

what can I do with a major in **Microbiology**

The Microbiology major deals with microscopic organisms, such as bacteria, fungi, algae, protozoa, & viruses. Microbiology students study microbial growth, survival, metabolism, genetics, and physiology, while examining the organism's relationship to the environment, biotechnology, and diseases. Many microbiologist focus on a specialized field in microbiology that can be used in hospital/clinical laboratories, the environment, the food industry, research laboratories, and in colleges/universities.

Some Characteristics of Microbiology Majors:

- ♦ Interest in microorganisms
- ♦ Enjoy working in a laboratory
- ♦ Desire to understand how microbes cause diseases
- ♦ Desire for intellectual growth
- ♦ Interest in government, academic, or private jobs
- ♦ Precision and attention to details
- ♦ Inquisitive

What You Gain From Studying Microbiology:

Knowledge:

The Microbiology major prepares students to pursue medical, dental, and other health-professional schools, and graduate schools in microbiology, molecular biology, biochemistry, and related disciplines. The major provides intensive training in modern microbiology, including cutting-edge research in genomics and genetic engineering.

Skills:

- ♦ Critical thinking and problem solving
- ♦ Work independently and on a team
- ♦ Bacteria & virus isolation and identification
- ♦ Culture microorganisms
- ♦ Microscopy techniques
- ♦ Operate scientific lab equipment
- ♦ Record and analyze data
- ♦ Oral and written communication

Participate in Student & Professional Organizations:

Student (Sponsored by Bio. Sci. Dept):

Biology Club
Pre-Vet Club
Tri-Beta Honors Society

Professional:

American Assoc. for the Advancement of Science
American Society for Biochemistry and Molecular Biology
American Society for Microbiology
Association for Clinical Biochemistry

Careers in Microbiology:

Employment:

Microbiology can be used in medical, academic, veterinary, environmental, public health, food, and pharmaceutical industries to examine the way microbes or microorganisms affect health care, products, animals, the environment, and the food supply. Many entry level microbiology jobs accept a Bachelor's degree. You can advance from entry level to higher-level positions with additional education.

Need Bachelor's Degree

Agriculturist
Biotechnologist
Brew master
Clinical lab tech
Clinical trials asst.
Environ. scientist
Food microbiologist
Geneticist
Histotechnologist
Lab coordinator/tech
Microbiologist
Mycologist
Quality assurance
Research Asst/tech
Technical sales

Need Further Education

Forensic scientist
Genetic engineer
Immunologist
Medical researcher
Medical tech
Parasitologist
Pathologist
Phlebotomist
Physician
Physician asst.
Professor
Public health tech
Virologist

Learn More About Microbiology careers:

Biological Sciences Advisors: Langley A258
www.biology.pitt.edu/undergraduate/advising

- ♦ Join the Bio. Newsletter for announcements
- ♦ Get advising info. before & after declaring major
- ♦ Learn about useful courses
- ♦ Inquire about research & internship opportunities

Career Development: WPU 2nd Floor
www.careers.pitt.edu/

- ♦ Meet with a Career Counselor (in person or virtual)
- ♦ Take interest inventories and self-assessment tests
- ♦ Assistance w/ CVs, resumes, & cover letters
- ♦ Internship placement (guaranteed)
- ♦ Employment search – via Future Links & Pitt
- ♦ Job shadowing program
- ♦ Career fairs

What You Can Do Now:

- ♦ Gain research experience by teaming with a Biology (or related field) professor and conducting research
- ♦ Get an internship at the CDC, NIH, hospital/clinic, research lab, public health dept, forensics lab, medical school, or Bio. Engineering company
- ♦ Get a part-time or summer job in a lab, industrial company, vet clinic, or research institute
- ♦ Study abroad to broaden cultural perspective and gain international experience

Ways To Acquire Skills in Microbiology:

Internships

Internships provide hands-on experience in an area that interests you as a potential career. To find a biology related internship speak with a Bio. Sci. advisor or a Career Development advisor, and visit the links below.

- ♦ www.biology.pitt.edu/undergraduate/research/outside-pitt
- ♦ www.biology.pitt.edu/undergraduate/research-internships/starting-intern

Research

Various opportunities exist for students to participate in research experiences outside of the classroom to develop an understanding of inquiry based research. Research can be performed on campus during the term for credit or no credit, or during the summer as part of an undergraduate

research experience program (REU, fellowship, co-op) on or off-campus. Check deadlines early.

- ♦ www.biology.pitt.edu/undergraduate/research
- ♦ www.asundergrad.pitt.edu/our/research
- ♦ www.undergradresearch.pitt.edu/research-opportunities/
- ♦ www.fws.gov/northeast/youth/college.html

Undergraduate Teaching Assistant (UTA)

Being an undergraduate teaching assistant is a terrific way to share your knowledge, gain confidence, and prepare yourself for leadership roles. Many courses utilize UTAs, and you should contact the instructor directly.

www.biology.pitt.edu/undergraduate/uta

Places Microbiology Majors Have Interned:

GSPH –Dept. of Infectious Disease & Microbiology
Carnegie Science Center
School of Medicine – Dept. of Pharmacology
Starkist Co. – Product Development

Tutoring & Study Resources

Academic Resource Center (ARC)
Calculus & Statistics Labs
Fish Bowl – Chemistry Dept.
Learning Communities – various residence halls
Math Assistance Center
Writing Center

This handout provides a brief sample of skills, jobs, and tips for individuals pursuing a degree in this major. It is not an exhaustive listing, but it gives initial insight into a particular career field that would employ the skills and knowledge gained through this major. Contact the Biological Sciences Advisors if you have any questions.