2017-2018

This publication provides guidance to prospects, applicants, students, faculty and staff.

1 . McGill University reserves the right to mak

Publication Information

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1 Welcome

To Graduate Students and Postdoctoral Fellows:

Welcome to Graduate and Postdoctoral Studies (GPS) at McGill. You are joining a community of world-class researchers and more than 9,000 graduate students in over 400 programs. *GPS* is here to support you from admissions through to graduation and beyond. We take a holistic approach to graduate student success; we support not only your academic development, but also your career-planning and professional development, and your well-being and student life. I invite you to consult the website *Resources for Your Success*, which is a one-stop-shop for the many resources and support systems in place for you across the University.

I would like to wish you all the best in your studies at McGill. We are here to make sure that you have the best possible experience.

Josephine Nalbantoglu, Ph.D.
Dean, Graduate and Postdoctoral Studies

2 GPS Directory

2.1 Administrators

Administrative Officers	
Josephine Nalbantoglu; B.Sc., Ph.D. (McG.)	**Dean (Graduate and Postdoctoral Studies)**
Robin Beech; B.Sc.(Nott.), Ph.D.(Edin.)	**Associate Dean (Graduate and Postdoctoral Studies)**
France Bouthillier; B.Ed., C.Admin.(UQAM), M.B.S.I.(Montr.), Ph.D.(Tor.)	**Associate Dean (Graduate and Postdoctoral Studies)**
Jean-Jacques Lebrun; B.Sc.(La Roche-sur-Y	**Associate Dean (Graduate and Postdoctoral Studies)**

If the courses completed elsewhere or at McGill prior to admission were used to complete a degree, exemptions may be granted without credit, i.e., the exempted course(s) must be replaced by other graduate course(s) at McGill. No double counting is allowed unless, exceptionally, the department offering the Master's degree permits it and the degree has an overall credit requirement greater than 45 credits. In other words, instances where exemptions with

French language courses are available at the French Language Centre. The teaching is intensive and class sizes are kept small. While undergraduate students are given preference, graduate students who are certain they can devote sufficient time to the work may enrol.

Thesis – Doctoral

The thesis for the Ph.D. degree must display original scholarship expressed in good literate style and must be a distinct contribution to knowledge. **Formal notice of a thesis title and names of examiners must be submitted to the Thesis section of GPS on the *Nomination of Examiners and Thesis Submission* form, available at *www.mcgill.ca/gps/thesis/guidelines/initial-submission*, in accordance with the dates on *www.mcgill.ca/importantdates*, at the same time as the thesis is submitted**. The list of examiners must be approved by the Department Chair, the supervisor and the student. The Thesis section of GPS should be notified of any subsequent change of title as early as possible. Guidelines and deadlines are available at *www.mcgill.ca/gps/thesis/guidelines*.

Special regulations for the Ph.D. degree in particular departments are stated in the entries of those departments.

Thesis Oral Examination – Doctoral

After the thesis has been received and approved, a final oral examination is held on the subject of the thesis and subjects intimately related to it. This is conducted in the presence of a Committee of at least five members presided over by a Pro-Dean nominated by Graduate and Postdoctoral Studies. The Chair of the candidate's department and the Thesis Supervisor are regularly invited to be members of the Committee; at least one member of the Committee is appointed from outside the candidate's department. Guidelines are available at *www.mcgill.ca/gps/thesis/guidelines*.

8.3 Vt P b y f d P t l

Graduate students and Postdocs should normally be entitled to vacation leave equivalent to university holidays and an additional total of fifteen (15) w

- the individual must have adequate proficiency in English, but is not required to provide official proof of English competency to Enrolment Services;
- the individual must comply with regulations and procedures governing research ethics and safety and obtain the necessary training;
- the individual will be provided access to McGill libraries, email, and required training in research ethics and safety. Any other University services must be purchased (e.g., access to athletic f

Montreal QC H3A 0C7
Canada
Telephone: 514-398-6350
Fax: 514-398-5047
Website: *www.mcgill.ca/anatomy*

11.1.2 AbAtn yB

The Department offers graduate programs leading to **M.Sc.** and **Ph.D.** degrees. Research in the Department investigates the dynamics and organization of molecules, organelles, cells, and tissues in several major systems of the body. The work makes fundamental contributions to a number of established and emerging multidisciplinary fields such as:

- cell and molecular biology;
- cellular immunology and hematology;
- reproductive biology;
- calcified tissue biology;
- tumour cell biology;
- developmental biology;
- neurobiology;
- aging.

The Department offers contemporary facilities for the wide range of techniques currently employed in research. Modern methods of cell and molecular biology, immunology, and biochemistry are used in conjunction with specialized microscopy in a variety of experimental systems.

The Department has one of the largest and best-equipped electron microscope facilities in the world. Currently in use are four modern electron microscopes which include a Tecnai F20 and a Titan Krios. Combined with some of these microscopes are computer-aided analytical equipment capable of elemental microanalysis, histomorphometry, reconstruction, and quantitation. The high-voltage microscope is particularly useful for certain analytical electron optical procedures such as electron diffraction, lattice imaging, and three-dimensional electron microscopy.

Funding

M.Sc. and Ph.D. students receive a minimum yearly stipend of $18,000 and $20,000 respectively. All students are financially supported either by their supervisor or through fellowships or scholarships. Prospective students are urged to make every effort to secure their own funding. Applications may be made for a variety of fellowships administered by the University or by various federal, provincial, or private agencies. For more information on fellowships and awards, see the *Graduate and Postdoctoral Studies website*.

Departmental Seminars

Nationally and internationally recognized scientists present their research findings to the Department at a regular *seminar series* throughout the academic year. On a regular basis, graduate students also present their own research progress and results to other students, postdoctoral fellows, and researchers in the Department through the Research in Progress Seminar Series.

The **Human Systems Biology Stream** is offered as a complementary stream to the existing M.Sc. program entailing a multidisciplinary approach to achieving an M.Sc. in Cell Biology and Anatomy. The primary objective of this stream is to offer graduate students academic training in Human Systems Biology. This is an exciting and new multidisciplinary field that aims to understand molecular human diseases at the systems level.

section 11.1.5: Master of Science (M.Sc.) Cell Biology (Thesis) (45 credits)

Graduate research activities leading to the presentation of the M.Sc. Thesis involve original experimental work in one of the areas being actively investigated by the Department's research supervisors. Our graduate program offers training in a personal, unique, and multidisciplinary environment in the top Canadian university with worldwide recognition. The thesis-based Master's training is intended for students with a B.Sc. or B.A. degree in life sciences from a university of recognized reputation. Candidates with an M.D., D.D.S., or D.V.M. degree are also welcome. The students are trained in how to address biological problems with an integrative understanding of cell biology by conducting hypothesis-driven projects. The training provides all the tools required for a competitive career in academic settings as well as in industry or other fields.

section 11.1.6: Doctor of Philosophy (Ph.D.) Cell Biology

Graduate research activities leading to the presentation of the Ph.D. thesis involve original experimental work in one of the areas being actively investigated by the Department's research supervisors. Our graduate program offers training in a personal, unique, and multidisciplinary environment in the top Canadian univ

11.1.4 Aten yBF by

Chair

Craig Mandato

Emeritus Pr

Associate Members

Daniel Bernard (*Pharmacology and Therapeutics*)

Claire Brown (*Physiology*)

Colin Chalk (*Neurology and Neurosurgery*)

Jean-François Cloutier (*Neurology and Neurosurgery*

Adjunct Professors

Michael Sacher; Ph.D.(McG.)

Elitza Tocheva; B.Sc., Ph.D.(Br. Col.)

11.1.5 [illegible] (45 [illegible])

[illegible] (24 [illegible])

ANAT 698	(24)	M.Sc. Thesis Research 1

[illegible] (12 [illegible])

ANAT 601	(3)	MSc Seminar Examination
ANAT 695	(3)	Seminars in Cell Biology 1
ANAT 696	(3)	Seminars in Cell Biology 2
ANAT 697	(3)	Seminars in Cell Biology 3

[illegible] (9 [illegible])

6 credits from one of two streams: Cell Developmental Biology Stream or Human Systems Biology Stream

[illegible]

Histologytal Biology Stream o1

11.1.6

A thesis for the doctoral de

Master's students receive a minimum stipend of $20,000 annually; doctoral students receive $22,000. The Department is committed to helping graduate students secure adequate funding for their research. All students are financially supported either by their supervisor or through fellowships or scholarships. Prospective students are urged to make every effort to secure their own funding. Applications may be made for a variety of fellowships administered by the University or by various federal, provincial, or private agencies. For more information on fellowships and awards, see the *Graduate and Postdoctoral Studies website*.

Departmental Seminars

Visiting scientists and senior doctoral students present their research findings to the Department at a regular seminar series throughout the academic year. All graduate students are required to attend the regular seminars and additional special lectures, and are encouraged to attend scientific conferences and symposia.

section 11.2.10: Doctor of Philosophy (Ph.D.) Biochemistry: Chemical Biology

The Chemical Biology Thematic Group is engaged in a diverse range of research topics which span structural biology, enzymology, nucleic acid research, signalling pathways, single molecule biophysics, and biophysical chemistry of living tissues. Among the themes which unite the research being performed in this group is trying to learn new chemistry and ph

Professors
Alba Guarné

Associate Members

Xiang-Jiao Yang (*Goodman Cancer Ctr., Dept. of Medicine*)

Adjunct Professors

BIOC 698	(12)	Thesis Research 2
BIOC 699	(15)	Thesis Research 3

BIOC 610	(1)	Seminars in Chemical Biology 1
BIOC 611	(1)	Seminars in Chemical Biology 3
BIOC 689	(1)	Seminars in Chemical Biology 2
BIOC 690	(1)	Seminars in Chemical Biology 4

At least 3 credits from the following:

CHEM 502	(3)	Advanced Bio-Organic Chemistry
CHEM 503	(3)	Drug Discovery
PHAR 503	(3)	Drug Discovery and Development 1

and at least 3 credits from the following:

BIOC 600	(3)	Advanced Strategies in Genetics and Genomics
BIOC 603	(3)	Genomics and Gene Expression
BIOC 604	(3)	Macromolecular Structure
BIOC 605	(3)	Protein Biology and Proteomics
BIOC 670	(3)	Biochemistry of Lipoproteins
EXMD 615	(3)	Essentials of Glycobiology
EXMD 635D1	(3)	Experimental/Clinical Oncology
EXMD 635D2	(3)	Experimental/Clinical Oncology

Plus additional credits, to a total of at least 11 complementary course credits from the following list:

CHEM 504	(3)	Drug Design
CHEM 522	(3)	Stereochemistry
CHEM 582	(3)	Supramolecular Chemistry
CHEM 591	(3)	Bioinorganic Chemistry
CHEM 621	(5)	Reaction Mechanisms in Organic Chemistry
CHEM 629	(5)	Organic Synthesis
CHEM 655	(4)	Advanced NMR Spectroscopy
EXMD 510	(3)	Bioanalytical Separation Methods
EXMD 602	(3)	Techniques in Molecular Genetics
		Drug Discovery and Development 2

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] (3 [illegible])

BIOC 696*	(3)	Seminars in Biochemistry
BIOC 701**	(0)	Research Seminar 1
BIOC 702**	(0)	Ph.D. Thesis Proposal
BIOC 703**	(0)	Research Seminar 2

*Students promoted directly from the M.Sc. to the Ph.D. program, and who registered for and passed BIOC 696 at the M.Sc. level, do not register for BIOC 696 at the Ph.D. level.

