

The Latest from the UC Santa Barbara Chemical Engineering Department



NSF ExFAB BioFoundry Launches



In 2025, UCSB celebrated the launch of the BioFoundry for Extreme and Exceptional Fungi, Archaea and Bacteria (ExFAB). With the support of a six-year, \$22 million dollar grant from the National Science Foundation, the new facility allows researchers to make novel discoveries using previously unstudied microbes that could generate advances in biotechnology and biomanufacturing. The facility will be a hub for collaboration across institutions, including UC Riverside and Cal Poly Pomona, and for training both industrial and academic workforces.

“ExFAB bridges marine sciences, bioengineering, and biotechnology with a focus on what is important for the future economy, and the climate of our state and our country.” — Rachel Segalman, UCSB Vice Chancellor for Research

BioPacific MIP Renewed



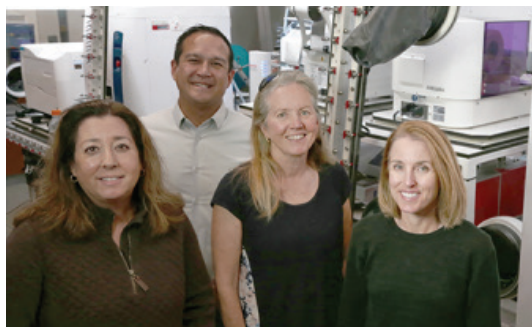
The Biomaterials, Polymers and Advanced Constructs from Integrated Chemistry Materials Innovation Platform, a collaboration between UC Santa Barbara and UCLA, received a \$19.8 million award renewal

to continue its work uniting synthetic biology, chemistry, automation, and artificial intelligence to reshape how materials are discovered, designed, and deployed.

Launched in 2020 as one of just four MIPs nationwide, this pioneering user facility serves as a central hub for materials innovation, chemical engineering research, and workforce training.

“This program turns scientific breakthroughs into real-world solutions that benefit the U.S. economy while training the next-generation workforce.” — Craig Hawker, co-principal investigator and director of the California NanoSystems Institute

Does the Early-Life Gut Microbiome Affect Neurodevelopment?



An interdisciplinary team of researchers at UCSB, led by chemical engineering professor Michelle O'Malley, has been awarded a major research grant from Wellcome Leap to join an ambitious global effort investigating the influence of the early-life gut microbiome on neurodevelopment.

“This program is exciting because it allows us to take the kind of bold, non-incremental steps that traditional funding models rarely support.” — Michelle O'Malley, professor

Snapshot

212

Undergraduate
Students

73

Graduate
Students

15

PhDs Awarded
(2024-25)

49

BS Degrees
Awarded
(2024-25)

19

Full-time
Faculty

Faculty Awards and Recognitions

since August 2025



Phillip Christopher

2025 Highly Cited Researchers List

Recognized as being in the top one percent of scientists worldwide



Matthew Helgeson

Fellow of the Neutron Scattering Society of America

Recognized for neutron scattering research and service, and innovation in thermodynamics and dynamics of soft materials



Tyler Mefford

Early Career Faculty Research Award from the University of California

Investigating how to use electrochemistry to develop better ways to store and use renewable energy



Michelle O'Malley

Fellow of the American Academy of Microbiology

Recognized for scientific achievement and original

contributions to advance microbiology

Pacific Coast Business Times

Named as one of the Top Women of 2026 by the Central Coast's primary business journal



James Rawlings

Richard E. Bellman Control Heritage Award

Honored for distinguished career contributions to

the theory or application of automatic control

National Recognition for Impact and Leadership

When it comes to research impact, UCSB ranks first among all public universities, third overall in the U.S., and seventh worldwide in the latest Leiden Rankings for engineering and physical sciences. Unlike survey-based rankings, Leiden is based entirely on citation data, measuring how frequently research is used and built upon by other scientists worldwide. UCSB placed first among U.S. public universities across all major citation impact tiers (top 1%, 5%, 10%, and 50%). The latest results mark the fifteenth consecutive year that UCSB has placed among the top two public universities nationally for scientific impact.

"These results affirm what we see every day at UC Santa Barbara: research that is not only prolific and impactful, but profoundly influential."

—Umesh Mishra, Dean of The Robert Mehrabian College of Engineering

Research Highlights

From Fundamental Discovery to Real-World Impact

Giving MRIs the Power of Microscopes

With protein-based sensors genetically engineered into cells, MRIs may someday catch molecular-level changes in action.

Advancing Alzheimer's Research

New software allows users to design, screen, and test new antibodies, accelerating the discovery process for potential therapies.

Catalyst Dynamics (NSF-funded)

Researchers from three institutions, including UCSB, seek to better understand cations to foster new material design and discovery.

Reading the Language of Proteins

Two new computational AI models to predict how proteins assemble, with potential to improve neurodegenerative disease research.



Why We Matter

UC Santa Barbara's Department of Chemical Engineering develops innovative science and technology that addresses the needs of industry, the scientific community, and society. Our department's highly collaborative, interdisciplinary approach to research and teaching creates both pioneering technology and engineers who make a positive impact on the world.