BIOMEDICAL SCIENCES

Anatomy and Cell Biology

Core Courses

This Department contributes to the multidisciplinary curriculum of the M.D.,C.M. program during the Fundamentals of Medicine and Dentistry (FMD) and Clerkship components.

Putting It All Together: Basic Science, Medicine, and Society (Anatomy for Surgeons – Basic and Translational Science Selective)

A selection of practical anatomy, seminar presentations, and clinical anatomical conferences is provided during the Senior Clerkship Component to supplement the knowledge of human anatomy obtained in the core program. It is specifically designed to provide the anatomical basis for surgical practice.

This selective is an opportunity to acquire a meaningful hands-on familiarity with human anatomy and the confidence for tackling further work in the operating room. Anatomy for Surgeons is a relevant course for any student entering residency. Students will perform comprehensive regional dissections according to the stream (head and neck, limbs, or trunk) in which they are enrolled. The dissection sessions will be supplemented with artificial 3D applications and case-study presentations form clinical experts. Upon completion of their dissections, students will present their work to the supervising anatomy faculty and receive an oral exam on the relevant content. Students will also prepare two presentations: one on a common anatomical variation associated with their stream, and another on diagnostic imaging related to their stream. For each of these assignments, students will conduct a thorough review of the relevant literature and present their topic to their peers with supporting anatomical and radiological images

Other Courses

The Department offers a range of courses leading to the Liberal Program/Major/Honours B.Sc. in Anatomy and Cell Biology and is well-equipped for graduate research leading to M.Sc. and Ph.D. degrees. See the Faculty of Medicine and Health Sciences' Graduate and Postdoctoral Studies section and the Faculty of Science's Undergraduate section.

For further information, visit the Department's website.

Biochemistry

Core Courses

This Department contributes to the multidisciplinary Fundamentals of Medicine and Dentistry (FMD), Transition to Clinical Practice (TCP), and Clerkship components of the M.D.,C.M. program. See the Elective Courses page for elective opportunities.

Other Courses

The Department offers a range of courses leading to the Liberal Program/Majors/Honours B.Sc. in Biochemistry and is well-equipped for graduate research leading to the M.Sc. and Ph.D. degrees. See the Faculty of Medicine and Health Sciences' Graduate and Postdoctoral Studies section and the Faculty of Science's Undergraduate section.

For further information, visit the Department's website.

Biomedical Engineering

Electives

The Department provides electives for medical students. See the Elective Courses page for elective opportunities.

Graduate Courses

The Department of Biomedical Engineering provides instruction and opportunities for interdisciplinary research in the application of engineering, mathematics, and the physical sciences to problems in medicine and the life sciences. Courses are offered for graduate students in the life sciences, engineering, and the physical sciences, leading to the Master's (M.Sc.) and Ph.D. in Biological and Biomedical Engineering.

For more information, see the Faculty of Medicine & Health Sciences' Graduate and Postdoctoral Studies section.

For further information, visit the Department's website.

Human Genetics

Core Courses

This Department contributes to the multidisciplinary Fundamentals of Medicine and Dentistry (FMD) and Clerkship components of the M.D.,C.M. program. See the Elective Courses page for elective opportunities.

Graduate Courses

This Department contributes to the multidisciplinary curriculum components of Fundamentals of Medicine and Dentistry (FMD), Transition to Clinical Practice (TCP), and Clerkship. See the Elective Courses page for elective opportunities.

The department also offers the following programs:

- M.Sc. in Genetic Counselling (Non-Thesis)
- M.Sc. in Human Genetics (Thesis)
- Ph.D. in Human Genetics (Thesis)

For details, please refer to the Faculty of Medicine and Health Sciences' Graduate and Postdoctoral Studies section.

For further information, visit the Department's website.

Microbiology and Immunology

Core Courses

This Department contributes to the multidisciplinary curriculum components of Fundamentals of Medicine and Dentistry (FMD) and Clerkship components of the M.D.,C.M. program.

Other Courses

The Department offers a range of courses leading to the Liberal/Major/Honours B.Sc. in Microbiology and Immunology, and the interdepartmental Honours Immunology Program. The Department is also well-equipped for graduate research leading to the M.Sc. and Ph.D. degrees through a program that includes the multidisciplinary and trans-departmental McGill Centre for Microbiome Research and access to cutting-edge research and technology. In addition, the Department offers courses that translate fundamental knowledge in Microbiology

and Immunology to basic science, clinical, biotechnological, and public policy aspects of Infection and Immunity.