** NOTE: Students DO NOT register for these courses until notified by the Student Affairs Officer.

Students must complete BIOC 701 in the third term after admission to the program, BIOC 702 in the fifth or sixth term, and BIOC 703 approximately six months prior to submission of the Ph.D. thesis.

[illegible] [illegible]* (6 [illegible])**

At least 3 credits selected from:

BIOC 600	(3)	Advanced Strategies in Genetics and Genomics
BIOC 603	(3)	Genomics and Gene Expression
BIOC 604	(3)	Macromolecular Structure
BIOC 605	(3)	Protein Biology and Proteomics
BIOC 670	(3)	Biochemistry of Lipoproteins
EXMD 615	(3)	Essentials of Glycobiology
EXMD 635D1	(3)	Experimental/Clinical Oncology
EXMD 635D2	(3)	Experimental/Clinical Oncology

Plus additional credits to a minimum of 6 total complementary course credits of 500- or higher-level courses in the biomedical and allied sciences.

*** Complementary courses are chosen in consultation with the Research Director.

The Graduate Advisory Committee may stipulate additional course work depending on the background of the candidate. BIOC 450 (Protein Structure and Function) and BIOC 454 (Nucleic Acids) are additional requirements for those who have not previously completed equivalent courses in their prior training.

11.2.9 [illegible] [illegible] (PhD .) [illegible] [illegible] [illegible]

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] (6 [illegible])

BIOC 696*	(3)	Seminars in Biochemistry
BIOC 701**	(0)	Research Seminar 1
BIOC 702**	(0)	Ph.D. Thesis Proposal
BIOC 703**	(0)	Research Seminar 2
COMP 616D1	(1.5)	Bioinformatics Seminar

COMP 616D2	(1.5)	Bioinformatics Seminar

* Students promoted directly from the M.Sc. to the Ph.D. program, and who registered for and passed BIOC 696 at the M.Sc. level, do not register for BIOC 696 at the Ph.D. level.

** NOTE: Students DO NOT register for these courses until notified by the Student Affairs Officer.

Students must complete BIOC 701 in the third term after admission to the program, BIOC 702 in the fifth or sixth term, and BIOC 703 approximately six months prior to submission of the Ph.D. thesis.

[illegible] (9 [illegible]

3 credits from the following:

BIOC 600	(3)	Advanced Strategies in Genetics and Genomics
BIOC 603	(3)	Genomics and Gene Expression
BIOC 604	(3)	Macromolecular Structure
BIOC 605	(3)	Protein Biology and Proteomics
BIOC 670	(3)	Biochemistry of Lipoproteins
EXMD 615	(3)	Essentials of Glycobiology
EXMD 635D1	(3)	Experimental/Clinical Oncology
EXMD 635D2	(3)	Experimental/Clinical Oncology

Plus 6 credits from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

*** Complementary courses are chosen in consultation with the Research Director.

The Graduate Advisory Committee may stipulate additional coursework depending on the background of the candidate. BIOC 450 (Protein Structure and Function) and BIOC 454 (Nucleic Acids) are additional requirements for those who have not previously completed equivalent courses in their prior training.

11.2.10 [illegible] (PhD .) [illegible]

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] (7 [illegible]

BIOC 610	(1)	Seminars in Chemical Biology 1
BIOC 611	(1)	Seminars in Chemical Biology 3
BIOC 689	(1)	Seminars in Chemical Biology 2
BIOC 690	(1)	Seminars in Chemical Biology 4
BIOC 696*	(3)	Seminars in Biochemistry
BIOC 701**	(0)	Research Seminar 1
BIOC 702**	(0)	Ph.D. Thesis Proposal

BIOC 703**	(0)	Research Seminar 2

* Students promoted directly from the M.Sc. to the Ph.D. program, and who registered for and passed BIOC 696 at the M.Sc. level, do not register for BIOC 696 at the Ph.D. level.

** NOTE: Students DO NOT re

11.3 [illegible]

11.3.1 [illegible]

Biomedical Ethics Unit
3647 Peel Street
Montreal QC H3A 1X1
Canada
Telephone: 514-398-6668
Fax: 514-398-8349
Website: *www.mcgill.ca/biomedicalethicsunit/teaching/masters*

For information, contact the Graduate Program Director:

Jennifer Fishman – *jennifer.fishman@mcgill.ca*

11.3.2 [illegible]

The Biomedical Ethics Unit was established in 1996 with the aim of supporting scholarly research, clinical services, teaching, and public outreach. Members of the unit have backgrounds in anthropology, history, law, medicine, molecular genetics, philosophy, and sociology. We offer a master's degree specialization in biomedical ethics for selected master's students in the Division of Experimental Medicine, the Department of Family Medicine, Department of Human Genetics, Department of Philosophy, School of Religious Studies, and Faculty of Law.

Research Domains

Our faculty members are particularly active in research related to the development of quantitative analysis tools and instruments for biological and biomedical research. The ultimate goal is the pursuit of answers to biological and medical questions. Ongoing biological and biomedical engineering research at McGill includes:

- signal analysis, including brain (EEG), muscles (EMG), eyes (EOG), respiration, and mass spectrometry;
- systems analysis, including neuromuscular control, and oculomotor and vestibular control;
- experimental and computational biomechanics, including orthopedic and auditory mechanics;
- biomaterials, including artificial cells;
- medical imaging and image processing;
- micro and nanotechnology and biosensors;
- nanoparticles and cell imaging;
- bioinformatics and computational biology;
- computers in medical education, including interactive 3D models and haptics;
- biological materials and mechanics;
- biomolecular and cellular engineering, regenerative medicine;
- biomedical, diagnostics, and high throughput screening engineering;
- mechanics of disease;
- tissue engineering, especially concerning 3D and nano-related biological microfluidics devices, such as fungi and cellular traffic;
- biological dynamic devices, from whole-organisms (e.g., bacteria) to nanodevices;
- information processing and storage in biological systems;
- systems and synthetic biology;
- cell mechanisms and the cytoskeleton;
- soft matter physics.

section 11.4.5: Master of Engineering (M.Eng.) Biological and Biomedical Engineering (Thesis) (45 credits)

The Biological and Biomedical Engineering Master's program focuses on the interdisciplinary application of methods, paradigms, technologies, and devices

[illegible] (18 [illegible])

12 credits from BMDE or BIEN courses at the 500-level or higher which may also include MDPH 607, of which the following must be included:

3 credits from the following quantitative courses, or other quantitative courses (at the 500-level or higher) approved by the Graduate Program Director.

BIEN 510	(3)	Engineered Nanomaterials for Biomedical Applications
BIEN 520	(3)	High Throughput Bioanalytical Devices
BIEN 530	(3)	Imaging and Bioanalytical Instrumentation
BIEN 550	(3)	Biomolecular Devices
BIEN 560	(3)	Biosensors
BIEN 590	(3)	Cell Culture Engineering
BMDE 502	(3)	BME Modelling and Identification
BMDE 503	(3)	Biomedical Instrumentation
BMDE 509	(3)	Quantitative Analysis and Modelling of Cellular Processes
BMDE 512	(3)	Finite-Element Modelling in Biomedical Engineering
BMDE 519	(3)	Biomedical Signals and Systems
BMDE 610	(3)	Functional Neuroimaging Fusion

6 credits from the list below or from other courses (at the 500-level or higher) which have both biomedical content and content from the physical sciences, engineering, or computer science, with the approval of the supervisor and Graduate Program Director.

BIEN 510	(3)	Engineered Nanomaterials for Biomedical Applications
BIEN 520	(3)	High Throughput Bioanalytical Devices
BIEN 530	(3)	Imaging and Bioanalytical Instrumentation
BIEN 550	(3)	Biomolecular Devices
BIEN 560	(3)	Biosensors
BIOT 505	(3)	Selected Topics in Biotechnology
BMDE 501	(3)	Selected Topics in Biomedical Engineering
BMDE 502	(3)	BME Modelling and Identification
BMDE 503	(3)	Biomedical Instrumentation
BMDE 504	(3)	Biomaterials and Bioperformance
BMDE 505	(3)	Cell and Tissue Engineering
BMDE 506	(3)	Molecular Biology Techniques
BMDE 508	(3)	Introduction to Micro and Nano-Bioengineering
BMDE 509	(3)	Quantitative Analysis and Modelling of Cellular Processes
BMDE 510	(3)	Topics in Astrobiology
BMDE 512	(3)	Finite-Element Modelling in Biomedical Engineering
BMDE 519	(3)	Biomedical Signals and Systems
BMDE 610	(3)	Functional Neuroimaging Fusion
BMDE 650	(3)	Advanced Medical Imaging
BMDE 651	(3)	Orthopaedic Engineering
BMDE 652	(3)	Bioinformatics: Proteomics
COMP 526	(3)	Probabilistic Reasoning and AI
COMP 546	(4)	Computational Perception
COMP 558	(3)	Fundamentals of Computer Vision

Advanced T

11.5.2 At

Excellent laboratory facilities for basic and applied research are available in the Department and in the laboratories of associated staff located elsewhere on campus. The Department operates a network of high-performance workstations and well-equipped mechanical and electronics workshops.

Basic research in the Department concentrates on the application of quantitative engineering analysis methods to basic biomedical research problems. Currently active areas of research include:

- neuromuscular and postural control;
- muscle mechanics;
- the vestibular system;
- oculomotor control;
- the auditory system;
- joint prosthetics;
- biomaterials;
- artificial cells and organs;
- cell and tissue engineering;
- drug delivery;
- microencapsulation;
- microbiome and probiotics;
- functional food and neutraceuticals;
- medical imaging;
- microfluidics;
- nanomedicine and nanotechnology;
- bioinformatics in genomics and proteomics.

Staff members are also active in more applied research related to the development of quantitative analysis tools and instruments for biomedical research. Areas of activity here include: signal analysis, system identification, modelling, simulation and parameter estimation, image processing, pattern recognition, ultrasound, and biorobotics.

section 11.5.5: Graduate Certificate (Gr. Cert.) Translational Biomedical Engineering (15 credits)

This program will enable students to translate advances in biomedical engineering research to clinical and commercial solutions. Students will learn the complementary skills needed to take early-stage research results from the bench to the bedside and bridge the gap between invention and product innovation.

The graduate certificate responds to the demand from students for such training and addresses the needs of the biomedical industry for such highly qualified personnel.

For additional information, see the *Biomedical Engineering website*.

11.5.3 A P d

11.5.3.1 A

See *University Regulations & Resources* > *Graduate* > *Graduate Admissions and Application Procedures* > *: Admission Requirements (Minimum Requirements to be Considered for Admission)*. In addition, please see the Department website: *www.mcgill.ca/bme/prospective-students/certificate*.

11.5.3.2 A P d

McGill's online application form for graduate program candidates is available at *www.mcgill.ca/gradapplicants/apply*.

See *University Regulations & Resources* > *Graduate* > *Graduate Admissions and Application Procedures* > *: Application Procedures* for detailed application procedures.

Please address enquiries directly to the Department.

11.5.3.3 A

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Department of Biomedical Engineering and may be revised at any time. Applicants must verify all deadlines and documentation requirements well in advance on the appropriate McGill departmental website; please consult the list at *www.mcgill.ca/gps/contact/graduate-program*.

	Application Opening Dates	Application Deadlines		
	All Applicants	**Non-Canadian citizens (incl. Special, Visiting & Exchange)**	**Canadian citizens/Perm. residents of Canada (incl. Special, Visiting & Exchange)**	**Current McGill Students (any citizenship)**
Fall Term:	Sept. 15	May 1	June 21	June 21
Winter Term:	Feb. 15	Sept. 10	Nov. 10	Nov. 10
Summer Term:	N/A	N/A	N/A	N/A

Admission to graduate studies is competitive; accordingly, late and/or incomplete applications are considered only as time and space permit.

