



## Why Major in Biology?



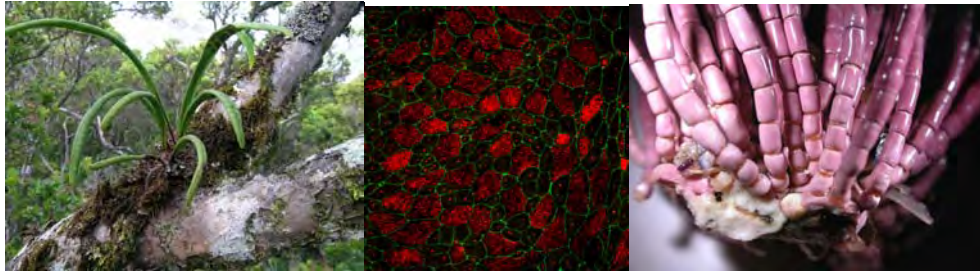
Biology is a diverse and exciting field. Both as preparation for specific professional careers and as the focus of a general liberal arts curriculum, a major in Biology is an excellent choice for many Stanford students.

The Biology major can serve as a stepping-stone for a wide variety of career opportunities. For students planning to attend medical, dental, or veterinary school, or graduate school in biological and applied sciences, the biology major provides a strong foundation in the basic life sciences. This foundation of knowledge, plus laboratory experience, also prepares students well for research and technical positions in universities, government, and industry. The recent tremendous growth in the biotechnology industry has opened up many additional career opportunities for individuals with a background in biology, including marketing and scientific writing. In addition, individuals combining an undergraduate degree in Biology with advanced degrees in law or business are uniquely qualified to meet the growing needs for people in patent law and biotechnology business administration.

While a major in Biology provides an excellent background for these technical careers, it can also serve as a valuable and satisfying focus of a liberal arts education for those not planning careers in science-related fields. An understanding of basic biological principles is of increasing importance in today's world. Environmental issues are of growing concern as we struggle to deal with the effects of contemporary civilization on the environment. Modern medicine has provided us with new insights into the basis for disease and has greatly improved the quality of human life, but the rapid advances in genetic engineering and other areas of biomedical research are also raising new moral and ethical questions. A knowledgeable and concerned citizenry is the best guarantee that these issues will be resolved most effectively. Finally, an understanding of the processes of life can heighten our perception and appreciation of the world around us, in terms of its beauty, variety, and uniqueness.

The Department of Biology offers its majors an impressive set of resources and experiences. Its world-renowned faculty is involved in research in many different areas, including ecology, neurobiology, population biology, plant and animal physiology, biochemistry, immunology, cell and developmental biology, genetics, and molecular biology. A wide range of courses is available, both on campus and at the department's Hopkins Marine Station in Monterey Bay. In addition, selected courses at the medical school and in other departments, such as psychology and human biology, may be taken for biology elective units. Biology majors are encouraged to pursue independent research, and several research opportunities are available including the popular summer research program. Top students are eligible to participate in the departmental honors program, which includes a presentation at the Undergraduate Research Symposium held every spring. Another advantage of the Biology major is that the required course load in the junior and senior years is sufficiently light to allow students to take elective courses outside of the major and to study abroad.

The department is committed to providing its majors with a solid and broad-based education in the principles and experimental approaches of modern biology. We value our interactions with students and appreciate comments and suggestions about our majors program. Information on the Biology major is available from our Student Services Office in Gilbert 108, which is open Monday through Thursday 10:00-12:00 and 1:00-4:30 and Friday 1:00-4:30. You can also learn more on our web page at <https://biology.stanford.edu/>.



# Department of Biology

<http://biology.stanford.edu>

The undergraduate program in Biology is intended for students with a passion for the constantly changing field of science, and for those wishing to study biology, enter medical school, or other graduate programs in sciences.

Recent graduates of the Biology major had these thoughts about their experience:

“I was able to and encouraged to explore biology fields not necessarily directly related to my career goals, like plant biology and biogeography and I was pleasantly surprised at how interesting I found them.”



“I love this department, and it has allowed me to reach all of my goals in terms of finding my direction and getting into my top choice graduate schools. Thank you all very much for making one of the best departments on campus.”

“I found welcoming and brilliant faculty who genuinely cared about teaching undergraduates.”

We offer a general major that covers all of the core areas across the field of Biology. Or, if you have a more specific interest, one of our six specialized fields of study might appeal to you:

- Biochemistry and Biophysics
- Ecology and Evolution
- Marine Biology
- Microbes and Immunity
- Molecular and Cell Biology
- Neurobiology

## General Biology Major Course Requirements

\*\*\*Requirements for the six specialized fields of study vary slightly from general major\*\*\*  
See the department website for more information.

