

# MICROBIOLOGY AND IMMUNOLOGY (MIMM)

## About Microbiology and Immunology

**Microbiology** is the study of microorganisms such as bacteria, viruses, unicellular eukaryotes, and parasites. Microorganisms play an important role in human and animal disease; food production (bread, cheese, wine); decay and spoilage; and contamination and purification of water and soil. Microbiologists study these tiny, self-replicating machines to understand the basic principles of life: growth, metabolism, cell division, control of gene expression, and response to environmental stimuli. Microbiologists are also concerned with controlling or harnessing microorganisms for the benefit of people, by isolating antibiotics or producing vaccines to protect against disease, and by developing and perfecting microorganisms for industrial uses.

**Immunology** is the study of the molecular and cellular basis of host resistance and immunity to external agents such as pathogenic microorganisms. Immunologists study the mechanisms by which the body recognizes foreign antigens, generates appropriate antibodies to an enormously diverse spectrum of antigens, and sequesters and kills invading microorganisms. Their discoveries lead to vaccination against disease; transfusions and organ transplants; and treatments for allergies; cancer; autoimmune diseases; and immune-deficiency diseases such as AIDS. Antibodies may soon be used in conjunction with antibiotics or chemical agents as specific "magic bullets" to diagnose disease and attack microbes and cancers.

**Research areas:** The disciplines of microbiology and immunology are natural partners in research, and both fields use the modern methods of cell biology, molecular biology, and genetics to study basic life processes. The members of the Department of Microbiology and Immunology conduct research in:

- microbial physiology and genetics
- microbial pathogenesis
- molecular virology
- cellular and molecular immunology
- parasitology

Students registered in the Department are therefore exposed to these related areas and receive an excellent background in basic biology and chemistry, as well as in the more applied areas of biotechnology and medicine.

Many opportunities exist for careers in basic or applied microbiology and immunology, medical microbiology, environmental microbiology, and biotechnology. They include positions in industry (pharmaceutical and biotechnology), hospitals, universities, and government (environment, public health, and energy). A degree in microbiology also provides an excellent basis for entering professional and postgraduate programs in medicine, dentistry, veterinary sciences, research, and education.

Course and program information is available on the MIMM website.

All new students should attend a departmental orientation/advising session held prior to the start of the academic year.

Please check our Department's Academic Advising and Orientation site for the orientation date/time.

## Available Programs

- Microbiology and Immunology Honours (B.Sc.) (72 credits)
- Microbiology and Immunology Liberal Program - Core Science Component (B.Sc.) (50 credits)
- Microbiology and Immunology Major (B.Sc.) (66 credits)

## Microbiology and Immunology (MIMM) Related Programs

### Interdepartmental Honours in Immunology

For more information, see Immunology.

This program is offered by the departments of Biochemistry, Microbiology and Immunology, and Physiology.

Students interested in immunology may choose between this Honours program and the Honours program of the Department of Microbiology and Immunology.

Details of this program may also be obtained from:

Department of Physiology  
McIntyre Medical Sciences Building, Room 1136  
Telephone: 514-398-4342

OR  
Department of Microbiology and Immunology  
McGill University Health Centre, Glen Site  
1001 Decarie Boulevard, Bloc E, Office EM23248  
Email: [undergrad.microimm@mcgill.ca](mailto:undergrad.microimm@mcgill.ca)

## Location

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