



COLLEGE OF SCIENCE AND HEALTH

WILLIAM PATERSON UNIVERSITY

Biology Major (Bachelor of Science)

Concentrations: General • Ecology • Physiology and Behavior

Biotechnology Major (Bachelor of Science)

DEPARTMENT OF BIOLOGY

HANDS-ON EXPERIENCE



About Biology

The BS in biology is the most popular and straightforward (no extra coursework required) route to gaining admission to all medically related professional schools to pursue a degree as a doctor of medicine (MD), doctor of osteopathic medicine (DO), doctor of podiatric medicine (DPM), dentist, veterinarian, pharmacist, physician's assistant (PA), physical therapist (PT), or medical perfusionist.

Biology students can choose from three concentrations:

- **General biology concentration:** provides the most flexibility in upper-level course selection and is recommended for pre-med students.
- **Ecology concentration:** includes upper-level coursework on ecology-related topics.
- **Physiology and behavior concentration:** requires courses in Animal Physiology and Animal Behavior at the upper level, and allows for maximum focus on animal/human topics. This is the recommended concentration for all preprofessional students except for pre-med (pre-vet, pre-PA, pre-PT, pre-dental).

About Biotechnology

The biotechnology program emphasizes coursework and training in many aspects of molecular biology, genetics, plant tissue culture, animal cell culture, DNA analysis techniques, protein isolation, and recombinant DNA techniques. Graduates are prepared to pursue further graduate study in biotechnology, molecular biology, biochemistry, and other related areas or to gain employment in academic, clinical, industrial, or government research laboratories.

Preparation for Advanced Study

Biology majors are prepared to continue their education in:

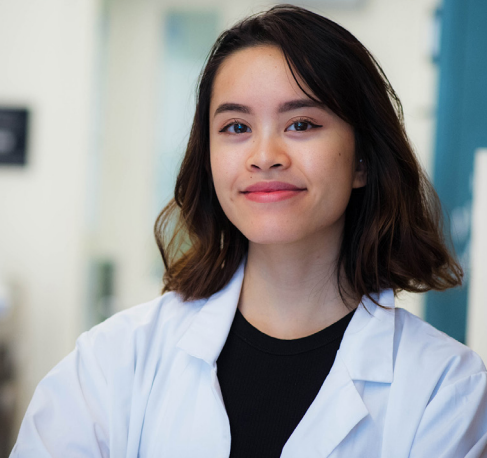
- professional schools (medical, dental, veterinary, physician's assistant, physical therapy)
- graduate school (MS or PhD) programs in animal physiology, molecular biology, botany, biochemistry, genetics, behavior genetics, ecology, microbiology, neuroscience
- certification programs (medical technologist, ultrasound technician, respiratory therapist)

MS in Biotechnology

Those who are interested in a career in the pharmaceutical, biomedical, or biotechnology industries may choose to continue into WP's MS in biotechnology program, where they not only gain further science training, but also develop vital career skills through industry-directed coursework in project management, business (management, economics, and marketing), and professional communication.

"Not only has performing laboratory research on campus increased my understanding of biological concepts, it has also helped me establish solid relationships with faculty members and other student researchers. I have also strengthened my public speaking abilities by presenting my research at conferences."

—Veronica Holganza '20, biology major



Career Opportunities

Vast employment possibilities include:

pharmaceutical, biotechnology, and biomedical industries • food and cosmetic industries • hospitals and clinical environments • university and government laboratories • federal, state, and local government agencies • environmental firms • research and development • quality control • assessment and testing • research technicians • laboratory assistants • naturalists • park rangers • sales and administration • K-12 teaching

Faculty Expertise

Every year, WP undergraduate students join our renowned faculty in conducting field and laboratory research, making presentations, attending conferences, and earning national awards and recognition. Our biology professors have diverse research expertise in such areas as:

traumatic brain injury • honeybee behavior • neurophysiology of pain • biology of metabolic diseases • wound healing and regeneration in tadpoles • biology of marine organisms • biology of drug abuse • DNA replication and genetics of parasitic protozoa • plant ecophysiology/ beach grass • conservation biology of bats • biochemistry of leukemia and HIV-associated B-cell lymphomas • biomedical ethics • Lyme disease • hand hygiene • and many more

Students also can participate in the Future Health Care Professionals Club, Pre-SOMA (Student Osteopathic Medical Association) Club, Pre-Physical Therapy Club, the Garden State-Louis Stokes Alliance for Minority Participation (GS-LSAMP) Program, as well as extracurricular summer programs offered in the United States and abroad.

Our greatest strength is helping you find yours

At William Paterson, we help students not only reach, but expand their potential and discover abilities they may not have been able to see for themselves. As with other programs at WP, our majors in biology and biotechnology provide:

- Hands-on experience to enhance marketability for careers/advanced study
- Opportunity to get involved in research or scholarly activities with faculty
- Professors who bring real world experience to the classroom
- Chance to work with industry professionals through internships
- State-of-the-art campus facilities
- Civic engagement/service learning opportunities



Will. Power.

For more about the majors in biology or biotechnology:
wpunj.edu/cosh/departments/biology/

For Admissions information: wpunj.edu/undergraduate