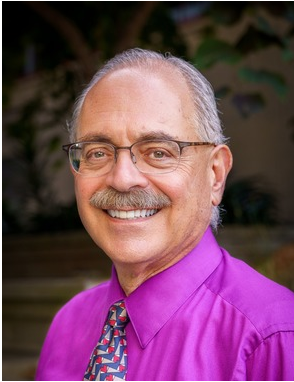


Empowering our faculty to “go for it”



This year's new faculty hires are absolutely amazing, and I am [proud to introduce them](#). At the same time, there is more to the story than just adding faculty lines.

As engineering dean, I feel that it is my job to take the next step and ensure that our new faculty have higher impact careers here at the Jacobs School of Engineering than they would have anywhere else.

What I mean by higher impact careers is that our new faculty feel fully empowered to “go for it” from day one. This means empowering new faculty to get beyond the cutting edge – and to get there from day one with confidence in themselves and their research ecosystem.

I am feeling bullish about this.

First, our new faculty stand out in their own right.

Second, I work closely with leaders across the entire Jacobs School to empower our new faculty to engage our research ecosystem in mutually beneficial ways. **Mutually beneficial** being the operative term. From day one, we work hard to make sure our new faculty feel as fully empowered as every other member of the faculty.

Creating and sustaining these kinds of environments where all faculty feel supported to push their research beyond the cutting edge is a heavy lift. But I am honored to do it because it's the right lift. When I make that lift – when we all work together to make that lift – both the faculty and the School at large are maximally empowered to achieve the greatest positive impacts possible in research, in education and in the transfer of innovation to the marketplace.

Here at the Jacobs School, this is all happening within an absolutely marvelous larger campus innovation ecosystem. I see our Jacobs School faculty a synergistic part of [UC San Diego's \\$1.73 billion campuswide research enterprise](#).

An annual research funding number this large underscores the opportunities our Jacobs School faculty have to collaborate directly with colleagues all across UC San Diego. In fact, that's what our faculty are known for.

And when our faculty make positive impacts across campus, a virtuous loop closes, feeding new energy into the Jacobs School ecosystem which, in turn, allows us to make the most of our larger campus research ecosystem.

This is how we collaborate across campus to deliver on our mission to advance and apply engineering and computer science to solve tough problems and improve lives. In the next year, we expect to announce two new institutes that embody this philosophy. I hope you stay tuned.

But in the meanwhile, please join me in welcoming this newest cohort of faculty to our extraordinary community of innovators. Together we make **bold** possible.

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



11 New Faculty Join the Jacobs School

The UC San Diego Jacobs School of Engineering is welcoming 11 incredible new faculty to its ranks in fall 2024. They join a group of nearly 300 faculty, 175 of whom have been hired in the last 11 years, dedicated to tackling humanity's toughest challenges through a combination of technical excellence, clear-eyed determination, creativity, and discipline-bridging innovation.

