

# MICROBIOLOGY (MICR)

## Degrees Offered: Ph.D., M.S.

*This program is offered in Durham.*

The Department of Molecular, Cellular, and Biomedical Science offers a Doctor of Philosophy (Ph.D.) degree and a Master of Science (M.S.) degree in Microbiology. Graduate students in microbiology are typically supported by teaching or research assistantships, as well as by competitive internal and external fellowship programs. For more information about the program, including admission and degree requirements, please contact the Department of Molecular, Cellular, and Biomedical Sciences at [mcbs.dept@unh.edu](mailto:mcbs.dept@unh.edu).

### Distinctive Features of the Program

Research opportunities are available in many cutting-edge microbiology research areas. Incoming students have the opportunity for laboratory rotations with Microbiology program faculty in those cases where a thesis advisor has not been identified or where exposure to a variety of experimental approaches is advantageous.

The Graduate Program in Microbiology offers:

- Outstanding research training in a broad range of areas, including: host-microbe interactions, environmental microbiology, microbial ecology, virology, immunology, parasitology, signal transduction, evolution, genetics, epigenetics, and genomics.
- Weekly seminar series that includes both distinguished invited speakers and graduate student research presentations.
- Opportunities to gain teaching and mentoring experiences with undergraduate students in the biological sciences.
- Strong track record for graduates attaining careers in academia, research institutes, biotechnology and pharmaceutical companies, and state and federal governmental agencies.

### Admission Requirements

Applicants are expected to have had adequate preparation in the biological and physical sciences. This typically includes general and organic chemistry, physics, one semester of calculus, a year of general biology, a semester or more of biochemistry, and general microbiology. Formal courses in quantitative analysis and statistics are recommended. Applicants with deficiencies in these background courses who are admitted to the program may be required to complete appropriate coursework without graduate credit. Applicants must submit a personal statement and three letters of recommendation. The personal statement should specify the applicant's motivation for pursuing an advanced degree, research interests, and names of potential faculty mentors. International applicants living outside the U.S. should initially complete a free online [pre-application](#). If approved for a full application, applicants must submit current TOEFL scores in addition to the items listed above. Each applicant to the graduate program must be sponsored by a Microbiology graduate program faculty. A mutual decision for assignment to a graduate research advisor is expected before the second semester of study.

<https://colsa.unh.edu/molecular-cellular-biomedical-sciences>

## Programs

- [Microbiology \(Ph.D.\)](#)
- [Microbiology \(M.S.\)](#)

## Courses

### MICR 805 - Immunology

**Credits:** 3

An introduction to the fundamental mechanisms of immune function. Topics include the cells and organs of the immune system, humoral and cellular immune responses, the generation of immune cells, and how immune cells fight various infectious pathogens. Prereq: introductory microbiology and lab.

**Grade Mode:** Letter Grade

### MICR 815 - Immunology Laboratory

**Credits:** 2

This applied immunology laboratory course highlights both historic and current methodologies important for elucidation and diagnosis of immune function. Techniques used to study phagocytosis, antibody production, immunodiffusion, and T-cell function will be introduced. Applications of the antibody technologies to other scientific disciplines (ELISA, immunofluorescence microscopy, immunoblotting, etc.) will also be covered. Prereq: General microbiology course with lab. Special Fee.

**Co-requisite:** MICR 805

**Grade Mode:** Letter Grade

## Faculty

Please see [https://colsa.unh.edu/molecular-cellular-biomedical-sciences/program/phd/microbiology#collapse\\_1816](https://colsa.unh.edu/molecular-cellular-biomedical-sciences/program/phd/microbiology#collapse_1816) for faculty.