

CAMB 7000: Topics in Microbiology (Spring 2025)

Directors: Joseph Zackular, Sunny Shin, Matthew Weitzman, Michael Betts

Class Time: Tuesdays and Thursdays, 2:00-3:30 PM from January 21th to March 25th

Location: The course will be held in person in Richards B207. A hybrid option will be available if possible.

Course Description: This course is designed for second year students studying MVP program related projects and focuses on presentation skills in the scientific area of microbiology and pathogen-host interactions. The overall goal of this course is to give students the tools to present and defend their science in a clear and concise fashion. Introductory sessions address the role of storytelling in effectively communicating their research and the use of clear and concise schematics to convey the project. The course directors will also cover strategies for effective prelim presentations in the new slide-based format. In subsequent classes students will give two presentations on their research project.

First presentation: The students will present a PowerPoint presentation on their project Specific Aims and a project schematic. Each student presentation should provide sufficient background, discuss what is known and what is not known about the topic, and frame two or three Specific Aims for a potential F31 style grant application. We will also discuss potential experimental strategies to address the central hypothesis of the grant proposal. The discussions are deliberately wide-ranging, and review recent literature, techniques, and how to construct a presentation and grant. There will be specific focus on experimental expectations, alternative approaches/strategies, and alternative models. For the first presentation we will have a visiting senior graduate student join to provide feedback and their experiences.

Second presentation: Students presentations will be given in the format of the preliminary exam for this year (5 PowerPoint slides given uninterrupted for 15 minutes, followed by questions). Students will present background, Specific Aims, experimental details, expected results, and alternative strategies during their presentation and field questions from faculty, peers, and upper year students. For this second presentation, two visiting faculty and the same visiting senior graduate student will join the class to provide critical feedback and questions.

Taken together, the students will learn how to prepare, present, and defend a research topic, as well as to integrate constructive criticism into the development of a strong research direction.

Outside experts: Each student will be required to identify and contact an outside expert (Penn faculty member) in their field of research (broadly defined – virology, bacteriology, immunology). They will meet with the outside expert at least once in the semester. Students should receive feedback on their proposed Specific Aims from their outside expert. We highly encourage students to meet with and stay in contact with their experts throughout the Spring semester and meet as frequently as needed. Faculty experts will not be restricted from student preliminary exam committees.

Course Evaluation: The success of the course rests entirely upon the discussion quality and engagement of the faculty and students involved. Class participation is 100% of grade.

Schedule:

Jan 21: “In the beginning...” Course introduction and Expectations. Discussion will include details on preliminary exam format.

Jan 23: Example prelims

Jan 28: “Show me the science...” Matt Weitzman presentation on Strategies for formulating Specific Aims and giving effective presentations.

Jan 30: NO CLASS

Feb 4: Round 1 Presentations 1+2:

Feb 6: Round 1 Presentations 3+4:

Feb 11: Round 1 Presentations 5+6:
 Feb 13: Round 1 Presentations 7+8:
 Feb 18: Round 1 Presentations 9+10:
 Feb 20: Round 1 Presentations 11+12:
 Feb 25: Round 1 Presentation 13 + wrap-up discussion

Feb 27: Round 2 Presentations 1+2:
 Mar 4: Round 2 Presentations 3+4:
 Mar 6: NO CLASS
 Mar 11: Round 2 Presentations 5+6:
 Mar 13: Round 2 Presentations 7+8:
 Mar 18: Round 2 Presentations 9+10:
 Mar 20: Round 2 Presentations 11+12:
 Mar 25: Round 2 Presentations 13 + wrap-up discussion

Contact information:

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Faculty Attendance Schedule:

Class dates	Presentations	Faculty	Backup
21-Jan	“In the beginning...”	Joe, Mike, Matt	
23-Jan	Example prelims	Joe and Mike	
28-Jan	“Show me the science...”	Sunny, Joe, Matt, Mike	
30-Jan	NO CLASS		
4-Feb	Presentation 1 and 2	Matt	Joe
6-Feb	Presentation 3 and 4	Joe	Sunny
11-Feb	Presentation 5 and 6	Mike	Matt
13-Feb	Presentation 7 and 8	Sunny	Joe
18-Feb	Presentation 9 and 10	Matt	Mike
20-Feb	Presentation 11 and 12	Sunny, Joe, Matt, Mike	
25-Feb	Presentation 13 & Wrap up	Sunny	Mike
27-Feb	Presentation 1 and 2	Joe	Mike
4-Feb	Presentation 3 and 4	Matt	Sunny
6-Mar	NO CLASS		
11-Mar	Presentation 5 and 6	Sunny	Matt
13-Mar	Presentation 7 and 8	Matt	Joe
18-Mar	Presentation 9 and 10	Mike	Sunny
20-Mar	Presentation 11 and 12	Sunny, Joe, Matt, Mike	
25-Mar	Presentation 13 & Wrap up	Sunny, Joe, Matt, Mike	