

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
DEPARTMENT OF MATHEMATICS

# Simple Person's Applied Math Seminar (SPAMS)

Thursday, February 6, 2020

6:00pm – 7:00pm      Room : 2 - 132



**Boya Song**  
*(MIT Mathematics)*

**“Effects of flow and antibiotics on growing biofilms”**

## **Abstract**

Bacterial biofilms represent a major form of microbial life on Earth and serve as a model active nematic system in which activity results from growth of the rod-shaped bacterial cells. In their natural environments, ranging from human organs to industrial pipelines, biofilms have evolved to grow robustly under significant fluid shear and the presence of antibiotics. In this talk, I'm going to present a microscopic framework which captures and predicts the growth dynamics, emergent architecture and local liquid-crystalline order of *Vibrio cholerae* biofilms, and I'll describe how this framework is used to investigate the effects of flow and antibiotics on growing biofilms.

(Thai cuisine.)