OVERVIEW AND SYLLABUS
CAMB 512 – CONCEPTS IN CANCER BIOLOGY
Spring 2022
12-1:30
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 3 thematic blocks of cancer biology, which are: *Tumor miroenvironment, genomics, elements of clinical translation*. 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 three 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. 2 out of 3 group leaders 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
Liling wan, Liling.wan@pennmedicine.upenn.edu
Crystal Conn, crystal.conn@pennmedicine.upenn.edu
Karin Eisinger, karineis@pennmedicine.upenn.edu

CAMB 512 Concepts in Cancer Biology Spring 2022

12-1:30PM Thursdays via zoom

THEME VI: TUMOR MICROENVIRONMENT

Thur, Jan 13	T-cell based immunotherapy	Joe Fraietta
Thur, Jan 20	Myeloid cells in cancer immunotherapy	Greg Beatty
Thur, Jan 27	Cancer Associated Fibroblasts	Ellen Pure
Thur, Feb 3	Angiogenesis and Cancer	Yi Fan
Thur, Feb 10	Cancer and the Microbiome	Chengcheng Jin
Thur, Feb 17	Physical Sciences of Cancer	Paul Janmey

THEME VII: GENOMICS

Thur, Feb 24	Intro to Cancer Genomics I	Peter Choi
Thur, March 3	Intro to Cancer Genomics II-workshop	Peter Choi
Thur, Mar 10.	**********No Class (Spring break)**********	
Thur, Mar 17	Functional Genomics- Precision Oncology	David Schultz
Thur, Mar 24	Translocations and Aneuploidy in Cancer	Kris Bosse

THEME VIII: ELEMENTS OF CLINICAL TRANSLATION

Thur, Mar 31	Viruses and Cancer	Elizabeth White
Thur, Apr 7	Aging and Cancer	Pat Morin
Thur, Apr 14	Mechanisms of Resistance	Asangani
Thur, April 21	Cell death and Cancer	Mike Hogarty
Thur, April 28	Biologic variables and cancer	Todd Ridky
Thur, May 5	Cancer Predisposition and Surveillance	Garrett Brodeur