

#9 Engineering School in the Nation

I am proud to share this news: the Jacobs School of Engineering at UC San Diego is #9 in the nation, according to the US News & World Report Rankings of Best Engineering Schools.

This is the second year in a row (and the second year ever) that we—the Jacobs School of Engineering—have broken into the top ten. (Or as I've been saying for a year now, we broke into the top nine!)

In the video embedded here (bit.ly/2021Rankings), I share a few thoughts (safely distanced from my backyard) on how and why we are leveraging our rising reputation.

But first...

To everyone inside and outside the Jacobs School—staff, students, faculty, industry partners, donors, friends, alumni—THANK YOU. You have built and sustained the excellence and momentum this #9 ranking reflects. It's been a tough twelve months, and as I've said many times, I'm inspired by your grit and resilience in the face of multiple headwinds.

I see rankings as recognition rather than definition. We have defined ourselves at the Jacobs School by growing and strengthening our research enterprise. We have defined ourselves by investing in our students and their educational experiences inside and outside the classroom. We have defined ourselves by our renewed culture-building efforts aimed at creating and sustaining equitable and welcoming learning and working environments for all our students, staff and faculty. We have defined ourselves through new partnerships, initiatives and projects, including Franklin Antonio Hall. Our new building will serve as a national model for the future of collaborative academic engineering research.

In many different ways over the last 12 months, I've been reminded more clearly than ever of the incredible good that can come from our work as engineering and computer science educators and researchers. But realizing this potential, and avoiding pitfalls, takes incredible hard work and collaboration across sectors. I'm ready for the challenges ahead, and I look forward to tackling them with you.

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

~Albert P. Pisano, Dean

UC San Diego Jacobs School of Engineering



Leveraging our rising reputation

For the second year in a row, the UC San Diego Jacobs School of Engineering is ranked the #9 engineering school in the nation, according to the U.S. News & World Report Rankings of Best Engineering Schools. This #9 ranking is up from #11 two years ago, #12 three years ago, #13 four years ago, and #17 five years ago. In the new US News Rankings, bioengineering / biomedical engineering at the UC San Diego Jacobs School of Engineering ranked #3 in the nation.

Learn more: bit.ly/2021Rankings

Gene therapy could provide opioid-free solution for chronic pain

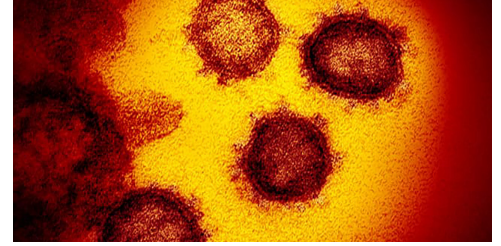
A gene therapy for chronic pain could offer a safer, non-addictive alternative to opioids. Bioengineers at the Jacobs School developed the new therapy, which works by temporarily repressing a gene involved in sensing pain. It increased pain tolerance in mice, lowered their sensitivity to pain and provided months of pain relief without causing numbness. The UC San Diego team co-founded spinoff company Navega Therapeutics to work on translating this gene therapy approach into the clinic.

Learn more: bit.ly/GeneTherapyPain



Coronavirus circulated undetected months before first cases in Wuhan

Using molecular dating tools and epidemiological simulations, bioinformaticians and computer scientists at UC San Diego, with colleagues at the University of Arizona and Illumina, estimate that the SARS-CoV-2 virus was likely circulating undetected for two months before the first human cases of COVID-19 were described in late-December 2019. In a paper published in *Science*, the researchers' simulations suggest that the mutating virus dies out naturally more than three-quarters of the time without causing an epidemic.



Learn more: bit.ly/CoronavirusCirculation

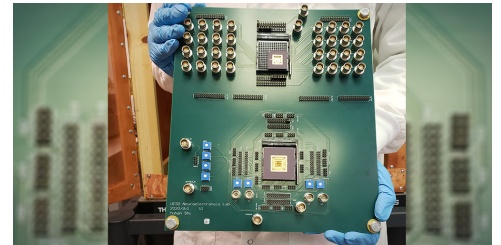


Living tissue can heal itself from many injuries, but giving similar abilities to artificial systems, such as robots, has been extremely challenging. Now, nanoengineers and mechanical engineers at UC San Diego have developed small, swimming robots that can magnetically heal themselves on-the-fly after breaking into two or three pieces. The strategy could someday be used to make hardier devices for environmental or industrial clean up, the researchers say.

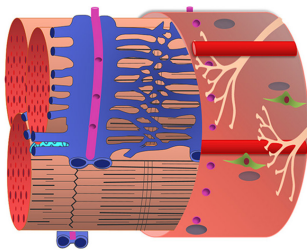
Learn more: bit.ly/selfhealingbots

Artificial neuron device could shrink energy use, size of neural network hardware

Training neural networks to perform tasks, such as recognizing images or navigating self-driving cars, could one day require less computing power and hardware thanks to a new artificial neuron device developed by electrical engineers at UC San Diego. The nanometer-sized device can run neural network computations using 100 to 1000 times less energy and area than existing CMOS-based hardware. The study was performed in collaboration with a DOE Energy Frontier Research Center.



Learn more: bit.ly/ArtificialNeuron



Speeding up muscle repair

A study led by engineers at the Jacobs School provides new insights for developing therapies for muscle disease, injury and atrophy. By studying how different pluripotent stem cell lines build muscle, researchers have for the first time discovered how epigenetic mechanisms can be triggered to accelerate muscle cell growth at different stages of stem cell differentiation.

Learn more: bit.ly/SpeedyMuscleRepair

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

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

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