

Animal Models of Human Disease (Genet 242) - 2 credit hours

Course Description: This genetics course examines the different types of animal models that mimic human genetic disorders and discusses some of the underlying biochemical principles that result from these genetic alterations. By the end of the course, students should understand how various types of animal models such as *Drosophila*, mouse, rat and non-human primates are used to understand human genetic disorders including congenital diseases and cancer. The class will involve one, two-hour lecture per week.

Course Dates for 2012: 1/10/12 - 5/8/12

Grading: Each student will receive a letter grade dependent on two in-class examinations and class participation.

Lecture Site and Time: Lectures will be given in the CSRB 752 every Tuesday from 1:30 – 3:30pm.

Class structure: Each topic consists of one two-hour lecture per week. Each lecture period consists of a didactic lecture or a student led discussion of a specific research article. The didactic lecture will be presented by the professor and introduce students to the basic concepts of that week's topic along with the use of unpublished data or data from recent literature reports to provide more in depth analytical coverage. In a subsequent class period, a student will each give a presentation and lead discussion together with the lecturer in a journal club format for one specific paper highlighting a key aspect or seminal discovery within the topic field. The students will be supplied with the specific paper one week in advance by the lecturer. Students will be evaluated based on their overall presentation, participation in discussion, grasp of knowledge of the field or topic covered in the paper, critical analysis of the data presented in the paper, and ability to address questions. Student presentation and participation will account for 20% of the student grade. The class will consist of a total 30 hours of lecture and discussion, and 4 hours of exam.

Examinations: Each lecture will provide one or two questions which require critical thinking. Two in-class exams will account for 80% of the student grade.

Contact Information:

Course Directors:

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Schedule for 2012

Date	Lecture Topic	Instructor
Jan. 10	Class Organization, Intro. to Animal Models	Crabtree
Jan. 17	<i>Drosophila melanogaster</i> (fruit fly)	Pandey
Jan. 24	<i>Drosophila melanogaster</i> (fruit fly)	Pandey
Jan. 31	Student presentations	Pandey
Feb. 7	Student presentations	Pandey
Feb. 14	Exam #1	Pandey
Feb. 21	Mardi Gras Holiday – no class	
Feb. 28	Basics of rodent models	Crabtree
Mar. 6	Mouse models of MEN1	Crabtree
Mar. 13	Mouse models of p53 pathway/cancer	Crabtree
Mar. 20	Rat models of cancer	Crabtree
Mar. 27	Mouse models of WNT signaling/cancer	Liu
Apr. 3	Student presentations	Crabtree
Apr. 10	Student presentations	Liu
Apr. 17	Non-human primates	Bunnell
Apr. 24	Animal model for infectious disease	Wang
May 1	Student presentations	Wang
May 10	Exam #2	Crabtree