



DEPARTMENT OF BIOLOGY

BIOLOGY GRADUATES ARE SUCCESSFUL

Our graduates are going places!

- **35%** PhD programs in Biology, Wildlife Biology and Conservation, Biochemistry or other Biology-related fields.
- **30%** Employed with State Agencies, Pharmaceutical, or Environmental Health, or other biology-related industries
- **20%** Professional schools (Medical school, Veterinarian school, Law school, etc.)
- **5%** Teaching Biology at the high school level
- **10%** Miscellaneous

OUR GRADUATES ARE PURSUING PH.D. PROGRAMS AT:

- Arizona State
- University of Alabama
- University of Drexel
- Penn State
- SUNY
- University of Missouri
- University of Wyoming
- University of Pittsburgh
- Ohio State
- Harvard
- Cornell
- Purdue University
- University of Maryland

Students have also gone on to Children's hospital's Med-Technologist program, Public Health, Cancer Research laboratory, and Natural Resource Conservation Service. Biology education graduates are teaching at Westmont Hilltop, Moon Township, Bradford, Summit Academy, Milton Hershey School, and Penn Highlands Community College.

INTERNSHIP OPPORTUNITIES

Experiential education enhances our students' knowledge, skills and abilities, and allows them to increase professional competence in a real world setting.

150-300 hours of internship opportunities were made available through:

- Environmental Service Laboratory
- Indiana Regional Medical Center
- Conemaugh Memorial Medical Center
- Citizens Ambulance Service
- Uganda Wildlife Education Center
- Phipps Conservatory
- Allegheny National Forest
- Pennsylvania Game Commission
- Pittsburgh Botanic Garden
- Pittsburgh Zoo
- Aerotek Scientific
- University of Wake Forest

RESOURCES

- Biology Student Resource Facility (BSRF): Tutoring, help with writing reports, help with class presentations, internships, career seminars, scholarship opportunities
- Biology Undergraduate Research Experience (BURE): Helps students carry out summer research.

FACILITIES

The Biology Department at Indiana University of Pennsylvania (IUP) is serving as a transformative force within a diverse, interdisciplinary, and collaborative educational environment for changing lives through science and math. Our graduates change the world as educators, scientists, and leaders. Our students have the opportunity to learn key research techniques with access to modern laboratory and classroom facilities.

LABS AND EQUIPMENT

Our teaching lab space permit most courses to have a dedicated lab for the semester. This allows for flexibility in constructing elaborate laboratory experiences.

A majority of the faculty members also have a laboratory in which they conduct research and guide student research projects. Each lab provides a diverse research experience, so students can gain expertise in a variety of research subjects.

MAJOR EQUIPMENT AND FACILITIES FOR CELL AND MOLECULAR BIOLOGY (UNIVERSITY, NATIONAL SCIENCE FOUNDATION, AND DEPARTMENT OF DEFENSE GRANTS)

- BIO-RAD ELISA reader
- Zeiss LSM710 laser confocal microscope
- Bio-Rad gel documentation system
- NanoDrop mini-spectrophotometer
- UV/visible spectrophotometers
- Gene delivery systems
- ChemiDoc bioimaging system
- Microscopes with high resolution cameras and video image analysis
- REAL-TIME DNA thermal cycler ep Eppendorf
- Dedicated Zebrafish Facility

SHIELDS HERBARIUM IS HOME TO PLANT COLLECTIONS:

- General
- Western Pennsylvania Collections
- Up State New York

MAJOR EQUIPMENT FOR ECOLOGY AND PHYSIOLOGY

- Environmental Chamber
- Photosynthesis analyzer
- LiCOR Leaf Chamber Fluorometer
- Electrofisher Combo
- Olympus SZ51 stereo microscopes with transmitted and reflected light Radio telemetry tracking equipment
- Global positioning systems
- ArcGIS Licenses

NEARBY FIELD AREAS

Our students and faculty frequently travel to several nearby sites for laboratory class and research including the university's College Lodge, University College Farm, Yellow Creek State Park, Blue Spruce County Park, Crooked Creek Environmental Learning Center (Army Core of Engineers Nature Preserve), National Park Services including Allegheny National Forest and Flight 93 Memorial. These facilities are used to demonstrate diversity, facilitate teaching, and provide color and visual interest throughout the year.

ADVANCED RESEARCH PROJECTS: A COLLABORATION OF STUDENTS & FACULTY

Many IUP Biology students engage in independent research projects as early as their sophomore year. Students may co-author publications with faculty, or present their results at national and international meetings. Some recent examples:

Mary Chey (B.S. '17) "Optimization of dsRNA Cloning in *Rhizoctonia solani*"

Robert Connacher (B.S. '16) "Characterization of *Rhizoctonia solani* Mycoviral Genes and their Products"

Ian Forte (B.S. '16) "Native vs. Invasive Preferences of the Annam Walking Stick (*Medauroidea extradentata*)"

Cassandra Krul (B.S. '17) "Managing Japanese Stiltgrass (*Microstegium vimineum*) Progression Using native Pennsylvania Plants"

Noriko Mikeasky (B.S. '15) "Expression of the *ezh2* gene in stem cells during zebrafish kidney development"

Kaitlyn Palmer (B.S. '18) "Effect of Caffeine on Circadian Rhythms in Ethanol Sensitivity"

Benjamin Wadsworth (B.S. '17) "Effects of Hydraulic Fracturing on Freshwater Ecosystems in the Marcellus Shale Region"

Kayla Weinfurther (B.S. '17) "Integrative Systematics of Mesoamerican Highland Leopard Frogs (*Ranidae: Lithobates*)"

Emily Welch (B.S. '17) "A possible Mechanism of Invasion into New Areas by Japanese Honeysuckle"

THE DEPARTMENT OFFERS FINANCIAL AID TO DESERVING STUDENTS THROUGH SCHOLARSHIP PROGRAMS

The following scholarships are available to Biology students:

- The Walter "Bud" Gasdek Memorial Scholarship
- The Thomas Smyth Memorial Scholarship
- The Cynthia Sushak Undergraduate Biology Fund
- Gilly Young Life Scientist Opportunity Fund

AWARDS:

- Biology Department Outstanding Student
- CPUB Outstanding Student

BIOLOGY SOCIETIES & ASSOCIATIONS

- American Medical Student Association (AMSA)
- Biology Club
- Tri Beta
- Phi Eta Sigma
- SEEDS (Strategies for Ecological Education, Diversity, and Sustainability)

FOR MORE INFORMATION CONTACT:

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<http://www.iup.edu/Biology>

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IUP College of Natural Sciences and Mathematics
We change lives through science and math. Our graduates change the world as educators, scientists, and leaders.

