PSYC UN3930: Psychology/Neuroscience Senior Thesis Advanced Research Seminar
Fall 2026

Wednesdays, 4:10 p.m. - 6:00 p.m. 200B Schermerhorn during seminar weeks; 300 Uris during colloquium weeks
Instructor: Dr. Larisa Heiphetz Solomon (lah2201@columbia.edu)
Office hours: Mondays, 1:30 p.m. - 3:30 p.m., 821 Uris. If you have another class during office hours, please e-mail me to set up a meeting at a different time. Please also let me know which of your classes conflicts with my office hours so that I can consider how best to arrange my office hours around popular courses in future semesters. The best way to reach me is via e-mail, and I typically reply to e-mails within 3 business days. I am happy to meet with you throughout the semester to discuss anything related to the course as well as other topics related to your professional development (e.g., labs to join, project feasibility, graduate school, fellowships).

I. Bulletin description
The seminar component of the Psych/Neuro Senior Thesis Advanced Research program. Students admitted to the research program should plan to take this seminar in the spring of their junior year and in the fall and spring semesters of their senior year. Students are expected to be working in a lab as part of their participation in this program. In addition to supporting students throughout their independent research project, this seminar will introduce students to some of the big questions in the field through its connection with the Psychology Department Colloquium and will train students in reading and evaluating scientific research and communicating their own research findings.

II. A full description of the content of the course
Participation in the thesis program—including students' work in their thesis lab, their participation in the STAR seminar, and their attendance at colloquium talks—meets a number of research goals. These include the following: learning what big questions psychologists and neuroscientists are currently asking, formulating one's own research questions, developing familiarity with the scientific literature, forming hypotheses, designing experiments, conducting experiments and collecting data using sound and ethical research methods, analyzing and interpreting data, and disseminating results.

The seminar portion of the STAR program meets additional goals, including the following: learning to read scientific papers and understand scientific presentations, clearly describing scientific studies, and presenting one's own experimental work.

The course website contains some information that may be helpful as you work on your thesis project with your lab, such as a guide about components that may be helpful to include in your written thesis and a QUALMRI guide that can assist with reading scientific articles. You can find these materials by clicking on files --> information for assignments & thesis projects.

III. Weekly schedule
[Note: The schedule below may be revised if necessary during the semester.]

Week 1: September 9th
Introduction to course

Week 2: September 16th
Colloquium: Steve Cole

Week 3: September 23rd
Presentations on Daphne Maurer's papers
Everyone: Verbally present current state of thesis research (5 minutes each; brief intro, research questions/hypotheses, state of data collection/analyses)

Week 4: September 30th
Colloquium: Daphne Maurer

Week 5: October 7th
Presentations on Koraly Perez-Edgar's papers
Discuss grant applications
Discuss formal practice talks

Week 6: October 14th
Grant application due to me via e-mail before the beginning of colloquium.
Colloquium: Koraly Perez-Edgar

Week 7: October 21st
Presentations on Darby Saxbe's papers
Team A: Formal practice (5 minutes each; intro and methods)

Week 8: October 28th
Colloquium: Darby Saxbe

Week 9: November 4th
Presentations on Erik Nook's papers
Team B: Formal practice (5 minutes each; intro and methods)

Week 10: November 11th
Colloquium: Erik Nook

Week 11: November 18th
Presentations on Christopher Honey's papers
Professional development panel

[November 25th - Thanksgiving Break]

Week 12: December 2nd
Colloquium: Christopher Honey

Week 13: December 9th
Everyone: Formal practice (revision of formal presentations from earlier in the semester)

IV. Course requirements
Grades will be determined as follows:

- Research (from lab PI; 50%)
- Attendance/participation (10%)
- Discussion comments (10%)
- Presentation of colloquium paper (10%)
- Formal practice #1 (5%)
- Formal practice #2 (5%)
- Grant application (10%)

Research (50%)
At the end of the semester, your lab PI will submit a grade for your research work toward your thesis. This grade will constitute 50% of your seminar grade. Please keep in mind that in the spring, you will need to submit your written thesis to your PI for them to grade. I would recommend discussing a submission deadline with your PI in advance; many find that a deadline in early April works well.

Attendance/participation (10%)
Attendance at each seminar and each colloquium talk is mandatory. This policy exists to support the educational experience of everyone in the class. If you are absent during a seminar, not only do you miss out on the discussion, but your classmates also don't have the chance to learn from your unique insights. Everyone's participation is vital to a small, discussion-based class such as this one.

