

UC San Diego

JACOBS SCHOOL OF ENGINEERING
Aiiso Yufeng Li Family Department of
Chemical and Nano Engineering

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DISTINGUISHED SEMINAR

Thursday, May 29th, 2025

11:00 AM - 12:00 PM

Franklin Antonio Hall Rm. 4201



Dr. Natalie Artzi, PhD

*“Supercharging Immunotherapy Through
Nanotechnology: Chemical Structure Matters.”*

Hansjörg Wyss Associate Professor of Biologically Inspired
Engineering at Harvard Medical School
Head of Structural Nanomedicine at Mass General Brigham's
Gene and Cell Therapy Institute

Abstract: Structural nanomedicines are therapeutic constructs designed to maximize efficacy while minimizing toxicity by precisely organizing functional components. My lab designs biomaterials that overcome barriers to the spatio-temporal distribution of immunotherapies, enabling their combination with both existing and novel treatments. In this talk, I will demonstrate how material design and structure shape therapeutic outcomes, altering the spatiotemporal dynamics of immune responses in cancer treatment. Structural nanomedicines have the potential to answer fundamental questions in immunobiology and revolutionize treatments for cancer and autoimmune diseases.

Bio: Dr. Natalie Artzi is a biomedical scientist-engineer renowned for her contributions to structural nanomedicine. Understanding mechanisms, she has developed materials that activate based on chemical cues. This enables targeted drug delivery and creates a novel "depot effect" where nanotherapeutics are released to neighboring cells to enhance immune therapy, which results in real-world translational research application. Dr. Artzi is the recipient of multiple grants and awards, including a \$27 million ARPA-H grant, the first at Harvard University; the Acta Biomaterialia Silver Medal, Mid-Career Award from the Society for Biomaterials, and the Massachusetts Life Science Center for Women Entrepreneurs.

Seminar Host: Liangfang Zhang