Note: Applications for Summer term admission will not be considered.

11.5.4 [illegible]

Chair

R.E. Kearney

Emeritus Professor

T.M.S. Chang; B.Sc., M.D.,C.M., Ph.D.(McG.), F.R.C.P.(C), F.R.S.(C) (*joint appt. with Physiology*)

Professors

D.L. Collins; B.Sc., M.Eng., Ph.D.(McG.) (*joint appt. with Neurology and Neurosurgery*)

H.L. Galiana; B.Eng., M.Eng., Ph.D.(McG.)

D. Juncker; Dipl., Ph.D.(Neuch-Switzerland)

R.E. Kearney; B.Eng., M.Eng., Ph.D.(McG.)

S. Prakash; B.Sc.(Hon.), M.Sc., M.Tech.(BHU), Ph.D.(McG.)

M. Tabrizian; B.Sc.(Iran), M.Sc., Ph.D.(PMC-France), M.B.A.(HEC) (*joint appt. with Dentistry*)

Associate Professor

W.R.J. Funnell; B.Eng., M.Eng., Ph.D.(McG.) (*joint appt. with Otolaryngology*)

Assistant Professors

A. Haidar; B.Sc.(Kuwait), M.Sc. A.(École Poly., Montr.), Ph.D.(McG.)

D.A. Rudko; B.Sc.(Br. Col.), M.Sc.(Vic., BC), Ph.D.(W. Ont.)

C.L. Tardif; B.Eng.(McG.), M.Sc.(Lond.), Ph.D.(McG.)

Associate Members

S. Baillet (*Neurology and Neurosurgery*)

C. Baker (*Ophthalmology*)

F. Barthelat (*Mechanical Engineering*)

S. Blain-Moraes (*Physical and Occupational Therapy*)

M. Chacron (*Physiology*)

M. Chakravarty (*Psychiatry*)

K. Cullen (*Physiology*)

M. Driscoll (*Mechanical Engineering*)

A. Ehrlicher (*Bioengineering*)

S. Enger (*Oncology*)

vT 1 atc

Associate Members

A.C. Evans; B.Sc.(Liv.), M.Sc.(Sur.), Ph.D.(Leeds) (*Neurology and Neurosurgery*)

J. Gotman (*Neurology and Neurosurgery*)

D. Guitton (*Neurology and Neurosurgery*)

A. Hendricks (*Bioengineering*)

R. Hoge (*Neurology and Neurosurgery*)

A. Kamen (*Bioengineering*)

A. Katsarkas (*Otolaryngology*)

J. Kinsella (*Bioengineering*)

S. Komarova (*Dentistry*)

A.M. Lauzon (*Medicine*)

R. Leask (*Chemical Engineering*)

I. Levesque (*Medical Physics and Oncology*)

and clinical trials. Complementary courses will provide students with advanced training in a specialized area of biomedical engineering selected from the areas where Departmental staff have significant expertise.

In cases where students have taken one or more of the core courses as part of another program, these core courses will be replaced with the equivalent number of credits, at the 500 level or higher, by other appropriate courses selected in consultation with the program director.

[illegible] (9 [illegible])

Three courses dealing with issues related specifically to the translation of biomedical engineering advances to clinical and commercial environments:

BMDE 653	(3)	Patents in Biomedical Engineering
BMDE 654	(3)	Biomedical Regulatory Affairs - Medical Devices
BMDE 655	(3)	Biomedical Clinical Trials - Medical Devices

[illegible] (6 [illegible])

Students must complete 6 credits of biomedical engineering course work selected from one or more of the following domains or other appropriate courses at the 500 level or higher approved by the Program Director:

General Biomedical Engineering

BMDE 501	(3)	Selected Topics in Biomedical Engineering

Biomedical Signals and Systems

BMDE 502	(3)	BME Modelling and Identification
BMDE 503	(3)	[illegible]
BMDE 512	(3)	Finite-Element Modelling in Biomedical Engineering
BMDE 519	(3)	Biomedical Signals and Systems

Medical Imaging

BIEN 530	(3)	Imaging and Bioanalytical Instrumentation
BMDE 610	(3)	Functional Neuroimaging Fusion
BMDE 650	(3)	Advanced Medical Imaging
MDPH 607	(3)	Medical Imaging

Biomaterials and Tissue Engineering

BIEN 510	(3)	Engineered Nanomaterials for Biomedical Applications
	(3)	Biomaterials and Bioperformance

11.6 [illegible]

11.6.1 [illegible]

School of Communication Sciences and Disorders
2001 McGill College Avenue, Suite 800
Montreal QC H3A 1G1
Canada
Telephone: 514-398-4137
Fax: 514-398-8123
Email: *scsd@mcgill.ca*
Website: *www.mcgill.ca/scsd*

11.6.2 [illegible]

The School provides both professional and research training in communication sciences and disorders at the graduate level through its **M.Sc. (Applied)**, **M.Sc.**, and **Ph.D.** degrees. We were the first department in Canada to provide both clinical and research degrees. Our M.Sc.A. program aims to educate the next generation of well-prepared and innovative speech-language pathology professionals by providing enriched classroom training, clinical laboratory activities that enhance the transition from theory to practice, and outstanding clinical practicum experiences. Our research degrees are designed to develop leading researchers and scholars, who will go on to train future investigators in the field of communication sciences and disorders and who, through their research, will advance our understanding of the processes of human communication and its breakdown.

Interdisciplinary interactions are at the core of our research training approach, which includes preparation to conduct both fundamental and clinically applied investigations. Our professors have collaborative ties with many departments and institutes of McGill:

- psychology;
- linguistics;
- neuroscience;
- otolaryngology;
- biomedical engineering;
- Montreal Neurological Institute and Hospital;
- other Montreal universities.

They also maintain national and international collaborations. Students can access this rich collaborative network via the *McGill Centre for Research on Brain, Language and Music*, a world-class interdisciplinary research centre established and directed by the School. The multilingual context in which we reside provides a unique environment for language research.

The School offers:

- a professional degree in Communication Sciences and Disorders at the M.Sc. (Applied) level with specialization in Speech Language Pathology
- two research degrees: an M.Sc. (Research) and a Ph.D. in Communication Sciences and Disorders.

Requirements for Licensure

The majority of provinces in Canada and certain states in the U.S. require that those intending to practise as speech-language pathologists within their borders comply with special provincial or state licensing regulations. Graduates wishing to practise in the province of Quebec must be members of the *Ordre des Orthophonistes et Audiologistes du Québec* (OOAQ) in order to call themselves speech-language pathologists. Further information is available from the OOAQ at:

235 boulevard René-Lévesque est, bureau 601
Montreal QC H2X 1N8
Telephone: 514-282-9123
Email: *info@ooaq.qc.ca*
Website: *www.ooaq.qc.ca*

Quebec law requires that candidates seeking licensure in provincially recognized professions demonstrate a verbal and written working knowledge of the French language. See *University Regulations & Resources* > *Undergraduate* > *Admission to Professional and Graduate Studies* > *: Language Requirements for Professions*.

Funding

IODE Canada funds two $1,000 “Silence to Sound” awards for studies in hearing impairment. These in-course awards are based on academic merit, Canadian citizenship, financial need, and potential for excellence, and are awarded by the School with approval of funds by IODE Canada.

Montreal League for the Hard of Hearing Award – Candidates must be enrolled at the graduate level in the School and w

An applicant must hold an undergraduate degree with a minimum B average (3.0 on a 4.0 point scale) or better in areas relevant to the selected field of specialization. Specific requirements are 6 credits in statistics, a total of 18 credits across the disciplines of psychology and linguistics (with a minimum of 6 credits in each discipline). Knowledge of physiology is also desirable.

M.Sc. in Communication Sciences and Disorders

The M.Sc. provides research training for:

1. students who are also taking courses for professional qualification;
2. students who have a non-thesis professional degree in Communication Sciences and Disorders; and
3. students with degrees in related fields who wish to do research but not obtain professional qualification in Communication Sciences and Disorders.

Ph.D. in Communication Sciences and Disorders

Applicants should normally have a master's degree with thesis or its equivalent in Communication Sciences and Disorders or a related field (e.g., psychology, linguistics).

Students who possess an appropriate bachelor's degree or master's degree without thesis will also be considered for the Ph.D. program, but, if admitted, must first complete a Qualifying year of coursework and a research project.

Applicants to graduate studies whose mother tongue is not English and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English **prior to admission**:

- the Test of English as a Foreign Language (*TOEFL*) with a minimum score of 95 on the Internet-based test (iBT; 587 on the paper-based test (PBT)) with minimum component scores of 24 in both Speaking and Writing and 21 in both Reading and Listening;

  OR

- the International English Language Testing System (*IELTS*) with a minimum overall band score of 7.0.

11.6.3.2 Application Procedures

McGill's online application form for graduate program candidates is available at *www.mcgill.ca/gradapplicants/apply*.

See *University Regulations & Resources* > *Graduate* > *Graduate Admissions and Application Procedures* > *: Application Procedures* for detailed application procedures.

Please see the *School of Communication Sciences and Disorders website* for required application materials.

M.Sc. (Thesis) and Ph.D. programs

All applications received by the application deadlines are automatically considered for any internal funding or awards made available to the Department for recruitment purposes. Students who apply for Fall admission generally have the most options with respect to applying for external funding as well as for being considered for internal support.

11.6.3.2.1 Additional

The items and clarifications belo

	Application Opening Dates	Application Deadlines		
	All Applicants	**Non-Canadian citizens (incl. Special, Visiting & Exchange)**	**Canadian citizens/Perm. residents of Canada (incl. Special, Visiting & Exchange)**	**Current McGill Students (any citizenship)**
Fall Term:	Sept. 15	Jan. 15	Jan. 15	Jan. 15
Winter Term:	Feb. 15	Sept. 10	Sept. 15	Sept. 15
Summer Term:	N/A	N/A	N/A	N/A

Admission to graduate studies is competitive; accordingly, late and/or incomplete applications are considered only as time and space permit.

11.6.4 [illegible]

Director and Associate Dean

Marc Pell

Research Director

Linda Polka

Part-Time Full Professor, Post-Retirement

Vincent Gracco; B.A., M.A.(San Diego), Ph.D.(Wisc.-Madison)

Professors

Shari R. Baum; B.A.(Cornell), M.S.(Vermont), M.A., Ph.D.(Brown)

Athanasios Katsarkas; M.D.(Thess.), M.Sc.(McG.), F.R.C.P.(C)

Marc Pell; B.A.(Ott.), M.Sc., Ph.D.(McG.)

Linda Polka; B.A.(Slippery Rock), M.A.(Minn.), Ph.D.(S. Flor.)

Susan Rvachew; B.Sc.(Alta.), M.Sc., Ph.D.(Calg.)

Karsten Steinhauer; M.Sc., Ph.D.(Dr.rer.nat)(Free Univ., Berlin)

Elin Thordardottir; B.A., M.Sc., Ph.D.(Wisc.-Madison)

Associate Professors

Laura Gonnerman; B.A.(Boston), M.A.(Middlebury), Ph.D.(USC)

Aparna Nadig; B.A.(Reed), M.S., Ph.D.(Brown)

Assistant Professors

Meghan Clayards; B.Sc.(Vic., BC), M.A., Ph.D.(Roch.)

Nicole Yee-Key Li-Jessen; B.Sc., M.Phil.(HK), Ph.D.(Pitt.)

