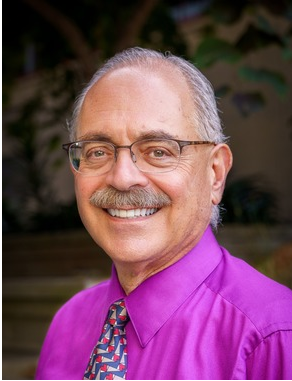


Strengthening Innovation Ecosystems



We recently teamed with Qualcomm and co-hosted an event with the independent, DC-based think tank, Center for Strategic and International Studies (CSIS). Through the event, we brought together industry, government and academic players that are all working together to strengthen our [Greater San Diego Semiconductor Ecosystem](#).

Planning for this event got me thinking about an important role that world-class engineering schools play — a role that extends beyond our research, workforce development, and technology commercialization work.

This additional role is to **convene the collaborators and advance the conversations** about how best to strengthen the innovation ecosystems that we belong to. And I don't just mean ecosystems defined by the physical boundaries of a campus — but innovation ecosystems that are regional in size.

If innovation is to be truly successful, I believe that we must do much more than count startups. We must act on the following four mega trends.

- **University startups need opportunities to incubate on campus for longer periods of time.** As a society, we can not afford to cast startups out into the global marketplace before they are fully ready to compete.
- **Entrepreneurship must be thought of as an all-community activity.** It is insufficient to have engineering and business students alone build startups. Our startups need talent from all parts of a comprehensive campus like UC San Diego — from arts and humanities to social sciences and all the way to policy.
- **We need larger and more comprehensive IP-free zones on campus.** Startups incubating on campus must be able to develop their own IP portfolios, and heterogeneous industry-academic teams need more IP-free zones in which to collaborate on shared challenges that are holding back emerging fields.
- **The boundaries of innovation ecosystems must expand to encompass larger geographical regions.** It is across larger regions that you find the necessary skills and capabilities for industry ecosystems to compete in the global marketplace. One example of such a region is the semiconductor innovation ecosystem that runs from San Diego north to Santa Barbara.

With these four points in mind, the CSIS meeting that we just co-hosted brought home a fifth element for me in a fresh way.

Innovation ecosystems need access to complementary manufacturing ecosystems — including supply chains and factories. Innovation and manufacturing can not exist in disassociated realms.

Here at the Jacobs School, we are absolutely dedicated to contributing to the full suite of efforts I have outlined above. We will be moving forward on as many of these themes as we can. The fact that we stepped up to co-host the CSIS event is, in and of itself, an example of our willingness to act constructively on behalf of larger innovation ecosystems.

Looking ahead to this November, our UC San Diego Fusion Engineering Institute is central to campus efforts to host and drive conversations at the [California Fusion Energy Convening 2025](#) at UC San Diego's Park & Market.

This is yet another opportunity to step up and strengthen our regional, state and national fusion innovation ecosystems.

As noted in [a new state-wide report](#) from the San Diego Regional Economic Development Corporation, the fusion energy industry in California could support more than 40,000 jobs and bring \$125 billion to the state economy in the next decade — if we set up the right innovation ecosystem support.

Building our regional innovation ecosystem is something we all can do. More on this in the item below on securing the future through planning.

As always, I can be reached at DeanPisano@ucsd.edu.

