First year
- *Life Sciences 1a* or *Life & Physical Sciences A* (fall)
- *Life Sciences 1b* and/or a related fields course (spring)
- Math or Applied Math

Second year
- *Molecular and Cellular Biology 80 OR 81. Neurobiology of Behavior* (fall)
- *One of the four ‘Foundational Courses’*: OEB 57, MCB 105, MCB 115, MCB 125
- During the sophomore year, students may consider taking a related fields course as well.

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**Sample Advanced Courses**

We offer over different 40 courses to choose from (more in the MBB Track!). These courses come from > 10 departments and cover the breadth of study of the brain: from genetics to cells to circuits to behavior! Here are some examples, but visit our website to see the entire list…

- OEB 145: Genes and Behaviors
- Neurobiology 104: The Neurobiology of Drug Addiction
- MCB 146: Experience-based Brain Development
- Psych 1201: Your Brain on Drugs - Psychopharmacology
- Psych 1401: Computational Cognitive Neuroscience
- SCRB 180: Repair and Regeneration in the Mammalian Brain
- LS100r: Experimental Research in the Life Sciences

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**Sample Thesis Titles**

Our student researchers don’t just learn about the brain, they discover it! Students can conduct research at Harvard College, Harvard Medical School, or any of the Harvard hospitals (MGH, Brigham and Women’s, etc.).

- Plasticity of dopaminergic neural circuits in the mouse olfactory bulb.
- Microglia Mediate Synapse Loss In Early Stage Alzheimer’s Disease Via the Classical Complement Cascade.
- Use of Stem Cells Loaded With Hyaluronidase-Expressing Oncolytic Viruses To Treat Malignant Brain Tumors.
- Development and neural bases of happy and angry facial processing in infants.
- Investigating Differences in Neural Activity of Young Children with and without Attention Deficit/Hyperactivity Disorder.

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**Sample Faculty**

- **Venki Murthy:** The central goal of this lab is to understanding how the signals and structure of the brain give rise to behavior. In particular, the lab studies how mammalian brains detect and recognize odor signals, and how subsequent neural activity from these odors can alter behavior.

- **Catherine Dulac:** This group explores the molecular and neuronal basis of innate social behaviors in the mouse. This includes projects studying genomic imprinting and its impact on brain development and function.

- **David Cox:** The focus of this laboratory is to understand the computational underpinnings of object recognition on two fronts: 1) learning from the neurophysiology of natural vision systems, and 2) using these findings to build better artificial (computational) object recognition systems.

- **Hopi Hoekstra:** This group is interested in understanding the genetic basis of naturally occurring behaviors, including: burrowing behavior, climbing behavior, and mate choice. These behaviors differ among closely related species, which allows for a dissection of the genetic architecture that gives rise to the brain.

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**Gateway Courses**

**Suggested and/or Required Courses**

**Sample Department Research Opportunities**

- Research: There are 250+ labs working in Neuroscience at Harvard College and the Harvard hospitals. You can work at any of them! Concentration advisors (Ryan and Laura) can help you get started.

- Tutorial Courses: Neurobiology offers optional junior year tutorial courses (year-long), which provide a great setting to study the brain at the level of a professional scientist. These small courses (<15 students) teach you to learn about neurobiology by reading the primary literature directly.

- Summer Abroad Programs: Neurobiology students can get course credit for participating in Harvard Summer Abroad programs in Trento Italy (MBB), Oxford, England, and Tokyo Japan (RIKEN). We also help place students in summer internships in Europe (Portugal) and India (Bangalore).

- Expert Advisors: Neurobiology has two dedicated advisors who are available to get to know you personally and provide you with all the information you need to get the most out of your concentration.

- Check out our website (lifesciences.fas.harvard.edu/neurobiology) for lots more info about Neurobiology!

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**Division of Science**

Biolabs, 1082, 16 Divinity Ave.
lifesciences.fas.harvard.edu/neurobiology