Please see the Faculty of Medicine and Health Sciences' Graduate and Postdoctoral Studies section, and the Faculty of Science's Undergraduate section for more information.

For further information, visit the Department's website.

Pharmacology and Therapeutics

About the Department of Pharmacology and Therapeutics

The program of instruction in Pharmacology and Therapeutics is designed to provide systematic coverage of the principles of drug action for the main classes of drugs, the factors that control and modify their effects, and the basis for selection and use of specific drugs in the treatment of disease.

Core Courses

This Department contributes to all curriculum components of the M.D.,C.M. program. Information on the curriculum can be found at mcgill.ca/ugme/mdcm-curriculum-joint-programs.

Other Courses

The Department offers a range of courses at different levels on the principles of pharmacology and therapeutics, with emphasis on the sites and mechanisms of action of drugs, from whole body to molecular interactions. The compounds covered represent classes of drugs used in the treatment of human disease. These courses are available to students registered in the Department's undergraduate program. The Department also offers a graduate program leading to an M.Sc. and/or a Ph.D. degree.

Please see the Faculty of Medicine and Health Sciences' Graduate and Postdoctoral Studies section and the Faculty of Science's Undergraduate section for more information.

For further information, visit the Department's website.

Physiology

About the Department of Physiology

Physiology has its roots in many of the basic sciences—including biology, chemistry, mathematics, and physics—and overlaps with other biomedical sciences such as anatomy, biochemistry, microbiology & immunology, neurology, pathology, pharmacology, psychology, and biomedical engineering. Physiology is one of the prime contributors of basic scientific knowledge to the clinical medical sciences. Members of the Department of Physiology at McGill are engaged in studies dealing with molecules, single cells, or entire systems in a variety of vertebrates, including humans. A wide range of interest and expertise is represented, including:

- biomathematics;
- biophysics;
- cardiovascular physiology;
- endocrinology;
- gastrointestinal and renal physiology;
- immunology;
- neurophysiology;
- physiology of exercise;
- respiratory physiology.

The Department also has a rich graduate research program leading to either an M.Sc. or a Ph.D. degree, and is a participant in McGill's M.D.,C.M. & Ph.D. program.

Some faculty members have formal or informal links with the Departments of Mathematics and Statistics; Physics; Electrical and Computer Engineering; and Chemistry, and with clinical medical departments, reflecting and reinforcing the close ties between physiology and other disciplines.

Please see the Faculty of Medicine and Health Sciences' Graduate and Postdoctoral Studies section, and the Faculty of Science's Undergraduate section for more information.

For further information, visit the Department's website.

Rosalind and Morris Goodman Cancer Institute

About The Goodman Cancer Institute

The Goodman Cancer Institute (GCI) is committed to training the next generation of cancer researchers through innovative, hands-on training programs designed to foster independent, original, and unconventional thinking, as well as an ability to integrate knowledge and technology from multiple fields. GCI full investigators are affiliated with eight Departments of the Faculty of Medicine and Health Sciences and make vital contributions to undergraduate and graduate-level teaching within these units, particularly the Departments of Biochemistry and Medicine (Division of Experimental Medicine).

Departments affiliated with GCI:

1. Department of Biochemistry
2. Department of Biomedical Engineering
3. Department of Human Genetics
4. Department of Medicine (Division of Experimental Medicine)
5. Department of Microbiology & Immunology
6. Department of Physiology

Prospective graduate students must apply to and be accepted by one of the graduate programs of the Faculty of Medicine and Health Sciences (School of Biomedical Sciences) which GCI members are affiliated with and choose a supervisor from among the GCI's Full Members. See the website of the relevant department and the Faculty of Medicine and Health Sciences' Graduate and Postdoctoral Studies section for more information on these programs.

The GCI complements these already outstanding programs by providing trainees with state-of-the-art research laboratories and equipment, a suite of outstanding Technology Platforms, access to an interdisciplinary community of mentors who are international authorities in their fields, and programs of seminars, events, conferences, workshops, and public outreach initiatives. GCI trainees are also eligible to apply for support from a range of competitive internal funding programs.

For further information, visit the Institute's website.

