

Pathology 801/GNET 801:

Cell Cycle Regulation and Cancer

Fall Semester, 2014

Tuesdays 2:00-5:00 pm

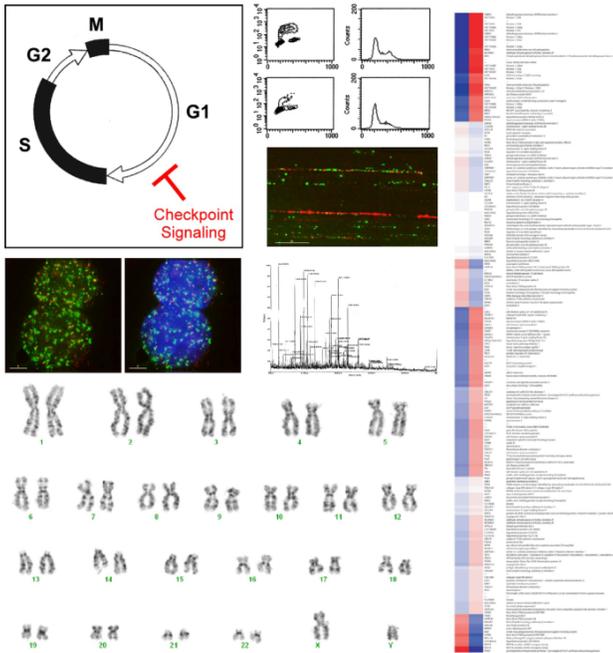
238 MacNider Hall

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Synopsis: This journal club-style discussion course will focus on molecular events that regulate normal cell cycle progression, and on how deregulation of the cell cycle leads to cancer. This course will follow the development of the cell cycle field chronologically, illustrating how current concepts and paradigms have evolved as a result of scientific inquiry. This will be a perfect starting point for students that would like to know more about the cell cycle as it pertains to cancer, but have no prior knowledge of this field.

Course Objectives: In addition to providing a thorough understanding of the cell cycle, a major goal is to teach students the 'scientific method' - the process by which scientists identify problems, formulate testable hypotheses, collect data through experiments, and eventually establish new models describing biological processes. The scientific method is illustrated by studying the development and progression of the cell cycle field, yet is *applicable to any field of study*. Another goal is to provide students with the opportunity to improve their oral presentation skills. *This course provides a structured mechanism to help facilitate the transition of students from the classroom to the lab and helps develop analytical skills that will be required throughout their scientific careers.* Course content will be derived solely from primary literature. The course content is updated every year to reflect evolving paradigm shifts in the field. Therefore the material covered will be very current. Grades will be determined based solely on in-class performance and take-home assignments. There will be no final exam.

Key words: Cell cycle, signal transduction, oncogenes, tumor suppressors, cell cycle checkpoints, DNA damage signaling, carcinogenesis, cancer

Prerequisites: Enrollment in a graduate program or permission of the course director.
