

The study of biology is designed to reveal the universal principles governing the phenomena of life. The role of a biology department in a liberal arts college is both to integrate into the student's total education the biological information which is significant to today's society and to provide a foundation for the many diverse career opportunities that exist in the biological sciences.

The mission of the Biology Department of Muskingum College is to nurture the basic curiosity about life inherent in the human spirit and prepare individuals for a broad range of fulfilling careers within and beyond the life sciences.

To this end, we have set for ourselves the following specific goals:

1. To help our students gain an understanding of what a modern biologist is, how biologists think, see how discoveries are made, and apply the scientific process to their everyday lives.
2. To help challenge our students to develop a broad based knowledge of the principles of cellular, molecular, genetic, physiological, morphological and ecological studies.
3. To help our students develop as critical and creative thinkers, particularly as related to the scientific process.
4. To encourage our students to integrate a sense of ethical thinking and behavior in their professional and personal lives.

Faculty

Five of the six biology faculty members hold earned doctorates from institutions which include Purdue University, University of Oklahoma, Mississippi State University, Texas Tech University, and the University of Virginia. The sixth faculty member hold a masters degree

from the University of Zimbabwe. Teaching is the focus of their work at Muskingum, but each is active in a variety of professional activities and organizations. Their research interests range from ornithology and population ecology to conservation ecology, microbiology, neuroscience and marine biology.

Facilities

The Biology Department at Muskingum College occupies 12,500 square feet in a modern science center. This space includes five teaching laboratories, a greenhouse, three controlled environment rooms, twelve double occupancy student research laboratories, animal rooms, a seminar room and a classroom. Our department has an outstanding collection of fluorescent and light microscopes, as well as a scanning electron microscope and photographic equipment including a digital image capturing and analysis system. The Biology Department is equipped with rotary and sliding microtomes, vibratomes, cryostat, Fisher Tissuematon paraffin dispenser and ovens, incubators freezers, oxygen meters, colorimeters, pH meters, water sampling and testing equipment, Percival controlled environment cabinets, compound stereomicroscopes, phase contrast, polarized, and ultra-violet microscopes, spectrophotometers, Photovolt densitometers, a high speed refrigerated centrifuge, microcentrifuges, International hi-speed centrifuge, electrophoretic and chromatographic equipment, power supplies, autoclaves, transilluminator, micropipetters, Bausch and Lomb bellows camera, Bessler Topcon 35 mm camera, water baths, microtome blade sharpener, automatic pipetter, Grass polygraph, radio frequency lesion instrument, Kopf pipette puller, Grass

amplifiers, Grass audio monitor, artifact suppressor and discriminator, sterotaxic instruments, exercise cycles, treadmill, clinical respirometer, a multi-media audio/visual system, and terminals for the College's main-frame computer. In addition, the department is well equipped with a wide variety of field sampling equipment including: sampling nets, live traps, field tapes, standard forestry supplies, waders etc.

Finally, the department is affiliated with The Wilds, a 9,500 acre wildlife preserve (North America's largest wildlife preserve), 18 miles south of New Concord, which affords students the chance to pursue unique field research questions. Also, the department is strongly associated with interdisciplinary programs in conservation science, environmental science, molecular biology, and neuroscience which further enhance training and research opportunities.

Opportunities for Involvement

The biology program enables the individual student to carry out independent biological research with an emphasis on experimental design, data collection, hypotheses testing, data analysis and interpretation. In addition, the department selects eight to ten students each year as paid laboratory assistants. These students gain first hand knowledge of the work that goes on behind the scenes as they prepare materials for laboratory courses. Students also work in the departmental museum with the plant and animal collections and in the greenhouse and/or to assist in the greenhouse and animal rooms.

Students doing superior work and majoring in biology are eligible for full membership in

the Upsilon Nu Chapter of Beta Beta Beta, the national biological honorary society. After their first year, Beta Beta Beta members are eligible for space in one of 14 double-occupancy student offices on the biology floor. Each year, the Beta Beta Beta chapter sponsors one or more visiting lecturers and engages in a variety of social and public service events.

Major Requirements

The major consists of 38 hours in the department. All majors include Biology for Science majors (three courses - 9 hours) with laboratory (2 hours) and Library Research (3 hours), plus one course from each of the following areas: Ecology and Systematics (plant systematics, vertebrate natural history, general ecology, aquatic ecology, and conservation science), Cellular and Molecular Biology (genetics and evolution, microbiology, cellular physiology, neuroscience, and molecular biology), and Anatomy and Morphology (functional histology, advanced botany, comparative vertebrate anatomy, and comparative vertebrate embryology). The remaining requirements may be completed by taking any additional courses (including human anatomy, physiology of exercise, and biological research) at the 200 level or higher.

Professional and Research Opportunities

Majors in biology have participated in research at Oak Ridge National Laboratories, Tennessee; the U.S. Army Physical Therapy Trainee Program in Hawaii; Ohio Environmental Protection Agency; Savannah River Plant; Jackson Memorial Laboratory at Bar Harbor Maine; The Marine Biological Laboratory at Woods Hole, Massachusetts; National Institutes of Health at Washington, D.C., and Mayo Clinic at Rochester, Minnesota.

Recent graduates in biology have entered medical and/or dental schools at The Ohio State University, Medical College of Ohio in Toledo, the University of Pittsburgh, University of Cincinnati, Case Western Reserve, Hahnemann Medical College of Philadelphia, Meharry Medical College and West Virginia

University. Graduates have entered physical therapy programs at Northwestern University, Duke University, Case Western Reserve and Ohio State; veterinary medicine at The Ohio State University, University of Pennsylvania and University of Illinois; and graduate schools at Ohio University, the University of Florida, University of Massachusetts, Cornell University, Miami University of Ohio, University of Montana, Kent State University, University of Pennsylvania, University of Wisconsin, Northwestern University, University of Oregon, Wayne State University, University of Cincinnati, University of Nebraska, Duke University, Long Island University, University of Pittsburgh, University of Missouri, University of West Virginia, The University of North Carolina, and Yale.

Additional Information

[If you're online, click here to access departmental web page in your browser's window.](#)

Otherwise, log on to Muskingum's Web Site at <http://www.muskingum.edu> or contact:

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