

# BIOLOGY

## College of Computer, Mathematical, & Natural Sciences

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<http://biology.umd.edu>

The Department of Biology is committed to an integrative understanding of organisms ranging from processes occurring at the level of molecules to human impacts on global ecological scales. This integrative approach is evident in the variety of courses we offer. Courses offered by Biology focus on the function of molecules or cells (e.g., Membrane Biophysics, Mammalian Histology, Neurophysiology), on the integration of organ systems (e.g., Vertebrate Form and Function, Mammalian Physiology), on the interaction of organisms with each other and their environment (e.g. Animal Behavior, Plant Ecology, Population Ecology), on evolutionary process and diversification (e.g., Principles of Evolution), and/or on the relationship between humans and their environment (e.g., Biology of Conservation and Extinction). In addition to a strong foundation in basic biology, our faculty provide students interested in medical careers with courses that discuss medical applications (Biology of Cancer, Diseases of the Nervous System) and evolutionary considerations. Our program has particular strengths in neuroscience, evolutionary developmental biology, and ecology. Our diverse faculty and our linkages with other institutions, such as the National Institutes of Health and the Smithsonian Institution, provide students with a wealth of research opportunities to prepare them for careers in medicine, conservation biology, public policy, education, and more.

Courses offered by this department may be found under the following acronym(s): BSCI, BIOL, NACS, and BISI.

The Department of Biology faculty coordinate and advise students who specialize in the following areas:

- **Biological Sciences:** Ecology and Evolution (ECEV)
- **Biological Sciences:** Physiology and Neurobiology (PHNB)
- **Environmental Science and Policy:** Biodiversity & Conservation Biology concentration (ENSP-BIOD)

The requirements for the Biological Sciences major can be found here (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/computer-mathematical-natural-sciences/biological-sciences/#requirementstext>).

## Admission to the Biological Sciences Program

The Department of Biology offers undergraduate courses in the Biological Sciences Program. Biological Sciences is a limited-enrollment program. Specific information about admission requirements for the major can be found here (<https://www.lep.umd.edu/bioscience.html#freshman>).

## Program Learning Outcomes

- Students will master the critical knowledge in biology relevant to the next stage in their career.
- Students will demonstrate an ability to use and apply appropriate quantitative methods in the biological sciences.

- Students will be able to critically evaluate and integrate scientific findings in the biological sciences and apply this understanding to areas of professional and public interest.
- Students will be able to effectively communicate through speaking and writing the processes of science and the results of scientific inquiry.
- Students will master experimental design and laboratory skills relevant to the next stage in their career.

## PROGRAMS

### Majors

- **Biological Sciences** (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/computer-mathematical-natural-sciences/biological-sciences/>) (Ecology and Evolution-ECEV)
- **Biological Sciences** (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/computer-mathematical-natural-sciences/biological-sciences/>) (Physiology and Neurobiology-PHNB)
- **Environmental Science and Policy** (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/agriculture-natural-resources/environmental-science-policy/>) (Biodiversity & Conservation Biology-ENSP-BIOD)
- **Neuroscience** (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/computer-mathematical-natural-sciences/biology/neuroscience-major/>) (CMNS-Biology)

## ADVISING

Students are assigned an academic advisor on the basis of their area of specialization. The Department of Biology faculty coordinate and advise students who specialize in the following areas:

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Students may contact the Department of Biology (biundergrad@umd.edu) for assistance.

For advising in other Biological Sciences Specialization areas, see the Biological Sciences Major (<https://academiccatalog.umd.edu/undergraduate/colleges-schools/computer-mathematical-natural-sciences/biological-sciences/>) listing in this catalog.

## OPPORTUNITIES

### Undergraduate Research Experiences

The Department of Biology offers a wealth of undergraduate research opportunities. Students doing undergraduate research with a biology department faculty member serving as advisor or co-advisor may sign up for credit under BSCI399, BSCI399L, or BSCI399H or may do research on a volunteer basis. More general information on research opportunities in the Biological Sciences may be found at: <http://cmns.umd.edu/undergraduate/research-internships/>.

### Honors Program

The Department of Biology Honors Program offers highly motivated and academically qualified students the opportunity to work closely with a faculty mentor on an original, independent, research project. Students are required to participate in the program for at least three

semesters and need not to have been previously admitted to the Honors College to participate. Successful completion of the program requires a public presentation of your research and defending a written thesis to a committee of faculty experts. Contact the Biology Undergraduate Office (301-405-6904; [bioundergrad@umd.edu](mailto:bioundergrad@umd.edu)) for more information.