Sincerely,

AI

Albert ("AI") P. Pisano

Dean, UC San Diego Jacobs School of Engineering

Special Adviser to the Chancellor for Campus Strategic Initiatives

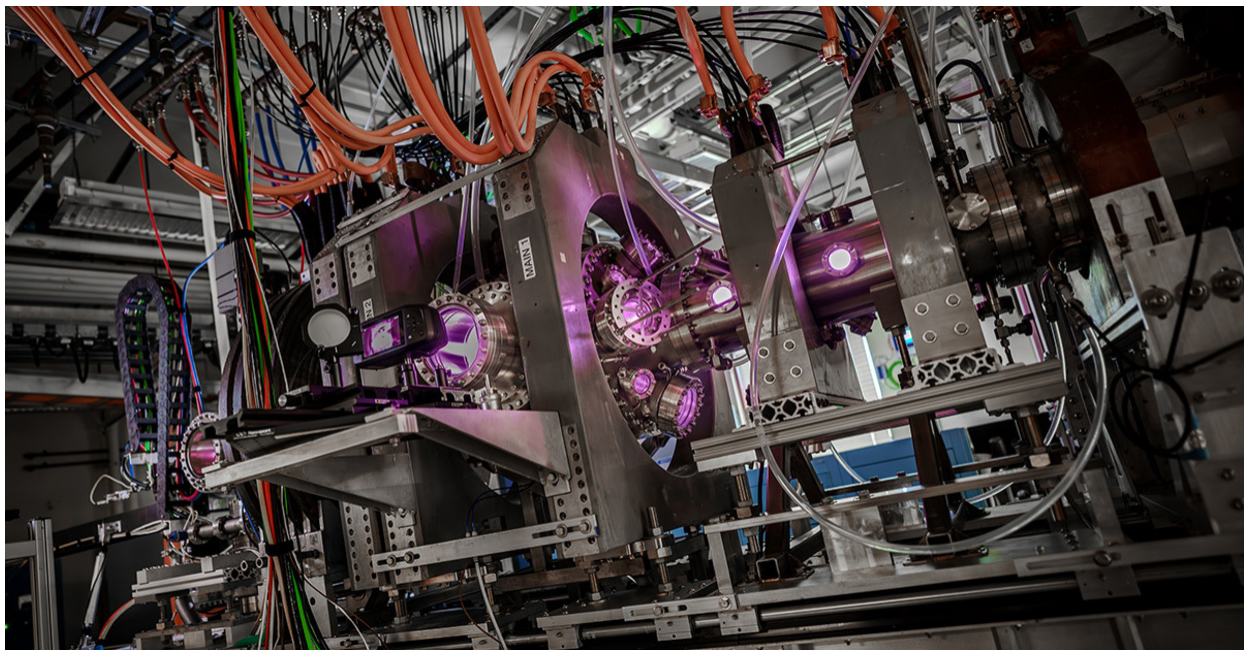


WELCOME NEW FACULTY

Six New Faculty Join the Jacobs School

We are proud to welcome six new faculty to the UC San Diego Jacobs School of Engineering. These educators and researchers join our incredible community of ~300 faculty. Together, we educate nearly 10,000 engineering and computer science students each year. We transform our students into the nation's innovation workforce for the economy to come.

[Read More](#)



Fusion Could Bring 40K Jobs to California

The fusion energy industry in California has the potential to support more than 40,000 jobs and bring \$125 billion to the state economy in the next decade. But to reach this

goal, this industry requires the right support. This is a key finding from a new report that quantifies the economic impact of California's fusion energy industry.

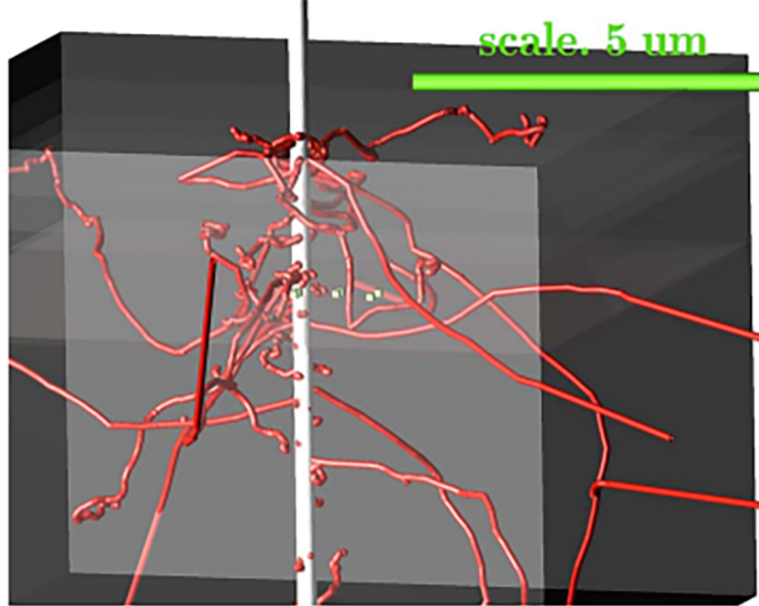
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WIRED: Satellites Are Leaking the World's Secrets

