

IMUN 507 IMMUNE MECHANISMS

SPRING 2019

Tuesdays and Thursdays 2:00 – 3:45 PM
701 BRB (Tuesdays) and 1101 BRB (Thursdays)

COURSE DIRECTORS:	Michael May 3800 Spruce St, OVH 200E 215-573-0940 maym@vet.upenn.edu	Bruce Freedman 3800 Spruce St, OVH 368E 215-573-8218 bruce@vet.upenn.edu
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COURSE GOALS: There are several goals for this course. First, building on the IMUN 506 foundation, we will further introduce you to basic principles, and current and emerging concepts in cellular immunology. Second, integrating with BIOM 555, we will introduce you to more basic principles, state-of-the art techniques, and current and emerging concepts in molecular immunology. Third, through the student-run journal clubs, we will work together to improve your ability to: critically evaluate primary literature, orally present your thoughts to an audience, and engage in scientific discussion.

COURSE DESCRIPTION: Faculty lectures will be taught from an experimental standpoint and assume basic knowledge of the immune system. To the greatest extent possible, faculty will teach through primary literature, with reference to reviews for background information. For each faculty lecture, one student will lead a journal club on one of the assigned papers.

READINGS: Each faculty is expected to provide a few reviews and possibly primary papers at least one week prior their lecture. Students should read these before the lectures. Faculty will assign at least one journal club paper that students also should read before the lecture class. Students presenting journal club need to read these before the presentations and may need to read the recommended reviews and papers to sufficiently prepare for their presentations. Texts that also may be useful for background reading include:

Janeway's Immunobiology (8th edition), by Murphy et al; Garland Press

Fundamentals of Immunology (7th edition) by Paul (ed). Raven Press

Readings and journal club papers will be posted on Canvas. Faculty lectures may be available by request, though often not until after the lecture.

JOURNAL CLUB EXPECTATIONS: Students are expected to meet with the faculty member (who assigned the paper) in advance of the presentation. Students should present: 1) a few introduction slides on background and the problem addressed or hypothesis tested, 2) schematics outlining experimental approaches or procedures for those that are complicated and/or not routine, 3) essential figures or figure panels, which may be all of them in a *Nature*, *Science*, or *Jl* paper or 50-75% in *Immunity*, *Cell*, *JEM*, or *Nature Immunology* paper, 4) figures or figure panels from supplementary materials if needed, 5) a few discussion/closing slides to place the authors'

findings within the contexts of the immediate field and immunology or biology as a whole, and 6) a few slides on new questions you would answer and experiments that you would conduct to do so. Presenters should be critical of the data by pointing out potential flaws; in addition, they should attempt to build an interaction-discussion with the audience, while keeping the presentation time to no more than 45 minutes.

For each paper, all students except the presenter are required to bring to class the following (in writing):

- 1) One question or discussion point about any aspect of the paper. This question or point could be raised and incorporated into the class discussion of the manuscript.
- 2) A short paragraph or several bullet points discussing the next experiments that should be performed to follow up on the main findings of the paper.

Audience members should ask questions, make points, and engage in discussion as often as possible, while letting the presenter get through all of their slides.

FACULTY EXPECTATIONS: In addition to providing reading materials ahead of time, lecturing, and moderating journal clubs, faculty are expected to be available to meet with students ahead of journal club presentations. Faculty should also provide feedback to the journal club presenters immediately after class ends.

FINAL GRADES: Students' grades will be based on their journal club presentations and on their participation (asking questions, engaging in discussions, and submitting written assignments) during all classes. Final grades will be determined by the course directors in consultation with participating faculty.

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Thurs	1/17	Parasitic Infections	Phillip Scott
Tues	1/22	Bacterial Immunity	Sunny Shin
Thurs	1/24	JC - Parasitic Infection / Bacterial Immunity	
Tues	1/29	Immunoglobulin Class Switch Recombination and Somatic Hypermutation	Craig Bassing
Thurs	1/31	Lymphoid Malignancies	Craig Bassing
Tues	2/5	JC - Lymphoid Malignancies / Class-switch Recombination	
Thurs	2/7	Adoptive Cell Therapies	Michael Milone
Tues	2/12	JC - Adoptive Cell Therapies	
Thurs	2/14	NO CLASS	
Tues	2/19	Autoimmune Disorders	Nina Luning Prak
Thurs	2/21	JC - Autoimmune Disorders	
Tues	2/26	Epigenetic Control of Immune Cell Fates	Ken Zaret
Thurs	2/28	JC - Epigenetic Control	
Tues	3/5	Systems Biology of Immune Cells	Golnaz Vahedi
Thurs	3/7	JC - Systems Biology of Immune Cells	
Tues	3/12	Tfh and Tfr regulation of germinal center responses	Michela Locci
Thurs	3/14	Mucosal Immunity	Jorge Henao-Mejia
Tues	3/19	The Microbiome and Host Immunity	Daniel Beiting
Thurs	3/21	JC - The Microbiome and Host Immunity / Mucosal Immunity	
Tues	3/26	NO CLASS	
Thurs	3/28	HIV	Michael Betts
Tues	4/2	Vaccines	David Weiner
Thurs	4/4	JC - Vaccines / HIV	
Tues	4/9	NO CLASS	
Thurs	4/11	Primary Immunodeficiencies	Kathleen Sullivan
Tues	4/16	JC - Primary Immunodeficiencies	
Thurs	4/18	Tumor Immunology	Steven Albelda
Tues	4/23	JC - Tumor Immunology	
Thurs	4/25	T Cell Cross-reactivity in Health and Disease	Laura Su
Tues	4/30	JC - T Cell Cross-reactivity in Health and Disease	