



# BIOLOGY

## DEPARTMENT HIGHLIGHTS

**Facilities and Instrumentation:** All educational and research equipment in the department is available for student use. The department has male and female human cadavers, handheld GPS equipment, phase contrast and fluorescence microscopes, computer based research-grade physiological equipment, ecological sampling and molecular biology equipment, thermocycler (PCR), DNA sequencer, environmental monitoring equipment, camping equipment and a greenhouse.

**A maximum of 15 students** in upper level courses (300-400) allows for individualized attention.

**Field work** in the Metroparks as part of the Evolution, Ecology, Botany, Invertebrate Natural History, Vertebrate Natural History and other courses.

**Student Laboratory Assistants:** Employment as a lab assistant allows students to develop lab skills while working one-on-one with a faculty member, equipment and/or organisms.

**Undergraduate Research Opportunities:** Molecular biologist **Dr. Michael Bumbulis** is currently studying the process of apoptosis, programmed cell death, in algae. Dr. Bumbulis and students also work on understanding the interaction between transcription factors and DNA.

The biochemical and physiological responses of plants to environmental stress are studied by **Dr. Natalie**

**Barratt's** students. An ongoing project is characterization of the production of the red/blue pigment anthocyanin in response to differing light conditions, UV, and drought.

Research students working with **Dr. Michael Melampy** focus on the interactions of plants and insects, particularly pollinators. Currently, Dr. Melampy is exploring the effects of forest fragmentation on pollination and plant reproduction.

Biodiversity, invertebrate conservation, the Great Lakes ecoregion, and water resources are **Dr. Chris Stanton's** research interests. A recent project with students studied invertebrate diversity in a preserve on the Lake Erie coast.

Gaining an understanding of the molecular mechanisms that control myelination and remyelination in the central nervous system of zebrafish is the goal of work in **Dr. Jackie Morris' lab**. Her research is currently supported by a research grant from the National Multiple Sclerosis Society.

One of **Dr. Sabina Thomas's** recent independent study projects had students test-drive GIS (Geographic Information System)-related computer programs for use in the classroom. Another study dealt with research for a publication on the history of the quarrying of Berea Sandstone.

**Dr. Joe Yavornitzky's** research interest is in facial development and aesthetics, and he developed an upper level course in head and neck anatomy for B-W students.

## WHAT CAN I Be WITH THIS MAJOR?

Aquatic Biologist

Physician's Assistant

Ecologist

Anesthesiologist Assistant

Geneticist

Wildlife Biologist

Nurse

Microbiologist

Physician

Dentist

Forensic Scientist

Genetic Counselor

Pharmacist

Naturalist

Medical Technician

Toxicologist

**RECENT INTERNSHIPS**

Institute for Ecosystem Studies	Medical College of Ohio
Lake Hospital System	North Coast Health Ministry
Cuyahoga County Board of Health	CVS Pharmacy
Cleveland Museum of Natural History	Baylor College of Medicine
Cleveland Metroparks Zoo	OSU Stone Laboratory
Cuyahoga County Coroner's Office	Pleasant Valley Veterinary Clinic
Cleveland Clinic Foundation	Metro General Health Center
Lorain County Metroparks	OARDC, Wooster Research Station

**RECENT EMPLOYERS**

VA Medical Center	Lake Erie Science and Nature Center	Cuyahoga County Board of Health
Cuyahoga Valley National Parks	Cleveland Metroparks Zoo	Columbia Chemical
Cleveland Clinic	Amresco	Sherwin Williams
Southwest Community Health System	Steris	Patient First
Wil Research Labs	Copernicus Therapeutics	Ricerca Biosciences, Inc.
Cleveland Metroparks	Ben Venue Labs	

**MEDICAL GRADUATE SCHOOL PLACEMENTS**

Vanderbilt University	The Ohio State University	Ohio College of Podiatric Medicine
Ohio University College of Osteopathic Medicine	Kansas State University	Hillcrest Hospital
Case Western Reserve University	University of Pennsylvania	University of Toledo, Physician Assistant Program
University of California, Davis	New York Chiropractic College	Duquesne University School of Natural and Environmental Sciences
Wright State University School of Medicine	University of Georgia	University of Miami, MD/Ph.D Program
University of Michigan	Baldwin-Wallace College MBA program	

**FACULTY**

**Natalie M. Barratt, Ph.D.**  
Associate Professor of Biology

**Michael J. Bumbulis, Ph.D.**  
Associate Professor of Biology

**Michael E. Kovach, Ph.D.**  
Department Chair, Associate Professor of Biology

**Michael N. Melampy, Ph.D.**  
Professor of Biology

**Jacqueline K. Morris, Ph.D.**  
Assistant Professor of Biology

**R. Chris Stanton, Ph.D.**  
Associate Professor of Biology

**Sabina F. Thomas, Ph.D.**  
Associate Professor of Geology

**Joseph . P. Yavornitzky, D.D.S.**  
Academic Support Specialist

In Addition to the Biology Major, Check out Associated Minors in:

Geology  
Neuroscience  
Environmental Studies  
Sustainability