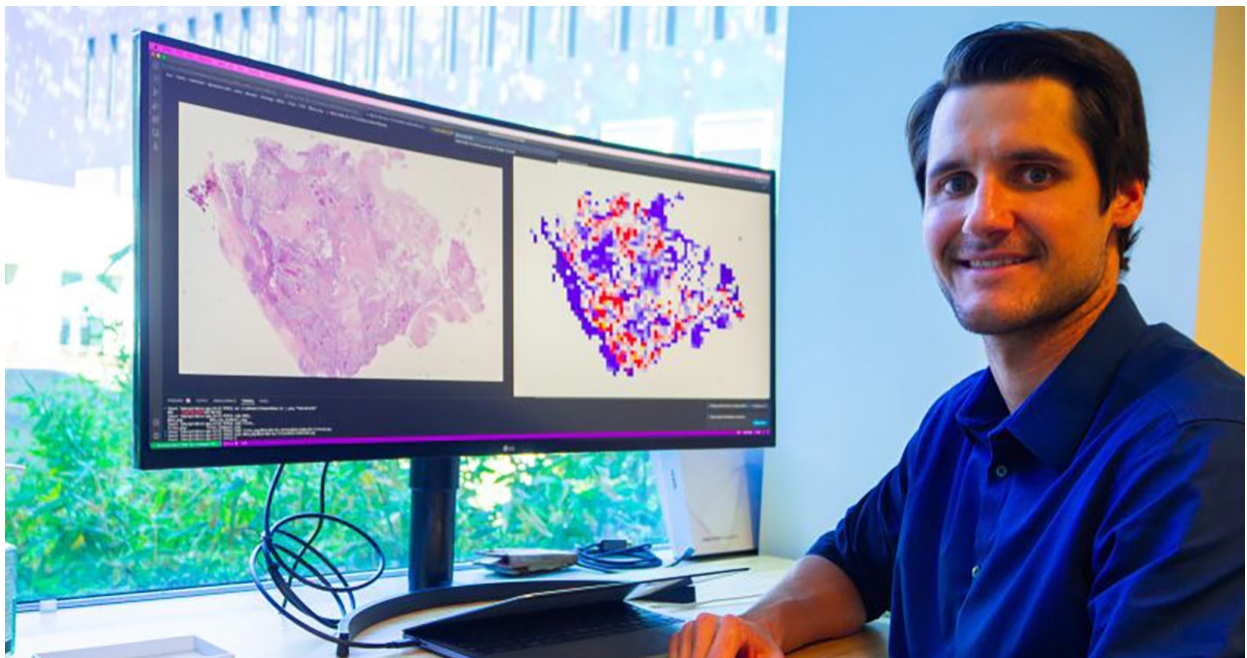
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Cybersecurity Flaws Could Derail High-profile Cycling Races

High-end bicycles used for high-profile road races such as the Tour de France are vulnerable to cybersecurity attacks targeting the bike's wireless gear shifting system. That is the finding from a team of researchers at UC San Diego and Northeastern University. The researchers are now working with Shimano, one of the leading bicycle component manufacturers, to patch the vulnerabilities. Read coverage in [Wired](#).

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Precision Oncology via AI for Cancer Biopsies

A new AI tool could be a game changer in breast and ovarian cancer diagnosis by instantly detecting a cancer biomarker in biopsy images. The biomarker, known as the HRD biomarker, can identify cancers that respond well to specific therapies. By providing immediate biomarker

detection, the AI tool enables quicker, more precise cancer care. It could also eliminate the need for expensive and time-consuming genomic testing required to determine the best first-line cancer treatment specific for each individual patient. Read coverage in [KPBS](#).

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With \$18M from NSF, New Tools to Study How Pandemics Start

Preventing the next pandemic begins before diseases emerge. This “pre-emergence” phase is the focus of a new Center—funded by the NSF—that is dedicated to developing cutting-edge technologies for disease investigations and pandemic research. Dubbed the NSF Center for Pandemic Insights (NSF CPI), the Center is supported with \$18 million over seven years. It is led by UC Davis and involves 10 partner institutions, including engineers at UC San Diego.

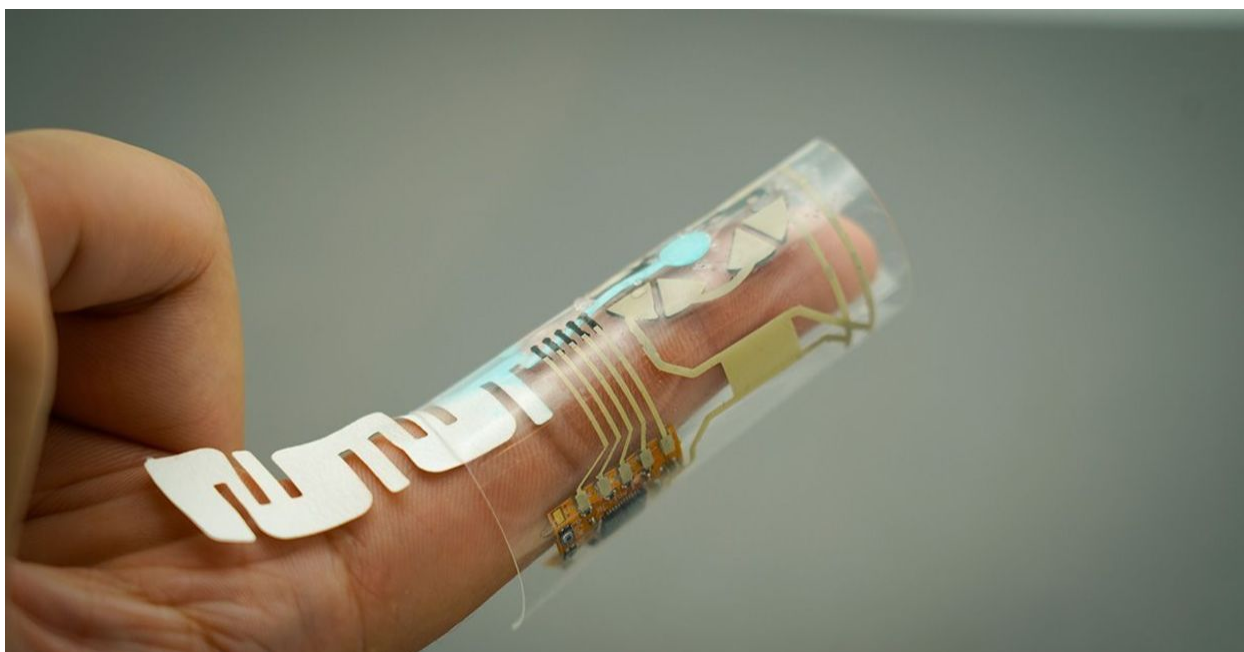
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Using AI to Enable Better Vision – for Both Humans and Machines

