

MIMG C234 / C134: Ethics and Accountability in Biomedical Research Syllabus and Requirements, Spring Quarter 2024

C234 is a graduate-level course covering topics of scientific integrity and ethics. This or an equivalent course is required of first-year PhD students in the UCLA Graduate Programs in Bioscience and other departments in bioscience disciplines. This course satisfies the requirements for training in Responsible Conduct of Research for predoctoral and postdoctoral trainees supported by federal training grants or individual fellowships. C134 is offered to senior-level undergraduates with faculty-supervised research experience (199 or equivalent) and instructor permission (request PTE). Course grading is P/F (undergrad) or S/U (graduate). **Postdocs enroll through this online form: [Registration \(http://tinyurl.com/C234-RCR-S24\)](http://tinyurl.com/C234-RCR-S24)**

Class Meetings

C234 is offered in two sections during Spring quarter. Class sessions will begin in the lecture room, (see maps-pgs.7-8 and schedule-pg.9). Classes with discussion groups will include smaller breakout groups moving to nearby conference rooms during class time.

Section	Day	Time	Room	Dates	Website
1	Tuesday	12:00PM - 2:00PM	CHS 13-105	April 2 – June 4	https://bruinlearn.ucla.edu
2	Friday	10:00AM - 12:00PM	CHS 13-105	April 5 – June 7	https://bruinlearn.ucla.edu

Contact Information

Email Dr. Talton for: <ul style="list-style-type: none">• Setting up phone or Zoom appointments• Bringing up issues/concerns	You can reach Lynn Talton at: LTalton@mednet.ucla.edu
Email Course Assistant for: <ul style="list-style-type: none">• Requesting to switch sections for a week• Planning to be absent, request make-up• Turning in make-up assignments	You can reach the course assistant at: GradPostdoc@mednet.ucla.edu (not monitored as frequently on evenings or weekends)
Dr. Talton's "Office Hour" Options I am very open to students who would like to speak to me one-on-one. I will arrive to class early to provide an opportunity for students to ask questions. If you would like to speak more privately, you can Email to set up a time for an individual call, Zoom, or in-person meeting.	

Class Requirements (More details on page 5)

To receive a passing grade or a certificate of completion (postdocs/fellows), you should:

1. Attend and participate in every class meeting (at either Tuesday or Friday class)
2. If you must miss a class, make up approved absence with a written assignment (maximum 2)

Reading assignments

Will be posted on course website, including selections from:

1. *On Being a Scientist: A Guide to Responsible Conduct in Research*, National Academy of the Sciences
2. *Making the Right Moves: A Practical Guide to Scientific Management for Postdocs and New Faculty*, Burroughs Wellcome Fund, Howard Hughes Medical Institute
3. Additional articles: links to articles will be provided through the course website.

Outline of Discussion Topics for each of the 2-hour classes

Meeting	Topic	Assignments
<p>April 2 Tuesday class or April 5 Friday class</p>	<p style="text-align: center;">Introduction, Scientists as Responsible Members of Society, Social and Environmental Impacts of Science, and Contemporary Ethical Issues in Biomedical Research</p> <p>Introduction: Review class organization, reading and small group discussion assignments and discuss course written assignment.</p> <p>Begin discussion of the importance of ethics and integrity in scientific research, the role of scientists as responsible members of society, the social and environmental impacts of science and contemporary ethical issues in biomedical research.</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • None
<p>April 9 Tuesday class or April 12 Friday class</p>	<p style="text-align: center;">Mentor/Mentee Responsibilities and Laboratory Safety for Researchers</p> <p>Arguably, the mentor relationship is the most critical relationship of a trainee's career. We will discuss potential mentorship issues and strategies for handling different dilemmas. We will also consider laboratory safety for researchers. What is the division of responsibility between research trainees and PIs for setting and upholding laboratory safety measures?</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • <i>Compact Between Biomedical Graduate Students & Their Research Advisors</i>, AAMC • <i>Lab Duties and Responsibilities</i>, UCLA EH&S • R. Van Noorden. (2011). A Death in the Lab. <i>Nature</i>, 472: 270-271. <p>Prepare Perspective Assignment</p> <ul style="list-style-type: none"> • Week 2 - Case-Studies on Mentorship and Lab Safety
<p>April 16 Tuesday class or April 19 Friday class</p>	<p style="text-align: center;">Conflicts of Interest and Dual Use Research of Concern</p> <p>Everyone has biases, but when reporting research results we try to present them as truthfully as possible. When do you need to disclose your conflicts of interest and under what circumstances are biases too strong to be managed?</p> <p>Dual Use Research of Concern is life sciences research that can be reasonably anticipated to provide knowledge, information, products, or technologies that could be directly misapplied to pose a significant threat to public health and safety. How can we promote important scientific progress while minimizing the risk of misuse of findings?</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • <i>On Being a Scientist - Competing Interests (43-47)</i> • <i>Dual Use Research of Concern (DURC) Summary Sheet</i> <p>Prepare Perspective Assignment</p> <ul style="list-style-type: none"> • Week 3 - Case-Studies on Conflicts of Interest and DURC

