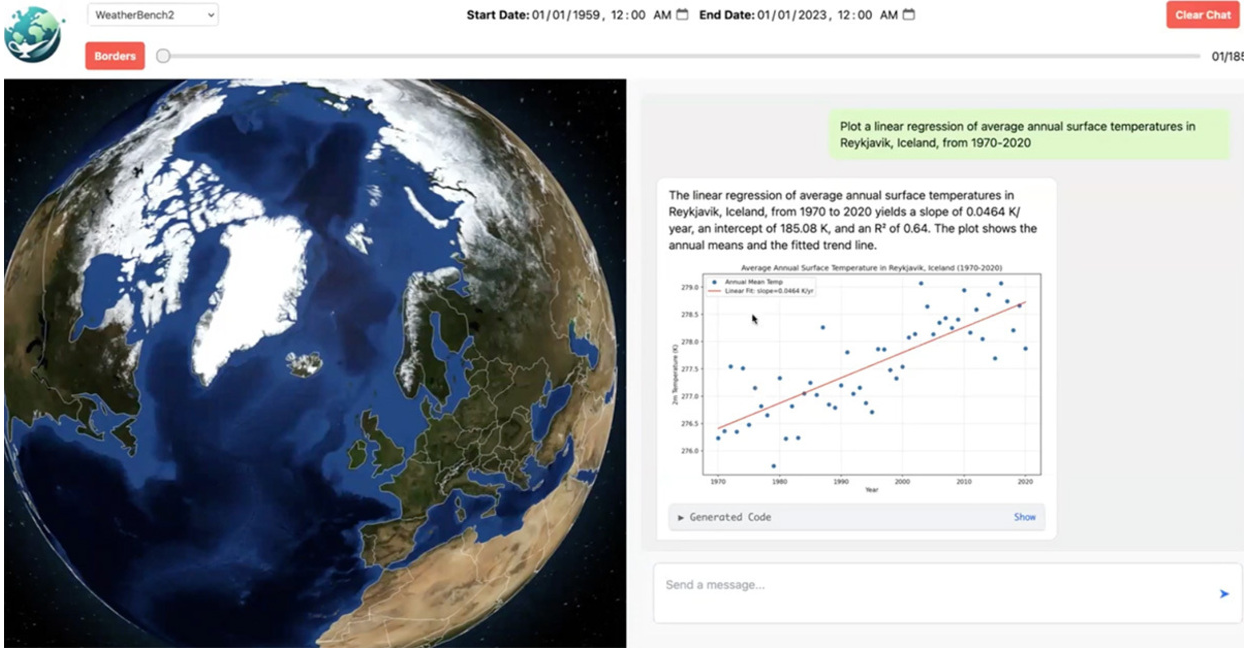

AI Agents for Weather Prediction

Computer scientists and weather scientists have taken the first steps toward creating an AI agent capable of analyzing and answering questions in natural language, such as English, about data from AI-driven weather forecasting models.The tool could help democratize earth science, making it easier for students and young scientists to interact with different datasets. The researchers also hope the findings will lead to AI agents that bring similar advances to other disciplines, especially climate science.

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Celebrating Jacobs School Teaching Excellence

A scalable, automated grading system designed to provide students with intelligent feedback on their work while freeing up instructor time for in-person student support was

recognized with the Jacobs School's inaugural Award for Outstanding Teaching Innovation. This new award complements the School's existing Best Undergraduate Teacher, Best Graduate Mentor, and Outstanding Faculty Mentor awards that recognize our talented and creative educators.

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A New Method to Steer AI Output

Researchers found a way to steer the output of large language models by manipulating specific concepts inside these models. The work, published in *Science*, could lead to more reliable, more efficient, and less computationally expensive training of LLMs. But it also exposes potential vulnerabilities — the researchers found that their method could get an LLM to operate outside of its guardrails, a practice known as jailbreaking. The work was led by computer scientists and data scientists at UC San Diego and MIT.

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Three Faculty Elected to National Academy of Inventors for 2026

Jacobs School of Engineering faculty Abdoulaye Ndao (electrical and computer engineering), Kenneth Vecchio (chemical and nano engineering) and Edward Wang (electrical and computer engineering and the Design Lab) have been named Senior Members of the National Academy of Inventors in recognition of their outstanding achievements in innovation. Ndao was recognized for optical technologies that can sense and image biological molecules; Vecchio was recognized for computational tools that can rapidly identify commercial candidates for advanced metal and ceramic materials; and Wang was recognized for transforming ordinary smartphones into powerful health monitoring tools.

