

PHOL/ PHRM/ NEUR/ CLBY/466: CELL SIGNALING
Tuesdays and Thursdays: 3:30 – 5:00 PM
E504 School of Medicine
2013 SCHEDULE

DATE	TOPIC	FORMAT	INSTRUCTOR
Jan 15 (Tu)	Trimeric G Proteins	Focus Questions	Dubyak
Jan 17 (Th)	Trimeric G Proteins	Paper Critiques	Dubyak
Jan 22 (Tu)	G Protein-Coupled Receptors	Focus Questions	Dubyak
Jan 24 (Th)	G Protein-Coupled Receptors	Paper Critiques	Dubyak
Jan 29 (Tu)	Receptor Ion Channels	Focus Questions	Dubyak
Jan 31 (Th)	Receptor Ion Channels	Paper Critiques	Dubyak
Feb 5 (Tu)	Phospholipid Signaling	Focus Questions	Liedtke
Feb 7 (Th)	Phospholipid Signaling	Paper Critiques	Liedtke
Feb 12 (Tu)	Cyclic Nucleotide Signaling	Focus Questions	Dubyak
Feb 14 (Th)	Cyclic Nucleotide Signaling	Paper Critiques	Dubyak
Feb 19 (Tu)	Growth Factor Receptors	Focus Questions	Dubyak
Feb 21 (Th)	Growth Factor Receptors	Paper Critiques	Dubyak
Feb 26 (Tu)	MAP Kinase Signaling	Focus Questions	Pucilowska
Feb 28 (Th)	MAP Kinase Signaling	Paper Critiques	Pucilowska
Mar 5 (Tu)	Optional Review - First 7 Weeks	Open Discussion	All Faculty
Mar 7 (Th)	Midterm Exam		
Mar 12 (Tu)	Nuclear Receptors	Focus Questions	Simonson
Mar 14 (Th)	Nuclear Receptors	Paper Critiques	Simonson
Mar 19 (Tu)	Network Analysis of Cell Signaling	Focus Questions	Simonson
Mar 21 (Th)	Network Analysis of Cell Signaling	Paper Critiques	Simonson
Mar 26 (Tu)	Cytokine Receptors	Focus Questions	Levine
Mar 28 (Th)	Cytokine Receptors	Paper Critiques	Levine
Apr 2 (Tu)	Cell Death Signaling	Focus Questions	Dubyak
Apr 4 (Th)	Cell Death Signaling	Paper Critiques	Dubyak
Apr 9 (Tu)	Developmental Signaling	Focus Questions	Dubyak
Apr 11 (Th)	Developmental Signaling	Paper Critiques	Dubyak
Apr 16 (Tu)	Calcium Signaling	Focus Questions	Schilling
Apr 18 (Th)	Calcium Signaling	Paper Critique	Schilling
Apr 23 (Tu)	Immune Signaling via Ca ²⁺ Influx	Focus Questions	Dubyak/ Schilling
Apr 25 (Th)	Immune Signaling via Ca ²⁺ Influx	Paper Critique	Dubyak/ Schilling
May 2 (Th)	Optional Review (Second 7 Weeks)		All Faculty
May 7 (Tu)	Final Exam		

COURSE DIRECTOR: George Dubyak, Dept. of Physiology and Biophysics, School of Medicine E520; phone: 368-5523; george.dubyak@case.edu

COURSE DESCRIPTION AND GENERAL ORGANIZATION

This advanced-level course will focus on 14 major areas of signal transduction biology that are indicated on the accompanying schedule. One topic will be covered per week. Each week will consist of:

- 1) 90 min presentation/discussion of basic concepts and focus questions (on the Tuesday session)
- 2) 90 min presentation/critique of original research papers (on the Thursday session).

There are no formal lectures. Each session will predominantly involve student-led presentations/ discussions of the focus questions or original research papers pre-assigned for that session. General format for these student-led presentations: Students will be divided into 4 groups of ~4 students/ group. Two groups will be responsible for preparing answers to the Tuesday focus question session while the other two groups will be responsible for presenting and leading discussions on the original research papers at the Thursday session. The groups will cycle through these Tuesday or Thursday assignments on alternative weeks: e.g., Groups 1 & 2 present on Tuesday and Groups 3 & 4 present on Thursday of week 1; then Groups 3 & 4 will present on Tuesday and Groups 1 & 2 on Thursday of week 2.

A midterm exam will cover the material presented in the initial 7 weeks while a final exam will cover the material presented in the final 7 weeks. Each exam will be preceded by a review session on the material to be tested; attendance at the review sessions is optional.

EVALUATION AND GRADING

Exams: Each exam will consist of 7 essay type questions (1 question per major topic presented in the previous 7 weeks). Each exam will account for 1/3 of the total grade

Class Participation: Each student will receive a cumulative weekly evaluation grade (0-3; see below)) for his/her preparation and presentations in the Tuesday and Thursday discussions. The cumulative scores for class participation will account for 1/3 of the total grade.

Class Preparation and Presentation Scoring Guidelines:

3 = Very strong understanding of material; outstanding preparation; voluntarily generates relevant questions or comments during discussions.

2 = Generally correct answers; has clearly read material in detail; acceptable contribution to discussions.

1 = Inaccurate or incomplete answers; somewhat familiar with study material; participation in open discussion is limited.

0 = Unprepared or unable to contribute to discussion in a way that indicates familiarity or comprehension of study material. Unexcused absence.

Policy on Excused Absences: If a student misses a session for a valid reason (illness, family emergency, attendance at a scientific meeting) the course director must be informed by noontime on missed day (at the latest) to provide an excused absence.

Final Grading:

Midterm exam:	1/3 of total grade
Final exam:	1/3 of total grade
Cumulative Class Participation:	1/3 of total grade

PARTICIPATING FACULTY

George Dubyak (Dept of Physiology & Biophysics):	368-5523	gxd3@case.edu
Alan Levine (Dept of Medicine)	368-0342	alan.levine@case.edu
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