

BISC 493
Biology Honors Seminar
Units: 2
Spring 2020, Wed, Time: 12-12:50PM

Location: RRI (Ray R. Irani Hall), room 221

Instructor: John Tower, PhD

Office: RRI 219C

Office Hours: Tues 10-11:50

Contact Info: Email (preferred method for contact)

jtower@usc.edu

Emails typically returned within 48hrs.

Phone 213-740-5384

Course Description

The goal of this seminar is for students to gain exposure to experimental biological research and to develop the ability to communicate scientific ideas effectively. Students in BISC493 are expected to attend at least one biology-related research seminar each week, choosing from the many available at USC each week, including the weekly seminar series listed below. Students are expected to take notes at the seminar, conduct additional background readings on the topic, and then present a summary of the research seminar as a “chalk talk” presentation to the class. Each student will make two presentations.

| | | |
|-------------------------------------|------------------|-------------------|
| Marine & Environmental Biology | 12 noon Tuesday | AHF Torrey Web Rm |
| Molecular and Computational Biology | 12 noon Friday | RRI Auditorium |
| Neuroscience | 12:30 PM Tuesday | HNB Auditorium |
| Gerontology | 12 noon Thursday | GER 224 |
| QCB | 2-3 PM Thursday | RRI Auditorium |

Biology seminars are listed at <https://dornsife.usc.edu/bisc>. Choose a section of the Biological Sciences department (e.g. Molecular and Computational Biology) and then choose Seminars and Symposia. Gerontology seminars are listed at <https://gero.usc.edu/colloquium/>. There are also numerous seminars in departments on the USC Health Sciences Campus. Neighboring institutions (UCLA, Caltech, City of Hope) offer a wide selection of research seminars. All BISC493 students should be able to find at least one interesting seminar to attend each week. It is also permissible to access seminars that have been recorded and archived electronically.

Learning Objectives

Students are expected to gain practical experience in understanding a research seminar, taking notes, conducting background literature research, and making an oral research presentation.

Prerequisite: BISC 120Lg or BISC 121Lg; BISC 220Lg or BISC 221Lg.

Course Notes

Course materials (syllabus and presentation schedule) will be available on Blackboard: <https://blackboard.usc.edu/>. Please check this site frequently for course information and announcements.

Required Readings and Supplementary Materials

There are no specific required readings for this course. However, students are required to conduct background reading on the topic of the seminar they will present to the class. Any supplementary class materials will be posted on Blackboard.

Description and Assessment of Assignments

Class participation (15%): is based on asking questions and participating in discussion during presentations. Presentations (two at 40% each): will be graded on Introduction/literature review, Methods, Results, Discussion, Future Directions, overall clarity, and ability of the student to answer questions from the class. Final exam (5%): students are required to provide one written question or informed comment regarding the thesis presentations.

Grading Breakdown

| <u>Assignment</u> | <u>Points</u> | <u>% of Grade</u> |
|----------------------------|---------------|-------------------|
| Class participation | 15 | 15 |
| Presentation 1 | 40 | 40 |
| Presentation 2 | 40 | 40 |
| Final exam | 5 | 5 |
| Total | 100 | 100 |

Grading Scale (Example)

Course final grades will be determined using the following scale

| | |
|----|--------------|
| A | 95-100 |
| A- | 90-94 |
| B+ | 87-89 |
| B | 83-86 |
| B- | 80-82 |
| C+ | 77-79 |
| C | 73-76 |
| C- | 70-72 |
| D+ | 67-69 |
| D | 63-66 |
| D- | 60-62 |
| F | 59 and below |

Assignment Submission Policy

Students will sign up for two presentations at the first class meeting.

Grading Timeline

Grades for presentations will be available on Blackboard by the next class meeting.

Additional Policies

Attendance at each class is expected. Missed classes will result in loss of class participation points for that class meeting. It may be necessary to make changes to the syllabus during the semester.

Course Schedule: A Weekly Breakdown

| | Topics/Daily Activities | Readings and Homework | Deliverable/ Due Dates |
|--------------------------|---------------------------------------|-----------------------|------------------------|
| Week 1 Aug 28 | Sign-up for presentation dates | None | None |
| Week 2 Sept 4 | Student presentations | None | None |
| Week 3 Sept 11 | Student Presentations | None | None |
| Week 4 Sept 18 | Student presentations | None | None |
| Week 5 Sept 25 | Student presentations | None | None |
| Week 6 Oct 2 | Student presentations | None | None |
| Week 7 Oct 9 | Student presentations | None | None |
| Week 8 Oct 16 | Student presentations | None | None |
| Week 9 Oct 23 | Student presentations | None | None |
| Week 10 Oct 30 | Student presentations | None | None |

| | | | |
|--------------------------|------------------------------|--|---|
| | | | |
| Week 11 Nov 6 | Student presentations | None | None |
| Week 12 Nov 13 | Student presentations | None | None |
| Week 13 Nov 20 | Student presentations | None | None |
| Week 14 Nov 27 | HOLIDAY | None | None |
| Week 15 Dec 4 | Student presentations | None | None |
| Week 16 | Final exam | Students are required to provide one written question or informed comment regarding the presentations. | Date: For the date and time of the final for this class, consult the USC <i>Schedule of Classes</i> at classes.usc.edu . |

Helpful Hints for Oral Defense Presentations in BISC 494

Plan on giving a PowerPoint presentation lasting ~20 minutes, so there will be plenty of time for questions. Start by introducing yourself and giving your title and the name of your advisor.

