I am generally in my office (Sowa 229B) or in my laboratory (Hickey 181) from 9:00 AM - 5:00 PM daily and am easily available with a prior appointment. To make an appointment, you may call me on my telephone or email me. I'll keep Tuesday afternoons from 2:00 P.M. to 4 P.M. for drop-in appointments. I will either be in my office or in my laboratory. Please feel free to talk to me about any issue relating either to the course or to your life as a student here at Providence College.

A PRAYER BEFORE STUDY
St. Thomas Aquinas, O.P.

O God, Creator of all things, true source of light and wisdom, graciously let a ray of your light penetrate the darkness of my understanding. Give me a keen intellect, a retentive memory, and the ability to grasp things correctly and fundamentally. Give me the talent of being exact in my explanations and the ability to express myself with thoroughness and charm. Point out the beginning, direct the progress, and perfect my work. We ask you this through Jesus Christ Our Lord. Amen.

COURSE DESCRIPTION:

What is cancer? In this advanced topics seminar, we will answer this question by focusing on the six hallmarks that define cancer cells: evasion of apoptosis, insensitivity to anti-growth signals, self-sufficiency in growth signals, sustained angiogenesis, tissue invasion and metastasis, and a limitless replicative division potential (cf. Hanahan and Weinberg, 2000). The seminar will involve extensive student-led discussions based upon the very best research papers in contemporary cancer biology. As a capstone course in biology, this seminar will also strive to help students to develop those skills needed by professional biologists including the ability to read, analyze, and critique scientific papers, and the craft of writing an NIH grant. Students will be expected to write five Methods & Logic Analyses of five published papers and to write an abbreviated NIH grant.
REQUIRED TEXTS:

- All the primary papers we will discuss and critique in this course can be downloaded from the course website on ANGEL. Please print out and bring the papers to class for discussion.


ACADEMIC EXPECTATIONS:

This is an upper-level seminar course, and I will expect active participation from all students. Thus, every student should come to class prepared to critically engage each scientific paper and each other. This means that you should read, take notes, and think about all the assigned readings before class. Each week, different students will take the lead and present the papers to the class before we discuss them.

During the course of the semester, each student will be expected to submit four (4) methods & logic analyses that critically engage one of the scientific papers we will discuss in class. A method & logic analysis for any one paper is due on the day that the paper is discussed in class. A detailed guide to writing a methods & logic analysis is available on the class website on ANGEL.

At the end of the semester, each student will submit a short 5-10 page grant proposal in the biology of cancer based on the format of National Institutes of Health Grant, PHS 398. (For details and for a template for the NIH grant, please refer to the NIH website, http://grants.nih.gov/grants/funding/phs398/phs398.html). Throughout the semester, students will work on different portions of the NIH grant. Please see the syllabus for a schedule of deadlines for each portion of the grant.

Since this is a course that requires active student participation, regular attendance is expected. Please email the instructor in advance if you expect to miss a class. Only one absence is permitted barring exceptional circumstances. More than one unexcused absences during the semester may lead to a final grade reduction of a full letter grade (e.g., B+ to C+).

GRADING POLICY:

Grades will be calculated as follows:

- Grant Proposal: 50%
- Methods & Logic Analyses: 40%
- Paper Presentations: 10%

In the world of science, grants have to be submitted to the funding agency by a particular deadline. There are no exceptions to this rule. Thus, in this class, I expect all work to be
handed in on time. Late assignments will be penalized 10% of their point value per calendar day late (not per class day).

Academic dishonesty and plagiarism ("the stealing and passing off of the ideas or words of another as one’s own without crediting the source") is not tolerated in the professional world of science and will not be tolerated in this class. Plagiarism on any written submission will result in an F for that assignment. Please consult the current Providence College Undergraduate Catalogue for its statement on “Academic Honesty.”
SCHEDULE OF READINGS

Week 1: The Nature of Cancer [January 20, 2009]


Week 2: Tumor Viruses and the Discovery of Cellular Oncogenes [January 27, 2009]


Week 3: Growth Factors Receptors, Cell Signaling, and Cancer [February 3, 2009]


NIH Grants: An Introduction to Writing an NIH Grant Proposal

Week 4: Tumor Suppressors [February 10, 2009]


Week 5: pRb and the Control of the Cell Cycle Clock [February 24, 2009]


Week 6: p53 and Apoptosis – Master Guardian and Executioner of Apoptosis

[March 3, 2009]


Week 7: Cell Immortalization and Tumorigenesis [March 17, 2009]


NIH Grant Draft: Specific Aim, Background, and Research Significance Section Due

Week 8: Tumorigenesis and the Microenvironment [March 24, 2009]


Week 9: Maintenance of Genomic Integrity and the Development of Cancer

[March 31, 2009]


NIH Grant Draft: Experimental Design Section Due
Week 10: Angiogenesis [April 7, 2009]


Week 11: Invasion and Metastasis [April 14, 2009]


NIH Grant: Final Draft Due with Form Page 1, Form Page 2, Biographical Sketch, Specific Aim, Background and Significance, and Experimental Design Sections. Proposals sent out for Peer Review

Week 12: Tumor Immunology and Immunotherapy [April 21, 2009]


NIH Grant: Peer Reviews Due

Week 13: The Rational Treatment of Cancer [April 28, 2009]