Through a unique and longstanding collaboration between electrical engineers and ophthalmologists at UC San Diego, researchers are developing AI and image processing tools to help physicians diagnose patients with retinal diseases faster and more accurately. Over the course of five years, the researchers have collaborated on more than 21 papers, publishing advances in both clinical and engineering journals. They developed better computer vision, artificial intelligence, and image processing tools to help physicians diagnose patients faster and more accurately, and predict which drugs will be most successful for specific patients.

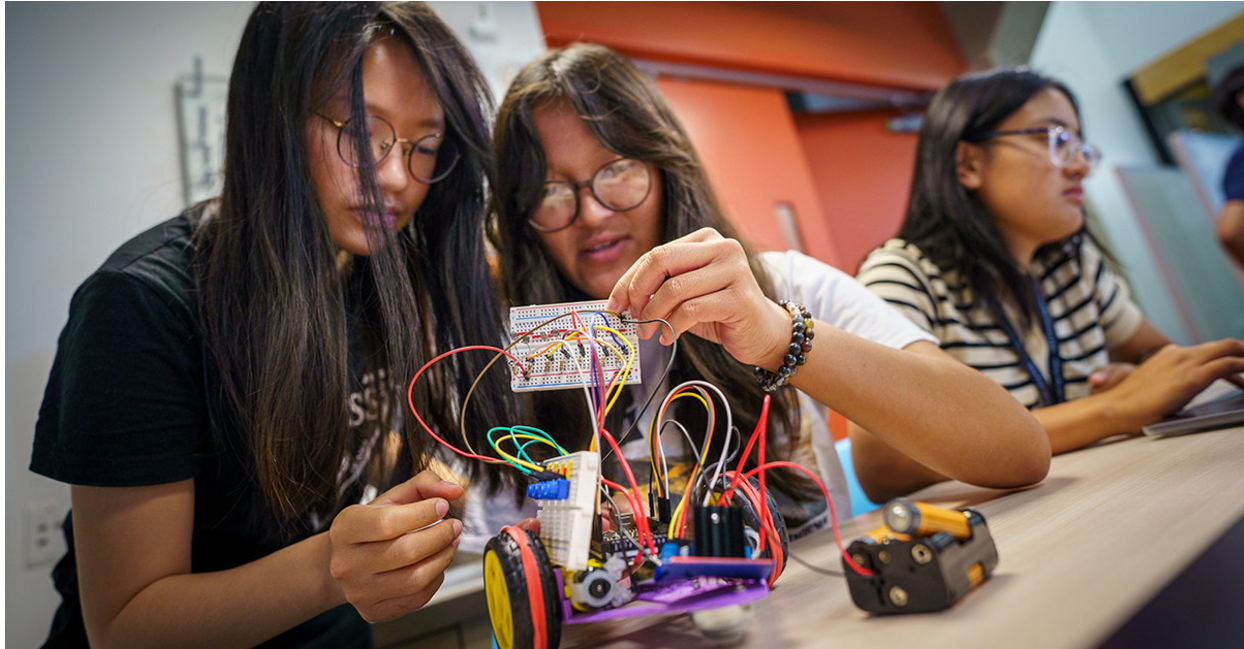
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Finger Wrap Uses Sweat to Provide Health Monitoring