Meeting	Topic	Assignments
<p>April 23 Tuesday class</p> <p>or</p> <p>April 26 Friday class</p>	<p>Responsible Publication and Peer Review</p> <p>What is the process for determining which articles get published and by which journals? Is it fair? What is the editor's role? Are journals doing enough to prevent plagiarism and data manipulation?</p> <p>A major tenet of academic research is the peer review process. Can this process ever really be unbiased and how does it affect publications and grant applications? How can you be a responsible peer reviewer?</p> <p>Guest Speaker: Dr. Paul Weiss, Editor-in-Chief, ACS Nano</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • <i>Council of Science Editors' White Paper on Promoting Integrity in Scientific Journal Publications</i> • <i>Selection 1: Editorial Responsibilities (pgs. 8-15)</i> • <i>Selection 2: Peer Review (pgs. 31-35)</i> <p>Prepare Perspective Assignment</p> <ul style="list-style-type: none"> • Week 4 - Publication and Peer Review
<p>April 30 Tuesday class</p> <p>or</p> <p>May 3 Friday class</p>	<p>Authorship and Collaborative Research</p> <p>Authorship is often the yardstick by which we measure academic success. What are appropriate guidelines for determining authorship and how do you handle conflict around authorship? Research collaborations are critical to modern interdisciplinary research. How are collaborations with colleagues, funding agents and industry handled ethically?</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • <i>ICMJE (2018) - Uniform Requirements for Manuscripts Submitted to Biomedical Journals: (Authorship and Contributorship Requirements) (2-3)</i> • <i>On Being a Scientist - Authorship & Allocation of Credit (35-38)</i> • <i>Making the Right Moves - Setting up Collaborations (201-210)</i> <p>Prepare Perspective Assignment</p> <ul style="list-style-type: none"> • Week 5 – Authorship and Collaborative Research
<p>May 7 Tuesday class</p> <p>or</p> <p>May 10 Friday class</p>	<p>Research Misconduct and Questionable Research Practices</p> <p>In what ways is it inappropriate to manipulate data? How do you avoid inadvertently mishandling your data? What constitutes misconduct and how do you respond if you see evidence of such behavior?</p> <p>In class Activity: US Dept of HHS-ORI "The Lab" interactive movie on research misconduct</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • <i>On Being a Scientist - Misconduct Selections: Treatment of Data, Mistakes and Negligence, Research Misconduct, Responding to Suspected Violations of Professional Standards (8-23) and Discussion of Case Studies (51-53)</i> <p>Prepare Perspective Assignment</p> <ul style="list-style-type: none"> • Week 6 – Research Misconduct

