

OVERVIEW AND SYLLABUS
CAMB 512 – CONCEPTS IN CANCER BIOLOGY
Fall 2019
11:30-1:00
Thursdays via zoom

COURSE GOALS: There are several goals for this course. One is to introduce students to basic fundamental principles and emerging concepts in cancer biology. Another is to challenge students to think with considerable depth about how these principles and concepts were shaped through experiment, as well as their implications, limits and caveats. A third is that the lectures, readings, and exams will hone your ability to think clearly and critically about the testing of hypothesis through experimental design and data interpretation. The course aims to provide students with a foundation that will enable them to keep abreast of cancer biology topics through critical appraisal of the literature and seminars.

COURSE DESCRIPTION: The course is divided into 4 thematic blocks of cancer biology, which are: *Intro To Cancer Biology And Signal Transduction, Genome regulation, Stress Responses and Microenvironment, and Evading Cell Death*. Each block will involve faculty members lecturing from an experimental standpoint of the literature that assumes basic knowledge of the subject. There are four course directors and one of them will attend every session. During each 1.5 hour class faculty will lecture for 45 minutes followed by a 45 minute breakout discussion. During the breakout session students will be separated into two pre-assigned groups and each group will have a student leader/presenter. Each group will discuss the primary research paper and answer the assigned question using any and all available resources. Each group leader will have 10 minutes to present their question and answer using 1 powerpoint slide displaying a graphical abstract of the assigned paper.

READING ASSIGNMENTS: Two weeks prior to their lecture, faculty will assign a review that provides relevant background and a primary research paper. The faculty will also provide a separate discussion question on the paper for each group to guide student reading and discussion. Each group is responsible for reading these materials before each lecture, and discussing the paper and question in breakout sessions. Student presenters are required to produce a 1-2 page written answer to the pre-assigned question/summary of their presentation and email it to the attending course director following their presentations. They have one week to email the document to the course director that attended their session. Should a student have to miss a lecture, the student needs to notify the course directors in advance.

COURSE GRADE: The course grade will be based on 40% participation, 40% presentations, and 20% 1-2 page write-up summarizing key points of the presentations (group leaders only).

CANVAS: The assigned review, primary paper, and questions should be posted two weeks prior to each class.

COURSE DIRECTORS:

Peter Choi, Choip@email.chop.edu
Kathrin Bernt, berntk@email.chop.edu
Karin Eisinger, karineis@penncmedicine.upenn.edu
Todd Ridky, ridky@penncmedicine.upenn.edu
David Feldser, , dfeldser@upenn.edu

Additional attending faculty

Sandra Ryeom, sryeom@upenn.edu

CAMB 512 Concepts in Cancer Biology Fall 2020

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THEME I: INTRO TO CANCER BIOLOGY and SIGNAL TRANSDUCTION

Thur, Aug 27	Course Introduction	Course Directors	KE
Thur, Sep 3	Oncogenes and Tumor Suppressors	David Feldser	
Thur, Sep 10	Kinases and Cancer	George Burslem	
Thur, Sep 17	Epigenetics of Cancer	Kathrin Bernt	

THEME III: GENOME REGULATION

Thur, Sep 24	Cancer Predisposition and Surveillance	Garrett Brodeur	
Thur, Oct 1	Transcriptional Control in Cancer	Thomas De Raedt	
Thur, Oct 8	Telomeres and Cancer	Brad Johnson	
Thur, Oct 15	Guardians of the Genome	Craig Bassing	

THEME IV: STRESS RESPONSES

Thur, Oct 22	Special class-Bench to Bedside: "Translating" Your PhD		
Thur, Oct 29	Oxygen in Cancer	Celeste Simon	
Thur, Nov 5	Integrated Stress Response and Cancer	Crystal Conn	
Thur, Nov 12	Targeting Autophagy	Donita Brady	

THEME V: EVADING CELL DEATH

Thurs, Nov 19	Biologic sex and cancer	Todd Ridky	
Thur Nov 26	No Class (Thanksgiving Break)		
Thur, Dec 3	Viruses and Cancer	Elizabeth White	
Thur, Dec 10	Targeting Apoptosis	Mike Hogarty	
Thur, Dec 17	Pre-metastatic niche and metastasis	Sandra Ryeom	