OVERVIEW AND SYLLABUS
CAMB 512 – CONCEPTS IN CANCER BIOLOGY
Fall 2019
11:30-1:00
Thursdays BRB 701

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 two primary research papers, one for each group. The faculty will also provide a discussion question on each paper to guide student reading and discussion. Each group is responsible for reading these materials before each lecture. 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@pennmedicine.upenn.edu
Todd Ridky, ridky@pennmedicine.upenn.edu
David Feldser, , dfeldser@upenn.edu

Additional attending faculty

Sandra Ryeom, sryeom@upenn.edu

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THEME I: INTRO TO CANCER BIOLOGY and SIGNAL TRANSDUCTION		
Thur, Aug 29	Course Introduction	
Thur, Sep 5	Oncogenes and Tumor Suppressors	David Feldser
Thur, Sep 12	Kinases and Cancer	Donita Brady
Thur, Sep 19	Epigenetics of Cancer	Kathrin Bernt
THEME III: GENOME REGULATION		
Thur, Sep 26	Cancer Predisposition and Surveillance	Garrett Brodeur
Thur, Oct 3	Transcriptional Control in Cancer	Tom De Raedt
Thur, Oct 10	Telomeres and Cancer	Brad Johnson
Thur, Oct 17	Guardians of the Genome	Craig Bassing
THEME IV: STRESS RESPONSES		
Thur**, Oct 24**	**Special class-Bench to Bedside: "Translating" Your PhD**	
Thur, Oct 31	Integrated Stress Response and Cancer	Costas Koumenis
Thur, Nov 7	Targeting Autophagy	Ravi Amaravadi
Thur, Nov 14	Oxygen in Cancer	Celeste Simon
THEME V: EVADING CELL DEATH		
Thurs, Nov 21	Biologic sex and cancer	Todd Ridky
Thur Nov 28	No Class (Thanksgiving Break)	
Thur, Dec 5	Viruses and Cancer	Elizabeth White
Thur, Dec 12	Targeting Apoptosis	Mike Hogarty
Thur, Dec 19	Pre-metastatic niche and metastasis	Sandra Ryeom/Ellen Pure