Meeting	Topic	Assignments
<p>Tuesday class May 14</p> <p>or</p> <p>Friday class May 17</p>	<p>Managing Data, Intellectual Property and Technology Transfer in a University Setting</p> <p>Who owns the data that you produce at UCLA? What are your responsibilities in terms of managing or protecting that data and how should you share data?</p> <p>What are the intellectual property policies at UCLA (and most institutions) that may apply to trainees and how do they protect the interests of the researcher, university, and funding source? What should trainees consider about future potential commercialization when planning their research? What is technology transfer and how does it apply to intellectual property?</p> <p>Speaker: Charan Arora, JD, PhD, Chief Intellectual Property Officer, UCLA Technology Development Group</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • <i>Making the Right Moves - Data Management and Lab Notebooks (Ch. 8)</i> • <i>Making the Right Moves - Understanding Technology Transfer (Ch.11)</i> <p>Prepare Perspective Assignment</p> <ul style="list-style-type: none"> • Week 7 – Managing Data and IP
<p>Tuesday class May 21</p> <p>or</p> <p>Friday class May 24</p>	<p>Animal Welfare and Human Subjects in Biomedical Research</p> <p>Bioscience research often involves human or animal subjects. What are the current ethical standards of the US scientific community regarding the protection of humans and animals in research? How do investigators decide when use of these subjects is required? What policies are in place at UCLA to protect the subjects and ensure that the research complies with US, CA, and UCLA policies?</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • <i>N.H. Steneck. (2007). ORI: Intro to the Responsible Conduct of Research; Protection of Human Subjects (35-45), Welfare of Laboratory Animals (51-61)</i> <p>Prepare Perspective Assignment</p> <ul style="list-style-type: none"> • Week 8 – Animal and Human Subject Welfare
<p>Tuesday class May 28</p> <p>or</p> <p>Friday class May 31</p>	<p>Civility, Wellness, Discrimination and Support</p> <p>Graduate students and postdocs may experience issues of incivility, harassment, discrimination, concerns about wellness, and need for support during their training. These experiences could be personal or as a mentor or colleague to the affected individual. How can you help? How can students, postdocs and faculty access support for these situations? In what ways can UCLA help foster resilience in research trainees?</p> <p>Special Guests: Belen Estrella and Jaine Park, Academic Case Managers for Grad Students & Postdocs</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • None
<p>June 4 Tuesday class</p> <p>or</p> <p>June 7 Friday class</p>	<p>Small-Groups Create a Case-Study Course Wrap-up</p> <p>In class Activity</p> <p>Each small group will develop their own case-study and present it to the class.</p>	<p>Reading Assignment</p> <ul style="list-style-type: none"> • None

Course Description

This course introduces standard and acceptable practices in the biomedical and life sciences research, with emphasis on responsibilities in research activities such as record keeping, data treatment, authorship, peer review, mentoring, laboratory safety and participation in research that engages human or animal subjects. Additional topics include misconduct, collaborative research, conflicts of interest, ownership of data and other intellectual property, maintaining a safe and inclusive research training environment, and potential ethical issues related to the environmental, social and health impacts of research. The course consists of ten lecture-discussion sessions of two hours each. Classes will begin with a brief introduction of the topic by instructor or an invited expert speaker, followed by a large group discussion. The class will then break into smaller groups for in-depth discussion of case studies assigned for the day, led by a faculty discussion leader.

Case-Study Discussion Groups

Discussions groups will take place during class time. Pre-assigned small groups of students will join a faculty facilitator in a conference room in CHS Building (see schedule, page 9). The facilitators are faculty volunteers who will be different each week. During these discussions, each student will be assigned 1-2 points-of-view from one of the case-studies to present to the group.

Discussion Attendance: You will be assigned to a specific discussion group. Your group will remain the same throughout the quarter. While there, the discussion leader will pass around a sign-in sheet on which you must provide your signature to indicate your presence in the discussion. If you do not sign the sheet, you will be responsible for completing a **Case-Study Discussion Make-up Assignment**, as described below.

Individual Discussion Assignment: You will be assigned to present the perspective of one of the people described in one or more of the week's case-studies. You may incorporate foundation material from the readings into your presentations as appropriate. The student representing the first listed perspective will briefly summarize the case and identify the problem(s) revealed by the case description. The class members representing the other perspectives will then briefly state their views, using the questions at the end of the case as a guide. The faculty facilitators will then invite comments from others and attempt to develop a group consensus view on how the problem presented in the case can or should be resolved.

