NEUR 93: Research Internship and Analysis in Neuroscience Information and Petition

Read and save the information on pages 2-3, including the timetable of deadlines. Detach and keep the pages for yourself.

To enroll in NEUR 93, complete the NEUR 93 petition online. Your sponsor will be notified to review the petition. One that is approved you will be emailed to set up an appointment to meet with Prof. Paul Miller (NEUR 93 Coordinator). Once the NEUR 93 Coordinator approves the petition the Neuroscience Office will be notified. They will then email you with a consent code

The Neuroscience department will give you a consent code to enroll in NEUR 93 assuming the petition is complete by the appropriate due date (see page 3) and the faculty mentor and project requirements have been met

NEUR 93 Coordinator
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NEUR 93: Research Internship and Analysis in Neuroscience

NEUR 93 is a **one-semester** course that enables the student to experience what life science research is like by working with a Neuroscience department faculty sponsor in his/her laboratory at Brandeis University. In consultation with the student's faculty sponsor, the student will design and execute an individual research project, culminating in an oral and written presentation about the resulting work. Students are permitted to do NEUR 93 research with any faculty member, irrespective of their department, if the research is of a neuroscience nature, **provided the student obtains permission from the NEUR 93 coordinator (who will consult with other faculty in uncertain cases).** ***Students cannot use NEUR 93 for off-campus internships.***

Course Credit. NEUR 93 does not count as an elective toward the Neuroscience major. It is restricted to juniors and seniors. It can be taken only once, either in the fall or spring semester. Rising seniors can do a *summer research internship* in the laboratory of their faculty sponsor and receive NEUR 93 course credit. To do so, juniors must **obtain permission** from the NEUR 93 coordinator as well as from their faculty sponsor in the spring semester preceding the summer internship. The student does summer research in the lab (a minimum of 10 weeks full-time work) and fulfills the other NEUR 93 course requirements (an oral presentation and a written report, see below). In the subsequent fall semester, the student enrolls in NEUR 93a to receive course credit for this summer research.

How to Enroll: The student should meet with their faculty research sponsor. The student then submits the completed NEUR 93 Petition online. The Biology department will then email the research sponsor a Sponsor's Agreement form to complete. The enrollment application will be complete only when the student and research sponsor have submitted their forms. The Biology department will then send a consent code to the student so they can enroll in NEUR 93.

Course Requirements

1. **Research.** The *minimum* Fall or Spring semester expectation is 10 hours of laboratory research per week.

2. **Written Report.** This is equivalent to a laboratory rotation report, ~10 pages in length (excluding references). See timetable on p.3 for the due date. It should contain the following sections:
   Title Page, which includes your name, the title of your research and the date.
   Abstract (not more than 250 words), which summarizes the nature of the research project, the results obtained and the relevance of those results.
   Introduction, which poses the research question asked in the context of current knowledge in the relevant field.
   Materials and Methods, which describes how experiments were conducted.
   Results, which provides a written description along with some figures and tables of the experimental data obtained.
   Discussion, which evaluates the results obtained and their relevance and significance to current models and data.
   References, which includes complete citations (authors' names, paper titles, journal, volume, page, year). See the *Journal of Neuroscience* for examples.

3. **Oral Presentation.** Specifics are left to the discretion of the faculty sponsor. E.g., this could be a data presentation during "group" lab meeting, or a more formal presentation at the end of the semester to the lab, or a talk given at a meeting, etc.

Combining NEUR 93 and NEUR 99

Typically, students who elect to take NEUR 93 intend to do only one semester of research. However, students may elect to continue with their research and proceed to take one semester of NEUR 99. If NEUR 99 is taken in addition to NEUR 93, then NEUR 99 **must be with the same faculty research sponsor as NEUR 93 and NEUR 99 must be taken the semester immediately after NEUR 93 was taken**. The two-semester combination of NEUR 93 and NEUR 99 may be used as one neuroscience elective (Group 3 and also as senior research) as long as the student fulfills all of the NEUR 93 requirements **AND** at the conclusion of NEUR 99, the student writes a **senior research thesis** (see the NEUR 99 petition for full details). The senior thesis may incorporate some of the NEUR 93 report, but it must be significantly longer with substantially more data.

Since it is unlikely that one semester of NEUR 93 and one semester of NEUR 99 will lead to sufficient research for senior honors, a 3-semester combination of research courses may also be taken. NEUR 93 (either in the spring of junior year or the summer before senior year) followed by two semesters of NEUR 99 (in senior year) may be taken *if all are with the same faculty research sponsor*. The 3

course combination may be used as a single Group-3 elective in Neuroscience and may provide sufficient experience for the student to be a candidate for senior honors.

NEUR 93 Timetable for 2020-2021 Academic Year

If Enrolling for FALL SEMESTER 2020

No later than Sept. 4, 2020:

To enroll in NEUR 93a, complete and submit the online NEUR 93 petition.

December 18, 2020 by 3pm:

Written report is due: Submit one copy to your faculty sponsor and a pdf copy to Molly Nelson (mollynelson@brandeis.edu) in the Biology office.

Oral presentation: Timing and format are at the discretion of the faculty sponsor. It is recommended to schedule this with your faculty sponsor no later than one week from the report due date and even earlier is suitable.

If Enrolling for SPRING SEMESTER 2021

No later than Jan. 15, 2021

To enroll in NEUR 93a, complete and submit the online NEUR 93 petition.

(a) If you are a Senior Honors Candidate and are Defending in the Spring Semester:

-by April 23, 2021, 3:00 pm: Send a PDF of your **Senior Honors Research thesis** to your Brandeis research sponsor or co-sponsor and ask for feedback by April 27. You then have time to incorporate any feedback and send the final version to your research sponsor and the other members of your committee by April 29, 2021 (and give paper copies, if asked). You will be told beforehand who the committee members are.

-on May 4, 2021: Honors Oral Presentation and Defense [May 5, May 6 are backup dates] by May 7, 2021, 3:00 pm: If revisions are required by your research committee, send a final version of your Senior Honors Research thesis to your faculty sponsor and a pdf copy to mollynelson@brandeis.edu

(b) If you are *not* doing Senior Honors but are concluding Senior Research in the Spring: -by May 3, 2021, 3:00 pm: Send a PDF of your Senior Honors Research thesis to your Brandeis research sponsor or co-sponsor and to mollynelson@brandeis.edu.