BIO 41: Genetics, Biochemistry, and Molecular Biology  
BIO 42: Cell Biology and Animal Physiology  
BIO/BIOHOPK 43: Plant Biology, Evolution, and Ecology  
BIO 44X & BIO/BIOHOPK 44Y: Core Laboratories

CHEM 31A and 31B or 31X: Chemical Principles  
CHEM 33: Structure and Reactivity  
CHEM 35: Organic Monofunctional Compounds  
CHEM 36: Organic Chemistry Laboratory I  
CHEM 130: Organic Chemistry Laboratory II  
CHEM 131: Organic Polyfunctional Compounds  
CHEM 135 or 171: Physical Chemistry

PHYSICS 21 & 22: Mechanics and Heat with Lab  
PHYSICS 23 & 24: Electricity and Options with Lab  
\*\*may also be fulfilled with PHYSICS 41, 43, 45 or 28, 29

MATH 41 & 42 or 19, 20, 21: Calculus

Students are also required to take one additional foundational breadth course, 24 units of electives including courses from 3 central menu areas, and a Writing in the Major course.

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### Comments about some favorite Biology courses:

- BIO 150 (Human Behavioral Biology) was my favorite - interesting subject matter, entertaining professor.
- BIO 230 (Immunology) was my favorite because it was challenging conceptually but taught well
- BIO 158 (Developmental Neurobiology) with Susan McConnell- a great lecturer, much more engaging class since we interact with each other and with her frequently.
- BIO 129A/B because of Dr. Nelson. He is an amazing teacher; funny and smart. And, the information is very fundamental for all of biology.
- BIO 137 (Plant Genetics). Prof. Walbot taught an exceptional class. It was challenging, thoughtful, and allowed students to express their own creative research interests.
- BIO 112 (Human Physiology). This class was perfect. Dr. Garza was an amazing professor and the content of the course was so interesting.

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### Want to know more?

If you want to get information about Biology-related jobs, research or events, you can self-subscribe to [biointerest@lists.stanford.edu](mailto:biointerest@lists.stanford.edu). To talk to staff and peer advisors, visit us anytime Monday-Thursday 10am-12pm, 1-4:30pm and Fridays 1-4:30pm.

Undergrad Student Services Officer  
Gilbert 108, 371 Serra Mall  
(650) 723-5060

BioBridge Peer Advisors  
Gilbert 108, 371 Serra Mall  
[biobridge@lists.stanford.edu](mailto:biobridge@lists.stanford.edu)

# Interested in science? Want to do research?

## Biology might be for you!

Biology majors have the option of following a general curriculum or one that focuses on a specific sub-field in Biology. All students are welcome and encouraged to do research while at Stanford.

86% of Biology majors  
conduct research at some  
point in their Stanford  
academic career!

For students who want to get a jump start on conducting research, there are tons of paid research opportunities during the summer quarters.

For more information about the major and the department, feel free to peruse these two websites:

Department: [http://www.stanford.edu/dept/biology/programs\\_bs.html](http://www.stanford.edu/dept/biology/programs_bs.html)

BioBridge Peer Advisors: <http://www.stanford.edu/group/biobridge>

You can also speak to staff in the Student Services Office:

Location: Gilbert 108

Phone: (650) 723-5060

Office hours: Monday-Thursday 10am-12pm, 1-4:30pm

Friday 1-4:30pm

**We are looking forward to meeting you!**

# YES! You can go to school right next to the beach when you are a student at Stanford!



Hopkins Marine Station sits on 11 acres of land and is located in Pacific Grove, which is approximately 90 miles from the Stanford campus. The Station is associated with the Biology Department and offers courses to undergraduates during Winter, Spring and Summer quarters.

There are numerous benefits to studying at Hopkins for a quarter (or more!):

- Most of the courses at Hopkins have labs or hands-on experiences that are not available anywhere else
- With small class sizes, you will be able to work one-on-one with professors in a way that is unlike almost anything else you can find at Stanford
- It's a chance to get away from Stanford for a quarter and experience another beautiful part of the Bay Area
- It gives you first hand insights into how real science gets done and the potential of science and research as a career

Learning at Hopkins Marine Station doesn't just happen in the classroom... Come and indulge your curiosity about the natural world in ways you've never imagined before!

For more information, visit <http://hms.stanford.edu>