At the same time, life sometimes throws all of us curveballs, including illness and other emergencies. Therefore, all students have one absence to use in whatever way they deem best, with the exception that you may not use this absence during any day when you are responsible for a presentation on a colloquium paper or either of your formal presentations of your thesis research. Additionally, medical and family emergencies are excusable. In such instances, with my permission, you may write a 3-page paper (12 point Times New Roman font, 1 inch margins, double-spaced) on a topic of my choice to receive participation credit for that week. This make-up paper will be due before the beginning of the class following the one you missed (e.g., if you missed class during Week 4 and receive permission to write a make-up paper, it would be due before the beginning of class during Week 5). Make-up papers should be submitted as a .doc or .docx attachment via e-mail (lah2201@columbia.edu).

If you require more than two excused absences and/or experience an emergency that affects multiple classes, such as prolonged illness or a family situation that prevents you from completing your coursework, please be in touch with your dean. He or she can coordinate with all of your professors so that you don't have to take on this labor, and I am happy to work with you and your dean to find a solution for your particular situation.

Please arrive in class on time and stay for the entire class period. This is for your own benefit as well as that of the other students, since it can be disruptive for students to come in and out during class discussion. If you arrive late or leave early, you will not be able to earn full participation credit for that day. **During colloquium weeks, please check in with me before the talk starts so that I can mark you down as present.**

In addition to coming to class, it's important to participate positively (and do other things that alliterate). Positive participation requires a balance between speaking and listening to your classmates. Please speak up if you have a question or thought to share, and please listen to your classmates' ideas and engage with them constructively. It is perfectly acceptable for you to disagree with someone else's comments—in fact, disagreement can make for lively and thought-provoking discussion! Please phrase your disagreements

respectfully. If you feel nervous or hesitant about speaking in class for any reason, I'd be happy to discuss your situation with you.

During seminar weeks, participation is graded in the following way: 2 points = you were present and participated positively; 1 point = you were present but didn't participate positively and/or were not present for the entire discussion; 0 points = you weren't present, already used your free absence, and did not receive an excused absence. During colloquium weeks, you earn 2 points for attending the speaker's talk.

Discussion comments (10%)

Before each seminar week, you are required to turn in a set of discussion comments on the papers for the following week's colloquium speaker (e.g., before class for Week 3, you will turn in discussion comments for the papers provided by the speaker for Week 4's colloquium). Please e-mail me your comments by 11:59 p.m. Eastern time on the Monday before the seminar (e.g., comments for the Week 4 speaker are due by 11:59 p.m. on Week 3, meaning that comments for Daphne Maurer's papers are due by 11:59 p.m. on September 21st). My e-mail address is lah2201@columbia.edu. Comments should be included as a .doc or .docx attachment. You are responsible for making sure that you are attaching a) the correct file and b) an uncorrupted file. I will grade the file I have in front of me at the deadline, even if that file is corrupt or contains comments for the wrong set of readings. Files should be named in the following format: YourLastName_SpeakerName_STAR_DiscussionComments (e.g., Solomon_Maurer_STAR_DiscussionComments). Please also type your name at the top of the Word document. Part of the goal of discussion comments is to prepare for our conversations in class. Therefore, late discussion comments will not be accepted in most circumstances. If you feel that your situation deserves special consideration (e.g., you are hospitalized), please discuss with me as soon as you are able.

For each reading, please include a comment that is about 3-5 sentences long. You do not need to integrate the comments for each article into one cohesive essay; instead, many students find it easiest to include one bullet point or short paragraph per article. **Comments should not summarize the article or discuss issues related to writing or presentation (e.g., the writing wasn't clear)!** Instead, they should discuss your thoughts about conceptual points related to the readings. Some ideas for what you may wish to address in your comments include the following:

- An interesting connection between the two readings. This could involve, for example, synthesizing two seemingly disparate areas or highlighting a contradiction between the theoretical and empirical claims. (Your total number of comments should still equal the total number of readings, so if your comment for one reading connects it with another reading, you should still write a separate comment for the second reading.)
- Possible extensions or applications of findings.
- Comments about a particularly clever, apt, or unusual experimental design and why it affords a unique ability to learn something about the question of interest.
- Reasons why the authors' conclusions do not follow from their results, alternative explanations for their findings, methodological flaws, and other criticisms. Be civil in your critique, and make a good-faith attempt to understand the authors' reasoning. Also, note that authors typically address potential criticisms at the end of an article, often to the reader's satisfaction…so you might want to make sure you get that far. Additionally, **you may not use your comment to offer criticisms that could be made of the vast majority of psychological studies (the sample size is less than a hundred gazillion, the sample was not nationally representative, etc.).** Comments that offer these types of criticisms will not receive credit. Instead, if you wish to offer a criticism, focus on something unique to the paper you are criticizing.
- A proposal for a study that could be conducted to clarify the nature of a finding or address an unresolved issue.