Options for a Missed Class

Since this is a discussion-based course, participation in all the case-study discussions and classes is a requirement for passing the course. If you must miss a class, we have provided two options for making up the assignment:

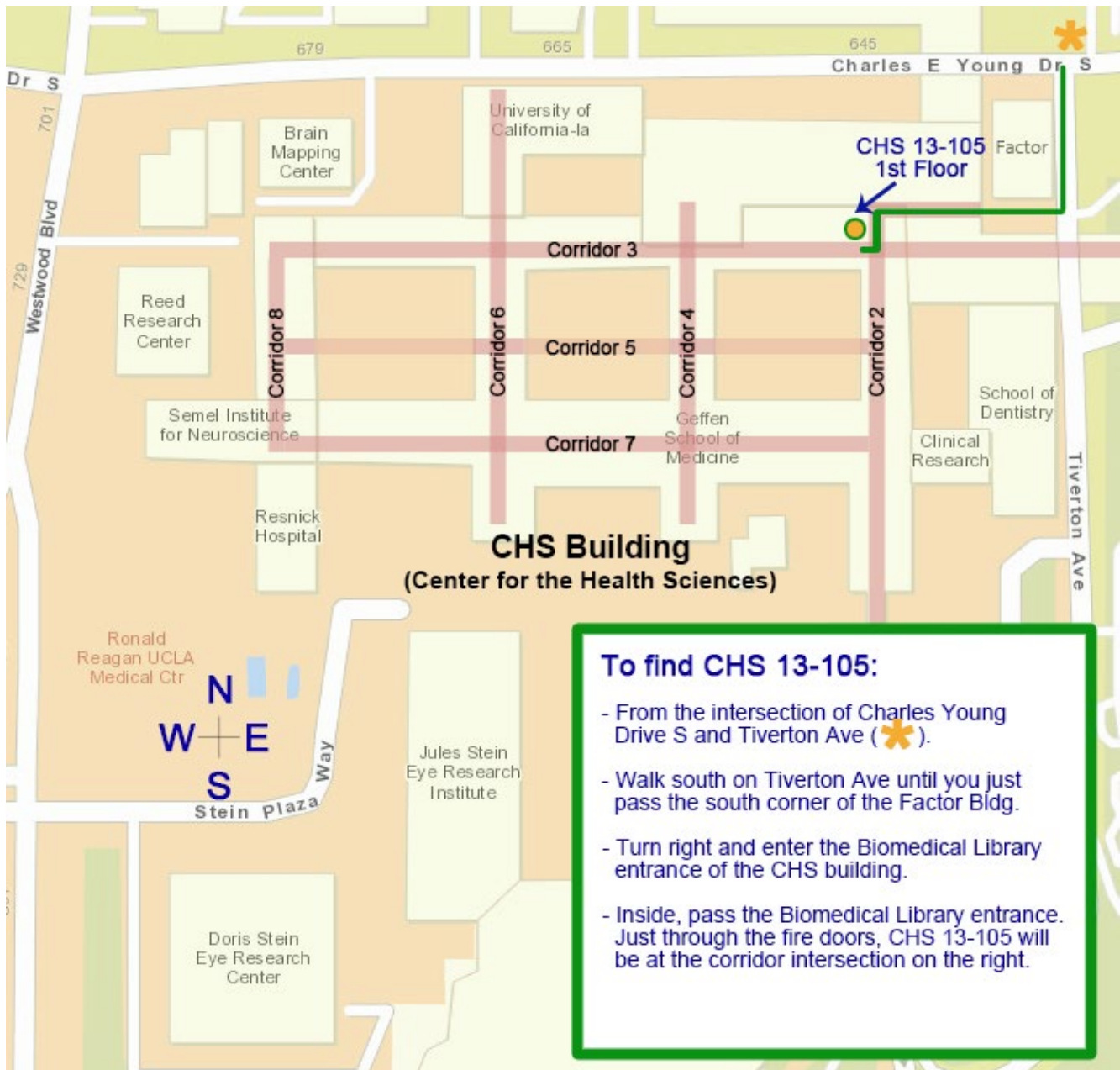
- 1. Attending the alternate class day:** You may attend the other class with prior approval of the instructor. For approval, email: GradPostdoc@mednet.ucla.edu, state your name and usual session (Tues/Fri) and request a temporary assignment to the alternate class.
- 2. Prepare the Case-Study Discussion Written Make-up Assignment:** For the first missed discussion, students will be asked to submit make-up case reports for **three** of the week's case studies, including the case assigned to you for that day. The second absence will require make-up case reports from **ALL** of the missed week's case studies. Students who miss two or more classes may be required to repeat the course. Each written case report should begin with a summary of the problem revealed by the case description and explore possible solutions to the dilemma presented there. It should be prepared in Microsoft Word format in Arial, 11-point font. Each written case report should be one, single-spaced page in length, headed with the case identifier and include your name, the class date of the discussion, and your Discussion Group. Written reports should be emailed to GradPostdoc@mednet.ucla.edu with the subject line: "Case Study Make-Up Assignment" and are due **no later than one week** after the missed class.

