

MCB150L
Immunology Laboratory
FALL 2020

The objective of this course is to introduce you to experimental design and basic immunology techniques. The cellular immunology module includes production of monoclonal antibodies, enzyme-linked immunosorbent assay (ELISA), immunoprecipitation, SDS-PAGE, western blot, and flow cytometry. The molecular module provides experience in isolation of DNA and RNA, qRT-PCR, restriction mapping, subcloning, CRISPR editing, and DNA sequencing. Emphasis will be placed on experimental design and the interpretation of data. **Previous completion or concurrent enrollment in MCB 150 "Molecular Immunology" is a REQUIREMENT!**

Faculty	GSIs
Robert Beatty Office Hour: Thursday 4:10-5:00 pm	Stephanie Silveria Office hour: Tuesday 2:00-3:00 pm
Greg Barton Office hour: TBA	Chenyu Zhang Office hour: Tuesday 2:00-3:00 pm

Instructional Support Staff: Arash Ng

Course Policies

Attendance on Zoom

Lab class this semester will be taught in online lectures, online activities (e.g., group discussions, journal clubs, jigsaw), and online live lab streaming that you will access on Zoom. Attendance will be required for lectures, live labs and activities that will be confined to Mondays and Wednesdays 1:00-5:00pm (Pacific Time). There will also be many videos, papers and other assignments that you will work on outside of class. This content will be included on lab reports, quizzes and exams.

Quizzes

There will be short quizzes given during some of the laboratory periods throughout the course. The quizzes will be based on material from the lectures, videos of experimental procedures, and experimental protocols in the manual. We may also ask you to explain/analyze controls or data obtained in the lab.

Journal Club and Jigsaw Exercise Paper Reading

Basic science research articles will be posted online and students will be asked to answer questions and discuss the articles in class and/or on quizzes and exams. The Jigsaw exercise will be done in class.

Laboratory reports

In the Cellular Immunology Module, you will report your work in laboratory reports written in a format similar to that used in scientific journals. Details will be provided in separate Report Format handouts. In the Molecular Immunology Module, you will do problem sets focused on experimental protocols and analysis of the data. Due dates are listed in the course schedule. Late work will be penalized by 5 points per class. If you are unable to meet a deadline because of circumstances beyond your control, please discuss this with the instructors before the due date of the assignment.

Individual work and cheating

Although all of the experiments you do will be performed in groups of two or more, **all written assignments** are intended to be **individual efforts**. This is not to say that you shouldn't communicate with anyone else about your assignments. We encourage you to discuss procedures, data, interpretations and analysis among yourselves and with the teaching staff. However, keep in mind that other than figure legends you must NOT have the same sentences in your report or problem set as another student. We want the work that you hand in to be **your own individual work**, based on the synthesis of **your** thoughts, questions and discussions concerning the experiment. **Any duplicate work will be penalized** and if you are caught will result in a failing grade for the class. UC Berkeley's cheating policy (<http://bulletin.berkeley.edu/academic-policies/#studentconductappealstext>) will be followed. If you are **uncertain what constitutes plagiarism or cheating**, go to: <http://campuslife.berkeley.edu/conduct/integrity>.

Grading

Module 1: Cellular Immunology	POINTS
Immunoprecipitation Lab report	60
Production of monoclonal antibodies Lab report	70
Participation	47
Journal club articles (2)	24
Jigsaw journal articles (2)	24
Quizzes	75
Midterm I	100
Module 2: Molecular Immunology	
Data analysis and problem sets (4 or 5 assignments)	160
Participation	45
Quizzes and in class exercises	75
Journal Club	20
Midterm II	100
TOTAL	800

Student Honor Code

The student community at UC Berkeley has adopted the following Honor Code:

“As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others.” The hope and expectation is that you will adhere to this code.

Collaboration and Independence: Reviewing lecture and reading materials and studying for exams can be enjoyable and enriching things to do with fellow students. This is recommended. However, unless otherwise instructed, lab reports are to be completed independently and materials submitted as lab reports should be the result of one's own independent work.

