



Biology

College of Science & Health

The Department of Biology, located in Cowley Hall of Science, supports undergraduate and graduate programs in biological sciences. To enhance student opportunities, the department offers a Biology major with concentrations in specific areas of study in addition to the major in General Biology. These concentrations include Aquatic Science, Biomedical Science, Cellular and Molecular Biology and Environmental Science.

Students pursuing a major in biology complete foundation course work that includes courses in introductory biology, botany, zoology, cell biology, genetics, and ecology. Because biologists must understand chemistry, biology majors complete at least three semesters of chemistry, including organic chemistry. Each student may plan his/her own electives and specialize in one of several subdisciplines within biology or specialize in field studies or laboratory studies. Some elective courses require off-campus trips to field stations in northern Wisconsin. Other courses make use of several unique ecological habitats close to campus. The Mississippi River and the La Crosse River Marsh are within blocks of the campus and are also used for outdoor laboratory studies. In addition, modern laboratory facilities and use of high tech research equipment prepare students for careers in the emerging fields of biotechnology.

Students develop a curriculum around specific career goals. Each student meets individually with their faculty adviser each semester. The diversity of the faculty in the department provides a wide array of both classroom and non-classroom opportunities for student learning.

Undergraduate research is an important part of the biology programs and provides excellent opportunities for students to receive both individualized and unique learning experiences. Graduates of the programs in biology have traditionally been very competitive in the job markets and for entrance into graduate and other professional programs.

The Department of Biology has established a number of partnerships with local, state, and regional environmental and aquatic science research centers, biotechnology firms, and allied health care institutions. These partnerships provide undergraduate students with the opportunity to interact with practicing scientists in a wide variety of professions including medical sciences, river studies, aquatic toxicology, fisheries biology, watershed studies, and seed genetics to name a few. These opportunities are in the form of internships, job shadowing, and undergraduate research, some of which are university funded. Many of these experiences result in summer jobs and part-time employment for students.

Undergraduate Programs

Majors:

- Biology
- Biology with concentrations in:
Aquatic Science
Biomedical Science
Cellular and Molecular Biology
Environmental Science
- Biology Education
- Biology/Physical Therapy dual degree

Minors:

- Biology
- Biology Education

Dual Degree Program in Chiropractic:

Six-year program in conjunction with Palmer College

Graduate Programs:

The master's degree in Biology includes concentrations in Aquatic Science, Cellular and Molecular Biology, Microbiology, and Physiology. The Clinical Microbiology and Nurse Anesthesiology concentrations are offered in conjunction with our local health care organizations. All of these programs ensure a stimulating scientific environment and state-of-the-art equipment for both graduate and undergraduate students.

Department Features

The Department of Biology has 28 faculty who are available to provide individual assistance to students both in and out of class. These faculty are trained in areas that collectively cover most subdisciplines in the biological sciences including aquatic biology, botany, cell biology, genetics, molecular biology, neurophysiology, endocrinology, developmental biology, parasitology, mycology, and zoology. In addition, scientists at the United States Fish and Wildlife Service, the U.S. Geological Survey, the Wisconsin Department of Natural Resources, local biotechnology firms, and health care facilities serve as adjunct faculty to the department.

Facilities and Resources

Student experiences are enhanced by a National Institute of Health approved animal facility, a greenhouse, an herbarium, and scanning electron and laser-scanning confocal microscopes. Up-to-date laboratories are equipped for molecular biology and genetics, as well as analytical and toxicology studies. Modern field equipment includes a fleet of boats for river and lake research and field trip activities. In addition, off-campus partner facilities are excellent and significantly expand resources available to students.

Sample Courses

- General Biology
- Plant Biology
- Animal Biology
- Genetics
- Cell Biology
- Ecology
- Molecular Biology
- Human Anatomy & Physiology
- Endocrinology
- Freshwater Invertebrate Zoology

Post-graduate Opportunities

Jobs

- Industry (biotechnology, pharmaceutical, environmental consulting and utility companies)
 - Research and Development
 - Sales
 - Technical Support
 - Environmental Health and Safety
 - Toxicology
- Primary and Secondary Education (with teacher certification)
- Academia
 - Research Technician
- Government (Department of Agriculture, Department of Natural Resources, U.S. Geological Survey, U.S. Fish &

Wildlife Service, and the Environmental Protection Agency, Public Health Service and state, county, and municipal health services)

- Environmental Health and Safety
- Water Quality Assessment
- Biomonitoring and Sampling
- Geographical Information Systems
- Data Management and Analysis
- Wildlife Management

Further Education

- Medicine, chiropractic, dentistry, optometry, nursing, podiatry, pharmacy, physical therapy, radiation therapy, occupational therapy, nuclear medicine technology, and veterinary
- Contemporary pre-professional training and individual instruction and advising ensure that graduates from the respective curricula are competitive nationwide in securing entry into their professional postgraduate programs

Graduate Programs

- Master of Science and/or Ph.D. degrees in biology or related fields prepare individuals for higher level employment in academia, industry, and government

Biology Department

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