

CAMB 691. Advanced Topics in Cell Biology and Physiology I.

Course Organizer: Erika Holzbaur

Co-Organizers: Carol Deutsch, Mickey Marks, Katya Grishchuk

Prerequisite(s): BIOM 600 or a similar survey course in cell biology. Permission required prior to registration for all non-BGS students.

An in-depth consideration of key topics in cell biology and physiology. This course will focus on three major aspects: (1) channels and transporters, (2) cell compartmentalization and membrane trafficking, (3) dynamics of the cellular cytoskeleton, and (4) mitosis and cell division. The course format will include faculty lectures as well as student-led discussion sessions focusing on important papers from the primary literature. Students will be evaluated on their presentations and class participation, as well as weekly problem sets.

Course Overview

CAMB 691 is a seminar course for first and second year graduate students focusing on the in-depth consideration of key topics in cell biology and physiology. We will emphasize current questions in the field, focusing on how these questions can be addressed with new experimental approaches. The course will be organized around three major themes: (1) channels and transporters; (2) cell compartmentation, and membrane trafficking; and 3) dynamics of the cellular cytoskeleton.

CAMB 691 will meet twice a week. New topics will generally be introduced in lectures presented by the faculty during the Monday sessions, and then will be discussed in depth in student-led presentations of relevant papers during the Friday sessions.

Students will be evaluated based on their presentations, lively participation in class discussions, and performance on problem sets assigned on each topic.

Course Organizer:

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Participating Faculty:

Erfei Bi
Carol Deutsch
Roberto Dominguez
Bob Doms
Claudio Girdaud
Ekaterina Grishchuk
Wei Guo
Erika Holzbaur
Todd Lamitina
Mickey Marks
Michael Ostap

Class will meet **Mondays from 10:30 AM to 12** and **Fridays from 10:30 AM to 12:30** in **JMB M100**, starting January 13, **with the exception of April 30, when we will meet at 2 PM** for the PMI Seminar by Iain Cheeseman in the Class of 62 Auditorium in John Morgan.

Date	Day	Lecturer	Lecture Topic/ Student Presentation
Part I: Channels and Transporters			
1/13/12	Friday	Erika Holzbaur Carol Deutsch	Organizational meeting - first 15 min. Ion Channels, part I
1/16/12	Monday	No class	MLK Day
1/20/12	Friday	Carol Deutsch	Student presentations
1/23/12	Monday	Carol Deutsch	Ion channels, part II
1/27/12	Friday	Carol Deutsch	Student presentations
1/30/12	Monday	Carol Deutsch	Ion channels, part III
2/3/12	Friday	Carol Deutsch	Student presentations
Part II: Intracellular Trafficking			
2/6/12	Monday	Mickey Marks	Phagocytosis
2/10/12	Friday	Mickey Marks	Student presentations
2/13/12	Monday	Wei Guo	Membrane curvature
2/17/12	Friday	Wei Guo	Student presentations
2/20/12	Monday	Bob Doms	Viral subversion of vesicular trafficking
2/24/12	Friday	Bob Doms	Student presentations
2/27/12	Monday	Claudio Girdaudo	SNARE fusion during regulated secretion
3/2/12	Friday	Claudio Girdaudo	Student presentations
3/5/12	Monday	Paul Janmey	Signaling in mechanosensing
3/9/12	Friday	Paul Janmey	Student presentations
3/12/12	Monday	Todd Lamitina	Cellular control of stress responses
3/16/12	Friday	Todd Lamitina	Student presentations
Part III: Cytoskeletal Dynamics			
3/19/12	Monday	Erika Holzbaur	Dynein, an unlikely but effective motor
3/23/12	Friday	Erika Holzbaur	Student presentations
3/26/12	Monday	Erfei Bi	Septins
3/30/12	Friday	Erfei Bi	Student presentations
4/2/12	Monday	Mike Ostap	Myosin-I
4/6/12		No class	
4/9/12		No class	
4/13/12	Friday	Mike Ostap	Student presentations
4/16/12	Monday	Roberto Dominguez	Actin nucleators
4/20/12	Friday	Roberto Dominguez	Student presentations

Part IV: Mitosis and Cell Division

4/23/12	Monday	Iain Cheeseman	Mitosis - PLEASE NOTE SEMINAR IS AT 2 PM
4/27/12	Friday	Katya Grishchuk	Student presentations
4/30/12	Monday	Katya Grishchuk	Mitosis
5/4/12	Friday	Katya Grishchuk	Student presentations