Cheating: A good lifetime strategy is always to act in such a way that no one would ever imagine that you would even consider cheating. Anyone caught cheating on an exam in this course will receive a failing grade in the course and will also be reported to the University Center for Student Conduct. In order to guarantee that you are not suspected of cheating, please keep your eyes on your own materials and do not converse with others during exams. Do not discuss the exam with anyone else in the class until everyone has taken the exam.

Plagiarism: To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action. For additional information on plagiarism and how to avoid it, see, for example: <http://gsi.berkeley.edu/teachingguide/misconduct/prevent-plag.html>. All lab reports will be checked for plagiarism by using Turnitin that compares reports to other students in the class and to websites. Use your own words unless you are using a direct quote.

Academic Integrity and Ethics: Cheating on exams and plagiarism are two common examples of dishonest, unethical behavior. Honesty and integrity are of great importance in all facets of life. They help to build a sense of self-confidence, and are key to building trust within relationships, whether personal or professional. There is no tolerance for dishonesty in the academic world, for it undermines what we are dedicated to doing – furthering knowledge for the benefit of humanity.

Your experience as a student at UC Berkeley is hopefully fueled by passion for learning and replete with fulfilling activities. We appreciate that being a student may be stressful. There may be times when there is temptation to engage in some kind of cheating in order to improve a grade or otherwise advance your career. This could be as blatant as having someone else sit for you in an exam or submitting a written assignment that has been copied from another source. It could be as subtle as glancing at a fellow student's exam when you are unsure of an answer to a question and are looking for some confirmation. One might do any of these things and potentially not get caught. However, if you cheat, no matter how much you may have learned in this class, you have failed to learn perhaps the most important lesson of all.

Safe, Supportive, and Inclusive Environment

Whenever a faculty member, staff member, post-doc, or GSI is responsible for the supervision of a student, a personal relationship between them of a romantic or sexual nature, even if consensual, is against university policy. Any such relationship jeopardizes the integrity of the educational process. Although faculty and staff can act as excellent resources for students, you should be aware that they are required to report any violations of this campus policy. If you wish to have a confidential discussion on matters related to this policy, you may contact the Confidential Care Advocates on campus for support related to counseling or sensitive issues. Appointments can be made by calling (510) 642-1988.

The classroom, lab, and work place should be safe and inclusive environments for everyone. The Office for the Prevention of Harassment and Discrimination (OPHD) is responsible for ensuring the University provides an environment for faculty, staff and students that is free from discrimination and harassment on the basis of categories including race, color, national origin, age, sex, gender, gender identity, and sexual orientation. Questions or concerns? Call (510) 643-7985, email ask_ophd@berkeley.edu, or go to <http://survivorsupport.berkeley.edu/>.

Diversity statement

The University of California considers the diversity of its students, faculty, and staff to be a strength and critical to its educational mission. Our community is enriched and enhanced by diversity along a number of dimensions, including race, ethnicity, national origins, gender, sexuality, class and religion. We welcome all our students in our class and hope that you always feel included. If there are aspects of the instruction within this course that result in barriers to your inclusion, please let us know. Your suggestions are encouraged and appreciated.

DSP accommodations

Students who need academic accommodations, should request them from the Disabled Students' Program, 260 César Chávez Center, 642-0518 (voice or TTY), <https://dsp.berkeley.edu>. DSP is the campus office responsible for verifying disability-related need for academic accommodations, assessing

that need, and for planning accommodations in cooperation with students and instructors as needed and consistent with course requirements.

We welcome students with disabilities in this course and will provide the accommodations in your DSP letter. Please discuss your accommodations with an instructor during the first weeks of the semester. We are here to help you.

Services for Students Encountering Food and Housing Insecurity

If you are in a situation where you are facing challenges in gaining access to nutritious, affordable food during the semester, you can find help by going to the UC Berkeley basic needs program at <http://basicneeds.berkeley.edu/> or the UC Berkeley Food Pantry at <https://pantry.berkeley.edu/>. You may be eligible for the CalFresh program as well.