

# 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 \$1.35 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

#3

#3 in nation for research expenditures per faculty member, among U.S. public engineering schools (U.S. News; March 2019)

\$188M

Total research funding at the Jacobs School for 2017 - 2018

\$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

#1

#1 on the West Coast for bachelor's degrees awarded in engineering and computer science (ASEE)

#2

#2 on the West Coast for bachelor's degrees in engineering and computer science awarded to women (ASEE)

9,169

Students enrolled in Fall 2019 (projected)

2,423

Degrees awarded in 2018 - 2019

266

Faculty at the Jacobs School of Engineering

106

Faculty hires in the last 6 years

# ACADEMIC DEPARTMENTS

## BIOENGINEERING

31 Faculty  
527 Undergraduates  
337 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

## MECHANICAL & AEROSPACE ENGINEERING

52 Faculty  
1,171 Undergraduates  
527 Graduate students



- 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/microfluidic flows

## COMPUTER SCIENCE & ENGINEERING

67 Faculty  
1,935 Undergraduates  
880 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

## NANOENGINEERING

30 Faculty  
633 Undergraduates  
193 Graduate students



- advanced nanomaterials
- computational materials science
- nanobiotechnology
- nanomanufacturing
- nanomedicine
- nanophotonics
- nanorobotics
- nanosensors
- nanotechnologies for energy storage and conversion
- stretchable, flexible electronics
- sustainable nanoengineering
- wearable devices

## ELECTRICAL & COMPUTER ENGINEERING

60 Faculty  
1,277 Undergraduates  
1,083 Graduate students



- applied electromagnetics
- bioinformatics / bionanotech
- brain imaging / mapping
- communications systems
- 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

## STRUCTURAL ENGINEERING

26 Faculty  
428 Undergraduates  
178 Graduate students



- aerospace structures / aviation safety
- biomechanics
- composites / nanomaterials
- computational fluid-structure interaction analysis
- computational mechanics for extreme events damage prediction
- earthquake engineering and infrastructure renewal
- geotechnical engineering / geomechanics
- large-scale experimental research
- multi-hazard mitigation for earthquakes, blasts and more
- risk analysis / visualization / optimization
- structural health monitoring / nondestructive evaluation