UNIVERSITY OF HOUSTON

MATERIALS SCIENCE AND ENGINEERING SPRING 2025 SEMINAR SERIES

KAREN LOZANO

RICE UNIVERSITY

Friday, April 11, 2025, 11:45am - 12:45pm
Location: W122 Engineering 2

Engineering the Future: The Role of Nanofibers in Innovation and Societal Impact

Nanofibers are a transformative class of materials with tunable properties that have opened new frontiers across industries such as healthcare, energy, environmental remediation, and advanced manufacturing. This talk will delve into the synthesis-structure-property relationships that define nanofiber performance, along with the scale-up processes necessary to bridge the gap between laboratory research and real-world applications. Advances in the Forcespinning technique and the ability to engineer nanofiber systems with tailored structural, electrical, thermal, catalytic, and optical properties have expanded their potential, underscoring the pivotal role of materials science in driving high-impact technological advancements. Beyond their scientific and industrial significance, nanofiber research has been a catalyst for community transformation. This presentation will highlight how innovation-driven research, when integrated with a strong educational mission, can empower students and strengthen communities.

Bio: Karen Lozano is currently the Trustee Professor and Department Chair of the Materials Science and NanoEngineering Department at Rice University. Previously, she was the Julia Beecherl Endowed Mechanical Engineering Professor at The University of Texas Rio Grande Valley and Founding Director of the UTRGV Nanotechnology Center and PhD program of the College of Engineering and Computer Science. Dr. Lozano earned her B.S. in Mechanical Engineering from Universidad de Monterrey (UDEM) and M.S. and Ph.D. degrees from Rice University. Since 2000, Lozano has creatively combined undergraduate education with state-of-the-art research projects. Through strategically designed projects and work environment, she has driven an exciting educational/social/economic mobility experience for hundreds of at-risk students, all now leading successful careers in industry, academia, or government labs. She is a member of the National Academy of Engineering, recipient of the U.S. Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM), and Fellow of the National Academy of Inventors, among other honors.