A sweat-powered wearable has the potential to make continuous, personalized health monitoring as effortless as wearing a Band-Aid. Nano engineers at UC San Diego have developed an electronic finger wrap that monitors vital chemical levels—such as glucose, vitamins, and even drugs—present in the same fingertip sweat from which it derives its energy. Read coverage in [the Health section of Fox](#) and on [Cybernews](#).

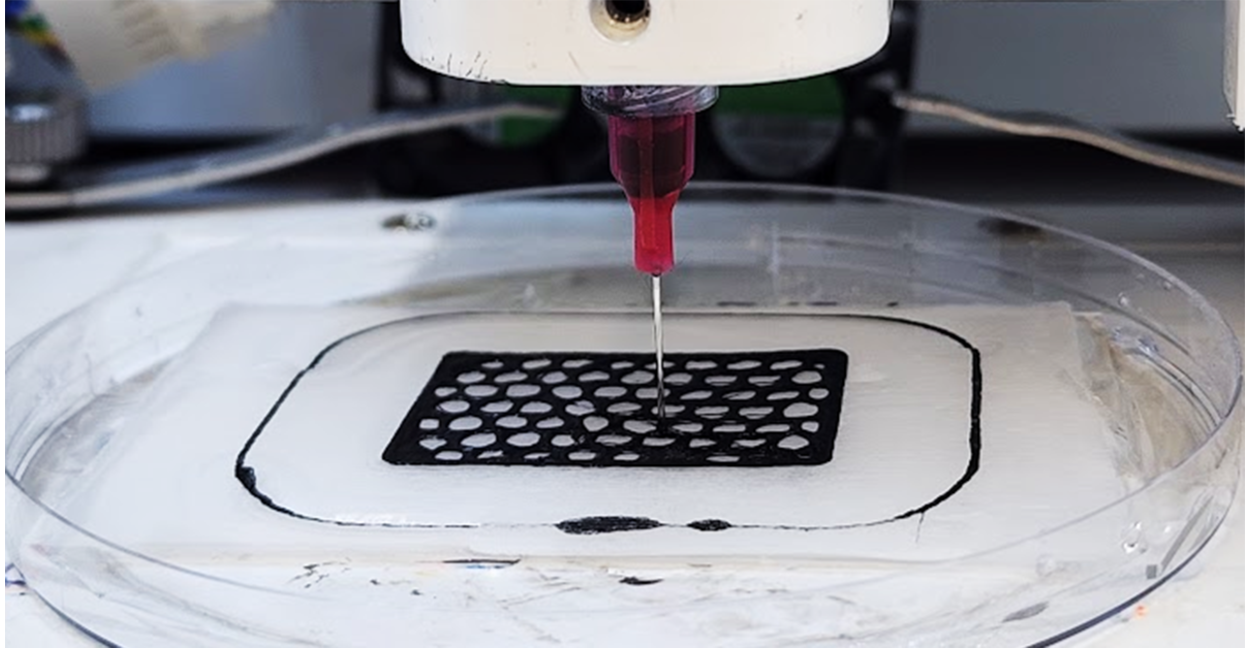
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Incoming Students get a Summer Jumpstart

This summer, nearly 200 incoming engineering and computer science students at the Jacobs School got a head start on their degrees thanks to two programs run by our IDEA Engineering Student Center. The programs empower students to succeed as undergraduates in these challenging majors. The Summer Engineering Institute for first year students, and the Transfer Prep program for transfer students, both aim to help incoming scholars adjust to campus and college life and develop a supportive community of friends, classmates and mentors.

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Sustainable and Reversible 3D Printing

A new 3D printing method developed by nano engineers at the Jacobs School is so simple that it uses only a polymer ink and salt water solution to create solid structures. The work, published in *Nature Communications*, has the potential to make materials manufacturing more sustainable and environmentally friendly. Read coverage in [Cosmos](#) and [New Atlas](#).

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