Eligibility

All applicants must:

- have US citizenship or US permanent residency
- have graduated from a four-year accredited US institution by the start of the program (graduating seniors and applicants who have received their undergraduate degree within the last 12 months are eligible to apply)
- be individuals with disabilities, or be first-generation college students in their families, under-represented minorities and/or individuals from socio-economically disadvantaged backgrounds
- have strong academic records (minimum GPA of 3.3)
- have majored in a STEM field with some prior research experience and a demonstrated interest in pursuing a PhD degree
- provide the names of three science faculty members who can evaluate the applicant’s academic promise, intellect, character, potential to benefit from this 2-year program, and motivation for pursuing a PhD degree

Application, dates, and deadlines

Program dates
July 2018–June 2020

Application deadline
February 28, 2018

The online application opens December 15, 2017. Applicants will be informed of their application status by April 15. The application can be found at bcs.mit.edu/postbacc.

For more information about the program, please visit bcs.mit.edu/postbacc

For questions about the program:
Mandana Sassanfar, Ph.D.
Outreach Officer, MIT Department of Brain and Cognitive Sciences
mandana@mit.edu

An image of neurons in a mouse hippocampus taken with expansion microscopy
Ed Boyden, Fei Chen, Paul Tillberg, Synthetic Neurobiology laboratory
The Department

The mission of the MIT Department of Brain and Cognitive Sciences (BCS) is to reverse engineer the human mind. To this end, we delve deeply into the mechanisms of the brain at all levels — from molecules to synapses to neurons to circuits to algorithms to human behavior and cognition, we build links between those levels, and we train the next generation of scientific leaders. Students come to the department with diverse backgrounds and interests. We inspire them to think big about the mind, and expose them to the many paths that the study of brain and cognitive sciences can take.

Overview

The Research Scholars Program in the department of Brain and Cognitive Sciences is a post-baccalaureate scholarship program for outstanding college graduates from under-represented minority groups or economically disadvantaged backgrounds who would benefit from additional course work or research experience to prepare them for graduate school in cognitive science, computational cognitive science, or neuroscience. This two-year, fully funded program allows Scholars to take courses at MIT, conduct supervised research in BCS labs, and immerse themselves in the MIT culture and experience its academic rigor, while gaining the knowledge and experience necessary to make them competitive applicants for top-tier graduate programs, and successful graduate students.

About the program

The program is structured as 70% research effort and 30% academic enrichment/coursework. Participants are assigned an academic advisor, with whom they meet on a biweekly basis, and a research mentor (an MIT faculty member in the department of Brain and Cognitive Sciences) who hosts the student in his or her lab.

Course work

Classes are tailored to each individual’s needs. Participants take one to two courses for credit per semester to build their skills and knowledge in computational and quantitative methods, critical reading, analysis of primary research literature, and fundamental and advanced concepts in cognition and neuroscience. Each participant presents their research on a monthly basis. The summer after completing their first year, participants learn about various aspects of the graduate application process required for submitting a competitive application and having a successful interview, take the GRE exam, explore funding opportunities for graduate school, and learn about various careers available to Ph.D. degree holders.

Research

Participants conduct supervised research in a host laboratory (85% in the summer, 70% during the academic year) in one the following areas: Cognitive neuroscience, computational neuroscience, systems neuroscience, neuro-engineering, and cellular and molecular neuroscience. Working in a fast-paced, supportive research environment, they learn to become fully independent researchers, designing and conducting experiments, collecting and analyzing data, and presenting their work to both general and specialized audiences.

Completion of program

At the completion of the program, students will receive an official transcript from MIT that documents the subjects and research completed in the department. Successful candidates will be fully prepared for graduate study at MIT or elsewhere.

Fully funded

All students admitted to the program will receive the equivalent of a graduate student stipend, health insurance, access to student housing, tuition remission, and all other benefits and privileges conferred upon MIT graduate students.

Classes taken by recent Scholars

9.46 Neuroscience of Morality

How do we decide whether an action is morally wrong? Are there different kinds of moral wrongness? Once we know something is wrong, how do we decide whether or not to do it anyway? The classic puzzles of human morality have recently become accessible as topics in human psychology and neuroscience. This course considers the origins of morality as a question for neuroscientists.

9.71 Functional MRI of the Human Brain

We live now at an unprecedented point in the field of neuroscience: We can watch the human brain in action as it sees, thinks, decides, reads, and remembers. Functional magnetic resonance imaging (fMRI) is the only method that enables us to monitor local neural activity in the normal human brain in a noninvasive fashion and with good spatial resolution. A large number of far-reaching and fundamental questions about the human mind and brain can now be answered using straightforward applications of this technology. The goals of this course are to help students become savvy and critical readers of the current neuroimaging literature, to understand the strengths and weaknesses of the technique, and to design their own cutting-edge, theoretically motivated studies.

9.97 Introduction to Neuroanatomy

An intensive introduction to neuroanatomy, involving lectures, demonstrations, and hands-on laboratories, including a brain dissection. This one-week Independent Activities Period (January) class provides an introductory-level introduction to mammalian neuroanatomy. Students are taught through lectures and hands-on lab experience, including sheep brain dissection, human brain slice live viewing, and neuroimaging anatomy.

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