UC San Diego
JACOBS SCHOOL OF ENGINEERING

MONTHLY NEWS JUN 2021

When the ecosystem engages

Last week, at our Corporate Affiliates Program (CAP) board meeting, we talked about developing talent and ensuring that ALL our Jacobs School of Engineering students have what they need to succeed. Industry and government partners came to me at our CAP Board asking how we can function as a unified team to support development of an innovation workforce that fully reflects society. I sat back and thought, wow, everyone here is fully engaged and working together.

Those are golden moments for me as a dean. It's not when the final goal has been achieved, but when the machinery engages, when the ecosystem engages, and I feel that we have a shared line of sight to the goal. Our student diversity and equity metrics can and will improve. I'm never satisfied with the rate of improvement, but it's a good feeling to have industry and government partners leaning in to engage with us in this work. With this kind of partnership, we know we can succeed.

We have incredibly talented and motivated people all across the Jacobs School working on the myriad issues at play when it comes to diversifying our student body, and crucially, supporting all our students academically and personally.

We are a big school with incredible, diverse talent. When it comes to fully engaging, mentoring and empowering our students, there is still plenty of opportunity. Ensuring tomorrow's innovation workforce reflects the diversity of our society is a concrete way that we can work together to leverage engineering and computer science for the good of society. I encourage you to get involved with us in this critical work. As our current partners know, we know how to listen, and we know how to take action. They are confident in their investment in us.

If you are in industry, government, the NGO world, or any other sector and are looking to engage in terms of helping us develop that brilliant, diverse student talent, a great place to start is our team in the Corporate Affiliates Program. They can connect you with the right people anywhere in the Jacobs School.

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

-Albert P. Pisano, Dean

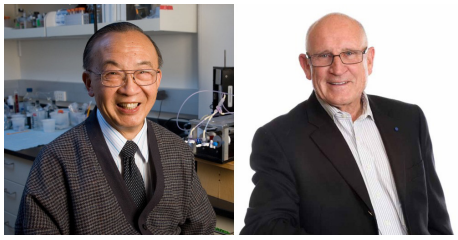
UC San Diego Jacobs School of Engineering

Graduating ACES Scholars are diversifying engineering

Xavier Perez, Yoon Jung Choi, and Armando Godoy-Velasquez are members of the first cohort of ACES Scholars to graduate from the Jacobs School of Engineering. Students in the NSF-funded program are highly motivated students from low income backgrounds that are traditionally underrepresented in engineering. Congratulations to these students, and to all our Jacobs School engineering and computer science students who are graduating this year.

Learn more: bit.ly/ACESScholars

Titans of industry, academia team up to advance engineering in medicine



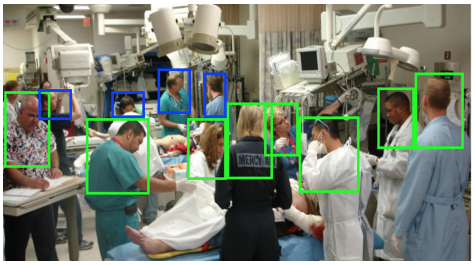
As the silos that once separated engineering and medicine continue to dissolve, there is a growing need on campus for facilities where engineers, physicians and medical researchers can work in the same physical research ecosystems. Pioneering bioengineer, professor Shu Chien, and his wife K.C., joined forces with Peter Farrell, founder of medical device company ResMed, to support this vision. The Chiens and Farrell each recently donated $1.5 million to support programmatic expansion of engineering and medicine on campus. A large collaborative research facility for engineering and medicine in the Jacobs School's newest building, Franklin Antonio Hall, will be named in recognition of their generosity.

Learn more: bit.ly/ChienFarrell

World's largest outdoor earthquake simulator undergoes major upgrade

A major upgrade to the world's largest outdoor earthquake simulator recently reached a milestone when the facility's floor—all 300,000 lbs of it—was put back into place. When completed this fall, the simulator will have the ability to reproduce multi-dimensional earthquake motions with unprecedented accuracy to make structures and their residents safer during strong shakes.The simulator, or shake table, will be able to test the heaviest and tallest structures to gauge how well they would withstand various earthquakes. The first test following the upgrade will feature a full-scale, 10-story, cross-laminated timber building. The upgrade is funded by a $16.3 million grant from the NSF.

Learn more: bit.ly/shaketableupgrade



Helping robots better navigate emergency rooms

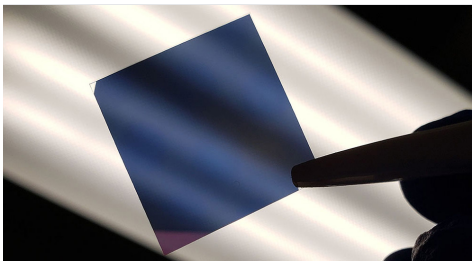
Computer scientists at UC San Diego have developed a more accurate navigation system that will allow robots to better negotiate busy clinical environments in general and emergency departments more specifically. The researchers have also developed a dataset of open source videos to help train robotic navigation systems in the future. The system is based on an algorithm that takes into account how many people are clustered together in a space and how quickly and abruptly these people are moving.

Learn more: bit.ly/ucsdrobotsintheER

Blood glucose monitoring without the finger pricks

Nanoengineers at UC San Diego have developed a device that can measure glucose in sweat with the touch of a fingertip—no needles required. Personalized algorithms translate each person's sweat glucose to their blood glucose levels. In tests, the algorithm was more than 95% accurate in predicting blood glucose levels before and after meals. To calibrate the device, a person with diabetes would need a finger prick only once or twice per month, compared to existing devices which require multiple pricks a day.

Learn more: bit.ly/SweatGlucoseSensor



Ordinary microscope sees in super resolution

A new technology improves the resolution of ordinary light microscopes so they can be used to directly observe finer structures and details in living cells. The technology developed by electrical engineers at UC San Diego turns a conventional light microscope into what's called a super-resolution microscope. The "secret sauce" is a specially engineered material that shortens the wavelength of light as it illuminates the sample—this shrunken light is what essentially enables the microscope to image in higher resolution.

Learn more: bit.ly/SuperResMicroscope