Course Learning Objectives

Topics	Learning Outcomes
Mentoring Responsibilities and Relationships	Students should be familiar with the expectations for both the mentor and mentee in the training relationship. Students should have learned strategies for approaching this understanding, including IDPs, compacts and conversational tools.
Safe Laboratory Practices	Students should understand policies promoting and protecting laboratory safety and biosafety at UCLA, and the role of the mentee and mentor in creating a culture of safety.
Data: acquisition, tools; management, sharing, security and ownership	Students should understand how to appropriately record, label and store data and use data tools to back up and facilitate sharing. Students should understand data ownership, data security, ethical data use, and the responsibility to make their data usable by others.
Intellectual Property	Students should understand the basics of intellectual property around data, publications, and inventions; including sharing appropriate credit, managing university IP and transferring technology between labs, companies, and funders.
Conflicts of Interest and Conflicts of Commitment	Students should be able to describe several types of personal, professional, and financial conflicts of interest or commitment common in research institutions and collaborations or relationships with industry or other funding sources. Students should know how potential conflicts of interest are reviewed, and the types of mitigation plans that may result.
Research Misconduct and Handling Misconduct	Students should be able to describe common types of research misconduct, avenues for reporting potential misconduct or negligence, and identify questionable research practices.
Authorship	Students should understand how authorship is determined in their work groups as well as the scientific community standards for contributions that merit authorship. They should know how to discuss authorship with mentors and collaborators and support appropriate attribution of credit in their projects.
Collaborative Research	Students should be able to demonstrate how to set up a collaboration using a collaboration agreement, and the factors that should be considered within. They should know how to address changes in the agreement as research evolves and how to participate as a trainee in a larger collaboration. Special topics include protecting the research/education mission in collaborations with industry and the challenges of international collaborations.
Responsible Publication	Responsible publication includes appropriate citation, avoiding plagiarism, following appropriate guidelines for images, being clear with readers and reviewers regarding originality, the strength of effects, sharing lines of evidence that do not support hypotheses in addition to those that do, appropriate use of statistical evaluation of data, methodology that promotes rigor, and data sharing. Students should be able to recognize and advocate for these practices in their projects.
Peer Review	Students should understand the strengths and weaknesses of the peer review process, the confidentiality required of reviewers, how to appropriately assist in a review with a mentor, when to disclose conflicts of interest, and who to approach with peer review concerns.
Human and Animal Research Subjects	Students should understand the oversight of Vertebrate Animal and Human Subject Research and the guiding ethical principles of both types of research.
Safe and Inclusive Research Environments	Students should understand the expectations for civility, inclusivity, and respect in research environments and how to support a culture of safety and inclusivity. Students will learn where to report and get support for issues of incivility, harassment, discrimination, and concerns about mental or physical wellness.
Broader Ethical Issues in Scientific Research Practice	Throughout the course, students will discuss the scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research. Students should be able to argue ethical opinions on the current state and future direction of these issues as technologies and guardrails evolve.

