

NSC 3851, 3860, 3861/3862, 3863/3864 Research Mentors' Evaluation

Research Advisors,

The list below provides a series of criteria to be used in evaluating student performance in the Neuroscience research courses.

Additionally, students are expected to meet certain criteria during their research experience, and, therefore, should be able to exhibit the following in their paper. Please keep these items below in mind when grading:

- 1) Students are expected to demonstrate: a) understanding of fundamental principles and concepts of neuroscience, (b) ability to think critically, (c) ability to organize and communicate conceptual and factual information, and (d) demonstration of a depth of knowledge in the area of the research project.
 - 2) The introduction to the paper should include a discussion of the neuroscience background and significance of the work. In some cases, students work with a research faculty member who is in an allied discipline to neuroscience, but the research itself is not in the field of neuroscience per se. If this is the case, the student is required to include a specific section of her/his term paper relating the neuroscience background and significance of the work.
 - 3) When appropriate, students are expected to provide statistical analyses of their results. When describing statistical analysis, they should provide at minimum the statistical test used (such as T-value, F-value, R-value) and not just a statement that the result was or was not statistically significant. If they cannot utilize a statistical test, they must include an explanation of what the appropriate test would be and why they have not performed it (for instance, the sample size was too small).
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Some working definitions of the categories can be found on pg. 2.

Laboratory:

- _____ effort and engagement
- _____ initiative and follow-through
- _____ problem-solving
- _____ technical competence
- _____ record keeping/laboratory notebook

Abstract (3861)

OR

Paper (NSC 3851, 3860, 3862, 3863/3864)

- _____ clarity, organization, presentation
- _____ scientific understanding
- _____ neuroscience specific content

- _____ clarity, organization, presentation
- _____ background, literature review
- _____ neuroscience specific content
- _____ inclusion of appropriate statistical methods
- _____ figures and tables

Oral Presentation (3863/3864)

_____ clarity, organization, presentation

_____ scientific understanding

_____ background

_____ visual aids

Mentors are strongly encouraged to provide feedback and comments on an early draft of the paper or abstract and allow opportunities for revision as an exercise in teaching good scientific writing. The final grade should reflect both the quality of early drafts as well as the student's ability to make improvements based on editorial suggestions.

"A-" is generally an average grade for research; "A" is a reward for an excellent performance; "B+" is appropriate for a performance that is only satisfactory. Anything less than "B+" is to some extent a reprimand.

The final grade should be assigned based on weighting the laboratory work at 75% and the final paper (and oral presentations) 25%. For NSC 3860 the laboratory portion of the grade will be based almost exclusively on the student's "effort and engagement" in the laboratory rather than research or technical accomplishment.

It is strongly recommended that the mentor meet with the student at least once in the middle of the semester to give the student feedback on their performance in the laboratory.

Summary of guidelines:

Laboratory

Effort & Engagement: Includes but is not a strict measure of hours. This is where we distinguish between the student who really takes ownership the research project and the one who simply does the work.

Initiative and follow-through: Does the student pursue ideas and suggestions? Follow through with them? Persist when difficulties arise?

Problem-solving: includes both solving problems that arise when things go wrong, and interpreting positive and negative results.

Technical competence: This includes everything from tidiness and physical lab organization to mastery of techniques necessary to carry out the project.

Record keeping: Maintaining well annotated, clear, and accurate records of experimental procedures and results

Success in obtaining results may be reflected in the grades for the various components of the laboratory grade, but is not in itself an element of the grade. Although unlikely, a grade of "A" is possible even with no results.

Paper/Abstracts

Clarity, organization, and presentation: Includes conforming to length (time), style, and layout guidelines, and general presentation quality. Was the material logically organized? Was the writing clear and grammatically sound? Was the information presented accurately and unambiguously?

Scientific understanding: Did the student seem to understand the field and the work? Did the student demonstrate understanding of fundamental principles and concepts of neuroscience?

Adequate background and literature review: Did the student give the readers a sound introduction to the area of research?

Appropriate statistical analysis: Did the student provide appropriate statistical analysis of their research and describe the statistics used? If a statistical test was not warranted, did they include an explanation of what the appropriate test would be and why they have not performed it (for instance, the sample size was too small).

Figures and Tables (visuals): Were they appropriate and adequate?