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‘For Distinguished Service to the Profession’

How does one fluid interact with another fluid? How do neurons relay signals in a brain with interrupted function? How can we choose structural materials to withstand different kinds of stress?

These questions, and many others, are the complex real-world kinds of problems that can be solved with the help of computational science and applied mathematics, which are closely related fields that study, model, simulate and predict behaviors and outcomes in complicated and multidimensional situations. They are part of the backbone of many modern data-intensive research projects and developments, encompassing a variety of problems, from scientific to social.

For her ongoing advocacy for computational science and applied mathematics, UC Santa Barbara professor [Linda Petzold](#) has been awarded the Society for Industrial and Applied Mathematics (SIAM) Prize for Distinguished Service to the Profession. Petzold, a professor in both the departments of Mechanical Engineering and of Computer Science, was recognized “for her strong, long-time advocacy for computational science and applied mathematics and for her role in molding national policy in research and education in these multidisciplinary fields.” She was recognized at the society’s annual meeting in Boston in July.

“It has been my dream to see computational science and applied mathematics grow and flourish as a research discipline and to gain the recognition that it deserves for

providing the computational and mathematical infrastructure that underlies so many technological advances and scientific discoveries,” she said. “And it has been my honor to have been in a position to accelerate this process.”

Petzold’s research has spanned many fields and an array of interesting problems, such as [how the mammalian brain re-synchronizes after a disruption to its circadian rhythm](#); or how opinion flow unfolds over time in social networks such as Facebook and Twitter. Other research has covered how certain materials can be combined for structural toughness; studied the biology of post-traumatic stress disorder; and investigated methods by which biomarkers for breast cancer may be identified.

According to SIAM, “her efforts have profoundly influenced the high status in which contemporary computational science and applied mathematics are held worldwide.”

“We are proud to have Linda among our faculty and of her accomplishments as a researcher and educator,” said Ambuj Singh, chair of the Department of Computer Science. “She has been an advocate and a leader of computational sciences for a long time. She truly deserves this honor.”

Petzold earned her Ph.D. in computer science from the University of Illinois in 1978. In addition to SIAM, she is a member of numerous prestigious organizations, including the U.S. National Academy of Engineering, the Association for Computing Machinery (ACM), the American Society of Mechanical Engineers and the American Association for the Advancement of Science. Petzold was the inaugural recipient of both the J. H. Wilkinson Prize for Numerical Software and the Association for Women in Mathematics-SIAM Sonia Kovalevsky Lecture. She also has received SIAM’s Germund Dahlquist Prize and the SIAM/ACM Prize in Computational Science & Engineering. In addition, Petzold was named UCSB’s Faculty Research Lecturer in 2011. This is the highest honor bestowed by the university on one of its faculty members.

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.