



School of Biological Sciences

Undergraduate Areas of Study

Majors

Biochemistry and Molecular Biology, B.S.

Biological Sciences, B.S.

Developmental and Cell Biology, B.S.

Ecology and Evolutionary Biology, B.S.

Genetics, B.S.

Microbiology and Immunology, B.S.

Specializations:

Microbiology

Immunology

Virology

Neurobiology, B.S.

Plant Biology, B.S.

Minor

Biological Sciences

School Overview

Studying in the School of Biological Sciences at UCI is a unique experience. Because the curriculum is interdisciplinary, students learn not only how the birds and bees function (physiology), but also why they behave as they do (neurobiology and behavior), and how they interact with each other (ecology). They study genetics, developmental and cell biology, biochemistry, and molecular biology as well. Students also engage in the Biological Sciences Core, an interdisciplinary sequence of lecture and laboratory courses which provides a broad yet intensive education in modern experimental biology and concepts that underlie biological phenomena. Advanced courses, called upper division biology electives, expand upon and intensify areas covered in the core, enabling students to focus on a particular area of interest.

The School of Biological Sciences reflects new concepts of biology in both its curriculum and its research programs. The faculty is dedicated to providing students with the opportunity to learn the principles and facts in the ever-expanding field of biology. The school encourages vigorous faculty and student research programs, and strongly believes that excellence in research is essential for effective, enthusiastic, and up-to-date teaching.

Academic Offerings

Biological Sciences*

The Biological Sciences major presents a unified in-depth study of modern biology commencing with the Biological Sciences Core, a five-quarter series of courses including cell biology, diversity, genetics, biochemistry, and molecular biology. Through upper-division laboratories, students acquire important laboratory techniques and learn scientific methodology. In their third and fourth years, students continue to receive diverse exposure to the biological sciences or study in-depth a particular area through upper division biology electives.

Ecology and Evolutionary Biology*

The Ecology and Evolutionary Biology major is designed to provide students with the ecological and evolutionary context for understanding patterns in biology, ranging from DNA structure to global climate change.

*Students may enter the Biological Sciences major or the Ecology and Evolutionary Biology major in the freshman year. Students who successfully complete their second year of study may elect to major in one of the following additional fields in the School of Biological Sciences.

Biochemistry and Molecular Biology

The Biochemistry and Molecular Biology major is based upon required courses in advanced biochemistry and advanced molecular biology, and provides an in-depth study of the molecular basis of microbiology, immunology, virology, developmental biology, pathogenesis and evolution.

Developmental and Cell Biology

The Developmental and Cell Biology major allows for an extensive analysis of the basic structure and function of cells, the integration of cells with the outside world, and the formation of pattern structure during embryo development.

Genetics

The Genetics major emphasizes developmental, evolutionary and molecular genetics, and explores how genetic mechanisms contribute to the understanding of human development and disease.

Microbiology and Immunology

The Microbiology and Immunology major addresses the biology of bacteria, viruses, and unicellular eukaryotes as well as encompassing efforts to understand how multicellular organisms have evolved to survive a variety of challenges to homeostasis.

Note: Major advising provided by the School of Biological Sciences Undergraduate Counseling Office.

Neurobiology

The Neurobiology major is designed to teach students how neurobiologists apply cellular, molecular, systems and behavioral analyses in understanding how the nervous system works. The hallmark of the major is a year-long, in-depth exploration of the intellectual tools used to create, advance, and disseminate knowledge about the nervous system.

Plant Biology

Plant Biology investigates the energy that runs our planet, the food we eat, drugs that heal, the forefront of biotechnology and much more. This exciting major will provide its students with the knowledge and skills to meet society's need for well-trained botanists.

Special Resources and Opportunities

Biological Sciences 199

Biological sciences students can pursue independent experimental laboratory or field research under the supervision of a professor in either the School of Biological Sciences, UCI School of Medicine, UCI Medical Center, or other off-campus clinical facilities.

Excellence in Research Program

Undergraduate student researchers may participate in the annual Biological Sciences Research Symposium, where they present the results of their research endeavors to peers and faculty via a formal research paper, an oral presentation, and a poster competition. Outstanding undergraduate researchers are awarded the honor of "Excellence in Research." Selected research papers are published in the school's Journal of Undergraduate Research in the Biological Sciences.

