

CBIO 643 Cell Structure and Function ("Supercell") Fall 2013 (Aug 15v)

MWF 2:00-2:50 pm, 124 Taylor Hall

Course information is posted on the UNC Sakai website under CBIO643.039.FA13

Course director: Richard Cheney (email: Richard_Cheney@med.unc.edu)

Course registration: Janice Warfford (email: Janice_Warfford@med.unc.edu)

A. Imaging, Cytoskeleton, and Cell Motility

Block director: Dr. Richard Cheney

W	Aug 21	Introduction (Cheney)
F	Aug 23	Microscopy and Imaging I (Dr. Michael Chua)
M	Aug 26	Microscopy and Imaging II (Chua)
W	Aug 28	Actin I: Structure, Polymerization, and Actin Binding Proteins (Dr. James Bear)
F	Aug 30	Actin II (Bear)
M	Sept 2	Labor Day Holiday
W	Sept 4	Mechanisms of Cell Motility (Bear)
F	Sept 6	Discussion sections: discussion of a current or classic paper
M	Sept 9	Myosins: Muscle, Mechanisms of Force Production, and ATPase Cycle (Cheney)
W	Sept 11	Unconventional Myosins, Assays for Motor Proteins, and Single-Molecule Studies (Cheney)
F	Sept 13	Mechanisms of Myosin Regulation (Cheney)
M	Sept 16	Microvilli and filopodia (Cheney)
W	Sept 18	Microtubules: Structure, Dynamics, and Regulators (Dr. Kevin Slep)
F	Sept 20	Discussion sections: discussion of a current or classic paper
M	Sept 23	Microtubule Motor Proteins: Kinesin and Dynein Families, Cilia and Flagella, Mitotic Motors (Slep)
W	Sept 25	Mitosis and Cytokinesis (Dr. Amy Shaub Maddox), Take-home exam for Block A posted
F	Sept 27	No class (Block A exam due M Sept 30 at beginning of class)

B. Cell Matrix, Cell Interactions, and Cancer Cell Biology

Block director: Dr. Carol Otey

M	Sept 30	Cell Adhesion and Adhesion Receptors (Dr. Carol Otey) (Turn in Block A exam at beginning of class)
W	Oct 2	Integrins and Focal Adhesions: Roles in Embryo Development, Cell Motility and Cancer (Otey)
F	Oct 4	Integrin Signaling (Dr. Wolfgang Bergmeier)
M	Oct 7	Discussion sections: discussion of a current or classic paper
W	Oct 9	Cadherins and Cadherin Signaling (Dr. Alan Fanning)
F	Oct 11	Tight Junctions, Types of Epithelia, Maintaining Tissue Barriers (Fanning)
M	Oct 14	Discussion sections: discussion of a current or classic paper
W	Oct 16	Angiogenesis and Tumors (Dr. Andrew Dudley)
F	Oct 18	Fall Break
M	Oct 21	Discussion sections: discussion of a current or classic paper
W	Oct 23	Breast Cancer (Dr. Nancy DeMore); Take home exam for Block B posted
F	Oct 25	No class (Block B exam due M Oct 28 at beginning of class)

C. Membranes and Membrane Trafficking

Block directors: Drs. Saskia Neher and Robert Sealock

M	Oct 28	Entry into the ER; Protein Folding and Misfolding (Dr. Saskia Neher); Turn in Block B exam at beginning of class
W	Oct 30	Vesicular Traffic; ER Protein Retention (Neher)
F	Nov 1	The Golgi Apparatus; Oligosaccharide Addition; Protein Secretion (Neher)
M	Nov 4	Discussion sections: discussion of a current or classic paper
W	Nov 6	Lysosomal Protein Targeting; Endocytosis (Neher)
F	Nov 8	Sorting to Membrane Domains in Polarized Cells; Transport to the Nucleus (Neher)
M	Nov 11	Transport to Mitochondria, Peroxisomes and Plastids (Neher)
W	Nov 13	Discussion sections: discussion of a current or classic paper
F	Nov 15	Summary and Review (Neher)
M	Nov 18	Voltage-Gated Ion Channels and Membrane Potentials (Sealock)
W	Nov 20	Ligand-Gated Ion Channels and Synaptic Potentials (Sealock)
F	Nov 22	Intracellular Ion Channels and Intracellular Ca ²⁺ Signaling (Sealock)
M	Nov 25	Discussion sections: discussion of a current or classic paper relevant to the lectures
W	Nov 27	Thanksgiving Holiday
F	Nov 29	Thanksgiving Holiday
M	Dec 2	Take home exam for Block C posted
W	Dec 4	No class (Block C exam due M Dec 9)
F	Dec 6	No class (Block C exam due M Dec 9)
M	Dec 9	Turn in Block C exam by 2:00 PM to Janice Warrford, MBRB rm 5200A

Course Faculty: (Please include "CBIO 643" in the subject line of any emails to course faculty)

Block A: Dr. Richard Cheney (block director), Department of Cell Biology and Physiology
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Dr. Kevin Slep, Department of Biology
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