Assistant Professors (Part-Time)

Christina Lattermann; Staatlich anerkannte Logopaedin(Westfaelische Wilhelms-Universität, Muenster), M.Sc.(McG.), Ph.D.(Kassel)

Rosalee Shenker; B.Sc.(Syrac.), M.A.(Calif. St.), Ph.D.(McG.)

Faculty Lecturers

Kelly Root; B.A.(Ott.), M.Sc.(Dal.)

Sophie Vaillancourt; B.Sc., MOA(Montr.), M.B.A.(McG.)

Faculty Lecturers (Part-Time)

Anna Baudier; B.Sc.(Montr.), M.Sc.A.(McG.)

Myrto Brandeker; M.Sc.(Karolinska Inst.)

Faculty Lecturers (Part-Time)

Liliane Brunetti; B.Sc.(C'dia), M.Cl.Sc.(W. Ont.)

Jesse Burns; B.A.(C'dia), M.Sc.(McG.)

Patricia Coffin; B.A.(PEI), M.Sc.(Dal.)

Ariana Fraid; B.A., M.Sc.A.(McG.)

Ana Maria Gonzalez; B.Sc.(Del Rosario Univ., Colombia), M.Ed.(McG.)

Lory Harboyan; B.A., M.A.(Haigazian), M.Sc.A.(McG.)

Suzanne Lalonde; B.A.(Montr.), M.Sc.A.(McG.)

Tanya Matthews; B.A.(N. Carolina), M.A.(Hampton)

Gina Mills; B.Sc.(Acad.), M.Sc.(Dal.)

IPEA 501	(0)	Communication in Interprofessional Teams
IPEA 502	(0)	Patient-Centred Care in Action
SCSD 609	(3)	Neuromotor Disorders
SCSD 616	(3)	Audiology
SCSD 617	(3)	Anatomy and Physiology: Speech and Hearing
SCSD 618	(3)	Research and Measurement Methodologies 1
SCSD 619	(3)	Phonological Development
SCSD 624	(3)	Language Processes
SCSD 631	(3)	Speech Science
SCSD 632	(3)	Phonological Disorders: Children
SCSD 633	(3)	Language Development
SCSD 636	(3)	Fluency Disorders
SCSD 637	(3)	Developmental Language Disorders 1
SCSD 638	(3)	Neurolinguistics
SCSD 639	(3)	Voice Disorders
SCSD 642	(3)	Aural Rehabilitation
SCSD 643	(3)	Developmental Language Disorders 2
SCSD 644	(3)	Applied Neurolinguistics
SCSD 646	(4)	Introductory Clinical Practicum
SCSD 669	(3)	ASD and Neurodevelopmental Disorders
SCSD 679	(12)	Advanced Clinical Practicum
SCSD 680	(3)	Deglutition and Dysphagia
SCSD 681	(1)	Practicum and Seminar 1
SCSD 682	(1)	Practicum and Seminar 2
SCSD 683	(1)	Practicum and Seminar 3
SCSD 684	(1)	Practicum and Seminar 4
SCSD 688	(1)	Genetics in Speech-Language Pathology Practice
SCSD 689	(1)	Management Cranio-Facial Disorders

[illegible]

6 credits from the following:

SCSD 664	(3)	Communication Sciences and Disorders 1
SCSD 666	(3)	Communication Sciences and Disorders 3
SCSD 667	(3)	Communication Sciences and Disorders 4
SCSD 670	(3)	Communication Sciences and Disorders 2
SCSD 678	(3)	Special Topics 4

11.6.7 [illegible]

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] (12 [illegible])

SCSD 652	(3)	Advanced Research Seminar 1
SCSD 653	(3)	Advanced Research Seminar 2
SCSD 685	(3)	Research Project 1
SCSD 686	(3)	Research Project 2
SCSD 701	(0)	Doctoral Comprehensive

[illegible] [illegible] (6 [illegible])

Minimum of 6 credits of graduate-level statistics from courses such as:

EDPE 676	(3)	Intermediate Statistics
EDPE 682	(3)	Univariate/Multivariate Analysis
EDPE 684	(3)	Applied Multivariate Statistics
EPIB 621	(4)	Data Analysis in Health Sciences
EPIB 622	(3)	Scientific Communication
PSYC 650	(3)	Advanced Statistics 1
PSYC 651	(3)	Advanced Statistics 2

Any other course requirements specified for the student's individual program of study.

11.6.8 [illegible] [illegible] (PhD .) [illegible] [illegible] [illegible] [illegible]

Students must satisfy all program requirements for the Ph.D. The Ph.D. thesis must be on a topic relating to language acquisition.

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] (12 [illegible])

LING 710	(2)	Language Acquisition Issues 2
PSYC 709	(2)	Language Acquisition Issues 1
SCSD 652	(3)	Advanced Research Seminar 1
SCSD 653	(3)	Advanced Research Seminar 2
SCSD 701	(0)	Doctoral Comprehensive
SCSD 712	(2)	Language Acquisition Issues 4

[illegible] [illegible] (6 [illegible])

3 credits of graduate-level statistics from courses such as:

EDPE 676	(3)	Intermediate Statistics
EDPE 682	(3)	Univariate/Multivariate Analysis
PSYC 650	(3)	Advanced Statistics 1
PSYC 651	(3)	Advanced Statistics 2

Students who have taken an equivalent course in statistics, or are currently taking an equivalent course as part of their Ph.D. program requirements, will be deemed to have satisfied this requirement for the Language Acquisition Option.

At least two courses, selected from the following list.

EDSL 620	(3)	Social Justice Issues in Second Language Education
EDSL 623	(3)	Second Language Learning
EDSL 624	(3)	Educational Sociolinguistics
EDSL 627	(3)	Instructed Second Language Acquisition Research
EDSL 629	(3)	Second Language Assessment
EDSL 632	(3)	Second Language Literacy Development
LING 555	(3)	Language Acquisition 2
LING 590	(3)	Language Acquisition and Breakdown
LING 651	(3)	Topics in Acquisition of Phonology
LING 655	(3)	Theory of L2 Acquisition
LING 751	(3)	Advanced Seminar: Experimental 1
LING 752	(3)	Advanced Seminar: Experimental 2
PSYC 545	(3)	Topics in Language Acquisition
PSYC 735	(3)	Developmental Psychology and Language
SCSD 619	(3)	Phonological Development
SCSD 632	(3)	Phonological Disorders: Children
SCSD 633	(3)	Language Development
SCSD 637	(3)	Developmental Language Disorders 1
SCSD 643	(3)	Developmental Language Disorders 2

[illegible]

0-2 credits from the following:

EDSL 711	(2)	Language Acquisition Issues 3

11.7 [illegible]

11.7.1 [illegible]

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Montreal QC H3A 1A2
Canada
Telephone: 514-398-6258
Email: *graduate.eboh@mcgill.ca*
Website: *www.mcgill.ca/epi-biostat-occh*

11.7.2 [illegible]

The Department offers **master's and doctoral programs in both Epidemiology and Biostatistics**, as well as a **Master's of Science in Public Health**. The methods learned in these fields are used not only in the study of diseases, but also in clinical research; health services research; public health; program planning and evaluation; and policy development. Our faculty members are at the forefront of their research domains and include epidemiologists, biostatisticians, clinician scientists, medical informatics specialists, public health specialists, health economists, medical sociologists, and health geographers.

Research in the Department spans a broad range of areas, including:

- biostatistics;

Professors

T.W. Gyorkos; B.Sc.(McG.), M.Sc.(Bishop’

Assistant Professors

M. Maheu-Giroux; B.Sc.(Montr.), M.Sc.(McG.), D.Sc.(Harv.)

S. Martin; M.D.(Tor.), M.Sc.(McG.) (PT)

L. Patry; B.Sc., M.D.(Laval), F.R.C.P.(C) (PT)

F. Richer; B.Sc., M.D.(Ott.), M.Sc.(McG.), F.R.C.P.(C)

G. Tan; D.Phil.(Oxf.) (PT)

P. Saha Chaudhuri; B.Sc.(Presidency Univ.), M.Stat.(Indian Stat. Inst.), M.S., Ph.D.(Wash.)

C. Stich; M.Sc.(Free Univ., Berlin), Ph.D.(Free Univ., Berlin/Toulouse II)

S. Weichenthal; B.Sc., M.Sc., Ph.D.(McG.) (*joint appt. with Oncology*) (*Cancer Research Society/FRQ-S*)

S. Yang; B.A.(Ajou), M.Sc.(McG.), Ph.D.(Mich.)

Associate Members

Biomedical Ethics Unit: J. Kimmelman, N. King

Dentistry: P. Allison, J. Feine

Family Medicine: A. Andermann, E. Robinson

Geography: N. Ross

Human Genetics: S. Gravel

Human Nutrition: N. Basu

Internal Medicine, MUHC: N. Dayan, M. Young

Medicine: J. Afilalo, A. Barkun, M. Behr, S. Bernatsky, J. Bourbeau, P. Brassard, K. Dasgupta, M. Eisenberg, P. Ernst, M. Goldberg, C. Greenaway, S. Kahn, M. Kaminska, M. Klein, T

Adjunct Professors

INSPQ: N. Auger, E. Lo, P

section 11.7.4.3: Master of Science (M.Sc.) Epidemiology (Non-Thesis): Pharmacoepidemiology (48 credits)

Applicants to the Pharmacoepidemiology Option of the M.Sc. (Non-Thesis) program should hold a bachelor's degree in the natural or quantitative sciences (e.g., chemistry, microbiology, computer science, statistics, economics) or hold a degree in one of the health professional sciences (e.g., medicine, pharmacy). Applicants must have an interest in the epidemiology of medications, along with strong conceptual, analytic, and quantitative skills (e.g., differential and integral calculus, statistics) at the undergraduate level. The Pharmacoepidemiology Option is designed to provide training in both theory and practice of pharmacoepidemiology. Students will study the foundations and principles of epidemiology and applied biostatistics in order to design, conduct, and analyze pharmacoepidemiological research. Courses require intellectual and academic rigour, and the program provides students with an opportunity to obtain specialized training in pharmacoepidemiology, including pharmacoepidemiologic methods, pharmacology for pharmacoepidemiologists, and practical experience in the form of a research project. Graduates of the program often go on to do doctoral work or become research associates in public, private, and academic settings. With a world-renowned reputation for excellence in pharmacoepidemiology, McGill-trained pharmacoepidemiologists are known for methodological and quantitative rigour, and quantitative analytic independence.

section 11.7.4.4: Master of Science (M.Sc.) Public Health (Non-Thesis) (60 credits)

The mission of the Master of Science in Public Health is to train outstanding public health professionals and future leaders by offering a rigorous academic program in methods, research, and practice. This program may be of interest for students from the natural or quantitative sciences (e.g., microbiology, computer science, statistics, economics, geography), social sciences (e.g., sociology, psychology, anthropology), or the health professions (e.g., medicine, nursing, social work, physical and occupational therapy, nutrition). Through a core series of courses, a wide range of electives, and a practicum, students will acquire knowledge and skills in all the core competencies of public health, including public health sciences; assessment and analysis; policy and program planning, implementation and evaluation. Graduates of the program will serve as public health practitioners or research professionals and will possess the competencies and professionalism to carry out broad public health functions in local, provincial, national, and international settings. In exceptional circumstances, the Admissions Committee may take professional experience into account for mid-career or returning/re-entry applicants.

