



## Quantitative Biology Honors Thesis

Units: 2.0

Spring 2024

3:30 - 5:10pm Mondays

Location: RRI 421

**Instructor:** Prof. Adam MacLean

**Office:** RRI 403H

**Office Hours:** Tue 1-2pm or by appointment

**Contact Info:** 213-740-7055, [macleana@usc.edu](mailto:macleana@usc.edu)

### Course Description

The Department of Quantitative and Computational Biology offers a Quantitative Biology (QBIO) major, offering students rigorous background in the quantitative sciences and their application to biology, encompassing methods from computer science, statistics and applied mathematics that are essential for modern data-driven biological sciences. This course is a required course for students majoring in Quantitative Biology with Honors distinction (<http://qbio.usc.edu>).

**Course Objectives:** The goal of this course is to support, stimulate and evaluate the QBIO honors student writing her/his honors thesis.

**Expectations:** QBIO 494 students are expected to participate in the weekly QBIO honors class as a means of maintaining communication with the course faculty and other honors students, and to ask questions and exchange ideas based on the oral presentations by fellow honors students.

The QBIO honors thesis committee for each student in class constitutes the course instructor, Students may invite their faculty research advisor to be part of their honors thesis committee. This committee will advise the student during the thesis preparation and the course instructors will have primary responsibility for grading the honors thesis. Each QBIO 494 student will discuss their thesis with their committee members and their peers as part of honors thesis class. The honors thesis will be a research paper based on the student's research project. The class participants need to confirm their research project with the course instructors within the initial 4 weeks of the semester.

**Course Requirements:** Each QBIO 494 student will give one oral presentation presenting the outline of his/her honors thesis early in the semester, and a second presentation on his/her honors thesis. This second oral presentation (thesis defense) will be presented to the Honors Seminar at or near the end of the semester. Students are encouraged to invite their research advisers to attend their thesis defense. Students will participate actively in weekly discussions on writing, editing, and presentation skills as they develop their thesis in class. Students will also offer peer-based feedback during weekly discussions.

**Honors Thesis:** The finished thesis must be submitted to the instructors by agreed deadline. The student will also supply to the QBIO 494 instructors a final copy of her or his thesis

following its defense, so it can be added to a permanent collection of Honors Theses in Quantitative Biology.

**Grading:** Course grades will be based on presentations, the student's honors thesis, and class participation as follows:

---

% of Grade	Criteria
15 %	Presentation 1 (overview of student's honors thesis)
30 %	Presentation 2 (honors thesis defense)
40 %	Honors Thesis (written document as evaluated by honors committee)
15 %	Participation, discussion in class, and peer feedback

---

### **Schedule**

**1/13 Welcome & Introductions** – Goals, expectations, project assignments

**1/20 No class: MLK Day**

**1/27 Discussion** – How to write a scientific paper part I

**2/3 Discussion** – How to write a scientific paper part II

**2/10 Discussion** – How to read a scientific paper part I / Workshop discussion

**2/17 No class: Presidents Day**

**2/24 Present Paper Outlines I:**

**3/3 Present Paper Outlines II:**

**3/10 Present Paper Outlines III:**

**~ 3/17 Spring Recess ~**

**3/24 Discussion** – How to give a research talk

**3/31 Discussion** – workshop and thesis writing

**4/7 Present Honors Thesis Research I:**

**4/14 Present Honors Thesis Research II:**

**4/21 Present Honors Thesis Research III:**

**4/28 Workshop** – thesis writing

\*Please note that some reading assignments and homework due dates will be announced at a later time.

### **Statement for Observance of Religious Holidays:**

The university's policy grants students excused absences from class to observe religious holidays (<http://orl.usc.edu/religiouslife/holydays/absences.html>). In this case, please contact your instructor in advance to agree on alternative course requirements.

### **Statement for Students with Disabilities:**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to your instructor as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

### **Statement on Academic Integrity:**

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.

### **Statement on Academic Conduct and Support Systems**

#### **Academic Conduct:**

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, "Behavior Violating University Standards" [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, [policy.usc.edu/scientific-misconduct](http://policy.usc.edu/scientific-misconduct).

#### **Support Systems:**

*Student Health Counseling Services - (213) 740-7711 – 24/7 on call*

[engemannshc.usc.edu/counseling](http://engemannshc.usc.edu/counseling)

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

*National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call*

[suicidepreventionlifeline.org](http://suicidepreventionlifeline.org)

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call*

[engemannshc.usc.edu/rsvp](http://engemannshc.usc.edu/rsvp)

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

**Office of Equity and Diversity (OED) | Title IX - (213) 740-5086**

[equity.usc.edu](http://equity.usc.edu), [titleix.usc.edu](http://titleix.usc.edu)

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

**Bias Assessment Response and Support - (213) 740-2421**

[studentaffairs.usc.edu/bias-assessment-response-support](http://studentaffairs.usc.edu/bias-assessment-response-support)

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

**The Office of Disability Services and Programs - (213) 740-0776**

[dsp.usc.edu](http://dsp.usc.edu)

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

**USC Support and Advocacy - (213) 821-4710**

[studentaffairs.usc.edu/ssa](http://studentaffairs.usc.edu/ssa)

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

**Diversity at USC - (213) 740-2101**

[diversity.usc.edu](http://diversity.usc.edu)

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

**USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call**

[dps.usc.edu](http://dps.usc.edu), [emergency.usc.edu](http://emergency.usc.edu)

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

**USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call**

[Dps.usc.edu](http://Dps.usc.edu). Non-emergency assistance or information.