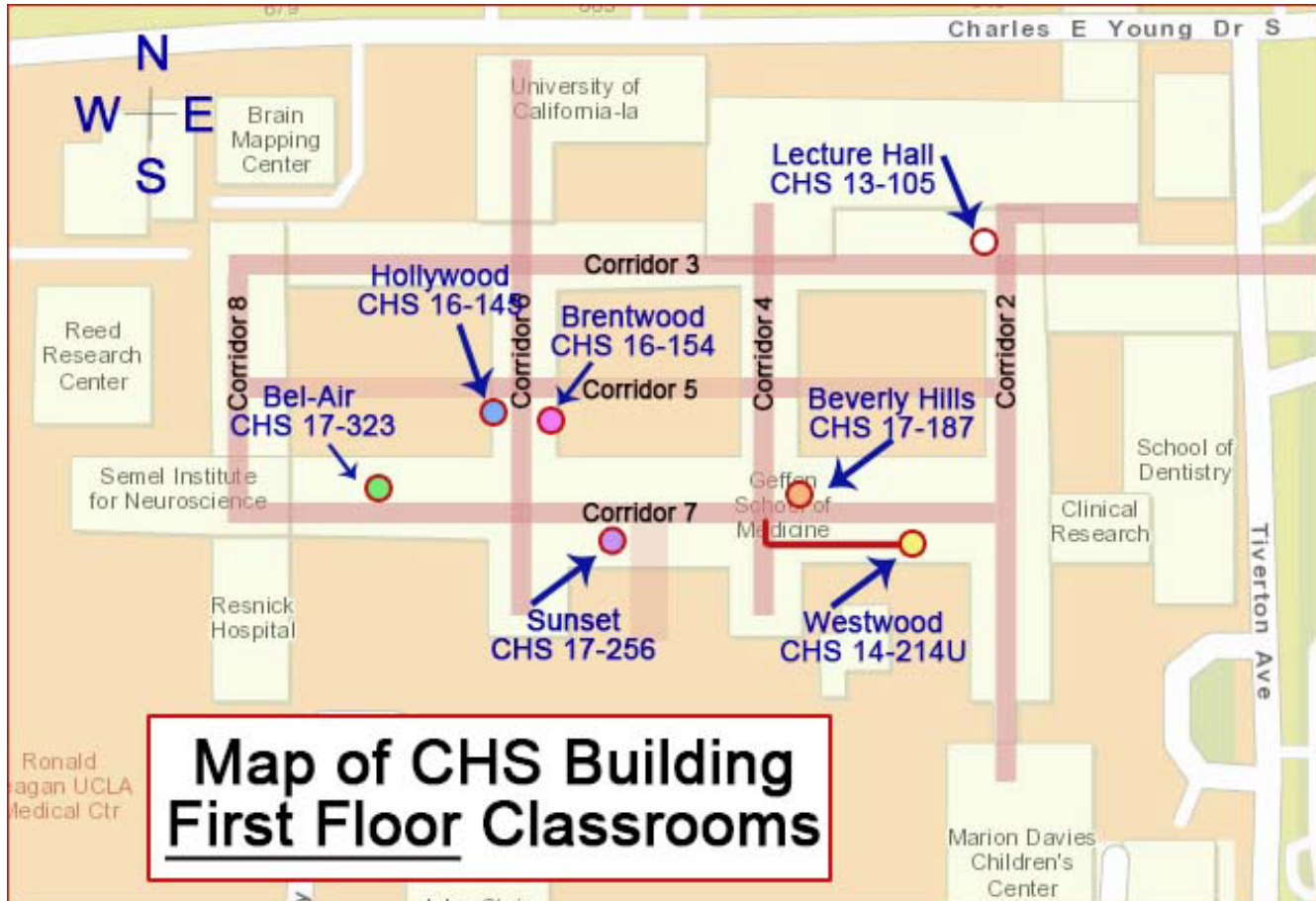
Map to the Lecture Hall

(class will always start in a lecture hall – see schedule pg. 9)



Map to the CHS Conference Rooms

(class will always start in the lecture hall, but will later divide into smaller discussion groups on Weeks 2-8 (April 11-May 26) – see schedule pg. 10)



Map of CHS Building First Floor Classrooms

For Bel-Air - CHS 17-323:

- Make your way to the intersection of Corridors 6 and 7 on CHS Building 1st Floor (look for room numbers that consist of 17-xxx or 16-xxx).
- Bel-Air Conference room is west on Corridor 7 (toward Semel Inst), 17-323.

