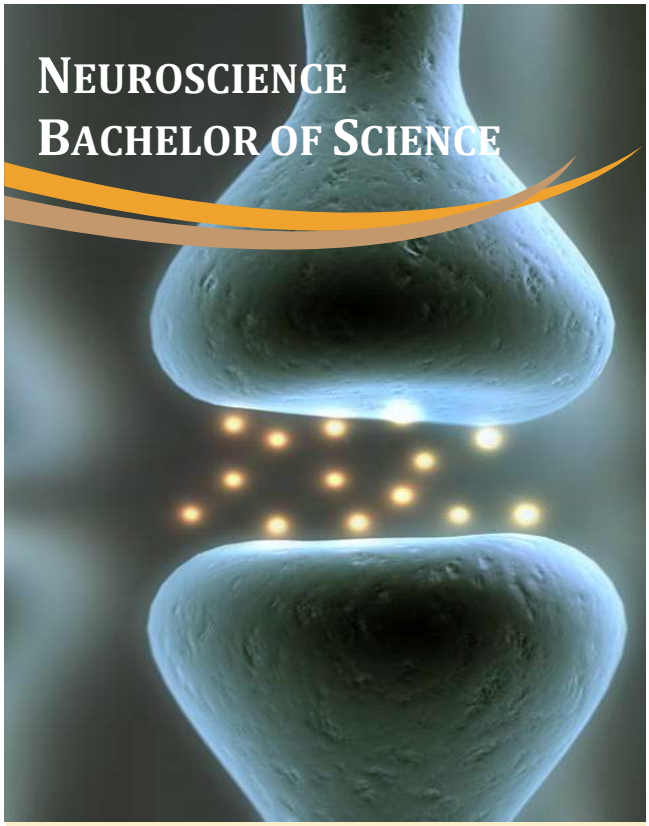
NEUROSCIENCE BACHELOR OF SCIENCE



What is Molecular/Cellular Neuroscience?

Molecular/Cellular Neuroscience is a subfield of neuroscience that examines the mechanisms related to the basic biological processes of neurons and support cells of the nervous system. Molecular/Cellular neuroscientists tend to study how neurons communicate, how parts of neurons (e.g. axons and dendrites) function, and explore the anatomy/physiology of neurons.

DECLARATION REQUIREMENTS

In order to declare the major, students must meet with a Neuroscience Advisor to discuss the requirements. To set up an appointment:

1. **Stop by room 10 of Townshend Hall**
2. **Give us a call at (614) 292-8512**
3. **E-mail us at NeuroAdvising@osu.edu**
4. **Attend an Info Session**
   NeuroscienceMajor.osu.edu/declare

CONTACT US
Neuroscience Undergraduate Program
College of Medicine & College of Arts and Sciences
10 Townshend Hall
1885 Neil Avenue Mall
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Phone: (614) 292-8512
http://NeuroscienceMajor.osu.edu

Molecular/Cellular Specialization

The requirements for the 36 semester hour (12 classes) neuroscience major are distributed across four categories: Core, Data Analysis, Specialization, and Breadth.

I. CORE REQUIREMENTS

Take all 4 of the courses below

Pre-Major Core: Pre-major students must complete the pre-major core with grades of 'B' or higher in both classes and earn a minimum 3.0 cumulative GPA

- **Psych 3313** **Introduction to Behavioral Neuroscience**
  3hrs | Au, Sp Su | (Pre-reqs: Psych 1100)
- **Neuro 3000** **Introduction to Molecular/Cellular Neuroscience**
  3hrs | Au, Sp | (Pre-reqs: Bio 1113)

Additional Core

- **Psych 3513** **Introduction to Cognitive Neuroscience**
  3hrs | Au, Sp | (Pre-reqs: Psych 1100)
- **Neuro 3050** **Structure & Function of the Nervous System**
  3hrs | Au, Sp | (Pre-reqs: Bio 1113 & Neuro 3000)

II. DATA ANALYSIS REQUIREMENT

Take 1 of the 4 courses below

- **Psych 2220** **Introduction to Data Analysis in Psychology**
  3hrs | Au, Sp, Su | (Pre-reqs: Psych 1100 & Math 1148)
  | Au, Sp | (Honors Version)
- **Stats 2480** **Statistics for Life Sciences**
  3hrs | Sp | (Pre-reqs: Math 1151)
- **Stats 2450** **Introduction to Statistical Analysis**
  3hrs | Au | (Pre-reqs: Math 1151)
- **MolGen 5650** **Analysis & Interpretation of Biological Data I**
  3hrs | Au | (Pre-reqs: Math 1150 & 10hrs 3000-level Bio)

III. SPECIALIZATION REQUIREMENTS

Choose at least 5 specialization courses from the options below

- **Neuro 3010** **Neurophysiology**
  3hrs | Au | (Pre-reqs: Neuro 3000)
- **Neuro 4050** **Neurogenetics**
  3hrs | Au | (Pre-reqs: Neuro 3000)
- **Neuro 4100** **Basic & Clinical Foundations of Neurological Disease**
  3 hrs | Au | (Pre-reqs: Neuro 3000)
- **Neuro 4640** **Neuronal Signal Transduction**
  3hrs | Sp | (Pre-reqs: Neuro 3000 & 3050)
- **Neuro 5790H** **Developmental Neuroscience**
  3hrs | Sp | (Pre-reqs: Neuro 3000 & 3050)
- **MolGen 4500** **General Genetics**
  3hrs | Au, Sp, Su | (Pre-reqs: Bio 1113 & 3+ hrs Bio)
  | Au, Sp | (Honors Version)
- **Biochem 4511** **Intro to Biological Chemistry**
  4hrs | Au, Sp, Su | (Pre-reqs: Chem 1210/1220 & 2510)
- **Psych 4305** **Intro to Psychopharmacology**
  3hrs | Au, Sp | (Pre-reqs: Psych 3313)
  Not Open to Students With Credit For Psych 3305
- **Psych 4501** **Advanced Behavioral Neuroscience**
  3hrs | Sp | (Pre-reqs: B or higher in 3313)
- **Psych 4644** **Hormones & Behavior**
  3hrs | Sp | (Pre-reqs: Psych 3313)
  Not Open to Students With Credit For Neuro 5644

