Systems Cell Biology

University of California, Irvine

Winter 2020 Syllabus (version: 5 Jan, 2020)

Dev Bio 232 – Graduate – 4 units – Course Code 08850
BME 213 – Graduate – 4 units – Course Code 14300

Instructors:
Professor Lee Bardwell – bardwell@uci.edu
Professor Steve Gross – sgross@uci.edu

Guest Lecturer:
Professor Wayne Haynes – whayes@uci.edu

Time and Place: Tues & Thur 2:00-3:20 PM, Nat Sci 2 room 4201

Web Site

- https://canvas.eee.uci.edu/courses/22118

Overview:

This course takes a systems biology approach to cell biology. We use math and computer modeling to attempt to understand aspects of cell biology at a deeper level than is possible from just looking at textbook figures and wiring diagrams. We use Mathematica and Python for our computational models.

Systems Cell Biology 2020 TOPIC/LECTURE OUTLINE

- The schedule below is subject to change.

Date	Topic	Professor	
Tue 7 Jan	**Intro to Systems Biology, Cells & Scales**	Bardwell	

Tue 7 Jan Thu 9 Jan Tue 14 Jan Thu 16 Jan	**Module I: Toolkit for Systems Biology (2+ parts)** " " No class Thu 16 January	Bardwell	

Tue 21 Jan Thu 23 Jan Tue 28 Jan Thu 30 Jan Tue 4 Feb Thu 6 Feb	No class Tue 21 January **Module II: Gene Regulation** **Networks & Motifs** **Gene Switches and Autoregulation** **Gene Regulation 2** "	Bardwell	

Tue 11 Feb Thu 13 Feb	**Module III: Network Motif Analysis** "	Hayes	

Tue 18 Feb Thu 20 Feb Tue 25 Feb Thu 27 Feb	**Module IV:** **Molecular Motors, Statistics, Stochastics and** **Single Molecule Analysis**	Gross	

Tue 3 Mar Thu 5 Mar	**Nonlinear Dynamics** **TBA**	Bardwell	

Tue 10 Mar Thu 12 Mar	**Class Projects Presented** **Lecture TBA time permitting** **Class Projects Presented** **Summary & BIG THINGS LEARNED**	Bardwell	