OVERVIEW AND SYLLABUS
CAMB 510 – Basic and Translational Immunology
Spring 2022
Monday and Wednesday 10:15am-12noon

Room BRB 252

COURSE GOALS: There are several goals for this course. One is to introduce students to basic fundamental principles and emerging therapeutics concepts in immunology. A second goal is to challenge students to think with considerable depth about how these principles and concepts were shaped through experiments, as well as their implications, limits and caveats. A third goal is to hone the ability of students to think clearly and critically about the testing of a specific hypothesis through experimental design and data interpretation. These goals will be achieved through lectures, readings, class discussions, and take-home exams. The course aims to provide students with foundations that will enable them to keep abreast of basic and translational immunology topics through critical appraisal of the literature and seminars.

COURSE DESCRIPTION: Each class will involve a faculty member lecturing from an experimental standpoint of the literature that assumes basic knowledge of the subject. There are three course directors (one each from CB, GTV, and MVP) and at least one of them will attend every session. During each 1 hour 45 minute class, faculty will lecture for 75 minutes followed by a 30 minute student-led paper discussion.

READING ASSIGNMENTS: One week prior to their lecture, faculty will assign a single review article that provides relevant background, as well as one primary research paper. The faculty will also provide a discussion question on the research paper to guide student reading and discussion. Students are responsible for reading these materials before each lecture. Each student is also required, before each class, to post on CANVAS either question on the assigned paper or response to a student's question.

PAPER PRESENTATION: During the paper discussion, one or two student(s) will present key aspects of the research paper and answer a "discussion question" provided by the lecturer (15-20 minutes). In the last 10-15 minutes of class the student presenter(s) and lecturer will address other outstanding questions provided by students in the class. Note: See CAMB510_template_2022.pptx under "Files" in CANVAS for paper presentation template example.

EXAMS: There will be two take-home exams: a mid-term and a final. Students will have a week to work on each exam, using any materials from class or outside as resources. The exams are intended to encourage deep thinking about immunology generally and/or deeper reading into some important areas that, because of time constraints, could not be given the in-depth coverage they warrant in class lectures. It is expected that answers will reflect this and will reference appropriate literature sources. Faculty may suggest some primary papers to help direct students in formulating their answers.

COURSE GRADE: The course grade will be based on: 40% mid-term exam, 40% final exam, and 20% on participation as judged by submitting questions or responses on CANVAS. While student presentations will not be graded, the participating faculty and/or course director or teaching assistant (TA) should provide feedback at the end of class.

CANVAS: The course directors will post assigned review, primary papers, and questions provided by specific faculty at least one week prior to each class. The students are required to post their question for each assigned paper by 5 pm the day before the class.

COURSE DIRECTORS: Sharon Diskin (diskin@email.chop.edu), Norbert Pardi (pnorbert@pennmedicine.upenn.edu), and Michael Abt (michael.abt@pennmedicine.upenn.edu)

TEACHING ASSISTANT:

Date	Topic	Instructor(s)	Journal Club
Jan 12 (Wed)	Introduction to the immune system	Michael Cancro	
Jan 17 (Mon)	NO CLASS - MLK		
Jan 19 (Wed)	Complement and myeloid cells - defenders of the universe	Kate Sullivan	
Jan 24 (Mon)	Hematopoiesis and lymphogenesis	Warren Pear	
Jan 26 (Wed)	Polymorphonuclear Leukocytes- Neutrophil Biology	Evgeniy Eruslanov	Warren Pear
Jan 31 (Mon),	Monocytes, macrophages, and inflammation	Malay Haldar	Eveniy Eruslanov
Feb 2 (Wed)	Pattern recognition and TLRs	Kellie Jurado	Malay Haldar
Feb 7 (Mon)	Intrinsic intracellular immunity	Maayan Levy	Kellie Jurado
Feb 9 (Wed)	Dendritic cells	Chengcheng Jin	Maayan Levy
Feb 14 (Mon)	Antigen receptor gene diversification	Craig Bassing	Chengcheng Jin
Feb 16 (Wed)	Immunoglobulin structure and function	Dave Allman	Craig Bassing
Feb 21 (Mon)	B cell responses/memory and germinal center reaction	Dave Allman	Dave Allman
Feb 23 (Wed)	MHC restriction, T cell antigen processing, presentation, and recognition	Ike Eisenlohr	
Mar 2 (Wed)	TH cell subsets	Chris Hunter	
Mar 7 (Mon)	Germinal Center Formation/response to vaccine & pathogens	Michela Locci	Chris Hunter
Mar 9 (Wed)	NK, NKT, and other ILCs	Taku Kambayashi	Michela Locci
Mar 14 (Mon)	Class-I CD8 T cells and T cell exhaustion	John Wherry	Taku Kambayashi
Mar 16 (Wed)	Lymphocyte Trafficking	Michael May	John Wherry
Mar 21 (Mon)	Mucosal immunity and host microbiomes	Michael Abt	Michael May
Mar 23 (Wed)	Tolerance and immune privilege	Paula Oliver	Michael Abt
Mar 28 (Mon)	Metabolic Regulation of Immune Responses	Will Bailis	Paula Oliver

Mar 30 (Wed)	V(D)J recombination, antibody repertoires, clone tracking in malignancy and other diseases	Nina Luning-Prak	
Apr 4 (Mon)	Immune response to HIV	Mike Betts	Will Bailis
Apr 6 (Wed)	Vaccine development and challenges	Norbert Pardi	Mike Betts
Apr 11 (Mon)	Immune responses to gene therapies	Jim Wilson	
Apr 13 (Wed)	CAR- T cell therapies	Carl June	Jim Wilson
Apr 18 (Mon)	Targeting cancer antigens and neoantigens	Gerry Linette:	Carl June
Apr 20 (Wed)	Anti-cancer immune responses	Joe Fraietta	Gerry Linette:
Apr 25 (Mon)	Immune checkpoint therapies	Jim Riley	Joe Fraietta
Apr 27 (Wed)	Mechanisms regulating T cell immunosurveillance in cancer	Gregory Beatty	Jim Riley
EXTRA			
May 3 (Mon)	No class - Final Exam – DUE May 4th		
May 5 (Wed)	No class - Final Exam Preparation		
May 7th (Mon)	**Final Exam Due**		