

Course Syllabus

Goldrath-BIMM 194/BGGN283, Spring Quarter 2023

Title: Immunotherapy

Instructor: Ananda Goldrath

Date/Time: This class will be in person. Mondays 10:00-11:20am York 3010

Course Summary: Immunology is generally thought of as the mechanisms that organisms use to defend their bodies from invasion by other organisms. However, the immune system is also a central player in many diseases that do not involve infection including: autoimmunity, allergy, cancers. Furthermore, inflammation contributes to the development of cardiovascular and metabolic diseases. In the present course we will learn about strategies to influence the immune system in a variety of human diseases to improve health outcome—collectively termed Immunotherapy. Immunotherapy can be designed to induce, enhance, or suppress an immune response. The goal of the course is not only to provide a big picture of immune responses involved in host protection and in disease, but also to learn how to interpret and present primary literature in this fast-moving field.

Lectures:

I will present the first lecture reviewing general principles of immune responses the second week of class, the next week we will finish the overview. The rest of the classes will consist of a short ~40 min lecture on the topic and then a discussion of one or two papers related to immunotherapy with group discussion of the relevant papers and preparation for a write up of the readings. Selected papers will be available 1-2 weeks in advance and need to be read before class by all students.

Each class you will be placed into a discussion group of ~5 students that will be assigned a portion of the papers we are reading. The group will have 20 minutes to discuss the figures/data/study and make a plan to discuss it with the class. The goal will be to identify the major question/s addressed by the paper, describe each part of the figure and the corresponding conclusion and come up with a simple take-home message for the figure(s). This will be typed up by each person for themselves and submitted via Canvas by Friday at 4pm.

Your grade will be calculated based on your top 8 quiz scores of the 10 taken and the top 6 of the 8 total turned in paper/write ups.

Quizzes: There will be 10 quizzes, 1 every week. Quizzes will be posted on the day of the lecture in which the topic is introduced and will be due on Friday at 4pm. They will consist of T/F questions regarding the material. Questions will be related to conclusions or concepts emphasized during the presentation. Each quiz will be worth 10 points.

Participation: Questions, comments, suggestions are encouraged at any time during the lecture/discussions.

Grading: Grading will reflect presentation of the assigned paper write ups (50%), quizzes (50%). The grading will be normalized to the highest score. 60-70% of that score will be a D, 70-80% will be a C, 80-90% will be a B and 90-100% of that an A.

Email Communication: Questions that can be asked after lecture or in office hours should not be asked by email and will not be answered by e-mail.

Office hours: My office hours will be after class in my office NSB5107.

Class 1, April 3rd Introduction to the immune system.

Class 2, April 10th Special Guest Seminar: Prof. Fran Lund-antibody responses to COVID vaccine

Class 3, April 17th Immunodeficiencies. Dr. Maximillian Heeg.

Class 4, April 24th Cancer Therapy, Blockade of inhibitory receptors. Dr. Nicole Scharping.

Class 5, May 1nd CAR (chimeric antigen receptors) T cell therapy for cancer. Dr. Miguel Reina Campos.

Class 6, May 8th Immunotherapies for autoimmunity. Dr. Giovanni Galletti

Class 7, May 15th Vaccination.

Class 8, May 22nd Ebola and serum therapy.

Class 9, May 29th SARS and corona viruses.

Class 10, June 5th COVID19.

No Final

Course Summary:

Date	Details	Due
Fri Apr 7, 2023	 Quiz #1 (https://canvas.ucsd.edu/courses/46724/assignments/639453)	due by 4pm
Fri Apr 21, 2023	 Week #2 Assignment (https://canvas.ucsd.edu/courses/46724/assignments/644493)	due by 11:59pm
Fri Apr 28, 2023	 Quiz #2 (https://canvas.ucsd.edu/courses/46724/assignments/646157)	due by 11:59pm
	 Quiz #3 (https://canvas.ucsd.edu/courses/46724/assignments/646756)	due by 11:59pm
Mon May 1, 2023	 Week #4 Assignment--Paper Assessment Barber PD1 blockade and chronic infection (https://canvas.ucsd.edu/courses/46724/assignments/647286)	due by 11:59pm
Mon May 8, 2023	 Week #5 Assignment--Paper Assessment Leach and Postow papers. Please upload your assessment of these papers for all of the main figures (not tables). (https://canvas.ucsd.edu/courses/46724/assignments/647288)	due by 11:59pm