

David I. Yule, Ph.D., Course Director
 e-mail: david_yule@urmc.rochester.edu

IND 447 (CRN #51675)/PHP 447 (CRN #68345)
Signal Transduction
 4 Graduate Credit Hours
Spring 2008

Lectures: Tuesday and Thursday, 11:00 a.m. - 12:30 p.m.
Room 3-7619 unless otherwise indicated

Cellular signal transduction is one of the most widely studied topics in the biomedical sciences. It has become clear that cells have multiple mechanisms for sensing the environment and converting the external signals into intracellular responses. The goal of this course will be for students to learn modern concepts in signal transduction. The lectures will cover a spectrum of topics ranging from basic principles and mechanisms of signal transduction to contemporary techniques for doing research in this area.

DATE	LECTURE TITLE	LECTURERS
January 17	Overview	A. Smrcka
January 22	G protein linked receptors	A. Smrcka
January 24	G proteins	A. Smrcka
January 29	G protein targets	A. Smrcka
January 31	Phosphodiesterases	C. Yan
February 5	GPCR's and disease	P. Hinkle
February 7	Taste reception	P. Hinkle
February 12	Receptor desensitization	B. Blaxall
February 14	Receptor downregulation	B. Blaxall
February 19	Tyrosine kinase linked receptors	R. Mooney
February 21	Protein phosphatases	R. Mooney
February 26 3-6408 (K-307)	Exam I	
February 28	Signaling by TGF β	Y. Sun
March 4	Signaling by TGF β	Y. Sun

DATE	LECTURE TITLE	LECTURERS
March 6	Lipid Signaling	A. Smrcka
March 11	<i>No class – this is <u>not</u> considered a semester break for Ph.D. students. All Ph.D. students must report to lab or office during this period.</i>	
March 13	<i>No class – this is <u>not</u> considered a semester break for Ph.D. students. All Ph.D. students must report to lab or office during this period.</i>	
March 18	Regulation of Ion Channels	C. Lopes
March 20	Nf- κ B signaling	J. Zhao
March 25	Nf- κ B signaling	J. Zhao
March 27	Exam II	
April 1	Signaling through ubiquitination and protein turnover	R. Freeman
April 3	Signaling through ubiquitination and protein turnover	R. Freeman
April 8	Introduction to Calcium Signaling	T. Shuttleworth
April 10	Calcium Release	D. Yule
April 15	Calcium Entry	T. Shuttleworth
April 17	Spatial organization of Signaling	D. Yule
April 22	Spatial organization of Signaling	D. Yule
April 24	Mitochondrial signaling	P. Brookes
April 29	NO Signaling	P. Brookes
May 1	No Class	
May 6 2-6408 (K-207)	Final Exam	