The Master of Science in Public Health program includes a 14–16 week field-based practicum after the first year, which will provide the student with the opportunity to use knowledge and skills acquired in the academic program in a public health practice or research setting.

section 11.7.4.5: Master of Science (M.Sc.) Public Health (Non-Thesis): Global Health (60 credits)

Students admitted to the M.Sc. degree in Public Health who have an interest in global health can receive additional recognition for completing the Global

section 11.7.4.8: Doctor of Philosophy (Ph.D.) Epidemiology: Global Health

Students admitted to the Ph.D. degree in Epidemiology who have an interest in global health can receive additional recognition for completing the Global Health Option within their degree program. Students can fulfill the requirements for both the Ph.D. and the Global Health Option within the normal Ph.D. timeline. Over and above the core Ph.D. training, students in the Global Health Option will undertake global health-dedicated coursework and the thesis would be of relevance to global health. This additional global health training will provide students with insight into the major global health challenges of today's world. This area of study, research, and practice prioritizes improving health and achieving equity in health for all people worldwide. McGill and its affiliated hospitals have close to 200 researchers involved in global health work, from basic biomedical research on tropical diseases to large-scale population studies on the social determinants of health. Students at McGill can be exposed to the work of 20 teams working in all major areas of global health, including Infectious and Tropical Diseases; Global Environmental Health; and Global Mental Health, among others. For more information, visit *www.mcgill.ca/globalhealth*. With this additional Global Health qualification, Ph.D. graduates will benefit from opportunities for future training or work in those institutions or organizations that are active in global health.

section 11.7.4.9: Doctor of Philosophy (Ph.D.) Epidemiology: Pharmacoepidemiology

The Pharmacoepidemiology Option of the Ph.D. Program may be of interest to students from the natural or quantitative sciences (e.g., microbiology, computer science, biostatistics, statistics, economics), Public or Population Health, or Epidemiology, or hold a degree in one of the health professional sciences (e.g., medicine, pharmacy). Applicants must have an interest in the epidemiology of medications, along with strong conceptual, analytic, and quantitative skills (including differential and integral calculus) at the undergraduate level. The Pharmacoepidemiology Option prepares students with the advanced epidemiological research skills needed to undertake original contributions to new knowledge related to pharmacoepidemiology. The program is generally completed in four to five years. In addition to obtaining advanced training in the foundations and principles of epidemiology and applied biostatistics as part of the Ph.D. program, students in the Pharmacoepidemiology Option receive specialized training in pharmacoepidemiology, including advanced pharmacoepidemiologic methods, pharmacology for pharmacoepidemiologists, and practical experience in pharmacoepidemiology through their doctoral thesis. Graduates will be prepared to engage in scientific collaboration, and communicate results to other scientists and diverse audiences. They will go on to careers in pharmacoepidemiology in public, private, and academic settings. With a world-renowned reputation for excellence in pharmacoepidemiology, McGill-trained pharmacoepidemiologists are known for methodological and quantitative rigour, and quantitative analytic independence.

section 11.7.4.10: Doctor of Philosophy (Ph.D.) Epidemiology: Population Dynamics

The Population Dynamics Option (PDO) is a cross-disciplinary, cross-faculty graduate program offered by the *Centre on Population Dynamics* (CPD) as an option within existing master’s and doctoral programs in the Departments of Sociology, Economics, and Epidemiology, Biostatistics and Occupational Health (EBOH) at McGill University. Students who have been admitted through their home department or faculty may apply for admission to the option. The option is coordinated by the CPD, in partnership with participating academic units.

Thus, in addition to the rigorous training provided in the Department of EBOH, graduate students who choose this option become *Centre on Population Dynamics* (CPD) student trainees. This affiliation notably offers opportunities for interdisciplinary research and supervision. The option also provides a forum whereby graduate students bring their disciplinary perspectives together and enrich each other's learning through structured courses, a weekly seminar series, and informal discussions and networking.

With interdisciplinary research being increasingly important to understanding complex social and biological processes, CPD student trainees benefit from

learn how to apply specific methods and understand how to apply research results for knowledge translation or policy purpose. Career opportunities for graduates are multiple and include work in industry, gov

* with departmental permission only.

[illegible] yG e(12)

12 credits of coursework at the 500 level or higher, with a minimum of 3 credits chosen from each of the following fields:

E iv it

GEOG 503	(3)	Advanced Topics in Health Geography
OCCH 602	(3)	Occupational Health Practice
PPHS 529	(3)	Global Environmental Health and Burden of Disease

Or other courses, at the 500 level or higher, selected with the Program's Academic Adviser.

[illegible] cP b y gn

PPHS 525	(3)	Health Care Systems in Comparative Perspective
PPHS 527	(3)	Economics for Health Services Research and Policy
PPHS 528	(3)	Economic Evaluation of Health Programs

Or other courses, at the 500 level or higher, selected with the Program's Academic Adviser.

[illegible]

PPHS 525	(3)	Health Care Systems in Comparative Perspective
PPHS 624	(3)	Public Health Ethics and Policy
SOCI 515	(3)	Medicine and Society
SOCI 588	(3)	Biosociology/Biodemography

Or other courses, at the 500 level or higher, selected with the Program's Academic Adviser.

[illegible]

OCCH 604	(3)	Monitoring Occupational Environment
PPHS 615	(3)	Introduction to Infectious Disease Epidemiology
PPHS 616	(3)	Principles and Practice of Public Health Surveillance

Or other courses, at the 500 level or higher, selected with the Program's Academic Adviser.

[illegible] (10)

10 credits of coursework, at the 500 level or higher.

Students may choose to focus on more advanced methods in epidemiology, biostatistics, geography, etc. or substantive areas such as environmental or occupational health, or to select a variety of courses that will deepen their general knowledge of the disciplines that influence population and public health.

Courses will be selected with and approved by the Program's Academic Adviser.

11.7.4.5 [illegible] [illegible] [illegible] [illegible] 60)

This option will provide enhanced training in global health to graduate students registered in the M.Sc. Public Health degree program at McGill. Students will become familiar with topics of global health relevance and incorporate this into their core coursework and practicum or project research. The practicum or research project must be relevant to global health, conducted in a global health setting, and approved by the Global Health Coordinating Committee. Contextualizing the core training students receive in public health and in their respective substantive disciplines within the global health research domain will enhance their academic experience. Graduates of this option will be prepared to pursue further training in global health or to undertake a variety of career opportunities in global health in Canada or internationally.

[illegible] (12)

PPHS 630	(9)	MScPH Practicum/Project

[illegible] (32 [illegible])

Students exempted from any of the courses listed below must replace them with additional complementary course credits.

EPIB 601	(4)	Fundamentals of Epidemiology
EPIB 603	(4)	Intermediate Epidemiology
EPIB 605	(1)	Critical Appraisal in Epidemiology
EPIB 607	(4)	Inferential Statistics
EPIB 613	(1)	Introduction to Statistical Software
EPIB 621	(4)	Data Analysis in Health Sciences
PPHS 511	(3)	Fundamentals of Global Health
PPHS 602	(3)	Foundations of Population Health
PPHS 612	(3)	Principles of Public Health Practice
PPHS 629D1	(.5)	MScPH Forum 1
PPHS 629D2	(.5)	MScPH Forum 1
PPHS 631D1	(2)	MScPH Forum 2
PPHS 631D2	(2)	MScPH Forum 2

[illegible] (19 [illegible])

13 credits of coursework at the 500 level or higher, with a minimum of 2 credits chosen from each of the following fields:

[illegible]

GEOG 503	(3)	Advanced Topics in Health Geography
OCCH 602	(3)	Occupational Health Practice
PPHS 529	(3)	Global Environmental Health and Burden of Disease

Or other courses, at the 500 level or higher, selected with the Program's Academic Adviser.

[illegible]

PPHS 525	(3)	Health Care Systems in Comparative Perspective
PPHS 527	(3)	Economics for Health Services Research and Policy
PPHS 528	(3)	Economic Evaluation of Health Programs

Or other courses, at the 500 level or higher, selected with the Program's Academic Adviser.

[illegible]

PPHS 525	(3)	Health Care Systems in Comparative Perspective
PPHS 624	(3)	Public Health Ethics and Policy
SOCI 515	(3)	Medicine and Society
SOCI 588	(3)	Biosociology/Biodemography

Or other courses, at the 500 level or higher, selected with the Program's Academic Adviser.

[illegible] (6 [illegible])

6 credits from the list of pre-approved courses at the 500 level or higher, or any other courses at the 500 lever or higher, approved by the Global Health Option Committee and the MScPH academic adviser, that have not been taken to satisfy other program requirements.

EPIB 681	(3)	Global Health: Epidemiological Research
GEOG 503	(3)	Advanced Topics in Health Geography

PPHS 525	(3)	Health Care Systems in Comparative Perspective
PPHS 527	(3)	Economics for Health Services Research and Policy
PPHS 528	(3)	Economic Evaluation of Health Programs

Or other courses, at the 500 level or higher, to be selected with the program's academic adviser.

PPHS 525	(3)	Health Care Systems in Comparative Perspective

11.7.4.7 [illegible]

Epidemiology is the study and analysis of the patterns and causes of disease in human populations. It forms the core discipline of public health by identifying

[illegible] (22 [illegible])

EPIB 623	(3)	Research Design in Health Sciences
EPIB 681	(3)	Global Health: Epidemiological Research
EPIB 701	(0)	Ph.D. Comprehensive Examination
EPIB 702	(0)	Ph.D. Proposal
EPIB 703	(2)	Principles of Study Design
EPIB 704	(4)	Doctoral Level Epidemiologic Methods 1
EPIB 705	(4)	Doctoral Level Epidemiologic Methods 2
EPIB 706	(3)	Doctoral Seminar in Epidemiology
EPIB 707	(3)	Research Design in Health Sciences
PPHS 511	(3)	Fundamentals of Global Health

[illegible] [illegible] (9 [illegible])

6 credits of coursework at the 500 level or higher, with a minimum of 3 credits in biostatistics, and 3 credits in epidemiology. Courses must be chosen in consultation with the student's supervisor and/or the degree program's director or adviser.

3 credits of coursework at the 500 level or higher from this list, or any other course approved by the Global Health Option Committee that have not been taken to satisfy other program requirements.

GEOG 503	(3)	Advanced Topics in Health Geography
NUTR 501	(3)	Nutrition in Developing Countries
PPHS 525	(3)	Health Care Systems in Comparative Perspective
PPHS 527	(3)	Economics for Health Services Research and Policy
PPHS 529	(3)	Global Environmental Health and Burden of Disease
SOCI 513	(3)	Social Aspects HIV/AIDS in Africa
SOCI 519	(3)	Gender and Globalization
SOCI 545	(3)	Sociology of Population

11.7.4.9 [illegible] [illegible] (PhD .) [illegible] [illegible]

This program provides in-depth training for graduate students on pharmacoepidemiologic methods and the application of these methods to study the population effects (benefits and harm) of pharmaceutical products. Students will acquire the skills to become independent investigators and conduct original research in pharmacoepidemiology. Career opportunities for graduates are multiple and include work in industry, government, or academia. Students will be required to participate in the Pharmacoepidemiology Journal Club. Research topics must be related to pharmacoepidemiology and approved by the program coordinating committee.

Students admitted to the Ph.D. in Epidemiology; Pharmacoepidemiology degree program with the equivalent of the M.Sc. in Epidemiology at McGill will be required to take a minimum of 28 credits of Ph.D. courses.

In addition to the Ph.D. requirements, students admitted to the Ph.D. degree program without the equivalent of an M.Sc. in Epidemiology at McGill will, in their first year, have to complete required coursework equivalent to the Master's Epidemiology program, excluding thesis course(s), as determined by the Department.

