

Biology 394-01
Topics in Cancer Biology
Fall 2013

Instructor: Dr. Marcos Ortega

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Course Meeting Time: Monday, Wednesday, and Friday 2:20pm – 3:20pm

Location: OLRI 270

Office Hours: No formal hours will be scheduled. Rather, I will have an open-door policy so as to accommodate the differing schedules of all students. If I am in my office, then all efforts will be made to meet with students. If not, a formal appointment can also be made to ensure a meeting time.

Website: Course material will be available through Moodle.

Course Objectives: Students will develop and grow in their ability to:

- Understand nucleic acids and the role of genetic information, processing, and epigenetics in the formation of cancer
- Critically analyze and evaluate current papers from primary scientific literature (reviews and research articles)
- Express scientific ideas in written papers and oral presentations
- Comprehend current ideas and research techniques utilized in biochemistry and molecular biology

Presentations

During the course we will discuss eight topics related to nucleic acids and the chemical and biological roles they play in cancer biology and the transformation of cells. For each topic, a group of 2 students will provide an overview of the topic and assign a research article for the class to read. The following class, the same team will then lead the class in the discussion of the assigned article. The introduction of the topic should provide sufficient background so as to put the assigned paper into proper perspective. New or novel scientific techniques utilized in the paper should also be addressed and explained. The article chosen for the assigned topic must be current so as to provide a current perspective of the field of study. The article will also be pre-approved by Dr. Ortega.

Proposals

Each student will write a grant modeled after the America Cancer Society Postdoctoral Fellowship. The fellowship is for a three-year period so work should reflect this time scale. The grant proposal will include a thorough literature review, a description of grant objectives, and experiments proposed. Students can consult with me to choose a topic of study. There will be three assignment deadlines for the grant proposal:

- a. Topic – Two paragraphs. The first paragraph will describe your chosen topic and the second will explain your reasoning for choosing the topic, including the potential impact of proposed research.
- b. Introduction/Outline – A one-page introduction, a completed outline detailing objectives, and 10+ literature sources.
- c. Completed Proposal - The final grant proposal should be submitted for peer evaluation.

Study Section

After the grant proposals have been submitted students will participate in study sections designed to review grant submissions. Students will be assigned two proposals for review. The grant proposals assigned must be analyzed independently and a written critique must be provided. Students must also be prepared to discuss the proposals with their peers in the study section.

Participation

With a seminar format, it is essential that all students contribute by asking questions and providing comments or reflections in class. The success of the class is closely tied to active participation by all students.

Grades

Grades will be determined based on approximately equal weighting of the following four components:

1. Paper presentations
2. Grant proposal
3. Study section critiques
4. Class participation

Honesty In Science

Plagiarism and academic dishonesty will not be tolerated. Work must be cited properly.

Disabilities

I am committed to providing assistance to help you be successful in this course. Accommodations are available for students with documented disabilities. Contact the Associate Dean of Students, Lisa Landreman, at 696-6220 to make an appointment. Students are encouraged to address any learning needs or accommodations with me as soon as possible. Additional information regarding the accommodations process for students with disabilities can be found at: www.maclester.edu/studentaffairs/disabilityservices/

Schedule

Week Of	Monday	Wednesday	Friday	Assignment Due
09/02	Labor Day	Syllabus, Assign Groups	Intro and Overview	
09/09	Ortega	Ortega	Topic 1: DNA damage	
09/16	Topic 1: DNA damage	Topic 2: Telomeres	Topic 2: Telomeres	
09/23	Topic 3: Chromatin Assembly	Topic 3: Chromatin Assembly	Topic 4: DNA methylation	Topic - 09/23
09/30	Topic 4: DNA methylation	Topic 5: Histone Modification	Topic 5: Histone Modification	
10/07	Topic 6: Splicing	Topic 6: Splicing	Topic 7: RNA processing	Intro/Outline – 10/11
10/14	Topic 7: RNA processing	Topic 8: Viral Transformation	Mid Course Evaluations	
10/21	Topic 8: Viral Transformation	Proposal Overview	FALL BREAK	
10/28	Proposals Presentation 1	Proposals Presentation 2	Proposals Presentation 3	Proposal – 11/1
11/4	Proposals Presentation 4	Proposals Presentation 5	Study Section 1	
11/11	Study Section 2	Study Section 3	Study Section 4	
11/18	Study Section 5	Study Section 6	Study Section 7	
11/25	Study Section 8	Response Day 1	Turkey Day (Gobble, Gobble)	

12/02	Response Day 2	Response Day 3	Response Day 4	
12/09	Response Day 5			