Oncology 725: Readings in Cancer Biology

Thursdays; 9:00-11:00 am (2 hours); Rm. 6471 WIMR II
2 Credits
Bill Sudgen, PhD, Professor, Department of Oncology
sugden@oncology.wisc.edu
Rm. 6555 WIMR II/ 608-262-1116
Grading System: A-F
Canvas: https://canvas.wisc.edu/courses/91712

Prerequisite:
Cancer Biology Graduate Program, graduate student, or permission of instructor. This course fulfills an important facet in the development of independent scientists by teaching them to critically read and review the current literature. This course is required for Cancer Biology PhD students and for students appointed to the NIH training grants in Cancer Biology and Virology.

Description:
A review and discussion of the current literature on topics related to Cancer Biology. The emphasis is on the development of skills in data analysis, interpretation, and writing. The goal of this course is to prepare students to critically review and discuss the current scientific literature on topics related to cancer biology. The emphasis is on the development of skills in data analysis and interpretation and communication of research. Skills learned in this course are critical to the development of an independent scientist. This course is an essential component in the training of PhD students in data analysis and interpretation of research in the literature, as well as written and oral communication of their science.

Method of Instruction:
Weekly lecture and discussion will be led weekly by instructor. Critical discussion and examination of weekly readings and subjects.

Class Format:
"Readings in Cancer Biology" is designed to help students become familiar with current literature in cancer research, to read articles critically, and to discuss them constructively. Approximately 40 papers are read during the semester; students are asked to submit one question on each paper read for each class; and then asked to lead a critical discussion of that paper on the basis of the question they submitted. The instructor reads the questions and selects ones to ensure that the papers are considered thoroughly and that all students have the opportunity to lead a discussion each class. The instructor provides expertise in all the topics covered and oversees the discussion to insure scientific rigor and to optimize participation of all students.

Course Grade:
A-F. Grades are based on student participation in all facets of the course as well as on a midterm exam and a final exam. The exams are modeled on the class with new papers and a series of questions on them handed out to be answered in grammatically correct English using only resources from the literature within a week. Grades are based on student participation (10%), mid-term exam (40%), final exam (40%), and writing assignments (10%). Please see guidelines for evaluating partition below.

A: 93-100 points  BC: 78-82 points  F: 0-64 points
AB: 88-92 points  C: 73-77 points
B: 83-87 points  D: 65-72 points
Course Schedule:

WK#1: Introduction


WK#2: Carcinogens, Heredity, and Cancer


WK#3: Papilloma Virus and Cancer


WK#4: Epstein-Barr virus and Cancer

Heslop and Rooney et al., Blood. 2010 Feb 4; 115(5): 925-35

WK#5: Inherited Predispositions to Cancer

Moser and Dove et al., Science. 1990, Jan 19; 247(4940): 322-4
MacPhee and Buchberg et al., Cell. 1995 Jun 16; 81(6): 957-66

WK#6: BRCA1 and BRCA2


WK#7: Mutations that "Drive" Cancers


WK#8: Mid-term Exam
WK#9:  Are Tumors Clonal in Origin?

Ding and DiPersio et al., Nature. 2012 Jan 26; 481(7382): 506-10

WK#10:  Telomeres and Cancer


WK#11:  Metastasis Pt. I


WK#12:  Metastasis Pt. II

Rhim and Stanger et al., Cell. 2012 Jan 20; 148(1-2): 349-61

WK#13:  Immune Responses to Cancer


WK#14:  Cancer Prevention and Screening Pt. I


WK#15:  Cancer Prevention and Screening Pt. II


FINAL EXAM

Guidelines for Evaluating Participation:

Outstanding Contributor: Contributions in class reflect exceptional preparation. Ideas offered are always substantive, provide one or more major insights as well as direction for the class. Challenges are well substantiated and persuasively presented. If this person were not a member of the class, the quality of discussion would be diminished markedly. (Outstanding contributors will receive full credit = 20 points.)

Good Contributor: Contributions in class reflect thorough preparation. Ideas offered are usually substantive, provide good insights and sometimes direction for the class. Challenges are well
substantiated and often persuasive. If this person were not a member of the class, the quality of discussion would be diminished. (Good contributors will receive 18 out of 20 points.)

**Adequate Contributor:** Contributions in class reflect satisfactory preparation. Ideas offered are sometimes substantive, provide generally useful insights but seldom offer a new direction for the discussion. Challenges are sometimes presented, fairly well substantiated, and are sometimes persuasive. If this person were not a member of the class, the quality of discussion would be diminished somewhat. (Adequate contributors will receive 16 out of 20 points.)

**Non-Participant:** This person says little or nothing in class. Hence, there is not an adequate basis for evaluation. If this person were not a member of the class, the quality of discussion would not be changed. (Non-participants will receive 10 out of 20 points.)

**Unsatisfactory Contributor:** Contributions in class reflect inadequate preparation. Ideas offered are seldom substantive, provide few if any insights and never a constructive direction for the class. Integrative comments and effective challenges are absent. If this person were not a member of the class, valuable air-time would be saved. (Unsatisfactory contributors will receive 10 out of 20 points.)

*The source of this rubric is the UW-Madison Writing Across the Curriculum website authored by Professor Virginia Sapiro. It was developed by Professor John Tyler of Brown University who obtained these guidelines from Professor Richard J. Murnane at the Harvard Graduate School of Education. Professor Murnane, in turn, learned of them from someone else (although the original attribution for the guidelines has been lost).*

**Learning Goals:**

- Discussing their science clearly;
- Thinking creatively and critically in planning and performing their science;
- Contributing substantively to their research;
- Growing intellectually;
- Growing thoughtfully as a scientific colleague