

Neurobiology Thesis Writing FAQs

Q. Is writing a thesis the only way to get involved in research?

A. No. Each semester (including summer), you can apply to do any of the following: 1) volunteer in a lab, 2) receive funding to work in a lab, or 3) receive course credit for working in a lab (through Neurobiology 98r; only possible after Junior Fall). All of these options are open to thesis writers and non-thesis writers.

****See the [Neurobio Guides](#) page for info on how to find a lab and find research funding.**

Q: Do I need to take Neurobiology 98r and 99 to write a thesis?

A: It depends on your track.

MBB Track: students are required to take one semester of both Neurobiology 98r and Neurobiology 99.

Neurobiology Track: Neurobiology 98r and 99 are optional; however, one semester of Neurobiology 98r is required to be eligible for Departmental Honors.

Q: Why should I write a senior thesis?

A: Writing a thesis allows you to complete a scientific study: conception, planning, research, troubleshooting, analysis, interpretation, and formal communication. Arguably, it is the best way to develop and deepen your understanding of science. First, through your research and the thesis writing process, you will become an expert in a small area of neurobiology. Second,

through the difficulties of conducting, analyzing and interpreting your results, you will discover how knowledge is generated and critiqued. Third, through formally presenting your results, you will develop argumentative writing skills and experience how new information and ideas are first communicated.

Here at Harvard College you have truly an amazing range of world-class laboratories and research centers that provide some of the most stimulating intellectual opportunities on planet earth. Writing a thesis allows you to take full advantage of these resources, and participate in the mission of these groups.

For all these reasons, writing a thesis is also required for highest distinction in Departmental Honors (Highest Honors).

Q: When do I have to decide if I am going to write a thesis?

A: There is no deadline or “decision” that commits you to writing a thesis, as you can decide not to write a thesis at any point. However, to remain eligible to write a thesis you must complete all the thesis checkpoints, which start **junior year spring semester** (see below)

Q: What is a rough schedule for thesis work?

A:

Anytime Freshman - Junior year:

Join a lab and begin your research.

Junior year:

By Spring semester: *Join a lab* and begin your research.

Early May (Spring semester): *Junior Thesis Proposal* due reading period.

Summer after junior year:

Most thesis writers stay on campus to *work in the lab*.

Senior year

Early December (Fall Semester): *Partial Rough draft* – due reading period.

Late January (Spring Semester): *Thesis Abstract* – due study card day.

Late February (Spring Semester): *Final Rough Draft* – due ~ 2 weeks before spring break.

Early March (Spring Semester): *Final Thesis* – due before spring break.

Q: Do I need to formally present or defend my thesis work?

A: No, there is not an oral component to the thesis. However, we hold a prestigious (and fun!) event to celebrate our thesis writers in late April: The ‘Annual Thesis Awards in Neurobiology’. During this event thesis writers present their research findings in 60 seconds through any creative medium (song, skit, poem, presentation, interpretative dance, puppetry, etc).

Q: What are the basic requirements for a thesis?

A: The thesis is a 30-50 page (double spaced) document, which includes: acknowledgements, contributions, table of contents, abstract, introduction, methods, results, figures, discussion and references. Specific guidelines and examples of how to write each sections will be presented senior year to all potential thesis writers. Additionally, thesis writers will be invited to a series of writing workshops designed to help improve and guide their scientific writing during junior and senior year.

If you wish to see examples of theses from previous years, they are available in the Neurobiology advising office (Biolabs 1082). Check out a list of titles and abstracts [online](#):

Q: What labs can I work in? What kinds of projects can I work on?

A: Neurobiology students may work in any of the many Harvard affiliated Institutions and Hospitals around Boston. This includes labs on the Harvard College campus, as well as those at Harvard Medical School, Children's Hospital Boston, Mass General Hospital, Mclean Psychiatric Hospital and more.

As a Neurobiology student, your research must involve the study of neurons. For students interested in working in cognitive science, sleep, immunology, or psychology labs, your project must meet any one of the following criteria:

1. Involve brain imaging (fMRI, EEG, etc) to assess and correlate neuronal function in your study.
2. Involve a diseased group of patients so that you can link what is known in the literature about the neurobiology underlying the disorder to your study.
3. Involve work on an animal model, so that you can link what is known in the literature about the neurobiology of brain (organization, connectivity, activity patterns, structure, etc) to your study.

Q: How is the thesis evaluated? How will it affect my grades?

A: Your thesis will be evaluated by two anonymous Neurobiology faculty members who will comment specifically on 1) the depth of your background knowledge, 2) the clarity of your writing 3) the quality and rigor of your methods, 4) the presentation of your figures, 5) your understanding of how your results

relate to the literature, 6) the logic and analysis of your conclusions, and 7) the accomplishments, weaknesses and difficulty of your work.

As an undergraduate, you may need to stop doing experiments before you have a complete story because of looming thesis deadlines. The completeness of the experiments is a major difference between the undergraduate thesis and a doctoral thesis. It is understood that undergraduate theses often are not able to fully complete their intended story. **How well the thesis is written, presented, and analyzed is the major determinant of its grade.**

Your thesis will receive a grade: no credit, commendable, cum, high cum, magna, high magna, or summa. This Latin grade affects your Departmental Honors determination only (English Honors); it is not recorded on your transcript. You will be notified of your grade (including the review comments) along with your Honors recommendation several weeks after you turn in your completed Thesis.

Additionally, if you are enrolled in Neurobiology 99, you will receive a course grade by your research lab director, similar to Neurobiology 98r (ie, based on your performance and diligence in the lab).

Q: How independent should my research be?

A: Independence varies greatly from lab to lab. On one extreme some rare students are able to spend several years in a laboratory and have free reign to design and carry out experiments completely on their own. More commonly though, students work fairly closely with a postdoc or graduate student in the lab. It is perfectly acceptable for you to work closely with someone in the lab, but it is important that you take ownership of some aspect of the project, whether it is the

day-to-day experiments, reading the literature and suggesting new models to incorporate, or independent statistical analyses. This will likely also make the project more interesting to you. The writing of the thesis should be done entirely on your own, with feedback and editing suggestions from your lab director or others.

Q: Whom can I talk to about my thesis?

A: Your concentration advisers (Dr. Ryan Draft and Dr. Laura Magnotti) are always available to discuss any issues or questions you have about your thesis in general, and any issues related to formatting or deadlines.

You should also be in touch with your daily supervisor and your lab research director to discuss specific questions about your research results, ideas about your project, and get feedback on your writing.

For additional writing help, the [Writing Center](#) at Harvard has resources available for thesis writers (senior thesis writing tutors available by appointment through the Writing Center website).

Potential thesis writers will also be invited to workshops throughout junior and senior year that focus on writing the Junior Thesis Proposal, Introduction, and Figures.