Syllabus and general course information for BIO505 Part II, Cell Biology II

Instructor:
Dr. Haijun Chen
Office: LSRB 1039
Office hours: Monday, 1:00-4:00 pm

Email: hchen01@albany.edu
Tel: 591-8854

Lecture time and location: 11:45-1:05 on Tuesdays and Thursdays, Bio 248A

Reference book: *Molecular biology of the cell*

**Module 2:**
Molecular and cellular physiology: signaling through the cell membrane

Session 1, March 14, 2013
  
  **Introduction to Bio505 Part II**
  **How to write Summary/Abstract in research articles (sample in Nature)**

Session 2, March 25, 2014
  
  **Discovery, development, and application of the green fluorescent protein, GFP, and GFP-like proteins**
  1. 2008 Nobel lectures
  2. Reading enrichment: Four Clontech manuals

Session 3, March 27, 2014
  
  **Discovery and application of RNA interference: gene silencing by double-stranded RNA**
  1. 2006 Nobel lectures
  3. 2011 Review

Session 4, April 1, 2014
  
  1. 2012 Nobel lectures in Medicine
  2. iPSCs as research tools.

**Assignment 1:** summary three major discoveries (each 400 words)

Session 5, April 3, 2014
  
  **Signaling in sensing heat and spicing chilli peppers**

Session 6, April 8, 2014
Signaling in sensing pain, hot, and cold

Session 7, April 10, 2014
Molecular basis of infrared sensation in vampire bats and snake

Assignment 2: summary the topic on TRP channels (each 400 words)
April 15, 2014 (No class)

Session 8, April 17, 2014
Signaling in sensing tastes 1: receptor

Session 9, April 22, 2014
Signaling in sensing tastes 2: neurotransmitter and postsynapse receptor
1. Finger, T.E., et al. (2005), Science, 310: 1495-9 as well as the supplementary data.

Session 10, April 24, 2014
Signaling in sensing tastes 3: molecular basis of neurotransmitter release.

Assignment 3: summary the signaling pathway

Session 11, April 29, 2014
Signaling breakthroughs of the year 2009(The Primary Cilium as the Cell's Antenna)
1. Shah, A.S., et al. (2009), Science, 325: 1131-4 as well as the supplementary data.

Session 12, May 1, 2014
Insulin secretion in pancreatic β–cells and diabetes

Session 13, May 8, 2014
Oral presentation
Each student picks up one research paper and presents in 15 min.
Mission statement and goals:

1) Help students to build the foundation for their career goals.
2) Train students to directly learn from most recent research articles, which are related to cell biology.
3) Train students to present their scientific work.
4) Introduce student powerful techniques in research in cell biology.
5) Help the transition from an undergraduate student to a graduate student.

Grading

1) Quizzes (15 or 30 pts each) will be given at the beginning of each session (at 11:45 pm) on the subject of that day's lecture to test your knowledge and preparation. The quiz questions are based on the material presented in lecturer’s Eres. The lowest-scoring quiz will be dropped.

2) Written presentation/assignment (15 pts each). You are required to write three scientific abstracts on the topics or articles, which is learnt in the class. The abstract should be less than 400 words.

3) Oral presentation (15 pts) will be given by each student in the last two sessions. Each student has 15 minutes to present one suitable research article including answering questions.

4) Written and Oral presentations weight the first 50% of student’s grade and quizzes weight the other 50% of student’s grade

5) Grade Scale: The following grading scale will be used to determine student’s grade.

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Note: Syllabus may be subject to change.