[illegible]

A thesis for the doctoral de

EPIB 639	(4)	Pharmacoepidemiologic Methods
EPIB 654	(2)	Pharmacoepidemiology 4
EPIB 661	(2)	Pharmacoepidemiology 3
EPIB 662	(1)	Pharmacological Basis of Pharmacoepidemiology
EPIB 701	(0)	Ph.D. Comprehensive Examination
EPIB 702	(0)	Ph.D. Proposal
EPIB 703	(2)	Principles of Study Design
EPIB 704	(4)	Doctoral Level Epidemiologic Methods 1
EPIB 705	(4)	Doctoral Level Epidemiologic Methods 2
EPIB 706	(3)	Doctoral Seminar in Epidemiology
EPIB 707	(3)	Research Design in Health Sciences

[illegible] [illegible] (3 [illegible])

3 credits of coursework in biostatistics at the 500 level or higher. Courses must be chosen in consultation with the student's supervisor and/or the degree program's director or adviser.

11.7.4.10 [illegible] [illegible] (Ph.D. .) [illegible] [illegible]

Students admitted to the Ph.D. in Epidemiology; Population Dynamics degree program with the equivalent of the M.Sc. in Epidemiology at McGill will be required to take a minimum of 31 credits of Ph.D. courses.

In addition to the Ph.D. requirements, students admitted to the Ph.D. in Epidemiology; Population Dynamics degree program without the equivalent of an M.Sc. in Epidemiology at McGill will, in their first year, have to complete required coursework equivalent to the Master's Epidemiology program, excluding thesis research course(s), as determined by the Department.

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] [illegible] (22 [illegible])

EPIB 701	(0)	Ph.D. Comprehensive Examination
EPIB 702	(0)	Ph.D. Proposal
EPIB 703	(2)	Principles of Study Design
EPIB 704	(4)	Doctoral Level Epidemiologic Methods 1
EPIB 705	(4)	Doctoral Level Epidemiologic Methods 2
EPIB 706	(3)	Doctoral Seminar in Epidemiology
EPIB 707	(3)	Research Design in Health Sciences
SOCI 545	(3)	Sociology of Population
SOCI 626	(3)	Demographic Methods

[illegible] [illegible] (9 [illegible])

9 credits of coursework, at the 500 level or higher, with a minimum of 3 credits in biostatistics, 3 credits in epidemiology, and 3 credits from courses approved for the Population Dynamics Option from the list below:

ECON 622	(3)	Public Finance
ECON 634	(3)	Economic Development 3
ECON 641	(3)	Labour Economics
ECON 734	(3)	Economic Development 4

ECON 741	(3)	Advanced Labour Economics
ECON 742	(3)	Empirical Microeconomics
ECON 744	(3)	Health Economics
EPIB 648	(3)	Methods in Social Epidemiology
EPIB 681	(3)	Global Health: Epidemiological Research
PPHS 525	(3)	Health Care Systems in Comparative Perspective
PPHS 528	(3)	Economic Evaluation of Health Programs
PPHS 529	(3)	Global Environmental Health and Burden of Disease
PPHS 615	(3)	Introduction to Infectious Disease Epidemiology
SOCI 502	(3)	Sociology of Fertility
SOCI 512	(3)	Ethnicity & Public Policy
SOCI 513	(3)	Social Aspects HIV/AIDS in Africa
SOCI 520	(3)	Migration and Immigrant Groups
SOCI 525	(3)	Health Care Systems in Comparative Perspective
SOCI 535	(3)	Sociology of the Family
SOCI 588	(3)	Biosociology/Biodemography

Courses must be chosen in consultation with the student's supervisor and/or the degree program's director or adviser.

11.7.5 B

Biostatistics involves the development and application of statistical methods to scientific research in areas such as medicine, epidemiology, public health, occupational and environmental health, genetics, and ecology. Biostatisticians play key roles in designing studies—from helping to formulate the questions that can be answered by data collection to the decisions on ho

BIOS 602	(4)	Epidemiology: Regression Models
MATH 523	(4)	Generalized Linear Models
MATH 533	(4)	Honours Regression and Analysis of Variance
MATH 556	(4)	Mathematical Statistics 1
MATH 557	(4)	Mathematical Statistics 2

11.7.5.3 [illegible]

Training in statistical theory and methods, applied data analysis, scientific collaboration, communication, and report writing by coursework and project.

[illegible]

BIOS 630	(6)	Research Project/Practicum in Biostatistics

[illegible]

Students exempted from any of the courses listed below must replace them with additional complementary course credits.

BIOS 601	(4)	Epidemiology: Introduction and statistical models
BIOS 602	(4)	Epidemiology: Regression Models
MATH 523	(4)	Generalized Linear Models
MATH 533	(4)	Honours Regression and Analysis of Variance
MATH 556	(4)	Mathematical Statistics 1
MATH 557	(4)	Mathematical Statistics 2

[illegible]

18 credits of coursework, at the 500 level or higher, chosen in consultation with the student's academic adviser or supervisor.

11.7.5.4 [illegible]

Students will study theoretical and applied statistics and related fields; the program will train them to become independent scientists able to develop and apply statistical methods in medicine and biology and make original contributions to the theoretical and scientific foundations of statistics in these disciplines. Graduates will be prepared to develop new statistical methods as needed and apply new and existing methods in a range of collaborative projects. Graduates will be able to communicate methods and results to collaborators and other audiences, and teach biostatistics to biostatistics students, students in related fields, and professionals in academic and other (ses (18 cret in s1 0 0 1 532.234 342.243 Tm(e5e81 0 3oi4 3.)Tj1 .36a 342.243 Tm7 preps42.243 Tm(Students will stu

MATH 523	(4)	Generalized Linear Models
MATH 533	(4)	Honours Regression and Analysis of Variance
MATH 556	(4)	Mathematical Statistics 1
MATH 557	(4)	Mathematical Statistics 2

12 credits (chosen and approved in consultation with the student's academic adviser), at the 500 level or higher, in statistics/biostatistics.

6 credits (chosen and approved in consultation with the student's academic adviser), at the 500 level or higher, in related fields (e.g., epidemiology, social sciences, biomedical sciences).

11.8

Please see *section 11.12: Medicine, Experimental* for more information.

11.9

Please see *section 11.13: Medicine, Family* for more information.

11.10

11.10.1

Department of Human Genetics
Strathcona Anatomy & Dentistry Building
3640 University Street, Room 315
Montreal QC H3A 0C7
Canada
Telephone: 514-398-4198
Fax: 514-398-2430
Email: *dept.humangenetics@mcgill.ca*
Website: *www.mcgill.ca/humangenetics*

Administration

Ross MacKay – *Student Affairs Advisor*

Email: *ross.mackay@mcgill.ca*

Rimi Joshi – *Student Affairs Coordinator*

Email: *grad.hg@mcgill.ca*

11.10.2

M.Sc. and Ph.D. Degrees in Human Geneticsdinatordinl499.462 Tm(11i Joshi –)Tjcc9617n0 1 67.52 1f.69 a cl52 569master’on and

section 11.10.8

Emeritus Professors

L. Pinsky; M.D.(McG.)

C. Scriver; B.A., M.D.,C.M.(McG.)

Professors

E. Andermann; M.Sc., Ph.D., M.D.,C.M.(McG.) (*Neurology and Neurosurgery*)

G. Bourque; B.Sc.(Montr.), M.A., Ph.D.(USC) (*Genome Quebec*)

W. Foulkes; B.Sc., MB.BS., Ph.D.(Lond.) (*Medicine*)

B. Knoppers; Ph.D.(Paris IV), Ad.E., O.C. (*Director, Centre of Genomics and Policy*)

M. Lathrop; B.Sc., M.Sc.(Alta.), Ph.D.(Wash.) (*Director*

Assistant Professors

C. Kleinman; Ph.D.(Montr.) (*Bioinformatics*)

H. Najafabadi; Ph.D.(Montr.) (*Genome Innovation Centre*)

I. Ragoussis; Ph.D.(Tübingen) (*Genome Innovation Centre*)

Y. Riaz Alhosseini; Ph.D.(Heidel.) (*Genome Quebec*)

J.P. Riviere; Ph.D.(Montr.) (*RI MUHC*)

A. Ruchon; Ph.D.(Montr.) (*Biomedical Sciences*)

V. Soleimani; Ph.D.(Ott.) (*Jewish General Hospital*)

Y. Trakadis; M.D.(Montr.) (*Montreal Children's Hospital*)

R. Sladek; B.A.Sc., M.D.(Tor.)

L. Walsh; Ph.D.(W. Ont.)

Y. Yamanaka; Ph.D.(Osaka) (*Goodman Cancer Research Centre*)

Lecturers

N. Anoja (*Medicine*)

L. Baret (*Medicine*)

S. Drury (*Pediatrics*)

S. Fox (*Medicine*)

L. Kasprzak (*Medicine*)

M. Lalous (*Medicine*)

L. Macrae (*Medicine*)

L. Palma (*Medicine*)

G. Sillon (*Medicine*)

L. Whelton (*Medicine*)

N. Wong (*Medicine*)

S. Zaor (*Medicine*)

Adjunct Professors

K. Anderson (*Children's Hospital of Eastern Ontario*)

T. Chiu (*Children's Hospital of Eastern Ontario*)

M. Cloutier (*Children's Hospital of Eastern Ontario*)

E. Creede (*Children's Hospital of Eastern Ontario*)

C. Goldsmith (*Children's Hospital of Eastern Ontario*)

B. Gottleib (*Medicine*)

V.A. Hastings (*Children's Hospital of Eastern Ontario*)

C. Honeywell (*Children's Hospital of Eastern Ontario*)

A. Imai (*Osaka Univ.*)

A. Montpetit (*Genome Quebec*)

S. Morrison (*Children's Hospital of Eastern Ontario*)

Adjunct Member

D. Vinh; M.D. (*Dept. of Medical Microbiology; Medicine*)

Associate Members

Biochemistry: P. Gros, D. Thomas

Associate Members

Bioethics: J. Kimmelman

Cardiology: J. Genest

Cancer Genetics: G. Zogopoulos

Dentistry: L. Diatchenko

Endocrinology: C. Polychonakos, B. Richards

Epidemiology, Biostatistics and Occupational Health: C. Greenwood

Law: R. Gold

Medicine: D. Cournoyer, J. Engert, B. Gilfix, C. Haston, G.Hendy, A. Karaplis, R. Koenekoop, A. Peterson, F. Rauch, M. Trifiro

Nephrology: I. Gupta

Neurology: G. Rouleau

Obs.-Gyn.: R. Gagnon, A. Naumova

Pediatrics: G. Bernard, P. Goodyer, N. Jabado, L. Majewska, J. Mitchell

Psychiatry: R. Joober, G. Turecki, C. Ernst

Surgery: P. Roughley

11.10.5 [illegible] (45 credits)

[illegible] (33 credits)

HGEN 680	(9)	M.Sc. Thesis Research 1
HGEN 681	(12)	M.Sc. Thesis Research 2
HGEN 682	(12)	M.Sc. Thesis Research 3

[illegible] (6 credits)

HGEN 662	(3)	Laboratory Research Techniques
HGEN 692	(3)	Human Genetics

[illegible] (6 credits)

6 credits chosen from the departmental offerings below or from 500-, 600-, or 700-level courses offered in the Faculties of Medicine or Science:

HGEN 660	(3)	Genetics and Bioethics
HGEN 661	(3)	Population Genetics
HGEN 663	(3)	Beyond the Human Genome
HGEN 670	(3)	Advances in Human Genetics 1
HGEN 671	(3)	Advances in Human Genetics 2
HGEN 690	(3)	Inherited Cancer Syndromes
HGEN 691	(3)	Host Responses to Pathogens
HGEN 693	(3)	Using Bioinformatics Resources
HGEN 695	(3)	Psychiatric Genetics
HGEN 696	(3)	Advanced Readings in Genetics 1
HGEN 697	(3)	Advanced Readings in Genetics 2
HGEN 698	(3)	Advanced Readings in Genetics 3
HGEN 699	(3)	Advanced Readings in Genetics 4

Note: The Graduate Advisory Committee may stipulate additional coursework at the 500, 600, or 700 level depending on the background of the candidate.

