

## GENE8970 Fall Semester, 2002

### Instructors:

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**Classes:** Room C404B Life Sciences, 10:10 – 12:05, Fridays

**Aug. 23** (Bender) Programmed cell death in *C. elegans*. (Forward genetic screens)

**Aug. 30** (Bender) Eye development in *Drosophila* (Enhancer and suppressor screens)

**Sept. 6** (Bender) Vulval induction in *C. elegans* (Epistasis and gene order in a pathway)

**Sept. 13** (Bender) Cell-cell signaling (Clonal analysis in flies and worms)

**Sept. 20** (Bender) Genetic tricks in *Drosophila* (Overexpression analysis, GAL4-UAS systems)

**Sept. 27** (Manley) Homeobox genes and regulation of patterning

**Oct. 4** (Manley) Left-right asymmetry in vertebrates

**Oct. 11** (Manley) Vertebrate limb development

**Oct. 18** (Manley) Lung development in the mouse

**Oct. 25** (Manley) Reverse genetics in the mouse

**Nov. 1** No class -Fall break

**Nov. 8** (Bedell) Genomic imprinting in mammals

**Nov. 15** (Bedell) X-inactivation in mammals

**Nov. 22** (Bedell) Forward mutagenesis in the mouse

**Nov. 29** No class -Thanksgiving holiday

**Dec. 6** (Bedell) Forward mutagenesis in the mouse

**Seminars: (attendance is mandatory)**

**September 11, 11:10 am.** C127 Life Sciences. Eric Baehrecke, University of Maryland Biotechnology Institute, Steroid regulation of programmed cell death during *Drosophila* development.

**September 25, 11:10 am.** C127 Life Sciences. Sally Camper, University of Michigan, Homeobox gene regulation of pituitary development and disease.

**December 4, 11:10 am.** C127 Life Sciences. Terry Magnuson, University of North Carolina, Functional annotation of the mouse genome.

**Format:**

The course will cover topics in metazoan genetics, focusing primarily on *C. elegans*, *Drosophila* and the mouse. Each week, 2 – 3 papers (typically a review article and 1 or 2 primary research papers) will be assigned and discussed in class. The goal is a lively discussion of the topic so students are asked to read the papers in detail before class and come prepared to interrupt the presenter with questions and comments. Students will make presentations (~30 minutes each) to the class in which the background, experimental details and significance of assigned papers will be described. Students will rotate responsibilities for presentations during the semester. Attendance at the three seminars (shown above) is mandatory and papers relevant to each seminar will be assigned and discussed in class. There will be no exams. Course grade will be determined by presentations and class participation.