In a study whose impact will reverberate across the cybersecurity, telecom, military and intelligence sectors, researchers led by computer scientists at UC San Diego found that roughly half of the geostationary satellite signals they observed from a rooftop in San Diego are vulnerable to eavesdropping. The researchers gleaned information about the location of military assets, phone numbers, cellular texts and calls, and the activity of passengers using in-flight WiFi. Multiple companies and organizations have already responded by fixing vulnerabilities, and the team is actively working with many others. Read the exclusive story in WIRED.

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\$17M for Radiation-resilient Electronics

Researchers at UC San Diego are part of a \$17 million project funded by the National Nuclear Security Administration (NNSA) to make electronics more resilient to the harsh radiation encountered in space and extreme environments here on Earth. The effort could strengthen national security and boost U.S. competitiveness in the space and defense sectors. The multi-institution Center for Advancing Radiation Resilience of Electronics (CARRE) is led by Oregon State University.

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Training LLMs with Less Data and Power

Large language models (LLMs) can be trained to perform new tasks using significantly less data and computing power thanks to a new method developed by electrical

engineers at UC San Diego. This means small labs and startups without supercomputer-level resources will be able to tailor AI models for their particular needs. “This work represents a step toward democratizing AI,” said electrical engineering professor Pengtao Xie.

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Tiny Robots with Smart Skin Navigate Complex Environments

Robots that are just a few millimeters wide are now able to better navigate convoluted paths and fragile environments thanks to a new kind of soft robotic skin. The researchers integrated a very thin layer of actuators made of liquid crystal elastomer at strategic locations in the soft skin to improve navigating capabilities. The robot is steered by controlling the pressure inside its body and the temperature of the actuators.

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RNA-Protein Interaction Maps Will Advance Medicine

Bioengineers at UC San Diego developed a powerful new technology that can map the entire network of RNA-protein interactions inside human cells. This achievement could offer new strategies for treating diseases ranging from cancer to Alzheimer's. RNA-protein interactions regulate many essential processes in cells, from turning genes on and off to responding to stress. This NIH-funded work now provides scientists with the exact region of the protein involved in the interactions — and what RNA sequences are preferred by a given protein. This kind of information is vital for designing targeted therapies.

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Securing the Future through Planning

To the many Jacobs School of Engineering alumni, families, friends and industry partners who support our students, our research and our startup efforts, thank you! Your generosity enables us to educate the innovation workforce for the economy to come. Planning is central to engineering and computer science education and research. And when our Jacobs School community includes us in estate planning, the positive outcomes are extraordinary. We offer a [complimentary online estate planning platform](#) and a [personal estate planning kit](#), in the hope that they will be useful tools for your planning journey. Together, we can transform career trajectories and power emerging industries. Adrienne Bolli, Executive Director of Development for the Jacobs School of Engineering, is available to answer estate planning questions: abolli@ucsd.edu.

[Learn More](#)



10th Annual Robotics Forum

Join us on Nov. 5 for the 10th annual UC San Diego Contextual Robotics Institute Forum. This year's theme is Bridging Embodied AI and Applications. Robotics leaders from industry and academia will meet to share the latest advances in embodied AI, including in industrial, medical and public-safety applications. Quan Vuong, a Jacobs School alumnus and co-founder of Physical Intelligence, is one of several industry speakers. Registration is free, but required.

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