OVERVIEW AND SYLLABUS
CAMB 510 – Basic and Translational Immunology
Spring 2021
Monday and Wednesday 10am-12noon

BlueJeans Meeting: https://bluejeans.com/601828995

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 2 hours class, faculty will lecture for 90 minutes followed by a 30 minute paper discussion. 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.

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 a question that they would like the students or faculty lecturer to answer during the paper discussion. Note: See CAMB510_template_2021.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 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: Vincent Wu (wuv@pennmedicine.upenn.edu)

Date	Topic	Lecture	Student(s)
Jan 13 (Wed)	Introduction to the immune system	Michael Cancro	
Jan 18 (Mon)	NO CLASS - MLK		
Jan 20 (Wed)	Complement and myeloid cells-defenders of the universe	Kate Sullivan	Amber Abott Adam Ziada
Jan 25 (Mon)	Hematopoiesis and lymphogenesis	Warren Pear	Jorge Acuna Taylor Yount
Jan 27 (Wed)	Polymorphonuclear Leukocytes- Neutrophil Biology	Evgeniy Eruslanov	Sara Alexander Kyra Smith
Feb 1 (Mon)	Monocytes, macrophages, and inflammation	Malay Haldar	Matthew Aronson Joe She
Feb 3 (Wed)	Pattern recognition and TLRs	Kellie Jurado	Robin Bailey Siera Rosen
Feb 8 (Mon)	Intrinsic intracellular immunity	Sunny Shin	Gabriel Birchak Jacqueline Plesset
Feb 10 (Wed)	NK, NKT, and other ILCs	Taku Kambayashi	Erica Brown
Feb 15 (Mon)	Dendritic cells	Chengcheng Jin	Priyanka Chatterjee
Feb 17 (Wed)	Antigen receptor gene diversification	Craig Bassing	Richard Duan
Feb 22 (Mon)	Immunoglobulin structure and function	Dave Allman	Sarah Dysinger
Feb 24 (Wed)	B cell responses/memory and germinal center reaction	Dave Allman	Jillian Eisenhauer
Feb 26 (**Fri**)	MHC restriction	Terri Laufer	Annabel Ferguson
Mar 3 (Wed)	T cell antigen processing, presentation and recognition	Ike Eisenlohr	Julia Flores
Mar 8 (Mon)	Early T cell development in the thymus	Ivan Maillard	Paul Gehret
Mar 10 (Wed)	NO CLASS - Mid-term Exam Distributed, DUE March 19th		
Mar 15 (Mon)	TH cell subsets	Chris Hunter	Puneeth Guruprasad
Mar 17 (Wed)	Class-I CD8 T cells and T cell exhaustion	John Wherry	Jennifer Hoffmann
Mar 22 (Mon)	Lymphocyte trafficking	Michael May	Orlaith Keenan
Mar 24 (Wed)	Mucosal immunity and host microbes	Michael Abt	Daniel Kim
Mar 29 (Mon)	Tolerance and immune privilege	Paula Oliver	Michelle Lee
Mar 31 (Wed)	Metabolic regulation of immune responses	Will Bailis	Grace Li
Apr 7 (Wed)	Immune response to HIV	Mike Betts	Giselle Lopez Fernandez
Apr 9 (**Fri**)	V(D)J recombination, antibody repertoires, clone tracking in malignancy and other diseases	Nina Luning-Prak	Andrew Marques
Apr 14 (Wed)	Immune responses to gene therapies	Jim Wilson	Kevin Mears
Apr 19 (Mon)	CAR-T cell therapies	Carl June	Madeline Merlino
Apr 21 (Wed)	Targeting cancer antigens and neoantigens	Gerry Linette	Kelsey O'Brien
Apr 23 (**Fri**)	Vaccine development and challenges	Norbert Pardi	Yohaniz Ortega-Burgos
Apr 26 (Mon)	Anti-cancer immune responses	Joe Fraietta	Ruchi Patel
Apr 28 (Wed)	Mechanisms regulating T cell immunosurveillance in cancer	Gregory Beatty	Vi Pham
May 3 (Mon)	NO CLASS - Final Exam Distributed, DUE May 7th		
May 5 (Wed)	NO CLASS - Final Exam Preparation		
May 7 (Mon)	**Final Exam Due**		