

**The Jacobs School of Engineering
welcomes new professors for 2015.**

280 by 2020

We aim to grow the Jacobs School of Engineering faculty from 214 to 280 by 2020.

After two years in San Diego as Dean of the Jacobs School, I am still awed by the quality and quantity of the fundamental, clinical and applied research at UC San Diego and across the Torrey Pines Mesa. At UC San Diego, research funding surpassed \$1 billion in 2015 for the fourth time in six years.

Opportunity is everywhere. Our international mega-region is home to many powerful research institutions, technology clusters and manufacturing centers on both sides of the U.S.-Mexico border.

We are growing toward 280 faculty to build and strengthen our research capacity and increase our impact in clinical medicine, robotics, wireless technologies, genomics, data sciences and cybersecurity, clean energy, advanced manufacturing and more.

Albert P. Pisano
Dean, Jacobs School of Engineering
University of California, San Diego

New Faculty Appointments



MANMOHAN CHANDRAKER

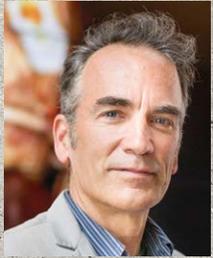
Assistant Professor
Ph.D. UC San Diego

Chandraker's research focuses on 3D reconstruction and scene understanding. He has developed theoretical frameworks and practical systems for applications in autonomous driving, robotics, 3D modeling and human-computer interfaces. He has led collaborations with the automobile industry aiming towards low-cost, real-time visual systems for navigation, 3D localization and recognition in traffic scenes.

mkchandraker@ucsd.edu

Computer
Science &
Engineering

Previously: NEC Labs America



ELLIOT MCVEIGH

Professor
Ph.D. University of Toronto

McVeigh aims to create a completely new imaging paradigm for cardiac care by developing imaging techniques that give patients and their doctors all the information they need to avoid heart attacks. This will allow physicians to guide the right patients into the right courses of treatments, from lifestyle changes to surgery.

emcveigh@ucsd.edu

Bioengineering

Previously: Chair, Department of Biomedical Engineering, Johns Hopkins University



DEIAN STEFAN

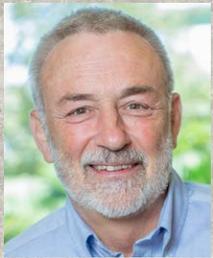
Assistant Professor
Ph.D. Stanford University

Stefan is interested in exploring new security mechanisms and programming language techniques that can allow developers to build secure systems more easily. He is also exploring browser security architectures, policy languages, and clean-slate methods for building secure, low-level systems and applications, which are notoriously difficult to secure.

deian@gitstar.com

Computer
Science &
Engineering

Previously: Co-founder GitStar



BRUCE WHEELER

Adjunct Professor
Ph.D. Cornell University

Wheeler's bioengineering research interests lie in the application of electrical engineering methodologies to neuroscience, in order to gain better understanding of the behavior of small populations of neurons as they represent brain function. Wheeler's educational record includes starting biomedical engineering undergraduate degree programs at two universities.

bcwheeler@ucsd.edu

Bioengineering

Previously: Chair, Department of Biomedical Engineering, University of Florida



FARINAZ KOUSHANFAR

Professor
Ph.D. UC Berkeley

Koushanfar's research goal is to build more intelligent embedded computer systems that can ensure low-overhead security and trust, reduce energy usage, and improve performance within the physical resource constraints. Her work has applications in internet-of-things, anti-piracy systems, medical devices, automotive systems, deep learning networks and secure bioinformatics.

fkoushanfar@ucsd.edu

Electrical &
Computer
Engineering

Previously: Associate Professor, Rice University

New Interdisciplinary Research Centers

CENTER FOR WEARABLE SENSORS



We accelerate the pace of innovation in wearable sensor systems by tackling the toughest research challenges and technical bottlenecks. Our work to create a series of the world's most advanced "lab on the body" systems is built around close collaborations between world-renowned faculty, students and our industry partners.

wearablesensors.ucsd.edu



DUYGU KUZUM

Assistant Professor
Ph.D. Stanford University

Kuzum develops new nanoscale electronics technologies to better understand circuit-level computation in the brain. She is exploring novel tools to probe brain circuits with high spatial and temporal precision. Her work on brain-inspired nanoelectronic devices is a step towards energy-efficient computation systems that learn and process information in real-time.

Electrical & Computer Engineering

dkuzum@eng.ucsd.edu

Previously: Postdoctoral Researcher, University of Pennsylvania



MICHAEL YIP

Assistant Professor
Ph.D. Stanford University

Yip aims to design new dexterous surgical robots that augment the capabilities of surgeons by enabling new clinical treatments, automated surgical methods and improved patient outcomes. He is also developing novel sensors and actuators for biomedical systems and computer vision and augmented reality for surgical training and image-guided surgery.

Electrical & Computer Engineering

m1yip@ucsd.edu

Previously: Ph.D. Stanford University



SIAVASH MIRARAB

Assistant Professor
Ph.D. University of Texas at Austin

Mirarab develops algorithms that can be used to understand evolutionary biology. His work focuses on developing computational methods that can accurately analyze very large biological datasets – such as the genomes of present-day species – and reconstruct their evolutionary history. An understanding of evolutionary biology has applications in species preservation, biodiversity and medicine.

Electrical & Computer Engineering

smirarab@ucsd.edu

Previously: Ph.D. University of Texas at Austin



JAVIER E. GARAY

Professor
Ph.D. UC Davis

Garay's work involves the design and synthesis of advanced materials and evaluating their performance in devices. His research focuses on understanding and leveraging nano/micro-length-scale-controlled phenomena to optimize material properties and performance for next-generation optical devices, magnetic devices and energy storage.

