

CORE Class: MCDB 5230 (3cr) Fall 2024

Times: Tuesday 4:00PM – 5:15PM (B121)
 Friday 12:35PM – 1:50PM (B121)

First Day: August 27th
 Last Day: December 10th

Instructors: **Shelley Copley, Andy Hoenger, Jenny Knight, Michael Stowell, Justin Brumbaugh, Nausica Arnoult, Jingshi Shen, Soyeon Park, Robin Dowell**

- Classes will be in person, unless requested otherwise by a teacher.
- Reading materials will be announced by each teacher separately.
- Grading will be based on two take-home exams (Oct. 13th and Dec. 12th), and your participation with discussions and questions.

Schedule:

Week 1	Shelley Copley	8/27 8/30	Visualization of Protein Structure using ChimeraX Catalysis
Week 2	Shelley Copley	9/3 9/6	Modulation of Protein Function by Small Molecules Protein Evolution
Week 3	Robin Dowell	9/10 9/13	Basic Stats P-Values
Week 4	Robin Dowell	9/17 9/20	Comparing Samples Graphs in Data Articles
Week 5	Andy Hoenger	9/24 9/27	Intro to Adv. Light & Electron Microscopy, Basic Principles of Lenses and Resolution, Confocal, Fluorescence and DIC High-Resolution Structural Biology in cryo-EM and cryo-ET
Week 6	Andy Hoenger	10/1 10/4	High-resolution Structural Biology in cryo-EM and cryo-ET Paper Discussion
Week 7	Jenny Knight	10/8 10/11	Biology Education Research: Studying Teaching & Learning Quantitative & Qualitative approaches for problem solving and metacognition
		10/11	Take-Home Midterm Exam
Week 8	Justin Brumbaugh	10/15 10/18	Chromatin Modifications and Development Paper Discussion
Week 9	Justin Brumbaugh	10/22 10/25	Post-transcriptional Regulation of RNA (miRNA, APA) Paper Discussion
Week 10	Michael Stowell	10/29 11/1	Structure and Function of the Synapse: An Overview (3) TMEM106B papers and (2) AchR papers
Week 11	Nausica Arnoult	11/5 11/8	Telomere Biology, Replicative Aging, Aging Diseases and Cancer
Week 12	Nausica Arnoult	11/12 11/15	DNA Repair and Genome Editing
Week 13	Jingshi Shen	11/19 11/22	Exocytosis and Endocytosis Cellular Signaling and Membrane Trafficking
Week 14	11/25 & 11/29	11/25	Fall Break
		12/3	Take-Home Final Exam
Week 15	Soyeon Park	12/3 12/6	Mechanisms & Functions of Ribosome-associated Protein Quality Control
Week 16	Soyeon Park	12/13	Final Discussion