

Quantitative Approaches to Modeling and Analyzing Complex Biological Systems

Time August 7-8, August 11-12, 2025 10:00-16:30

Venue Room 515, Cosmology Building, NTU

Speakers

Lani Wu

University of California,
San Francisco

Steven Altschuler

University of California,
San Francisco

Yu-Hau Tseng

National University of
Kaohsiung

Te-Sheng Lin

National Yang Ming
Chiao Tung University

Organizer

Introduction & Purposes

This course is designed as an introduction to quantitative approaches in modeling and analyzing biological systems. The course material is suitable for participants with little or no background in biology.

Schedule

Day 1

Introduction to life sciences

Day 2

Numerical methods for simulating biological systems
(focus on Physics-Informed Neural Networks (PINNs))

Day 3

Analyzing emergent behaviors of biological systems

Day 4

Team presentations and discussions

Outline & Descriptions

Biological networks have the ability to create self-organizing behavior and adapt to environmental changes. Systems biologists seek to understand how these robust behaviors arise out of simple parts and interactions. Mathematical models can be useful in hypothesizing fundamental principles and making predictions that can be experimentally tested.

Registration



Contact

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(Deadline: 7/11)
(Limited to 50 students)