



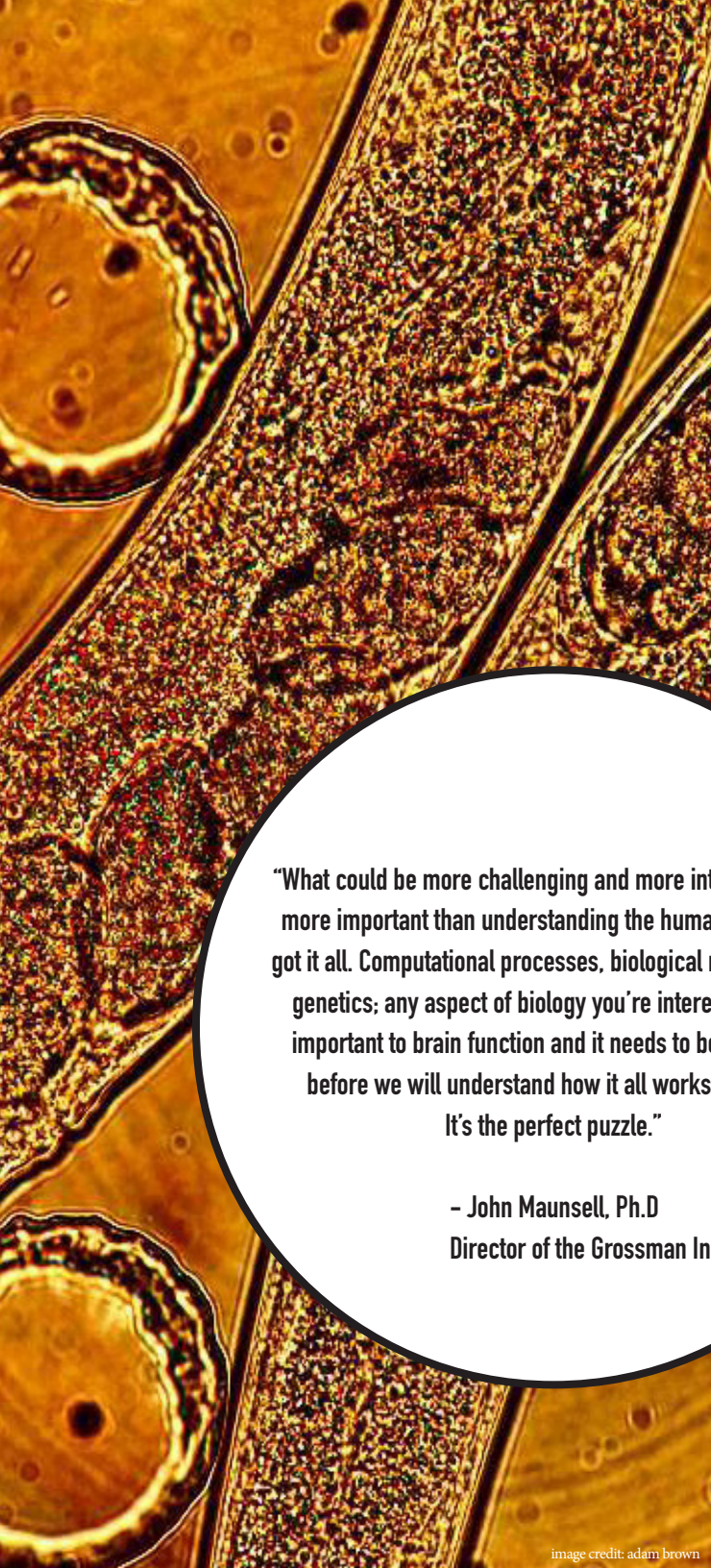
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UNDERGRADUATE MAJOR
IN NEUROSCIENCE



THE UNIVERSITY OF
CHICAGO

GROSSMAN INSTITUTE
FOR NEUROSCIENCE, QUANTITATIVE
BIOLOGY AND HUMAN BEHAVIOR

A detailed microscopic image of brain tissue, showing various cellular structures and fibers in shades of brown and orange. The image is positioned on the left side of the page, partially obscured by a white circular callout and the main title text.

Neuroscience is the multidisciplinary study of nervous systems and their relationship

“What could be more challenging and more interesting and more important than understanding the human brain? It’s got it all. Computational processes, biological mechanisms, genetics; any aspect of biology you’re interested in, it’s important to brain function and it needs to be mastered before we will understand how it all works together. It’s the perfect puzzle.”