11.10.6 [illegible]

** This program is currently not offered. **

[illegible] (33 [illegible])

HGEN 680	(9)	M.Sc. Thesis Research 1
HGEN 681	(12)	M.Sc. Thesis Research 2
HGEN 682	(12)	M.Sc. Thesis Research 3

[illegible] (6 [illegible])

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
HGEN 692	(3)	Human Genetics

[illegible] (6 [illegible])

6 credits from the following courses:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

Note: The Graduate Advisory Committee may stipulate additional coursework at the 500, 600, or 700 level depending on the background of the candidate.

11.10.7 [illegible]

[illegible] (30 [illegible])

30 credits selected as follows:

HGEN 681	(12)	M.Sc. Thesis Research 2
HGEN 682	(12)	M.Sc. Thesis Research 3
HGEN 683	(6)	M.Sc. Thesis Research 4

[illegible] (12 [illegible])

12 credits from:

BIOE 680	(3)	Bioethical Theory
BIOE 681	(3)	Bioethics Practicum
HGEN 662	(3)	Laboratory Research Techniques
HGEN 692	(3)	Human Genetics

[illegible] (3 [illegible])

3 credits from the following:

BIOE 682	(3)	Medical Basis of Bioethics
CMPL 642	(3)	Law and Health Care

PHIL 643	(3)	Seminar: Medical Ethics
RELG 571	(3)	Ethics, Medicine and Religion

11.10.8 [illegible]

[illegible]

HGEN 600D1	(3)	Genetic Counselling Practicum
HGEN 600D2	(3)	Genetic Counselling Practicum
HGEN 601	(3)	Genetic Counselling Principles
HGEN 610D1	(3)	Genetic Counselling: Independent Studies
HGEN 610D2	(3)	Genetic Counselling: Independent Studies
HGEN 617	(3)	Principles of Medical Genetics
HGEN 620	(3)	Introductory Field Work Rotations 1
HGEN 621	(6)	Intro Field Work Rotations 2
HGEN 630D1	(6)	Advanced Field Work Rotations
HGEN 630D2	(6)	Advanced Field Work Rotations
HGEN 640	(3)	Second Year Practicum 1
HGEN 641	(3)	Second Year Practicum 2
PATH 653	(3)	Reading and Conference

11.10.9 [illegible]

Candidates entering Ph.D. 1 must complete at least three years of full-time resident study (six terms). The normal and expected duration of the Ph.D. program is four to five years. A student who has obtained a master's degree at McGill in a related field, or at an approved institution elsewhere, and is proceeding in the same subject toward a Ph.D. degree may, upon the recommendation of the Graduate Training Committee, enter at the Ph.D. 2 level.

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible]

HGEN 692	(3)	Human Genetics
HGEN 701	(0)	Ph.D. Comprehensive Examination

[illegible]

(15 credits or 6 credits depending on admission status as described above.)

Courses are to be chosen from the list below and/or from among 500-, 600-, or 700-level courses offered in the Faculties of Medicine and Science.

HGEN 660	(3)	Genetics and Bioethics
HGEN 661	(3)	Population Genetics
HGEN 663	(3)	Beyond the Human Genome
HGEN 690	(3)	Inherited Cancer Syndromes
HGEN 691	(3)	Host Responses to Pathogens
HGEN 693	(3)	Using Bioinformatics Resources

HGEN 695	(3)	Psychiatric Genetics
HGEN 696	(3)	Advanced Readings in Genetics 1
HGEN 697	(3)	Advanced Readings in Genetics 2
HGEN 698	(3)	Advanced Readings in Genetics 3
HGEN 699	(3)	Advanced Readings in Genetics 4

Students are restricted to taking the following courses:

HGEN 670	(3)	Advances in Human Genetics 1
HGEN 671	(3)	Advances in Human Genetics 2

Note: The Graduate Advisory Committee may stipulate additional coursework depending on the background of the candidate.

11.10.10 [illegible]

** This program is currently not offered. **

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible]

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
HGEN 692	(3)	Human Genetics
HGEN 701	(0)	Ph.D. Comprehensive Examination

[illegible]

* Two courses from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics
PHGY 603	(3)	Systems Biology and Biophysics

* Note: Students who enter in Ph.D. 1 will need to take an additional 6 credits of complementary courses chosen from the departmental offerings listed for the Ph.D. in Human Genetics and/or from among 500-, 600-, or 700-level courses in the Faculties of Medicine or Science.

11.11 [illegible]

11.11.1 [illegible]

Medical Physics Unit, DS1-7129
McGill University Health Centre – Glen Site
Cedars Cancer Centre
1001 Décarie Boulevard
Montreal QC H4A 3J1

“Term” = Fall 2018
“Department” = Medical Physics Unit
"Program" = M.Sc. Med Radiation Physics (Thesis)
"Area of study" = Medical Radiation Physics-T
"Status" = Full Time

Under **Additional Questions**:
Please indicate source(s) of funding to cover tuition & student fees + living expenses while studying at McGill University.

Supporting Documents: All supporting documentation must be uploaded to the online application; any documents sent by mail will be considered unofficial and missing from the application. For detailed instructions on how to upload required supporting documents, please see *www.mcgill.ca/gradapplicants/apply/ready*.

Transcripts: All transcripts and degree certificates in a language other than English or French must be uploaded to the application in both the original language version and also in an officially certified English or French language version. If the applicant is accepted, original documents must be presented to the University prior to registration. The grading scale must also be viewable.

English Language Proficiency: Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in English by submitting a *TOEFL* iBT or *IELTS* test score. The original test report must be sent electronically by the testing centre to McGill University; to ensure successful transmission, the student's name given to the testing centre must be identical

Emeritus Professor

E.B. Podgorsak; Dipl.Ing.(Ljubljana), M.Sc., Ph.D.(Wisc.), F.C.C.P.M., F.A.A.P.M., D.A.B.M.P., D.A.B.R.

Professors

D. Louis Collins; M.Eng., Ph.D.(McG.), Post Doc.(Rennes), F.C.C.P.M.

S.M. Lehnert; B.Sc.(Nott.), M.Sc., Ph.D.(Lond.)

J. Seuntjens; M.Sc., Ph.D.(Ghent), F.C.C.P.M., F.A.A.P.M., F.C.O.M.P.

Assistant Professors

F. DeBlois; M.Sc., Ph.D.(McG.), F.C.C.P.M.

S. Devic; M.Sc., Ph.D.(Belgrade), F.C.C.P.M.

S. Enger; Ph.D.(Uppsala), Post Doc.(Laval)

M.D.C. Evans; B.A.(Qu.), M.Sc.(McG.), F.C.C.P.M.

J. Kildea; Ph.D.(Dublin), M.Sc.(McG.)

I. Levesque; Ph.D.(McG.), Post Doc.(Stan.)

W. Parker; M.Sc.(McG.), F.C.C.P.M.

H.J. Patrocinio; M.Sc.(McG.), F.C.C.P.M., D.A.B.R.

E. Soisson; M.Sc., Ph.D.(Wisc.)

G. Stroian; M.Sc.(McG.), Ph.D.(Montpellier), F.C.C.P.M.

Affiliate Members

S. Ambareen, K. Asiev, H. Bekerat, T. Connell, S. Darvasi, S. Davis, C. Furstoss, A. Gauvin, D. Guillet, G. Hegyi, M. Hobson, C. Janicki, P. Léger, L. Liang, B. Moftah, E. Poon, M. Popovic, R. Richardson, R. Ruo, A. Sarfehnia, M. Serban, N. Tomic, N. Ybarra

Adjunct Professors

I. El Naqa; B.Sc., M.S.(Jordan), Ph.D.(Chic.), M.A.(Wash.), D.A.B.R.

G.B. Pike; B.Eng.(St. John's), M.Eng., Ph.D.(McG.)

A. Reader; B.Sc.(Kent), Ph.D.(Lond.)

A. Syme; B.Sc.(McM.), Ph.D.(Alta.), F.C.C.P.M.

11.11.5 [illegible] (52 [illegible])

The M.Sc. program in Medical Radiation Physics provides candidates with the knowledge required to enter into the field of medical physics. The program relies on a strong fundamental science background and enables candidates to undergo further training through a clinical residency program or to further advanced graduate studies in medical physics through a Ph.D. degree. Graduates from the program typically find employment in clinical settings, academia, industry, or governmental research and regulatory agencies. The program is accredited by the Commission for Accreditation of Medical Physics Education Programs (CAMPEP).

[illegible] (24 [illegible])

MDPH 690	(24)	M.Sc. Thesis Research

[illegible] (28 [illegible])

MDPH 601	(3)	Radiation Physics
MDPH 602	(3)	Radiotherapy Physics
MDPH 603	(2)	Laboratory Radiotherapy Physics
MDPH 607	(3)	Medical Imaging
MDPH 608	(2)	Laboratory - Diagnostic Radiology and Nuclear Medicine
MDPH 609	(2)	Radiation Biology

MDPH 612	(3)	Instrumentation and Computation in Medical Physics
MDPH 613	(2)	Health Physics
MDPH 614	(3)	Physics of Diagnostic Radiology
MDPH 615	(2)	Physics of Nuclear Medicine
MDPH 618	(3)	Anatomy and Physiology for Medical Physics

section 11.12.7: Master of Science (M.Sc.) Experimental Medicine (Thesis): Environment (45 credits)

seminars, and informal discussions and networking. The graduate option in Environment provides students with an appreciation for the role of science in informed decision-making in the environmental sector, and its influence on political, socio-economic, and ethical judgments.

section 11.12.8: Doctor of Philosophy (Ph.D.) Experimental Medicine

Applicants for the Ph.D. in Experimental Medicine must normally hold an M.Sc. degree. The one exception is the possibility of direct entry offered to candidates having demonstrated academic excellence, i.e., a CGPA of 3.5 or more out of a possible 4.0 throughout their undergraduate studies. The training is in the conduct of research in a wide range of medical specialties. The method of instruction consists of a combination of in-class and practical training, as well as exposure to international conferences and guest seminars. Success is ultimately determined by the preparation and defense of a thesis. This program may lead to research careers in industry, government, or academia.

section 11.12.9: Doctor of Philosophy (Ph.D.) Experimental Medicine: Environment

Applicants to the Ph.D. Environment Option must meet the same qualifications as those for the M.Sc. Environment Option, the only difference being that they must hold an M.Sc. rather than simply a B.Sc. For further details, please see the section above regarding the M.Sc. Environment Option.

section 11.12.10: Graduate Diploma (Gr. Dip.) Clinical Research (30 credits)

The objectives of this program are to give students exposure to both theoretical and practical issues relevant to the conception and conduct of a clinical research study, as well as allowing them to put these principles in practice by participating in an ongoing clinical trial. The core element of the diploma is the Practicum in Clinical Research. It is an active “clerkship” or “intern/resident-type” participation in an ongoing clinical trial and/or research program. Six 1-credit workshops will be provided by experts in the academic, industrial, and government sectors, and cover wide-ranging issues pertinent to the conduct of clinical research. The training provided qualifies students to manage and design clinical research studies in both academic and industrial settings.