Mechanical & Aerospace Engineering

jegaray@ucsd.edu

Previously: Professor, UC Riverside



TINA NG

Associate Professor
Ph.D. Cornell University

Ng develops flexible electronics and aims to push the boundary of how electronics are made by incorporating electronic control and power sources onto any surface. Her research methods are based on additive printing, which allows low-temperature patterning that is compatible with a wide range of materials, reduces wastes and enables rapid, complex design changes.

Electrical & Computer Engineering

tnn046@ucsd.edu

Previously: Palo Alto Research Center



ERTUGRUL CUBUKCU

Assistant Professor
Ph.D. Harvard University

Cubukcu explores the way light interacts with matter at the fundamental level. He engineers light-matter interactions at the nanoscale to achieve new functions in optical devices and sensors for medical diagnostics and environmental monitoring. He also investigates two-dimensional semiconducting and semi-metallic materials for photonics applications.

NanoEngineering

ecubukcu@ucsd.edu

Previously: Assistant Professor, University of Pennsylvania

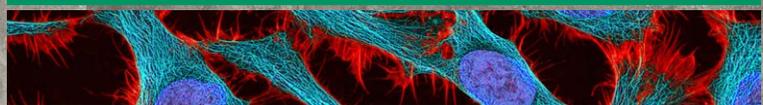
SUSTAINABLE POWER & ENERGY CENTER



We collaborate to solve key challenges in distributed-energy storage and generation, and accompanying power-management systems. We partner with innovators on electric vehicles, microgrids, photovoltaic panels, wind turbines, wearable power devices and more. UC San Diego's microgrid serves as a real-world test bed for our work.

spec.ucsd.edu

CHO SYSTEMS BIOLOGY CENTER



We generate and harness big data to advance CHO (Chinese Hamster Ovary) cell-line engineering for drug development. Working at the frontiers of systems biology, genomics and CHO research, we develop – and then convert – large data sets into biological knowledge to advance cell-line engineering for biopharmaceutical development and production.

cho.ucsd.edu



VICKI H. GRASSIAN

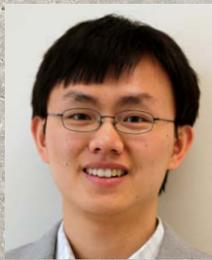
Distinguished Professor
Ph.D. UC Berkeley

Grassian's research focuses on understanding the chemistry of atmospheric aerosol particles, such as sea spray, mineral dust and brown carbon, and how they impact global processes including climate and human health. She is also interested in developing sustainable nanotechnology through the understanding of the environmental and health implications of nanomaterials.

vgrassian@ucsd.edu

NanoEngineering

Previously: Professor, University of Iowa



SHENG XU

Assistant Professor
Ph.D. Georgia Institute of Technology

Xu engineers inorganic materials into a soft format for a new generation of wearable electronics and energy harvesting and storage devices. These "soft" inorganic materials retain the electronic properties of stiff inorganic materials and are the building blocks for advanced electronic systems that can be comfortably integrated with the human body.

shengxu@ucsd.edu

NanoEngineering

Previously: Postdoctoral Scientist, University of Illinois at Urbana-Champaign



PING LIU

Associate Professor
Ph.D. Fudan University, China

Liu designs materials and architectures for next-generation energy conversion and storage systems. He aims to develop battery technologies that have capabilities beyond those of today's lithium-ion batteries and offer lower costs. He also explores batteries as actuators that create mechanical motion for medical, aerospace and energy applications.

piliu@ucsd.edu

NanoEngineering

Previously: Program Director, Advanced Research Projects Agency-Energy



ALICIA KIM

Associate Professor
Ph.D. University of Sydney

Kim works at the interface of engineering, computer science and mathematics. She creates optimization methods to find simple and powerful solutions to complex engineering problems, from materials to structures. These solutions provide a common design platform that includes multiphysics considerations. She focuses on aerospace structures and aircraft design.

hak113@eng.ucsd.edu

Structural Engineering

Previously: University of Bath



OSCAR VAZQUEZ-MENA

Assistant Professor
Ph.D. Swiss Federal Institute of Technology of Lausanne, Switzerland

Vazquez-Mena's research focuses on using the physical properties of two-dimensional atomic materials such as graphene to develop new devices for solar energy harvesting and biomedical applications. His work also involves integrating nanoscale materials with biological structures, such as cell membranes and proteins, to study biophysical processes.

oscarvm@ucsd.edu

NanoEngineering

Previously: Postdoctoral Fellow, UC Berkeley



KENNETH J. LOH

Professor
Ph.D. University of Michigan, Ann Arbor

Loh's research program focuses on deriving multifunctional materials and sensors for resilient systems of the future. Specifically, the goal is to encode unique properties in nanocomposites and to derive scalable fabrication techniques for realizing large, field-deployable applications. Applications of interest include structural health monitoring, human performance sensing, and next-generation materials.

kenloh@eng.ucsd.edu

Structural Engineering

Previously: Associate Professor, UC Davis

CENTER FOR VISUAL COMPUTING



We bring together computer graphics, augmented and virtual reality, computational imaging and computer vision. Our work is revolutionizing the way we capture, image and display the visual world. The opportunities in communication, health and medicine, city planning, entertainment, 3-D printing and more are vast.

viscomp.ucsd.edu

CENTER FOR EXTREME EVENTS RESEARCH



We leverage our expertise in experimental and computational methods to develop better ways to protect entire built infrastructures, as well as bio-systems, from extreme events such as blasts from terrorist attacks and mining explosions, car crashes, sports collisions, and natural disaster such as landslides.

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George Tynan, Associate Dean
Pamela Cosman, Associate Dean for Students
Ahmed Elgamal, Associate Dean for Faculty Affairs and Welfare

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