Remember: although it is important to maintain a critical eye when reading scientific papers, some of the best discussion comments will be insightfully positive in nature. Discussion comments will be graded on the following scale: 3 = excellent, 2 = good, 1 = poor. Don't be discouraged if you're not getting 3s right away—this is a learning experience, and there's always room for improvement. **Sample discussion comments are available on the course website (files --> information for assignments & thesis projects) along with brief notes about why the examples are strong comments, and I strongly recommend you take a look at this document before writing your own comments.**

Presentation (10%)

During one class period, you will give a short (~10 minutes) presentation on one of the assigned readings. Your presentation should include the following components:

- A brief (2-3 sentences) summary of the article. Assume that your classmates have read the article and just need to have their memories jogged.
- What is one strength of the research presented in the article? Please be specific and explain why you like this particular feature (e.g., why a specific aspect of the design is particularly important, or why a particular conclusion is especially interesting, etc.). Include your own ideas; do not just summarize the authors' arguments about the importance of their topic and/or the amazingness of their studies.
- What is one weakness of the research presented in the article? As with discussion comments, this weakness must be specific to the article on which you are presenting; it cannot be a critique that applies to many psychology studies. If the authors attempted to address your concern, why are their attempts unsatisfactory to you?
- How could this weakness be addressed? For instance, could follow-up studies provide a solution? If so, what would those studies look like?
- What is one discussion question from this article that you would like to pose to your classmates? Please ask an open-ended question that could reasonably elicit discussion—for instance, asking how classmates might resolve two seemingly disparate results presented in the paper, or what they think about a particular point relevant to the research, etc. Please do not ask questions that can be answered with a simple "yes" or "no" or questions that have a correct factual answer (e.g., questions that ask your classmates to repeat the methods or results of a particular study). **When you are not presenting, a portion of your participation grade will be based on your engagement with questions posed by the presenters.**

Since your presentation is so short, you do not need to cover all aspects of the article. Instead, focus on the one strength, one weakness, and one discussion question that seem most interesting to you. After your presentation, the rest of the class will discuss the article using your comments as a springboard. These are verbal presentations only—no Power Point slides or other visuals required.

Please e-mail me by **Thursday, September 10th at 5:00 p.m. Eastern time** with a list of your top 5 preferred articles (1 = the article you would most like to discuss). For each article, please list **both** the speaker and whether you are referring to the empirical paper or the review paper. You may choose from papers associated with all speakers other than the first speaker of the semester. I will e-mail you before the next class to confirm your article. To make sure that presentations are spread relatively equally across articles and weeks, I may not be able to assign you your first choice, but I will do my very best to assign you one of your top 5 preferred articles. If I haven't received your preferences by the deadline, I will assign you an article that no one else has selected.

Formal practice (5% each for a total of 10%)
Each student will give a 5-minute formal presentation focused on the Introduction and Methods sections of their senior thesis project. This is an opportunity to receive feedback from your peers and the instructor before finalizing your design and written proposal. Presentations will be timed and should be clear, concise, and well-organized. You will have an opportunity to practice twice and should incorporate feedback from the first round into your second presentation.

You will be assigned to present either with A group (Week 7, October 21st) or B group (Week 9, November 4th). Please include your preference in the e-mail that you send me by Thursday, September 10th, at 5:00 p.m. Eastern that also contains your preferences for which colloquium papers to present. I will assign groups on a first-come, first-served basis. If I do not hear from you by September 10th at 5:00 p.m. Eastern, I will assign you to the date that has fewer other presentations.

