# COLORADO STATE UNIVERSITY

**uq-bío**

# 2nd Annual Undergraduate Quantitative Biology (UQ-Bio) Summer School (in person and online)

## June 1 – 17, 2022 – Fort Collins Colorado, USA

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.

**Apply now (deadline March 15, 2022)!** https://forms.gle/5uLnJaUBW68HC3Mv9
**More information** https://q-bio.org/

## Program Summary:

### Live Presentations
• Research seminars from top scientists in the field
• Whiteboard lectures and Q/A discussions with faculty

### Live Software Practice
• Hands-on software tutorial sessions using real data
• Mentored problem and project sessions

### Laboratory Exploration
• Laboratory tours
• Experiment demonstrations
• Microscopy demonstrations

### Career Networking
• Career discussion forums
• Student Presentations
• Poster Sessions
• Group Meals

**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.

## 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 Regulatory Processes (June 13 - 15)
• Student Symposium and Workshop (June 16-17)

## Organizers/Lectures/Learning Assistants :
• **Brian Munsky, Colorado State University** (contact organizer)
• **Luis Aguilera, Colorado State University** (co-organizer and Project Manager)
• **Ashok Prasad, Colorado State University** (co-organizer)
• *Example Lecturers and Learning Assistants from 2021:*
  **Doug Shepherd**, Arizona State University, **Mary Dunlop**, Boston University, **Linda Forero Quintero**, Colorado State University, **Zachary Fox**, Los Alamos National Laboratory, **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

**Contact the organizers:** gbio_summer_school@colostate.edu

**SINGLE-CELL EXPERIMENTS**

**HANDS ON PYTHON CODING**

**MONTE CARLO SIMULATION**

**STATISTICS & MACHINE LEARNING**

**NETWORKING AND CAREER TRAINING**