

**Request for Authorization to Establish a
Bachelor of Science in Neuroscience
(B.S., CIP 26.1501) at
University of North Carolina at Chapel Hill**

I. Program Highlights

- The proposed B.S. in Neuroscience degree program will give undergraduates the fundamental knowledge and exposure needed to pursue careers and post-graduate studies in fields related to human development and aging, health and disease, rehabilitation, biomedical research, human-machine interactions, and other emerging disciplines. Extensive analytical and communication skills will be acquired through the neuroscience major, including data analytic techniques, project management, communication, computer and technical skills, leadership, problem solving and critical thinking, and writing.
- The proposed B.S. in Neuroscience degree program will be delivered on campus.
- The proposed B.S. in Neuroscience degree program requires completion of 120 credit hours of undergraduate course work, designed to be completed in 8 fall/spring semesters of full-time study. Students are required to complete 24 core courses, as well as 4 elective courses, with 2 drawn from each of two elective categories.
- 100 full-time students are projected in the first year, with 400 full-time students projected by the fourth year.
- The new neuroscience major will not require the hiring of any new faculty. However, it is anticipated that new undergraduate courses will be proposed as new faculty with neuroscience training and expertise are hired over the coming years.
- No differential tuition or program specific fees will be requested.
- No additional library holdings are needed to support the instructional and research needs of the program.
- No new facilities and equipment are needed to implement the proposed B.S. in Neuroscience.

II. BOG Academic Program Planning Criteria (UNC Policy 400.1)

1. **Existing Programs (Number, Location, Mode of Delivery).** There are two existing undergraduate B.S. in Neuroscience degree programs in the state of North Carolina: Multidisciplinary Studies with a Concentration in Neuroscience at East Carolina University and the B.S. in Neuroscience at Duke University.
2. **Relation to Campus Distinctiveness and Mission.** The mission of UNC Chapel Hill is to “serve as a center for research, scholarship, and creativity.” The institution has adopted the Quality Enhancement Plan (QEP) with the theme of “Creating Scientists: Learning by Connecting, Doing, and Making.” The proposed neuroscience major explicitly meets the learning objectives of “Connecting”, “Doing”, and “Making”. “Connecting” refers not only to the complex connections within science models, but also explicitly links the arts and humanities with the sciences such that students increase their critical thinking and communication skills.
3. **Demand (local, regional, state).** Within the state of North Carolina, there are numerous academic and research institutions (both within the UNC System and at private universities, colleges, and centers), as well as industrial and pharmaceutical companies, especially within the Research

Triangle Area, that hire individuals with training in neuroscience. Several searches on ncworks.gov yielded hundreds of available positions for individuals with the aforementioned education and skill sets.

4. **Potential for Unnecessary Duplication.** Only one other UNC Institution - East Carolina (ECU) – offers undergraduates the option to major in the field of neuroscience. In speaking with Dr. Tran (Director for the Neuroscience major at ECU), it quickly became apparent that there would be minimal overlap between the current application for a neuroscience major at UNC-Chapel Hill and the existing ECU multidisciplinary major in neuroscience. First, all but one of ECU’s undergraduate neurosciences courses are taught face-to-face on site. Given the distance between Chapel Hill and Greenville, it is unreasonable for students at UNC-Chapel Hill to drive multiple times per week to attend neuroscience courses at ECU. Second, the current application strongly encourages undergraduates to pursue active research learning opportunities in labs at UNC-Chapel Hill currently conducting neuroscience research.
5. **Employment Opportunities for Graduates.** Government agencies, universities, industry, hospitals, and medical centers are all settings for neuroscience jobs. Private research foundations, government laboratories, and regulatory agencies, such as the National Institutes of Health (NIH), Food and Drug Administration (FDA), and Environmental Protection Agency (EPA), all have research and administrative positions for neuroscientists. Universities offer teaching and brain research opportunities. Industries such as pharmaceutical, chemical, biotechnology, and medical instruments provide jobs for researchers or leaders of research teams—often paying better than comparable government positions.
6. **Faculty Quality and Number.** The proposed B.S. in Neuroscience can be initiated with no new faculty hires. The neuroscience major consists of courses already offered in the College of Arts and Science and School of Public Health by faculty in the ten signatory units. As such, it is anticipated that the neuroscience major will have little to no negative impact on faculty course load, public service activity, or scholarly research. Over time, new faculty will be hired.
7. **Availability of Campus Resources (library, space, etc.).** No additional library holdings are needed to support the instructional and research needs of the program. For example, faculty in the Department of Psychology and Neuroscience, as well as in the Neuroscience Center, have thriving research programs that are supported by the current UNC-Chapel Hill library holdings and journal subscriptions. Additionally, the current holdings are used to support the instructional mission of all ten signatory departments (from which the courses for the neuroscience major are drawn).

The B.S. in Neuroscience degree program will use the existing research and teaching facilities in the nine signatory academic departments in the UNC-Chapel Hill College of Arts and Sciences (Biology, Biomedical Engineering, Chemistry, Computer Science, Mathematics, Exercise and Sport Science, Physics and Astronomy, Psychology and Neuroscience, and Statistics and Operations Research) and in the School of Public Health (Biostatistics), as well as the Neuroscience Center.

8. **Relevant Lower-level and Cognate Programs.** There are no relevant lower-level or cognate programs.

- 9. Impact on Access and Affordability.** The proposed degree program will not require differential tuition or program-specific fees.
- 10. Expected Quality.** Annual measurement of enrollment, number of students participating in mentored research, number of graduates, and number of students immediately entering graduate or professional schools will be conducted.
- 11. Feasibility of Collaborative Program.** Several opportunities for collaboration were identified. First, because ECU is a member of the UNC System, UNC-Chapel Hill students may easily take the ECU on-line Introduction to Neuroscience course for credit, then have that credit transferred to UNC-Chapel Hill. Relatedly, UNC-Chapel Hill and Duke have reciprocal relations with regard to undergraduate courses, with students at each institution able to enroll in courses at the other institution, thereby broadening the course options available to students. This is an important issue since all institutions have limited resources and a limited ability to offer a wide array of neuroscience courses in a single semester. Second, with regard to research opportunities, students often look for research lab placements, particularly during the summer months. Dr. Tran expressed interest in collaborating to place ECU students living in the Triangle Area during the summer in research positions at UNC, and reciprocally, helping to identify labs at ECU for UNC-Chapel Hill students living in that area during the summer.
- 12. Other Considerations.** Total tuition and fees for regular full-time resident undergraduate students at UNC-Chapel Hill are \$8,731.04. Total tuition and fees for regular full-time non-resident undergraduate students at UNC-Chapel Hill are \$34,314.04.

III. Summary of Review Processes

Campus Review Process and Feedback. The proposal was reviewed by the UNC-Chapel Hill faculty, department and university curriculum committees, provost, and chancellor. The institution obtained approval at each of those reviews.

UNC System Office Review Process and Feedback. Throughout the review process, UNC-Chapel Hill provided relevant information pertaining to program requirements and resources. The institution submitted appropriate documentation and research to support its statements. Reviewers evaluated the requests and did not request further information.

IV. Recommendation

Approve UNC-Chapel Hill's request to establish a Bachelor of Science (B.S.) in Neuroscience degree program (CIP 26.1501) to enroll students starting Fall 2018.