**– John Maunsell, Ph.D
Director of the Grossman Institute**

The sheer scope of neuroscience necessitates numerous scientific approaches to achieve understanding of sensation, perception, cognition and behavior. Consequently, students in the major are provided with access to a wealth of scientific variety including biology, psychology, physics, chemistry, computer science, engineering, mathematics, statistics and medicine.

Neuroscience faculty at the University of Chicago have expertise in all of these areas and are distributed across the Biological Sciences, Social Sciences, and Physical Sciences Divisions.

The course of study in the undergraduate major in neuroscience provides students with the background and skills appropriate to pursue a diverse set of careers. These include established neuroscience career paths in academia, medicine and the pharmaceutical industry, as well as new emerging careers in economics, machine learning and analytics, to name but a few.

Part of the **general requirements** of the Neuroscience major includes a **fundamental sequence of courses**.

The **Neuroscience Fundamental sequence, NSCI 20100–20140**, provides students with a broad knowledge of neuroscience.

Courses will cover the **cellular and subcellular properties of neurons**, including the passive and electrophysiological properties of neurons and their interactions through synapses. Students will learn that what we actually experience —**perception**— arises from **neural responses**. To better understand neural responses, the fundamental sequence introduces vertebrate and invertebrate neural anatomy, physiology, as well as the **development** of sensory and motor control **systems**.

Finally, students will be provided the opportunity to carry out **hands-on neuroscience research** in a laboratory course.

Collectively the fundamental sequence **prepares students** to take full advantage of the breadth of neuroscience electives and other related opportunities associated with the major.

Neuroscience Programs of Study

The BA, BS, and BS Honors degrees in neuroscience provide a broad foundation in understanding neural function from the perspective of molecules, cells, circuits, systems, organisms and species. The BA degree offers thorough study in the field of neuroscience and provides flexibility in elective choices. The BS degree offers a more intensive program of study that includes individual research.

BACHELOR OF ARTS

Neuroscience Majors have a selection of General Education courses, approved Core Classes, and a list of Electives to choose from to satisfy their Bachelor of Arts requirements.

BACHELOR OF SCIENCE

The principal distinctions between the BA and BS programs is enrollment in faculty supervised research and additional neuroscience electives.

BACHELOR OF SCIENCE W/ HONORS

The Bachelor of Science with Honors program expands on the regular BS requiring a minimum GPA as well as more immersive faculty supervised research. Majors must apply for admittance into the Honors program in their third year through a competitive process.

Minor in Neuroscience

The minor in Neuroscience is intended to provide neuroscientific literacy for students whose primary interest lies in other fields.

Undergraduate Research

Students have an opportunity to transform knowledge learned in the classroom into tangible skills. Under the supervision of neuroscience faculty, students develop valuable scientific techniques and problem solving skills while learning to function independently in a laboratory setting.

Importantly, the major permits elective credit for laboratory research.

In addition to contacting faculty directly Neuro majors have a number of resources and opportunities.

COLLEGE CENTER FOR RESEARCH AND FELLOWSHIP

The CCRF supports students through scholarly undergraduate research and nationally competitive fellowships by providing access to an extensive research opportunities database, college-sponsored research grant programs, and individual advising to all undergraduates interested in pursuing scholarly research, including:

- Assisting students in finding and applying to research opportunities at UChicago and beyond
- Helping students find Faculty and research mentors
- Working with students to navigate and secure funding sources for their research
- Encouraging and supporting students to present and publish their research

More information can be found on the CCRF Research Website at <http://ccrf.uchicago.edu/>

This program gave me the opportunity to advance my ideas and questions in the lab, and ultimately enabled me to conduct my own research on one of my questions! It was valuable experience that furthered my understanding of what rigorous scientific inquiry should be.

– John Havlik, '19

Research Fellowships

Metcalf

The Metcalf summer research fellowship provides undergrads with the opportunity to gain laboratory research experience working with NSCI faculty. This fellowship is competitively awarded to first, second, and third year NSCI majors. Fellows will be required to perform 10 weeks of full-time research in their host labs.

DNUFO

The Developmental Neurobiology Undergraduate Fellowship Opportunity (DNUFO) is an undergraduate summer research program that encompasses the breadth of developmental neurobiology research across various departments. DNUFO Fellows will be required to perform 10 weeks of full-time research in their host labs.

Quantitative Biology

The Quantitative Biology summer research fellowship is an opportunity for students to complete a research project primarily computational in nature, although students may also engage in experimental data collection to support their aims. Students will take part in a regular student-led seminar with the aim of acquiring new quantitative skills to support their research progress.

College de France

The University of Chicago has partnered with College de France to create a 10 week paid fellowship opportunity for NSCI majors. Students accepted to this program will be based at the historic College de France campus in Paris, France.



