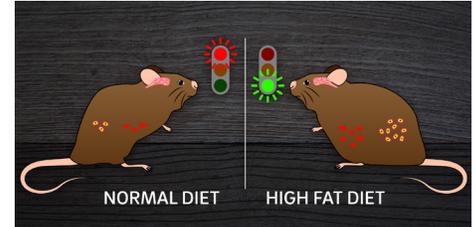


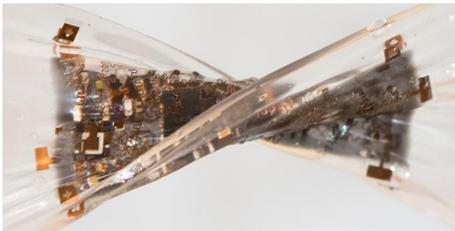
Stop-eating signals

Bioengineers have discovered a mechanism that blocks the brain from registering signals to stop eating. The researchers uncovered a molecular mechanism that causes leptin resistance, a well-known phenomenon associated with obesity. Leptin resistance blocks the brain from knowing when to stop eating. The team led by UC San Diego bioengineers found that mice fed a high-fat diet produce an enzyme named MMP-2 that clips receptors for the hormone leptin from the surface of neuronal cells in the hypothalamus. This blocks leptin from binding to its receptors, which keeps the neurons from signaling that your stomach is full.

Learn more: bit.ly/2MMP2leptin



Building stretchable electronics in 3D



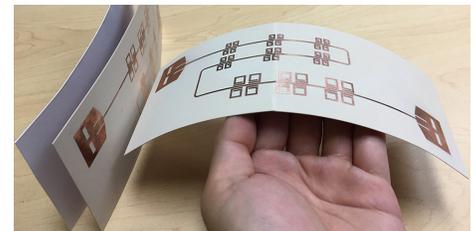
Nanoengineers have developed a new approach for building soft, stretchy electronics that can pack more functions in smaller devices. The key is the team's ability to stack and electrically connect vertical layers of stretchable circuits. As a proof of concept, the team built a stretchable electronic patch the size of a U.S. dollar coin. It can be worn on the skin like a bandage and used to wirelessly monitor a variety of physical and electrical signals, including respiration, body motion, and heart and brain activity. The work is led by nanoengineering professor Sheng Xu, a member of the Center for Wearable Sensors at the UC San Diego Jacobs School of Engineering.

Learn more: bit.ly/StretchableElectronics

Printable WiFi tags turn everyday objects into smart devices

Electrical engineers at the Jacobs School developed printable metal tags that can turn everyday objects into smart Internet of Things devices. The thin, flexible copper tags are made to reflect WiFi signals in a particular way when touched by a user. Uniquely identifiable tags can be tacked onto plain objects that people touch and interact with every day, like water bottles, walls or doors. These objects then become smart, connected devices. "We're developing low-cost, battery-free, chipless, printable sensors that can include everyday objects as part of the Internet of Things," said UC San Diego electrical engineering professor Xinyu Zhang, a member of the Center for Wireless Communications at UC San Diego.

Learn more: bit.ly/LiveTag



With \$12M NIH grant, bioengineers aim to move metabolomics to the clinic



A \$12 million grant to UC San Diego bioengineers will help researchers and physicians develop better tools to diagnose diseases through metabolite markers in the blood. The National Institutes of Health grant will allow the team led by bioengineering professor Shankar Subramaniam to expand the Metabolomics Workbench, a searchable, interactive repository of data for all research in the field of metabolomics. The funding will allow the team to add a wide range of clinical data to the Workbench and take the project into the clinic itself.

Learn more: bit.ly/MetabolomicsWorkbench

An upward social mobility machine

UC San Diego is a national leader in transforming the lives of low-income students. One of the best schools for students to get a quality education at an affordable price, Money Magazine listed the campus in the No. 2 spot in its new 2018 Best Colleges for Your Money ranking. In addition, the university was ranked the No. 1 public university in the nation for serving the public interest for the seventh consecutive year by Washington Monthly. In addition to conducting research for the benefit of our community and world, Jacobs School of Engineering students serve the public interest through programs like Global TIES, which partners students with nonprofits to create solutions to real world problems.



Learn more: bit.ly/UpwardSocialMobility



Unsecured, obsolete medical record systems and medical devices put patient lives at risk

A team of physicians and computer scientists from UC San Diego and UC Davis took to the stage at the Black Hat 2018 conference in Las Vegas to demonstrate how easy it is to modify medical test results. They remotely attacked the connection between hospital lab devices and medical record systems, showing that obsolete and unsecure medical record systems put human lives at risk. While the vulnerabilities the researchers exploited are not new, this is the first time that a research team has shown how they could be exploited to change test results in order to compromise patient health.

Learn more: bit.ly/Pestilencetool

You're invited: Contextual Robotics Institute Forum

Robotics for healthcare is extremely sophisticated and yet, in many ways, still in its early days. The opportunities and the challenges in the clinic and at home are extraordinary. Join us on Thursday, Nov. 8 for the Contextual Robotics Institute 2018 Forum on Healthcare Robotics featuring clinicians, technologists and academics for an interactive day focused on state-of-the-art advances and the toughest remaining questions.

Learn more: bit.ly/HealthcareRobotics

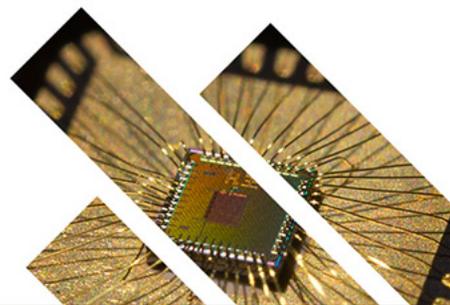


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