Clinical trials for needle-free glucose monitor

A needle-free glucose monitor developed at UC San Diego measures insulin levels through sweat on the skin so people with diabetes don't have to prick their fingers so often. The tattoo sensor technology was developed in the labs of Joseph Wang and Patrick Mercier at the Jacobs School of Engineering's Center for Wearable Sensors. The sensors are now being tested in a phase 1 clinical trial at the UC San Diego Altman Clinical and Translational Research Institute. "Our tattoo is printed with material containing two electrodes that apply a small amount of electrical current," said electrical engineering professor Patrick Mercier. "This forces glucose molecules that reside below the skin to rise to the surface, allowing us to measure blood sugar."

Learn more: bit.ly/GlucoseSensor

## Engineering and management schools strengthen collaborations

UC San Diego has emerged as a leader in how engineering and management schools within one university can collaborate in order to strengthen entrepreneurship education, startup creation, and the commercialization of innovation. Most recently, the Jacobs Family Chairs in Engineering Management Leadership were awarded to the two professors leading the UC San Diego Institute for the Global Entrepreneur, which is the centerpiece of the collaboration between the Jacobs School of Engineering and the Rady School of Management at UC San Diego. The awardees are electrical and computer engineering professor Sujit Dey and Rady School of Management professor Vish Krishnan.

Learn more: bit.ly/EngManagement

Transparent soft robot swims silently underwater

A soft, transparent, eel-like robot developed by engineers and marine biologists at UC San Diego can swim silently in salt water without an electric motor. It's an important step toward a future when soft robots can swim in the ocean alongside fish and invertebrates without disturbing or harming them. "Instead of propellers, our robot uses soft artificial muscles to move like an eel underwater without making any sound," said Caleb Christianson, a Ph.D. student in Mike Tolley's mechanical engineering lab at UC San Diego.
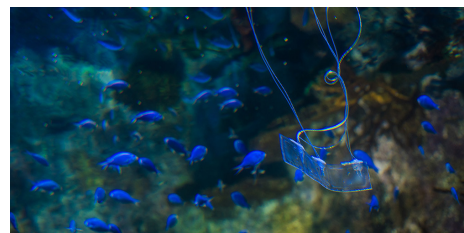
Learn more: bit.ly/RobotEel

Eight Jacobs School alumni recognized at UC San Diego's first 40 Under 40 awards

From startup founders to VPs at major technology companies, eight alumni of the Jacobs School of Engineering were recognized in the first 40 Under 40 alumni awards bestowed by UC San Diego. The engineering awardees, in alphabetical order, are Shraddha Chaplot, Sarah Guthals, Dr. Albert Hsiao, Albert Y. Lin, Paul Martini, Sameer Samat, Nicole Truitt, and Josh Windmiller.

Learn more: http://bit.ly/UCSD40
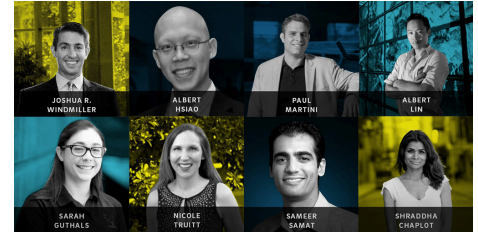
Data storage research center celebrates 35 years

In 1983, a one gigabyte hard drive cost $100,000. Today, there are 10 terabytes of storage on a single drive at a cost of three cents per gigabyte. The UC San Diego Center for Memory and Recording Research (CMRR), which is celebrating its 35th year of groundbreaking research, is responsible for many of the technological developments that enabled this transformation. CMRR launched in 1983 as the Center for Magnetic Recording Research, with a goal of collaborating with industry partners to advance data storage. The "M" in CMRR changed from "Magnetic" to "Memory" three years ago to reflect the broadening scope of data storage to include solid state storage and new approaches to non-volatile memories.

Learn more: bit.ly/CMRR35

How do fires spread in the real world?

UC San Diego mechanical engineering graduate student Luca Carmignani took home the top prize at Research Expo for his work to understand the spread of fire over real-world 3D terrain. His work explains what happens to flames spreading over 3D geometries and shapes such as edges or angles. Previous fire safety research has focused on quantifying how flames spread over flat, 2D surfaces, which doesn't have immediate application to real-world structures. "It's well established how fast a flame is over a flat surface, and various models work well for 2D flames—flames over flat fuel," Carmignani said. "The question is what happens when you have the effect of a finite sample—say edges close to the flame?"

Learn more: bit.ly/FlamesOnEdge
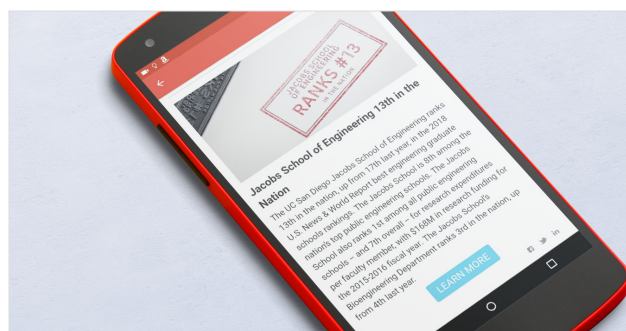
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