1. Keep your mind on the big picture! Remember to give an overview at the beginning. Give a brief introduction to the topic, including why the question being investigated is interesting and important. This will help to peak the interest of your listeners at the start.
2. Aim for a crisp, well-organized, succinct presentation. You cannot possibly cover all the material that was given in a 1-hr seminar or in a research paper, so you have to decide what sub-section is most critical and interesting.

3. Frequently, speakers forget that people in the audience don't know much about the topic. Unless you are presenting a talk at a specialized scientific conference, you should remember that you're explaining complicated material to people who don't already know much about it. Put yourself in the listeners' place and try to anticipate what will confuse them.
4. Give at least 1 practice talk at least 1 day before your class presentation. If possible, practice in the same room where you will be presenting your talk. Since you'll be using PowerPoint, it is important that you rehearse and work out any technical difficulties. We have created a forum for you to practice being professional, so please take advantage of it.
5. Try not to read extensively from notes or to spend lots of time looking down; people will be a lot more interested if you look up and make eye contact with the audience.
6. Remember to take a giant step BACK at the end of your presentation and return to the big picture. Ask yourself: what is the main take-home message I want to convey?
7. It's a performance! Even if you don't feel particularly energetic and confident, you have to ACT AS IF YOU ARE, just for 30 minutes.
8. Try not to say "um" or "like" or "basically" multiple times during your talk. If you fall into the habit of repeating such words, it can be a difficult habit to break. It is very distracting to the audience to hear multiple repetitions of a single word, especially one that has little or no informational content.
9. The better you are at giving your 494 thesis presentation, the better you'll be at communicating in general, so this is great practice! No matter what your career goals, the ability to communicate verbally, in both formal and informal settings, will be an important skill for your professional success. Good luck, and have fun!

Writing Tips

- Include page numbers, even in your drafts.
- Standard abbreviations don't have to be defined and should be used throughout: 37°C; min for minute or minutes; h or hr for hour or hours; s or sec for second or seconds; µL or µl, mL or ml; M for molar; DNA; bp; kb; Da for dalton.
- A non-standard abbreviation must be introduced in parentheses on its first occurrence [e.g., "Wells were washed with phosphate-buffered saline (PBS)."] After the abbreviation has been introduced, it then must be used thereafter [e.g., "Samples were diluted with PBS."].
- An acronym is often composed of capital letters, but the spelled-out phrase does not contain capital letters, except for words that are always capitalized.
 RIGHT: based on fluorescence resonance energy transfer (FRET)
 WRONG: based on Fluorescence Resonance Energy Transfer (FRET)
 RIGHT: in the C-terminal domain (CTD) of RNA polymerase (RNAP)
- # is not a standard (publishable) abbreviation for "number." Use "no." or spell out "number," especially if you have room for it anyway.
- Use Greek letters where appropriate. Don't spell out the Greek letter (use µ, not mu).
 Don't use u instead of µ
- Use correct chemical notation, including subscripts and superscripts: H₂O, Mg²⁺ (not Mg++ or Mg+2).
- Italicize the names of restriction enzymes and scientific names of organisms. You don't have to italicize *in vivo*, *in vitro*, e.g., i.e., or et al.
- Italicize genes and genotypes, but not proteins or phenotypes.
- Put a space between a numerical value and the unit of measure: 2 mM, 10 min, 125 bp. However, if you are creating an adjective, put a hyphen between the numerical value and the unit of measure: "... 2 ml of culture in a 5-ml tube."

- You don't have to double space within a table, but the rest of the thesis should be double-spaced.
- A table should not have empty boxes. Use "Merge cells" to remove unwanted grid lines.
- Every column in a table has a heading that applies to all of the entries in that column.
- If a table presents the results of an experiment, it is customary to use the leftmost column for the independent variable. The dependent variable goes in column(s) further to the right.
- Don't let a page break fall within a table.
- For titles and table headings, choose a capitalization rule and stick to it throughout your thesis. The two most common rules are: (i) capitalize only the first word and proper nouns; and (ii) capitalize nouns, verbs, pronouns, adjectives and adverbs, but not articles, prepositions or abbreviations that should not be capitalized (mtDNA, tRNA).
- Don't capitalize chemical or biochemical words such as guanine, sodium acetate, buffer, immunoglobulin, nuclease, or polymerase. This does not apply to defined abbreviations, such as IgG, RNase A, DNA, Buffer Q, or PolB.
- In American English, a comma or period comes before the end-quote symbol. All other punctuation follows the end-quote symbol. For examples, see any issue of The New York Times, Los Angeles Times, or People magazine.
- Use American, not British spelling (e.g., color, not colour).
- Judicious use of color and shading can enhance clarity and understanding. However, color and shading are not helpful when they make it difficult to read the words. If you use color in your document, print it with a color printer.
- Don't write a sentence that, standing on its own, is false.

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. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

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

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

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, 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

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

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

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

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, 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

Non-emergency assistance or information.