



Department of  
Biomedical Engineering

UNIVERSITY OF WISCONSIN-MADISON

Celebrating 25 Years

Spring 2025  
Seminar Series

# Mapping cellular responses to perturbations with dynamic computational imaging and AI

**Shalin Mehta, PhD**

Platform Leader

Computational Microscopy

Chan Zuckerberg Biohub

Co-sponsored by Morgridge Institute for Research and the Center for Quantitative Cellular Imaging

Discovery of biological mechanisms, drugs, and therapeutics is being accelerated by image-based profiling of cellular responses to perturbations. In this seminar, I will discuss our recent work on computational imaging to visualize the dynamic responses to perturbations and self-supervised learning to analyze the perturbations and responses.



## ABOUT the SPEAKER

Shalin Mehta developed signal processing algorithms for radars, before earning a PhD in optics at the National University of Singapore from Colin Sheppard's lab. His PhD research led to elegant mathematical models and new label-free imaging technologies. He then worked at the intersection of technology development and quantitative biology at the Marine Biological Laboratory in Woods Hole as a Human Frontier Science Program (HFSP) Fellow. His postdoctoral research led to novel computational imaging methods to measure the molecular order of the cytoskeleton beyond the resolution limit. At CZ Biohub SF, Mehta leads the Computational Microscopy platform; he and his team integrate optics, inverse algorithms, and machine learning to build computational microscopy platforms that measure the biological architecture and activity with increasing accuracy, precision, and throughput. These technologies are developed and deployed to discover biological mechanisms and therapeutic opportunities in close collaboration with projects, platforms, and partners at CZ Biohub SF.

**Monday, March 17 at Noon**  
**1003 Engineering Centers (Tong Auditorium)**