IV. Breadth Requirement

Choose at least 2 additional courses from the list below

- **Neuro 4850** **Contemporary Topics in Neuroscience**
  3hrs | Au | (Pre-reqs:Psych 3313 & Neuro 3000)
- **Psych 3310** **Sensation and Perception**
  3hrs | Au, Sp | (Pre-reqs: Psych 1100)
- **Psych 3321** **Quantitative and Statistical Methods in Psychology**
  3hrs | Au, Sp | (Pre-reqs: B or higher in 2220)
- **Math 4350** **Quantitative Neuroscience**
  3hrs | Sp | (Pre-reqs: Math 1151 &1152)
- **EEOB 4550** **Neurobiology of Behavior**
  3hrs | Au | (Pre-reqs: 2 courses in Bio)
- **Neuro 4623** **Biological Clocks & Behavior**
  3hrs | Sp | Spring '16 '18 (Pre-reqs: Psych 3313)
- **CSE 5526** **Introduction to Neural Networks**
  3hrs | Au | (Pre-reqs: Psych CSE 3521)
- **Psych 5600** **Psychobiology of Learning & Memory**
  3hrs | Sp | (Pre-reqs: Psych 3313)
- **Psych 5602** **Behavioral Genetics**
  3hrs | Sp | (Pre-reqs: Psych 3313)
- **Psych 5606** **High Level Vision**
  3hrs | Sp | (Pre-reqs: Psych 3310)
- **Psych 5608** **Intro to Mathematical Psychology**
  3hrs | Au | (Pre-reqs: Psych 3321)
- **Psych 5609** **Intro to Mathematical Models in Experimental Psychology**
  3hrs | Au | (Pre-reqs: Psych 5608)
- **Psych/CSE/Ling/Philos 5612** **Introduction to Cognitive Science**
  3hrs | Au | (Pre-reqs: 12hr in Psych/CSE/Ling/Philos)
- **Psych 5613H** **Biological Psychiatry**
  3hrs | Sp | (Pre-reqs: Psych 4501)
- **Psych 5614** **Cognitive Neuroscience**
  3hrs | Au | (Pre-reqs: Psych 3313 or 3513)
- **Psych 5618** **Introduction to Computational Cognitive Neuroscience**
  3 hrs | Au | (Pre-reqs: Psych 3513)
- **SHS 5760** **Neurology of Speech and Hearing Mechanisms**
  3hrs | Au, Sp | (Pre-reqs: Permission of Instructor)
- **Psych 5898** **Seminar in Behavioral Neuroscience**
  3hrs | Au | (Pre-reqs: Psych 4501 & Instructor Consent)
- **Neuro 4998/3193** **Undergraduate Research & Individual Studies**
  Pre-approval required.
  Up to 3 credit hours of any combination of Undergraduate Research (4998) and Individual Studies (3193) can be applied to the breadth requirement. **3 credit hours equals 1 course toward the breadth requirements.**

Honors and Graduate Level Course Offerings

Honors students* and students with a 3.4 or higher cumulative and major GPAs are eligible to take graduate level courses. Course credit at the graduate level may be substituted for credit within the specialization and/or breadth requirements. To see current course offerings, please visit:

http://neurosciencemajor.osu.edu/honors

*Honors students are required to take at least one honors or graduate level course.

Important information about the Neuroscience Major

1. **Students must meet the following requirements to declare the neuroscience major:**
   - First, meet with an advisor to officially be declared as a pre-neuroscience major
   - Complete 24 total semester credit hours
   - At least 12 of those semester credit hours must be from graded OSU coursework
   - An overall GPA greater than or equal to 3.0
   - Earn at least a " **B** " in Psych 3313 and Neuro 3000
2. Thirty-six (36) semester credits in approved Neuroscience coursework.
3. At least half of the major's curriculum must be completed at Ohio State.
4. Majors will follow the Bachelor of Science curriculum for GE and other degree requirements.
5. Students are encouraged to focus on completion of core requirements before beginning their specialization coursework.
6. For courses to apply toward the major, you must earn at least a " **C** ".
7. To earn your degree you will need an overall GPA of at least a 2.0.
8. Research experience is also strongly encouraged for students considering graduate and professional training. You may enroll in a variety of 4998 opportunities.
   http://neurosciencemajor.osu.edu/4998
9. Up to 3 hours of experiential coursework can be applied to the breadth requirements of the major. This experiential coursework can be from any combination of the following classes: Undergraduate Research (4998) and Individual Studies).
   Pre-approval from your neuroscience major advisor is required.
10. Students planning to graduate "With Honors in Arts and Sciences" should visit our website for information on Honors Contract requirements for neuroscience majors.
    http://neurosciencemajor.osu.edu/honors
11. Courses cannot count for both a minor and a major.

The interdisciplinary major in neuroscience was created by a joint venture between the College of Arts and Sciences & the College of Medicine.

THE OHIO STATE UNIVERSITY
COLLEGE OF MEDICINE
COLLEGE OF ARTS AND SCIENCES