Honors Program

The honors program in the School of Biological Sciences provides opportunities for outstanding students to pursue advanced work in independent research via participation in the Excellence in Biological Sciences Research Program and earn honors in biological sciences upon graduation. Students must have a minimum grade point average of 3.5 in both overall coursework and required biological sciences requirements. The program requires a minimum of three quarters enrollment in research (Biological Sciences 199), including successful completion of Biological Sciences H195 and the Excellence in Biological Sciences Research Program.

The Beckman Laser Institute and Medical Clinic

is a research, training, and service facility dedicated to developing the full potential of lasers and related

phototonic systems for biomedical applications.

The Developmental Biology Center is a research center analyzing the cellular and genetic mechanisms underlying growth, development, and regeneration.

The Center for the Neurobiology of Learning and Memory is a research center for studies of the brain mechanisms underlying learning and memory.

The UCI Arboretum is a botanical garden facility. The San Joaquin Marsh Reserve, adjacent to the UCI campus, consists of freshwater ponds and their attendant and aquatic flora.

The Ecological Preserve includes coastal hills on the campus, once under heavy grazing, but now returning to a more natural state.

The School of Medicine is committed to developing and maintaining research programs in the health sciences.

Scholarships, Awards, and Prizes

The School of Biological Sciences is committed to recognizing the outstanding academic and research achievements of its undergraduates. Through generous donors, the school is able to present awards, prizes, and scholarships to its undergraduates each year. Many of these awards assist students in achieving their future academic endeavors in various areas of graduate work in the biological sciences and in the health professions. The recipients are recognized at the annual Biological Sciences Honors Convocation.

Student Organizations

The school is home to a variety of organizations designed to promote interaction among students and foster interest in various health science fields. They include Chicanos for Creative Medicine and the Pharmacy Society, among others. Some of the organizations, such as the Flying Samaritans, provide health care services to the community.

Health Sciences Advising

Advising for careers in the health sciences is a specialty of the Biological Sciences Student Affairs staff. Counselors check students' programs, give advice about appropriate elective courses, and provide information about the application process for health professional programs, including the Medical College Admission Test (MCAT) and other required examinations.

Career Opportunities

Graduates with a B.S. degree from the School of Biological Sciences have entered the following fields, some of which require advanced education:

- Biomedical Engineering
- Business Management
- Chiropractic Medicine
- Dentistry

- Drug and Law Enforcement
- Environmental Management
- Genetic Counseling
- Genetic Engineering
- Health Administration
- Law
- Medical Technology
- Medicine
- Nurse Practitioner
- Occupational Therapy
- Optometry
- Osteopathic Medicine
- Patent Law
- Pharmacology
- Pharmacy
- Physician Assistant
- Physical Therapy
- Podiatry
- Public Health
- Quality Assurance
- Research
- Sales
- Speech Pathology
- Teaching
- Technical Writing
- Veterinary Medicine

Additional Information

School of Biological Sciences

Undergraduate Counseling Office

University of California

Irvine, CA 92697-1460

Telephone: (949) 824-5318

www.bio.uci.edu

Admissions and Relations with Schools

204 Aldrich Hall

University of California

Irvine, CA 92697-1075

Telephone: (949) 824-6703

www.admissions.uci.edu

General Campus Information

Telephone: (949) 824-5011

www.uci.edu

UCI General Catalogue

UCI Bookstore

Telephone: (949) 824-2665

www.book.uci.edu

www.editor.uci.edu/catalogue (PDF Version)

Accommodations: Upon request, this publication will be made available in alternative formats for people with disabilities. Contact the UCI Disability Services Center; telephone (949) 824-7494, TDD 824-6272. The campus and all buildings are accessible by wheelchair.

Campus Safety: Pursuant to the Federal Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, UCI annually makes available to the public statistics on reported occurrences of criminal activity on and off campus and at UCI Medical Center at www.police.uci.edu/awareness/jca.html.

Nondiscrimination Policy: The University of California, in accordance with applicable Federal and State law and University policy, does not discriminate on the basis of race, color, national origin, religion, sex, gender identity, pregnancy, physical or mental disability, medical condition (cancer related or genetic characteristics), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services. The University also prohibits sexual harassment. This nondiscrimination policy covers admission, access, and treatment in University programs and activities. For more