Your presentation should include the following elements:

- A clear and descriptive title for your study
- Introduction discussing the background and rationale for your thesis project
  * Brief overview of the relevant literature (2-3 key findings or concepts)
    * Please review the literature search guidelines available on the course website (files --> information for assignments & thesis projects). **I strongly suggest that you do not use Google Scholar to find background literature!**
  * How does your project build on or challenge this prior work?
  * Why is your project important to do? In order to answer this question, it is not sufficient to point to a gap in the prior literature. Prior work has left many topics unaddressed, some presumably for good reason (e.g., maybe the topic is not interesting or important). What makes your research question important to answer? How specifically does answering your question advance science?
- Research question(s) and hypotheses
  * What specific question(s) are you asking?
  * What results do you expect, and why? I recommend using the prior work you discussed in your introduction to motivate your hypotheses.
- Methods and study design
  * Description of your sample (e.g., number of participants, demographic characteristics relevant to your project, recruitment method)
  * Experimental tasks or measures (e.g., surveys, behavioral tasks, imaging)
  * Variables: what are your independent and dependent variables?
  * Procedure: a step-by-step description of what participants will do
  * Tools and materials needed (e.g., software, equipment)
- Feasibility
  * Timeline: when and how will you collect your data?
  * IRB status: is approval already obtained or in process?

Please present these components using slides that will be easy for an audience to understand (e.g., appropriate balance of text and images, use of figures/tables to illustrate predicted results, animations so that you are only displaying new information that you want your audience to be looking at right then). Based on other students' experiences in this course, I would recommend taking the following steps for your presentation:

- Practice your timing to stay within the 5-minute limit. I will set a timer for your presentation and you will not be able to continue speaking after it goes off, so please make sure that you've covered all the required elements in your 5 minutes!

- Be succinct—prioritize clarity over detail.
- Speak confidently and avoid reading from your slides.
- Prepare to answer questions from your peers and the instructor.

Grant application (10%)
CC and GS both offer funding to defray the cost of conducting a thesis (e.g., to help cover participant payments, software licenses, or other expenses you may incur as part of your thesis project).

Information regarding the application for CC students is here:
https://urf.columbia.edu/fellowship/columbia-college-senior-thesis-funding

Information regarding the application for GS students is here:
https://www.gs.columbia.edu/content/senior-thesis-stipend

CC applications are typically due in mid-November, and GS applications are typically due in early December. **Your assignment for this class is due before class during Week 6**; this deadline will allow you to incorporate my feedback before submitting the final version of your application to CC/GS. Please submit a full version of your proposal, including responses to all questions on the application form found at the relevant link above, as a Word document attachment or PDF attachment to me via e-mail. (This is the only assignment that you can submit to me as a PDF; this format makes it a bit harder for me to leave comments but may be the only feasible format given the way the application itself is set up.) Late grant proposals may be e-mailed to me as a Word document attachment or PDF attachment; however, they will be penalized 2 points out of 20 possible points for every 24 hours late or portion thereof (e.g., if you were going to earn 20 points and you turn the outline in 15 hours late you would earn 18 points, 36 hours late and you would earn 16 points, etc.). Turning in this assignment late may also prevent you from getting timely feedback. Talk to me if an emergency prevents you from turning in this assignment on time.

V. Plagiarism and academic integrity
Severe plagiarism (a.k.a. "copying") is the most overt and deceptive form of plagiarism. This involves deliberately misrepresenting all or part of another person's work as one's own. For example, a student might turn in a paper written by another student in a previous term. Another common example is writing containing chunks of "copy-and-paste" from published articles or online sources such as Wikipedia. Representing work as your own if it is not counts as severe plagiarism even if there is no one identifiable author (e.g., if you use text produced by ChatGPT or other programs and represent that text as your own). **The use of generative AI (ChatGPT, Claude, or any other generative AI tools) is not permitted for any portions of this course.**

Irresponsible plagiarism (a.k.a. "omission") is the act of paraphrasing or quoting from a source without giving proper credit to the source. The author does not necessarily explicitly take credit for the idea or materials, but this is nevertheless implied.

Self-plagiarism (a.k.a. "recycling") is the act of representing one's own previous ideas or materials as new and original. For example, a student might turn in all or part of the same paper for more than one course. This may not seem as bad as stealing another person's work, but it is *deceptive*, and therefore unacceptable.

Should I plagiarize?
No. You will be caught, and then you will be sad. Assignments that show evidence of academic dishonesty will receive a zero, and any student who submits such an assignment may be referred to the Office of Judicial Affairs and Community Standards.

For more information about academic integrity at Columbia, please see https://www.college.columbia.edu/academics/integrity.

VI. Students with disabilities

Students with special needs who may require classroom and/or test accommodations should let me know as soon as possible. ODS often requires a few weeks to process an application, so please contact them as soon as you can. The procedures for registering with ODS can be found at https://www.health.columbia.edu/content/disability-services or by calling (212) 854-2388 (Voice/TTY).

Thanks for reading this far! I am very much looking forward to getting to know you and learning together.