UC SANTA BARBARA
THE Current

April 30, 2025
James Badham

Professor Irene Beyerlein elected to American Academy of Arts and Sciences

Mechanical engineer Irene Beyerlein has been elected to the American Academy of Arts and Sciences, one of the nation's most prestigious honorary societies. At UC Santa Barbara, she leads pioneering research in mechanics and materials science, advancing the design of resilient, high-performance materials through multiscale modeling and experimentation.

"Our UC Santa Barbara community is continually inspired by the extraordinary accomplishments of our faculty. Today, we are proud to celebrate Professor Irene Beyerlein on her election to the prestigious American Academy of Arts and Sciences," said Chancellor Henry Yang. "This honor recognizes her groundbreaking contributions to materials science and engineering, as well as her leadership in advancing interdisciplinary research. Professor Beyerlein now joins an esteemed group of scholars, scientists, and artists who are shaping the future of their fields. Her election reflects not only her individual excellence, but also the vibrant culture of innovation and creativity that defines our campus."

Since 1780, the academy has honored excellence and convened leaders from across disciplines and divides to examine new ideas, address issues of importance and work together "to advance the interest, honor, dignity, and happiness of a free, independent, and virtuous people." Among its very first members were Benjamin

Franklin and George Washington.

Beyerlein’s election comes just one year after her selection as a fellow of the National Academy of Engineering.

“It was a wonderful surprise to receive the news, and I could not be more honored and humbled,” said Beyerlein, the Mehrabian Interdisciplinary Endowed Chair at UCSB. “The American Academy of Arts and Sciences was founded by some of our founding fathers. It is awe-inspiring to know that the values they set forth at the time for the academy have persevered over centuries and still serve today as powerful guidelines for researchers of all disciplines.”

At the intersection of mechanics and materials, Beyerlein’s research brings together multiscale modeling, experimentation and theory to guide materials design by controlling microstructures through manufacturing processes. She has studied how plastic deformations propagate through materials, and how strain localization can give rise to the initiation of slip bands. She has a particular interest in materials that can withstand extreme conditions, including high stress, temperature and strain, and in lightweight materials that can improve fuel economy in aircraft.

Beyerlein has published more than 500 academic manuscripts and been cited more than 30,000 times. She has received notable honors such as the Brimacombe Medal and Distinguished Scientist/Engineering Award from The Minerals, Metals and Materials Society (TMS), and the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) Champion H. Mathewson Award. She is also a fellow of the TMS, and the Materials Research Society.

Tags
Awards

Media Contact
Shelly Leachman
Editorial Director
(805) 893-2191
sleachman@ucsb.edu

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.