The 2022 UQ-bio Summer School

(featuring on-campus projects and online events)

The **Second Annual Undergraduate Quantitative Biology Summer School** will be held June 1 – 17, 2022 using a hybrid (part on campus and part online) format.

To apply now, please visit the application website: https://forms.gle/5uLnJaUBW68HC3Mv9

Applications are due March 15, 2022. In-person participation will be limited to 30 students selected based on their past coursework and statements of interests. Online events will be limited to 200 registered participants. All events are **free** to all participants.

School Overview: The UQ-bio Summer School is an annual event intended to help **undergraduate** and **first year graduate students** acquire essential skills to advance predictive modeling of cellular regulatory systems. Participants will be exposed to a survey of work in quantitative biology and provided with in-depth instruction in selected techniques. The emphasis of the 2022 program will be experimental and computational techniques useful to understand cellular regulatory networks at the single-cell level.

The main focus of the program is to get students working together with mentors on small projects. All participants will have access to pre-recorded technical lecture videos (approximately 6hrs per week) and will attend **daily live events** (Monday through Saturday) including research seminars from top scientists in the field (3hrs/week), mentored problem sessions (4hrs/week), project-specific software tutorial sessions (4hrs/week), career discussion forums (2hrs/week), student presentation sessions (2hrs/week), laboratory tours and demonstrations, and more. The summer school is designed for undergraduate students and early-stage graduate students, or anyone with a quantitative background who is new to modeling cellular regulatory systems/networks.

The 5 modules of the 2022 UQ-bio summer school will be:

- Bootcamp Basics to get Started with Scientific Computing in Python (May, Online)
- Single-Cell Optical Microscopy Experiments and Image Processing (June 1 - 4)
- Multivariable Statistics and Machine Learning for Single-Cell Data (June 6 - 8)
- Stochastic Simulations of Single-Cell Gene Regulatory Processes (June 9 - 11)
- Master Equation Analyses of Single-Cell Gene Regulatory Processes (June 13 - 15)
- Student Symposium and Workshop (June 16-17)

More details about each module available at: q-bio.org/wp/qbss/course_topics

Organizers/Lectures/Learning Assistants (q-bio.org/wp/qbss/2022lecturers):

Lecturers, Organizers, and Learning Assistants from 2021 included: **Brian Munsky** (contact organizer), Colorado State University, **Doug Shepherd** (co-organizer), Arizona State University, **Luis Aguilera**, Colorado State University, **Mary Dunlop**, Boston University, **Linda Forero Quintero**, Colorado State University, **Zachary Fox**, Los Alamos National Laboratory, **Srividya Iyer-Biswas**, Purdue University, **Khuloud Jaqaman**, UT Southwestern Medical Center, **Carlos Lopez**, Vanderbilt University, **Zaida (Zan) Luthey-Schulten**, University of Illinois, **Gregor Neuert**, Vanderbilt University, **Linda Petzold**, University of California Santa Barbara, **Steve Presse**, Arizona State University, **Huy Vo**, Colorado State University, **Jesse Wilson**, Colorado State University.

Interested to become a mentor or speaker at the UQ-bio program? Please contact us directly or apply at: https://forms.gle/Vzey1UUcwDxsYBcr8

For inquiries about the summer school, please contact:

Dr. Brian Munsky: qbio_summer_school@colostate.edu

For more information, please visit the school website at: http://q-bio.org