Northeastern University
College of Engineering

**Wednesday, September 17, 2025 | 108 Snell Engineering Ctr. | 12:00 PM**

*Distinguished Seminar Speaker*

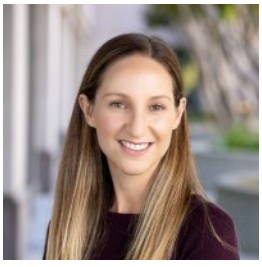
# Small But Large:
# Transforming Drug Delivery with Nanoparticle Formulations


## Dennis Leung, Ph.D.
## Tahnee Dening, Ph.D.



**Abstract:** This seminar will provide an in-depth exploration of drug nanoparticle formulations, highlighting the principles, advantages, and commercial applications of nanotechnology in drug delivery systems. The discovery of resonant acoustic milling as a new technology for the preparation of drug nanoparticles will be presented, resulting in a highly scalable and translatable process as well as allowing for high throughput experimentation. The application of resonant acoustic milling results in nanoparticle formulations with improved drug load and enhanced chemical and physical stability, as well as extending its application to modalities beyond small molecules including peptide therapeutics and paves the way towards on-demand personalized medicine. Mechanistic insights into the origin of nanoparticle stability are provided through analytical characterization and molecular dynamics simulations.


**Biography:** Dr. Dennis Leung is an accomplished scientist with expertise in drug delivery and pharmaceutical sciences, combining extensive experience in both academia and industry. He earned his PhD in Chemistry from the University of California, Berkeley, and currently serves as the Director of the Discovery Pharmaceutics group at Genentech. Over the course of his career, Dr. Leung has contributed to a di-verse range of research areas, focusing on leveraging mechanistic insights to develop innovative strategies for overcoming challenges associated with new drug candidates. His work has been instrumental in advancing small molecule and peptide therapies, with a particular focus on nanoparticle-based drug de-livery systems. Beyond his research achievements, Dr. Leung is deeply committed to mentoring the next generation of scientists and fostering collaborations that bridge the gap between academia and industry.



**Biography:** Tahnee Dening is a Principal Scientist in the Discovery Pharmaceutics group within the Synthetic Molecule Pharmaceutical Sciences Department at Genen-tech in South San Francisco. She received her PhD from the University of South Aus-tralia and completed postdoctoral training at the University of Kansas, prior to joining Genentech. Her research focuses on development and application of enabling formula-tions for challenging molecules and novel modalities, such as peptides, as well as char-acterizing and understanding peptide behavior in the gastrointestinal environment.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