HOW TO FIND A RESEARCH LAB



Road map to a mentor

1. IDENTIFY POTENTIAL FACULTY MENTORS

Visit the faculty page at neuroscience.uchicago.edu to start your search

- **Make a list**

Not all faculty will be taking new students so be sure to cast a wide net

- **Check out each lab's website**

Most labs have their own website but all will have faculty profiles for you to read up on their work

- **Still need help identifying?**

If you need additional help, contact the CCRF

2. EDUCATE YOURSELF

Make an educated choice on which lab you'd like to join

- **Read** up on each faculty member's work

- **Before approaching** the P.I. (Principal Investigator aka laboratory head), know something about their lab

3. WRITE A COVER LETTER

To get to the interview stage, you'll need a good cover letter.

Your letter should be concise and less than a page

- **Salutations!**

Address your letter to Dr. or Prof. regardless of their rank or degree

- **State your vitals**

Year? Major? Honors student? Interested in summer research?

This is all info faculty need to know

- **Know your stuff**

Tell the faculty what interests you about their research

- **Experience**

Write about your past laboratory experience or alternatively that you're eager to learn

- **Goals**

Describe your long-term career goals

- **Ask!**

Request to speak with the faculty member about opportunities in their lab

4. INTERVIEWS

Meet the faculty and let them get to know you

- **Ideally** all of your diligent research and networking will lead to 3-5 interviews

- **Practice** answering questions with a friend

Why do you want to do research? What is your particular interest in neuroscience?

What are your career goals? Tell me about your previous research. What draws you to this laboratory?

GOOD LUCK!

If you are lucky to get more than one offer, then talk to the members of the respective laboratories.

Visit the laboratories. Go someplace where you feel comfortable. Comfortable begets productivity.

Study Abroad Program

Those participating in the College-sponsored Fall quarter program on Neuroscience will take 2 Neuroscience courses and 1

Psychology course taught by Chicago faculty at the University of Chicago's Center in Paris. All 3 courses will count toward the Neuroscience major, and the Psychology course may be used in the Psychology major.

Neuroscience majors are encouraged to apply, though the program is open to students of all majors.

NEURO Club

The Neuroscience Education, Undergraduate Research & Outreach (NEURO) Club is a Registered Student Organization (RSO) at the University of Chicago centered on students interested in the field of Neuroscience and in educating the on-campus and surrounding community about Neuroscience.

For upcoming events and other information go to
theneuroclub.org
facebook.com/TheNeuroClub

Meet a Neuroscientist

Have lunch with UChicago NSCI faculty and learn about exciting research on campus! Faculty members from across the major will speak informally about their work. If you are interested in getting into research, this is an excellent way to narrow down the type of approaches and topics that are appealing to you.

You can sign up for a lunch date on our website.

Questions about the major?

Students will have opportunities to meet with the Neuroscience Director and Advisors each quarter to ask questions, get help navigating the curriculum, and learn more about opportunities within the major.

Sign up links are available through our website.

F.A.Q.S

How do I register for NSCI 29100/2, 29700 research electives?

First obtain a "Reading & Research form" (R&R) from a student advisor and fill it out with thesis course 29100/29700. Be sure to include a description of your research and have a faculty mentor (P.I.) sign off on the R&R form. Submit it to the Grossman Institute reception desk and NSCI administration will review and approve. If approved, you can pick up the completed form from the Institute and submit it to the College advising reception desk in Harper Memorial Hall. (NSCI 2910X must have a new form filled out and approved for every quarter of research you're enrolled in).

I am a BS student but want to take NSCI 29700 research elective.

Can I register?

Nope. Only BA students are able to register for NSCI 29700. BS students must register for Neuroscience Thesis Research (NSCI 29100).

I'm thinking of making a career change into Neuroscience,

who can I talk to?

You can email neuromajor@uchicago.edu or come to the quarterly advising meetings. You can also set up one-on-one time with a senior advisor by scheduling time with them through the advising calendar on our site.

Can I get paid for tech work while in a lab when I am enrolled in Neuroscience Thesis Research (NSCI 29100)?

There is a strict rule that you can either receive credit for research or get paid for research. Not both. If you're being paid for work in the same lab that you're doing thesis work, you must suspend the paid position while you're enrolled in Neuroscience Thesis Research.

How do I get to the Institute?

We're located at 5812 S. Ellis ave. Just head up to the 4th floor, turn left out of the elevators, and look for Suite P-400. If you have any trouble, just give us a call @ 773.702.9802

Notes