Victor Phillip Dahdaleh Institute of Genomic Medicine

About The Victor Phillip Dahdaleh Institute of Genomic Medicine

McGill has long been a leader in Canada and internationally in the increasingly vital fields of RNA, DNA, and genomics research. In concert with the Faculty of Medicine and Health Sciences and affiliated hospitals within the McGill University Health Centre, the newly created institute aims to maximize opportunities to apply genomics for clinical interventions in high-priority fields where McGill is already an established leader—such as cancer, neuroscience and mental health, chronic inflammatory diseases and infectious diseases, including COVID-19.

By harnessing the interdisciplinary expertise and research infrastructure across McGill's faculties, the Institute seeks to implement a full spectrum approach to genomic medicine, which draws on information from a person's genes and how they interact to inform an individual's clinical care. McGill researchers will work to lead breakthrough research aimed at the development of cutting-edge diagnostic tools, targeted treatments, and new pharmaceuticals and preventative vaccines. Additionally, the Institute's social sciences pillar will draw on expertise across the University to lead important research on the ethical, policy, and legal implications of genomic medicine.

For further information, visit the Institute's website.

Location

School of Biomedical Sciences
Francesco Bellini Building, Room 433
Life Sciences Complex
3649 Promenade Sir-William-Osler
Montreal QC H3G 0B1
Email: sbms.medicine@mcgill.ca
Website: mcgill.ca/sbms

Associate Dean and Director: Keith Murai

For further information, visit the School's website.

Anatomy and Cell Biology

Location

Department of Anatomy and Cell Biology
Strathcona Anatomy and Dentistry Building, Room M-30
3640 University Street
Montreal QC H3A 0C7
Telephone: 514-398-6350
Email: admin.acb@mcgill.ca
Website: mcgill.ca/anatomy

Chair: Chantal Autexier

Biochemistry

Location

Department of Biochemistry
McIntyre Medical Sciences Building, Room 905
3655 Promenade Sir-William-Osler
Montreal QC H3G 1Y6
Telephone: 514-398-1898
Email: undergrad.biochem@mcgill.ca
Website: mcgill.ca/biochemistry

Chair: Thomas Duchaine

Biomedical Engineering

Location

Department of Biomedical Engineering
Duff Medical Building, Room 316
3775 University Street
Montreal QC H3A 2B4
Telephone: 514-396-2493
Email: info.bme@mcgill.ca
Website: mcgill.ca/bme

Chair: David Juncker

Human Genetics

Location

Department of Human Genetics
Hugessen House, Room 208
3666 McTavish Street
Montreal Quebec H3A 1Y2
Telephone: 514-398-6890
Email: grad.hg@mcgill.ca
Website: mcgill.ca/humangenetics

Chair: William Foulkes

Microbiology and Immunology

Location

Department of Microbiology and Immunology
Duff Medical Building, Room 511
3775 University Street
Montreal QC H3A 2B4
Telephone: 514-398-7492
Email: office.microimm@mcgill.ca
Website: mcgill.ca/microimm

Chair: Samantha Gruenheid

Pharmacology and Therapeutics

Location

Department of Pharmacology and Therapeutics
McIntyre Medical Sciences Building, Room 1325
3655 Promenade Sir-William-Osler
Montreal QC H3G 1Y6
Telephone: 514-398-3622
Email: undergradstudies.pharmacology@mcgill.ca
Website: mcgill.ca/pharma

Chair: Koren Mann

Physiology

Location

Department of Physiology
McIntyre Medical Sciences Building, Room 1021
3655 Promenade Sir-William-Osler
Montreal QC H3G 1Y6

Telephone: 514-398-4316
Website: mcgill.ca/physiology

Chair: John White

Rosalind and Morris Goodman Cancer Institute

Location

The Rosalind and Morris Goodman Cancer Institute
1160 Pine Avenue West, Room 602
Montreal QC H3A 1A3
Telephone: 514-398-3535
Email: info.gci@mcgill.ca
Website: mcgill.ca/gci

Director: Morag Park

Victor Phillip Dahdaleh Institute of Genomic Medicine

Location

Victor Phillip Dahdaleh Institute of Genomic Medicine
740 Avenue Dr. Penfield
Montreal QC H3A 0G1
Telephone: 514-398-3311
Email: info.genome@mcgill.ca
Website: genomic.medicine.mcgill.ca

Director: Mark Lathrop