

Biological Sciences 493/494
BIOLOGY HONORS SEMINAR and THESIS, FALL 2018

Faculty:

John Petruska	RRI 119B	740-5189	<petruska@usc.edu>
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Meetings: 12-1 PM Wednesday, RRI 221 (Ray Irani Hall for Molecular-Computational Building)

If you are unable attend a class for some compelling reason, please be sure to notify the above faculty by e-mail in advance. Course materials (syllabus, readings, etc.) will be available on Blackboard: <https://blackboard.usc.edu/>. Please check this site frequently for course information.

1. 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. One primary means for achieving this is for students to be involved in scientific research seminars at USC and elsewhere. Students enrolled in 493 are expected to get in the habit of attending research seminars, many of which will be announced at the weekly class meetings.

The usual time and places of departmental seminars are:

Marine Biology	12 noon Tuesday	AHF Torrey Web Room
Molecular Biology	12 noon Friday	RRI Auditorium
Neuroscience	12:30 p.m. Tuesday	HNB Auditorium

There are also many excellent research seminars in Chemistry, Physics, Gerontology, Biomedical Engineering and in departments on the USC Health Sciences Campus. Neighboring institutions (UCLA, Caltech, City of Hope, UCI) also offer a wide selection of research seminars which 493 students may also attend. Seminars throughout Southern California are listed at BiologyWest (<http://www.usc.edu/biowest/>). All 493 students should be able to find at least one interesting seminar to attend each week.

2. Each 493 student is required to give two to three oral presentations (chalk talks) during the semester.

Presentations are to be based on research seminars they attended. In addition, students may present a recent journal article from a leading scientific experimental journal for one of their chalk talks; the article must be approved by the course coordinator(s) in advance (see Guidelines below, p. 3). **However, at least one of the presentations made by each student must be based on a recent research seminar attended in person by that student.** A schedule for presentations will be made early in the semester. After the schedule is set changes to the schedule may be made among students with instructor approval only.

3. Course grades will be based both on presentations and class participation. Students are expected to learn to ask questions and exchange ideas freely. Students should be prepared to ask at least one good question by the end of each presentation. While grades lower than B are very rare in this course (after all, you are all honor students!), a solid A is given only for exceptional performance. Don't count on it.

4. The final exam period, 11:00 – 1:00 pm, Wednesday, Dec 5, will be used for 494 thesis presentations (if needed).

5. Students requesting academic accommodations based on a disability are required to register with Disabilities Services and Programs (DSP) each semester (see below, p. 3). A letter of verification for approved accommodations can be obtained from DSP when adequate documentation is filed. Please be sure the letter is delivered to one of the course faculty as early in the semester as possible.

Helpful Hints for Oral Presentations in 493

Introduce yourself to the class before writing (on the board) an abbreviated title of the research seminar you attended (or paper you read). Also, write or state the name of the researcher and the institution where the research was conducted. Plan on speaking for 10-12 min so as to leave plenty of time for questions. After that:

1. Keep your mind on the big picture! Remember to start with a very brief overview, indicating why the question being investigated is interesting and important, and providing some background to help understand the research results and to *peak the interest of your listeners!*

2. Aim for a well-organized, succinct presentation. It is **neither necessary nor appropriate** to give a “blow-by-blow” description; usually it’s preferable not to give too much detail, but instead concentrate on specific results and what they mean (how they are interpreted by the researcher). **Prioritize** in terms of deciding what information is critical for the specific audience you will be addressing (in this case, the audience is broad). Give a brief, clear exposition of the results and what they mean. You want to develop a coherent story that engages the interest of your audience so choose seminars that allow you to do this!
3. Keep in mind that you will not have time to present the results comprehensively – you will need to be selective. It is a good idea to start organizing your presentation by focusing on which results you wish to cover, i.e., those that you think are most interesting and/or important. Then back up and think about how your introduction and research description can help your listeners understand the specific results on which you have chosen to focus.
4. Be prepared – if you need to use notes, write a short (< 1 page) summary or outline in advance. Concentrate on an integrated story line; think about what questions you are hoping to get. **Give at least one practice talk 1-2 days before your class presentation.** Remember, you have only 10 minutes in which to convey your story – concentrate on giving specific information in a user-friendly way (especially regarding experimental results and what they mean).
5. Remember your 493 presentation is a “chalk talk” – so use the board and write clearly! It’s an excellent way to use the power of simple graphics, and will help to prevent people from falling asleep. Try **not** to read from notes or spend lots of time looking down; people will be a lot more interested if you look up and out into the audience.
6. Remember to take a giant step BACK at the end of your presentation (as at the beginning) – **FINISH** by fulfilling the interest of your listeners! Frequently speakers are so closely focused on details that they forget that the audience may not know much about the topic in general. Remember you are usually trying to explain something that people in the audience know little about. Ask yourself: *what is the main take-home message I want to convey?* The better you are at getting your information across, the better you will be at communicating in general, so this is great practice!
7. Last but not least: try not to say “um”, “like”, “basically” during your talk. If you fall into the habit of repeating such words as a crutch to “fill the empty space”, it can be difficult to break this habit (although it is possible!). It is very distracting to the audience to hear multiple repetitions of a single word (and one that has little or no informational content). Listeners are never bothered by short silences in a talk – but they tend to be driven crazy by lots of “ums”!
8. Good luck, and have fun!

Guidelines for choosing journal articles for an oral presentation in BISC 493

Remember that you need to get the article you wish to present approved in advance (by at least one week). You should choose an article from a top-rated journal whose articles are refereed before publication. Please email the full reference (authors, title, and journal publication info) to one or more of the faculty members in this course at least one week before your presentation.

What constitutes a “top” journal? For the purposes of this class, we use something called the “citation index” to judge whether a journal is “significant” or not (also known as the journal’s “impact factor”). The citation index can be found on the ISI Web of Knowledge found at <http://www.usc.edu/libraries/> under the tab “Additional Resources” (you have to be logged into the USC network to access this resource). It measures the number of times, on average, a paper published in this journal is cited subsequently in the literature. Nature/Science/Cell (commonly considered the most prestigious journals) have an index of above 30. If you pick a paper from one of these journals, you should be fine – although you still need to have it approved in advance by one of the faculty.

However, we don’t want you to be limited to these journals since there are many great papers in the tier immediately below these three. A journal with an index much below 6 means that the papers in this journal, on average, will not be of sufficient interest to present to this class. There are, of course, famous exceptions to this rule - but they are rare! In addition, even Science and Nature make mistakes on occasion, so not all papers published in those journals are of the best quality.

Whatever your interests, please choose a paper from a refereed journal in your field with an impact factor above 6, and remember to submit it for approval at least a week in advance. As ever, if you have any questions, ask!

Disabilities. Students requesting academic accommodations based on a disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP when adequate documentation is filed. Please be sure the letter is delivered to Dr. Petruska as early in the semester as possible. DSP is open Monday-Friday, 8:30-5:00. The office is in Rm 120, Grace Ford Salvatori Hall, 2601 Watt Way, phone number (213) 740-0776. FAX (213) 740-8216, E-mail <ability@usc.edu>.

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/>.