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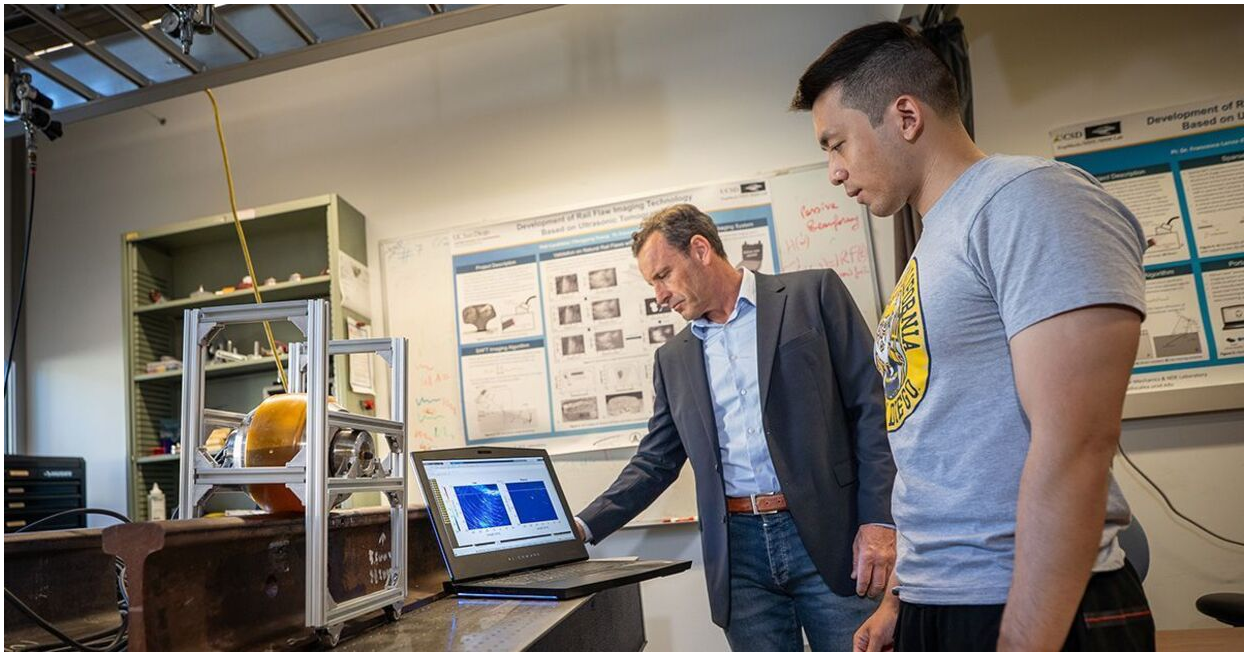

Safer Railroads Through Ultrasound

Structural engineers are making railroad track inspection more effective, thanks to advances in ultrasound. The researchers applied an innovative form of ultrasound with new beamforming algorithms to create a device that can be embedded in the wheel of a cart — and one day, potentially a train itself — to inspect each and every mile of rail for defects and internal cracks not visible to the naked eye. The device provides real-time high-resolution images of any internal defects as the cart is pushed over a railroad track.

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AI Model to Improve Prostate Cancer Care

Researchers and clinicians from across the country developed a new AI model of the male urinary tract that could make prostate cancer radiation therapy more precise and help reduce side effects, such as urinary complications. The work was led by Yuze Song, an electrical engineering doctoral student at the Jacobs School of Engineering, alongside Dr. Tyler Seibert, an associate professor of radiation medicine and applied sciences at UC San Diego School of Medicine and radiation oncologist at UC San Diego Health.

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Register to Join us at Research Expo

The Jacobs School of Engineering's 44th annual Research Expo symposium will be held on Wednesday, April 15. Research Expo has been a flagship event for our students and industry partners for more than four decades. It's a chance to learn about the latest research trends and technologies being developed in emerging industries, and meet the engineering and computer science graduate students and faculty bringing them to fruition. Register to join us for a day of networking and discovery.

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