### UC San Diego JACOBS SCHOOL OF ENGINEERING

## snapshot 2019



# WE MAKE BOLD POSSIBLE.

#### We take on the tough challenges no lab, discipline, or company can solve alone.

#### How we do it

We collaborate across disciplines within the Jacobs School and throughout UC San Diego's \$1.2 Billion research enterprise.

When we partner with industry, we actually listen. The result: bold collaborations that address the toughest shared challenges.

In Franklin Antonio Hall, our new building, we are expanding our abilities to partner across fields and industries through the Collaboratories for the Digital Future.

In all we do, we return to our guiding principle: engineering for the public good.

RESEARCH IMPACT	#1	#1 in nation for research expenditures per faculty member, among U.S. public engineering schools (U.S. News; 2019)
	\$188M	Total research funding at the Jacobs School
	\$56M	Industry-sponsored research funding; and funding from gift and endowment income
	13	Industry-sponsored centers and institutes launched in the last 5 years
	75	Member companies in our Corporate Affiliates Program
	136	Jacobs School technologies licensed in the last 5 years

# We are transforming engineering education, at scale.

#### How we do it

Hands-on undergraduate education all four years, team-based internships, vast research opportunities that often cross disciplines, world-class maker studios, bold student-led engineering teams, a dynamic entrepreneurship ecosystem, and more.

We empower one of the largest cohorts of undergraduate students in the nation to apply theory to real-world problems.

EDUCATION + WORKFORCE	#2	#2 in nation for bachelor's degrees in engineering and computer science awarded to women (ASEE)
	#3	#3 in nation for bachelor's degrees awarded in engineering and computer science (ASEE)
	8,976	Students enrolled in Fall 2018
	2,749	Degrees awarded in 2017-2018
	249	Faculty at the Jacobs School of Engineering
	90	Faculty hires in the last 5 years

#### UC San Diego JACOBS SCHOOL OF ENGINEERING

# ACADEMIC DEPARTMENTS

#### BIOENGINEERING

- 29 Faculty
- Undergraduates 593
- 307 Graduate students



- autodigestion
- bioinformatics
- biomaterials / biomechanics cell / tissue mechanics
- biophotonics / biosensors
- cardiac mechanics
- cardiovascular engineering and imaging
- cartilage / tissue engineering
- genomic engineering
- metabolic bioengineering
- microcirculation / transfusion medicine
- molecular / cellular bioengineering
- nanotechnology
- neuroengineering
- regenerative medicine / stem cells
- systems bioengineering
- translational bioengineering

#### **COMPUTER SCIENCE & ENGINEERING**

- 61 Faculty 1,855 Undergraduates
  - 837 Graduate students



- artificial intelligence / machine learning
- bioinformatics
- computer architecture
- computer science pedagogy databases and info mgmt.
- embedded systems, VLSI/CAD
- graphics and vision
- human-computer interaction
- programming languages
- robotics
- security and cryptography
- software engineering
- systems and networking
- theoretical computer science

applied electromagnetics

communications systems

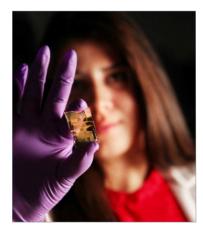
• brain imaging / mapping

bioinformatics / bionanotech

#### **ELECTRICAL & COMPUTER ENGINEERING**

University of California San Diego | Jacobs School of Engineering

- 57 Faculty 1,255 Undergraduates
- Graduate students 914



- cyber-physical systems security
- electronic circuits / systems
- embedded systems
- intelligent systems / robotics
- machine learning and data science
- magnetic and optical storage
- medical devices and systems nanoelectronics
- network infrastructure
- neural interfaces
- photonics / nanophotonics signal/image/video processing
- systems energy engineering
- wearable sensors

#### MECHANICAL & AEROSPACE ENGINEERING

- 49 Faculty
- 1,186 Undergraduates
- Graduate students 533

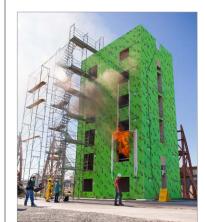


- aerospace technologies
- biomaterials, bio-inspired tech
- cell / membrane mechanics control and optimization
- combustion
- high-energy materials processing
- materials for extremes
- medical device technologies MEMS for extremes
- networked control systems
- renewable and carbon-neutral energy technologies
- robotics and design solid and soft matter mechanics of metamaterials
- thermo-physics, heat and mass transfer
- tribology for memory storage turbulence, geophysical flows,
- macro/microfluidić flows
- NANOENGINEERING
  - 30 Faculty
  - 663 Undergraduates
  - Graduate students 171



#### advanced nanomaterials computational materials

- science
- nanobiotechnology
- nanomanufacturing
- nanomedicine
- nanophotonics
- nanorobotics
- nanosensors
- nanotechnologies for energy storage and conversion
- stretchable, flexible electronics
- sustainable nanoengineering
- wearable devices
- STRUCTURAL ENGINEERING 23 Faculty
  - 473 Undergraduates
  - Graduate students 189



- aerospace structures / aviation safety
- biomechanics

prediction

research

geomechanics

optimization

 composites / nanomaterials computational fluid-structure

computational mechanics

for extreme events damage

earthquake engineering and infrastructure renewal

geotechnical engineering /

large-scale experimental

multi-hazard mitigation for

risk analysis / visualization /

earthquakes, blasts and more

structural health monitoring /

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nondestructive evaluation

interaction analysis