

MICROBIOLOGY@WAGNER

The mission of the undergraduate program in microbiology, which is within the Department of Biological Sciences, is to provide students with a comprehensive background in the various fields of modern microbiology including microbial genetics, clinical microbiology, applied microbiology, immunology, molecular biology, and microbial physiology. Wagner is one of the few liberal arts colleges in the Northeast offering this major as an undergraduate degree. The primary goal of this major is to prepare students for graduate study and careers as microbiologists in public health, hospital, industrial, or research laboratories.

Wagner College is a competitive, four-year private college founded in 1883. The broad liberal arts curriculum is enhanced by a rich array of internship and other professional and cultural opportunities readily available in New York City.



For more information, contact the Admissions Office at (800) 221-1010 or visit our website at www.wagner.edu.

By graduation, microbiology majors should possess or have demonstrated:

- a basic knowledge of fundamental concepts in cell and molecular biology, microbial genetics, and microbial physiology.
- a basic knowledge of applied, food, and industrial microbiology.
- a clear conceptual knowledge of immunology and serology.
- a general knowledge of clinical microbiology.
- a basic knowledge of statistical analysis.

SAMPLE CLASSES

Plagues, Outbreaks, and Biological Warfare

The course focuses on historical epidemics with emphasis on how scientists discovered, treated, and halted the spread of these illnesses and how the diseases shaped societies. Present day epidemics are examined and attention is given to future epidemic threats.

General Pathology

A course in the principles, techniques, and clinical significance of standard clinical laboratory

procedures in hematology, clinical biochemical analyses, and immuno-hematology.

Gene Expression and Development

A course designed to familiarize students with fundamental biological principles emphasizing DNA replication, transcription, translation, control of gene expression, and genomics.

Biostatistics and Experimental Design

This course provides an introduction to the hypothesis testing, experimental design, and the statistical treatment of biological information.

Epidemiology

An intensive course in the principles and methods of epidemiology with special reference to the determination of community needs.

FIRST YEAR LEARNING COMMUNITY EXAMPLE

Seeing the Unknowable and Knowing the Unseeable: Promoting Health at the Microbiological Level

This Learning Community will explore the influence of microbiology on people's health and the ways that health issues get promoted in the general population. Students will explore how health concerns such as MRSA,

viral outbreaks (Bird Flue, AIDS, Ebola), food outbreaks (E. coli), and bioterrorism (anthrax, plague, small pox) begin at the cellular level. Students will learn concurrently how medical topics are disseminated by creating an advertising campaign that informs the public about serious health issues.

INTERNSHIPS

Staten Island University Hospital
Aberdeen Proving Grounds-US
Army Material Command

RESEARCH TOPICS

- "Antimicrobial and Antifungal Properties of Mastic"
- "Effect of Mastic on Microbial Cells"
- "Secondary Metabolites in *Rhodococcus*"
- "Antimicrobial Properties of *Xios* Mastic in Vitro"
- "Examining the Pathogenesis of *Paeruginosa* in Zebrafish Adults"

CONTACTS

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