For Brentwood - CHS 16-154

and for

For Hollywood - CHS 16-145:

- Make your way to the intersection of Corridors 6 and 7 on CHS Building 1st Floor (look for room numbers that consist of 17-xxx or 16-xxx).
- Brentwood Conference room is south on the right side of Corridor 6 (toward Pub Health), 16-154.
- Hollywood Conference room is south on the left side of Corridor 6 (toward Pub Health), 16-145.

For Westwood - CHS 14-214U:

- Make your way to the intersection of Corridors 4 and 7 on CHS Building 1st Floor (look for room numbers that consist of 17-xxx or 14-xxx).
- On Corridor 4, just south of Corridor 7, there are a suite of rooms numbered 14-214x.
- Westwood Conference Room is at the end of that hallway, 14-214U.

For Beverly Hills - CHS 17-187:

- Make your way to the intersection of Corridors 4 and 7 on CHS Building 1st Floor (look for room numbers that consist of 17-xxx or 14-xxx).
- Beverly Hills is on the corner, 17-187.

For Sunset - CHS 17-256

- On corridor 7, opposite the main south entrance to Switzer Plaza (and wall of DGSOM screens)
- Sunset is on the southwest corner by the screens

C134/C234 Room Assignments, Spring 2024

Tuesday Section

	April 4	April 11	April 18	April 25	May 2	May 9	May 16	May 23	May 30	June 6
CLASS STARTS HERE →	CHS 13-105 12:00pm	CHS 13-105 12:00pm	CHS 13-105 12:00pm	CHS 13-105 12:00pm	CHS 13-105 12:00pm	CHS 13-105 12:00pm	CHS 13-105 12:00pm	CHS 13-105 12:00pm	CHS 13-105 12:00pm	CHS 13-105 12:00pm
THEN, BREAKS INTO SMALL GROUPS AND MOVES TO ↓										
Small Group 1	Stay in CHS 13-105	Hollywood CHS 16-145 12:40pm-2pm	Hollywood CHS 16-145 12:40pm-2pm	Hollywood CHS 16-145 12:40pm-2pm	Hollywood CHS 16-145 12:40pm-2pm	Hollywood CHS 16-145 12:40pm-2pm	Hollywood CHS 16-145 12:40pm-2pm	Hollywood CHS 16-145 12:40pm-2pm	Stay in CHS 13-105	Hollywood CHS 16-145 12:40pm-2pm
Small Group 2	Stay in CHS 13-105	Westwood CHS 14-214U 12:40m-2pm	Westwood CHS 14-214U 12:40m-2pm	Westwood CHS 14-214U 12:40m-2pm	Westwood CHS 14-214U 12:40m-2pm	Westwood CHS 14-214U 12:40m-2pm	Westwood CHS 14-214U 12:40m-2pm	Westwood CHS 14-214U 12:40m-2pm	Stay in CHS 13-105	Westwood CHS 14-214U 12:40m-2pm
Small Group 3	Stay in CHS 13-105	Brentwood CHS 16-154 12:40pm-2pm	Brentwood CHS 16-154 12:40pm-2pm	Brentwood CHS 16-154 12:40pm-2pm	Brentwood CHS 16-154 12:40pm-2pm	Brentwood CHS 16-154 12:40pm-2pm	Brentwood CHS 16-154 12:40pm-2pm	Brentwood CHS 16-154 12:40pm-2pm	Stay in CHS 13-105	Brentwood CHS 16-154 12:40pm-2pm
Small Group 4	Stay in CHS 13-105	Beverly Hills CHS 17-187 12:40pm-2pm	Beverly Hills CHS 17-187 12:40pm-2pm	Beverly Hills CHS 17-187 12:40pm-2pm	Beverly Hills CHS 17-187 12:40pm-2pm	Beverly Hills CHS 17-187 12:40pm-2pm	Beverly Hills CHS 17-187 12:40pm-2pm	Beverly Hills CHS 17-187 12:40pm-2pm	Stay in CHS 13-105	Beverly Hills CHS 17-187 12:40pm-2pm
Small Group 5	Stay in CHS 13-105	Bel-Air CHS 17-323 12:40pm-2pm	Bel-Air CHS 17-323 12:40pm-2pm	Bel-Air CHS 17-323 12:40pm-2pm	Bel-Air CHS 17-323 12:40pm-2pm	Bel-Air CHS 17-323 12:40pm-2pm	Bel-Air CHS 17-323 12:40pm-2pm	Bel-Air CHS 17-323 12:40pm-2pm	Stay in CHS 13-105	Bel-Air CHS 17-323 12:40pm-2pm

