BMB 585: Wistar Cancer Biology Course

**Location:** The Wistar Institute, 3601 Spruce St. KOPROWSKI/BERG ROOM
**Time:** Fall Semester 2017, Thursdays 2 - 4:00 pm

**Course Directors -**
Dr. Maureen Murphy, Room 352, The Wistar Institute, mmurphy@Wistar.org
Dr. Brian Keith, Room 214-3, The Wistar Institute, bkeith@wistar.org
BMB coordinator: Kelli McKenna (mckennak@mail.med.upenn.edu)

The course will cover basic pathways and mechanisms of cancer development and progression as well as current approaches for the identification of therapies for the treatment of cancer. The class meets once per week.

The class will be a 50-minute lecture on a cancer-relevant pathway, followed by a 50-minute discussion of that week's assigned journal club paper, whose topic is related to the lecture, and which article is handed out the week before, and posted on Canvas. Class will end after a 15-minute informal introduction on the key techniques to be used for the next week's journal club paper, by Drs. Murphy and Keith.

**All students are expected to read the assigned paper prior to class, and to participate in class discussion.** Each figure of the paper will be discussed in order, and discussants are selected on a random basis to go over each figure.

Students will also be required to take and pass a mid term and final exam consisting of short essays or questions related to the material taught during the course. The course is designed to provide students with an integrated learning platform, combining up-to-date basic mechanistic understanding of cancer pathways and cutting edge molecular techniques, along with in-depth critical analysis of the current scientific literature.

**Prerequisites:** Senior undergraduate or graduate level biochemistry and molecular biology, or prior acceptance by the Instructor

**Grading:** Class Participation 10%
Mid term exam 50%
Final Exam (not cumulative) 40%
**Lectures:**

Introduction to BMB585, guidelines and objectives  
MURPHY/KEITH  
August 31

Introduction to Cancer Biology  
MURPHY  
Sept 7

**Basic pathways in cancer biology:**

The p53 tumor suppressor gene  
MURPHY  
Sept 14

Cancer Metabolism  
ALTIERI  
Sept 21

The Ras and WNT pathways in melanoma  
WEERARATNA  
Sept 28

Hypoxia, stress responses and cancer  
KEITH  
Oct 5

Medicinal Chemistry approaches  
SALVINO  
Oct 12

Telomerase and cancer  
VILLANUEVA  
Oct 19

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MID TERM  
Oct 26

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**Focus on cancer ‘omics’:**

Proteomics and Epigenetics  
GARCIA  
Nov 2

Metabolomics  
SCHUG  
Nov 9

Cancer Genomes and Genomics  
KOSSENKOV  
Nov 16

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**Cancer Immunology and Virology:**

Tumor Immunology  
KEITH/GABRILOVICH  
Nov 30

Viruses and Cancer  
LIEBERMAN  
Dec 7

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FINAL EXAM  
Dec 14