UC San Diego JACOBS SCHOOL OF ENGINEERING



\$5M from NSF to empower transfer students to earn engineering degrees

UC San Diego is leading a new NSF-funded effort to support low-income transfer students pursuing a bachelor's degree in engineering. The five-year, \$5 million program, called EM-POWER, will support engineering students at UC San Diego and two nearby community colleges — Southwestern College and Imperial Valley College — working to eliminate opportunity gaps through comprehensive cohort-based programming and significant scholarships. The program is designed to identify and document the most effective combinations of strategies for increasing the rate at which students who start at community colleges around the nation ultimately earn bachelor's degrees in engineering.

Learn more: bit.ly/EMPOWERUCSD

Franklin Antonio Hall set to open

After years of planning, construction, and collaboration, our new Franklin Antonio Hall is opening this month! The building's collaborative lab spaces will expand our ability to leverage engineering and computer science for the public good. We are grateful to everyone who has helped bring this project to fruition, from faculty and staff, to students, philanthropists, industry and community partners.



Learn more: bit.ly/FAHSetoToOpen



Small, low-energy chip enables AI on the edge

A new chip brings AI a step closer to running on a broad range of edge devices, disconnected from the cloud, where they can perform sophisticated cognitive tasks anywhere and anytime without relying on a network connection to a centralized server. The work is co-led by bioengineers at UC San Diego and appears in the journal Nature. The chip runs computations directly in memory and can run a wide variety of AI applications — while being twice as efficient as existing systems. Applications for the neuromorphic chip range from smart watches, to VR headsets, smart earbuds, next-gen sensors in factories, and rovers for space exploration.

Learn more: bit.ly/NeuRRam



The physics of walking is simpler than we thought

What do robots walking and ants walking have in common? Quite a bit it turns out — enough to show that the math behind the physics of walking is not as complicated as scientists thought. The research team had previously studied ant walking and wanted to see how their findings could be applied to robots. In the process, they discovered a new mathematical relationship between walking, skipping, slithering and swimming in viscous fluids for multi-legged animals and bots. "This is important because it will allow roboticists to build much simpler models to describe the way robots walk and move through the world," said PNAS paper coauthor Nick Gravish, a faculty member in the Department of Mechanical and Aerospace Engineering at the Jacobs School.



Learn more: bit.ly/physicsofwalking



Students enjoy binational summer of research and friendship

Nearly 200 high school and college students from the US and Mexico spent the summer at UC San Diego, conducting research projects ranging from bioprinting for in vitro blood brain barriers, to the acoustic tracking of humpback whales. It's part of the ENLACE binational summer research program, founded in 2013 and run by Olivia Graeve, mechanical engineering professor and director of the UC San Diego graduate program in materials science. ENLACE uses STEM to build cross-border friendships, while encouraging participants to consider college or graduate school options.

Learn more: bit.ly/Enlace2022

Math-computer science student named to hacking Top 50 list

UC San Diego math-computer science student Faris Ashai was recently featured in 2022's Major League Hacking (MLH) Top 50, a list recognizing the top new computer scientists and hackers. MLH compiles this list each year, highlighting the hackathon community's most inspiring members and recognizing their contributions to the tech ecosystem and STEM education. Ashai was recognized for creating new opportunities to help make the hackathon community more inclusive and accessible.



Learn more: bit.ly/MLHTop50UCSD

Sign up to receive the Jacobs School monthly newsletter: bit.ly/JacobsSchoolMonthlyNews

Contact newsletter editor, Daniel Kane: dbkane@ucsd.edu

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