Friday Section

	April 7	April 14	April 21	April 28	May 5	May 12	May 19	May 26	June 2	June 9
CLASS STARTS HERE →	CHS 13-105 10:00am	CHS 13-105 10:00am	CHS 13-105 10:00am	CHS 13-105 10:00am	CHS 13-105 10:00am	CHS 13-105 10:00am	CHS 13-105 10:00am	CHS 13-105 10:00am	CHS 13-105 10:00am	CHS 13-105 10:00am
THEN, BREAKS INTO SMALL GROUPS AND MOVES TO ↓										
Small Group 1	Stay in CHS 13-105	Hollywood CHS 16-145 10:40am-12pm	Hollywood CHS 16-145 10:40am-12pm	Hollywood CHS 16-145 10:40am-12pm	Hollywood CHS 16-145 10:40am-12pm	Hollywood CHS 16-145 10:40am-12pm	Hollywood CHS 16-145 10:40am-12pm	Hollywood CHS 16-145 10:40am-12pm	Stay in CHS 13-105	Hollywood CHS 16-145 10:40am-12pm
Small Group 2	Stay in CHS 13-105	Westwood CHS 14-214U 10:40am-12pm	Westwood CHS 14-214U 10:40am-12pm	Westwood CHS 14-214U 10:40am-12pm	Westwood CHS 14-214U 10:40am-12pm	Westwood CHS 14-214U 10:40am-12pm	Westwood CHS 14-214U 10:40am-12pm	Westwood CHS 14-214U 10:40am-12pm	Stay in CHS 13-105	Westwood CHS 14-214U 10:40am-12pm
Small Group 3	Stay in CHS 13-105	Brentwood CHS 16-154 10:40am-12pm	Brentwood CHS 16-154 10:40am-12pm	Brentwood CHS 16-154 10:40am-12pm	Brentwood CHS 16-154 10:40am-12pm	Brentwood CHS 16-154 10:40am-12pm	Brentwood CHS 16-154 10:40am-12pm	Brentwood CHS 16-154 10:40am-12pm	Stay in CHS 13-105	Brentwood CHS 16-154 10:40am-12pm
Small Group 4	Stay in CHS 13-105	Beverly Hills CHS 17-187 10:40am-12pm	Beverly Hills CHS 17-187 10:40am-12pm	Beverly Hills CHS 17-187 10:40am-12pm	Beverly Hills CHS 17-187 10:40am-12pm	Beverly Hills CHS 17-187 10:40am-12pm	Beverly Hills CHS 17-187 10:40am-12pm	Beverly Hills CHS 17-187 10:40am-12pm	Stay in CHS 13-105	Beverly Hills CHS 17-187 10:40am-12pm
Small Group 5	Stay in CHS 13-105	Bel-Air CHS 17-323 10:40am-12pm	Bel-Air CHS 17-323 10:40am-12pm	Bel-Air CHS 17-323 10:40am-12pm	Bel-Air CHS 17-323 10:40am-12pm	Bel-Air CHS 17-323 10:40am-12pm	Bel-Air CHS 17-323 10:40am-12pm	Bel-Air CHS 17-323 10:40am-12pm	Stay in CHS 13-105	Bel-Air CHS 17-323 10:40am-12pm