11.12.3 [illegible]

11.12.3.1 [illegible]

M.Sc. or Ph.D. in Experimental Medicine

Admission to graduate studies and research in Experimental Medicine is no longer solely restricted to students who wish to register for the Ph.D. degree. Candidates who hold only an undergraduate degree in the medical and allied sciences (B.Sc. degree in Medicine, Dentistry, Nursing, Pharmacy, Physiotherapy, Occupational Therapy) may apply for the M.Sc. degree, unless they have an undergraduate CGPA of 3.5 or more out of a possible 4.0, in which case they may apply for direct entry into the Ph.D. if they so desire. Candidates who already hold an M.Sc. apply directly to the Ph.D. program.

Admission is based on an evaluation by the Admissions Committee, which looks for evidence of high academic achievement, and on acceptance by a research director. All students must be financially supported either by their supervisor or through studentships or fellowships.

In addition to the documentation currently required by Graduate and Postdoctoral Studies, a letter from the candidate's research director outlining the M.Sc. or Ph.D. project is necessary.

M.Sc. (Bioethics Option)

Admission to the master's program in Bioethics, from the base discipline of Medicine, is limited to students having degrees in Medicine, Nurs 8.1ancially suppo01 e8.1.67

11.12.3.2.1 Addi

The items and clarifications below are additional requirements set by this department:

M.Sc. and Ph.D. in Experimental Medicine

- Personal Statement
- Curriculum Vitae
- Acceptance by a research director
- Letter from the candidate's research director outlining the M.Sc. or Ph.D. project
- Additional documents (in the cases of the M.Sc. (Bioethics Option) and the M.Sc. (Environment Option))

11.12.3.3 A

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Division of Experimental Medicine and may be revised at any time. Applicants must verify all deadlines and documentation requirements well in advance on the appropriate McGill departmental website; please consult the list at *www.mcgill.ca/gps/contact/graduate-program*.

All Programs (except Bioethics Option)

	Application Opening Dates	Application Deadlines		
	All Applicants	**Non-Canadian citizens (incl. Special, Visiting & Exchange)**	**Canadian citizens/Perm. residents of Canada (incl. Special, Visiting & Exchange)**	**Current McGill Students (any citizenship)**
Fall Term:	Sept. 15	April 30	June 15	June 15
Winter Term:	Feb. 15	Sept. 1	Nov. 1	Nov. 1
Summer Term:	N/A	N/A	N/A	N/A

M.Sc. (Bioethics Option)

	Application Opening Dates	Application Deadlines		
	All Applicants	**Non-Canadian citizens (incl. Special, Visiting & Exchange)**	**Canadian citizens/Perm. residents of Canada (incl. Special, Visiting & Exchange)**	**Current McGill Students (any citizenship)**
Fall Term:	Sept. 15	Jan. 15	Jan. 15	Jan. 15
Winter Term:	N/A	N/A	N/A	N/A
Summer Term:	N/A	N/A	N/A	N/A

Admission to graduate studies is competitive; accordingly, late and/or incomplete applications are considered only as time and space permit.

11.12.4 M , 5 b

Chair, Department of Medicine

J. Martin

Director, Division of Experimental Medicine

A.-M. Lauzon

Professors

M. Alaoui-Jamali; D.V.M.(Rabat, Morocco), Ph.D.(Paris V)

S. Ali; B.Sc.(C'dia), Ph.D.(McG.)

C. Autexier; B.Sc.(C'dia), Ph.D.(McG.)

A. Bateman; B.Sc., Ph.D.(Lond.)

G. Batist; B.Sc.(Col.), M.D.,C.M.(McG.), F.R.C.P.(C)

O. Beauchet; B.Sc.(Sainte-Etienne), M.Sc.(Claude Bernard), Ph.D.(Jean Monnet)

Professors

M. Behr; B.Sc.(Tor

Professors

S. Rabbani; M.B.B.S.(King Edward Med. Coll., Lahore)

D. Radzioch; M.Sc., Ph.D.(Jagiellonian, Cracow)

S. Richard; B.Sc., Ph.D.(McG.)

J.-P. Routy; B.Sc., M.D., Ph.D.(Aix-Marseille)

D. Sasseville; M.D.(Laval), F.R.C.P.(C)

E. Schiffrin; M.D.(Buenos Aires), Ph.D.(McG.)

E. Schurr; Diplom., Ph.D.(Al. Ludwigs U., Freiburg)

A. Schwertani; D.V.M.(Baghdad), M.D., Ph.D.(Lond.)

A.D. Sniderman; M.D.(Tor.)

M.M. Stevenson; B.A.(Hood), M.Sc., Ph.D.(Catholic U. of Amer.)

T. Takano; M.D., Ph.D.(Tokyo)

D.M.P. Thomson; M.D.(W. Ont.), Ph.D.(Lond.), F.R.C.P.(C)

P. Tonin; B.Sc., M.Sc., Ph.D.(Tor.)

M. Trifiro; B.Sc., M.D.,C.M.(McG.)

C. Tsoukas; B.Sc.(McG.), M.Sc.(Hawaii), M.D.(Athens), F.R.C.P.(C)

M. Wainberg; B.Sc.(McG.), Ph.D.(Col.)

B.J. Ward; M.D.,C.M.(McG.), M.Sc.(Oxf.), F.R.C.P.(C)

J. White; B.Sc., M.Sc.(Car.), Ph.D.(Harv.)

S. Wing; B.Sc., M.Sc.(McG.)

X.-J. Yang; B.Sc.(Zhejiang), Ph.D.(Shanghai)

Associate Professors

D. Baran; M.D.,C.M.(McG.), F.R.C.P.(C)

N. Bernard; B.Sc.(McG.), Ph.D.(Duke)

V. Blank; B.Sc., M.Sc.(Konstanz, Germany), Ph.D.(Inst. Pasteur)

M. Blostein; M.D.,C.M.(McG.)

P. Brassard; B.Sc., M.D.(Montr.), M.Sc.(McG.), F.R.C.P.(C)

L. Chalifour; B.Sc., Ph.D.(Manit.), M.A.(Harv.)

S.R. Cohen; B.Sc., M.Sc., Ph.D.(McG.)

D. Cournoyer; M.D.(Sher.), F.R.C.P.(C)

M. Culty; B.Sc., M.Sc.(Lyon), Ph.D.(Grenoble)

S. Daskalopoulou; M.D.(Athens)

J.C. Engert; B.A.(Colby), Ph.D.(Boston)

V. Essebag; M.D.,C.M., M.Sc., Ph.D.(McG.), F.R.C.P.(C)

E. Fixman; B.Sc.(Col.), Ph.D.(Johns Hop.)

B. Gilfix; B.Sc.(Manit.), Ph.D.(W. Ont.), M.D.,C.M.(McG.), F.R.C.P.(C)

S.B. Gottfried; M.D.(Penn.)

C. Haston; B.Sc.(W. Ont.), M.Sc.(Tor.), Ph.D.(Texas)

T. Jagoe; B.A., M.D.(Camb.), Ph.D.(Newcastle, UK), F.R.C.P.(C)

B. Jean-Claude; B.Sc., M.Sc.(Moncton), Ph.D.(McG.)

M. Kokoeva; B.Sc.(Lomonosov Moscow), Ph.D.(Acad. of Sci., Moscow)

A. Kristof; B.Sc., M.D.,C.M.(McG.), F.R.C.P.(C)

Associate Professors

P. Laneuville; B.Sc.(McM.), M.D.(Ott.), F.R.C.P.(C)

S. Laporte; B.Sc., M.Sc., Ph.D.(Sher.)

L. Larose; B.Sc., Ph.D.(Montr.)

S. Lehoux; B.Sc.(Bishop's), Ph.D.(Sher.)

S. Lemay; M.D.(Montr.), F.R.C.P.(C)

C. Liang; B.Sc., Ph.D.(Nankai)

R. Lin; B.Sc., B.Sc.(Xiamen), M.Sc.(Peking Union), Ph.D.(C'dia)

M. Lipman; M.D.,C.M.(McG.), F.R.C.P.(C)

J.-L. Liu; B.Sc., M.Sc.(Beijing), Ph.D.(McG.)

J.A. Morais; M.D.(Montr.), F.R.C.P.(C)

S. Morin; B.Sc., M.D.(Laval), M.Sc.(McG.)

A. Mouland; B.A., B.Sc., Ph.D.(McG.)

M. Murshed; M.Sc.(Brussels), Ph.D.(Cologne)

Assistant Professors

D.C. Vinh; B.Sc., M.D.,C.M.(McG.), F.R.C.P.(C)

Associate Members, McGill

B. Abdulkarim, H. Abenhaim, M. Basik, M. Ben-Shoshan, D. Boivin, M. Bouchard, P. Brodt, K. Brown, S. Chevalier, R.-C. Chian, H. Clarke, T. Coderre, L. Diatchenko, T. Duchaine, D. Dufort, C. Ells, K. Eppert, M. Fabian, L. Ferri, C. Goodyer, P. Goodyer, W. Gotlieb, I. Gupta, M. Hunt, N. Jabado, A. Jahani-Asl, D. Juncker, M. Kaartinen, J. Kimmelman, A. Koromilas, L. Koski, L. Lands, J. Lapointe, C. Mandato, K. Mann, P. Martineau, B. Mazer, L. McCaffrey, C. McCusker, T. Muanza, M. Nagano, J. Nalbantoglu, C. O'Flaherty, A. Orthwein, A. Pause, A. Philip, C. Piccirillo, C. Polychronakos, S. Prakash, R. Rajan, J. Rak, G. Rouleau, A. Ryan, S. Sabri, G. Sant'Anna, R. Slim, N. Sonenberg, I. Topisirovic, M. Tremblay, J. Ursini-Siegel, M. Witcher, J.-H. Wu, M. Zappitelli, G. Zogopoulos

Associate Members, Universit de Montr al

J. Archambault, M. Cayouette, F. Charron, E. Cohen, C.F. Deschepper, J.M. Di Noia, J. Drouin, J. Estall, M. Ferron, N. Francis, H. Gu, J. Gutkowska, P. Hamet, D. Hipfner, P. Jolicoeur, A. Kania, M. Kmita, E. Lecuyer, T. Moroy, F. Ni, M. Oeffinger, R. Rabasa-Lhoret, E. Racine, N. Seidah, W.-K. Suh, H. Takahashi, M. Trudel, W.Y. Tsang, J. Vacher, A. Veillette, C. Wu, J. Zwaagstra

11.12.5 [illegible] (45 [illegible])

[illegible] (36 [illegible])

24-36 credits selected from the following:

EXMD 690	(3)	Master's Thesis Research 1
EXMD 691	(6)	Master's Thesis Research 2
EXMD 692	(9)	Master's Thesis Research 3
EXMD 693	(12)	Master's Thesis Research 4
EXMD 694	(12)	Master's Thesis Research 5

[illegible] (21 [illegible])

9-21 credits of courses at the 500, 600, or 700 level chosen in consultation with the Supervisor. A minimum of 9 course credits is required for students entering the program with a bachelor's or M.D. degree.

11.12.6 [illegible] (45 [illegible])

[illegible] (24 [illegible])

BIOE 690	(3)	M.Sc. Thesis Literature Survey
BIOE 691	(3)	M.Sc. Thesis Research Proposal
BIOE 692	(6)	M.Sc. Thesis Research Progress Report
BIOE 693	(12)	M.Sc. Thesis

[illegible] (6 [illegible])

BIOE 680	(3)	Bioethical Theory
BIOE 681	(3)	Bioethics Practicum

[illegible] (15 [illegible])

3 credits, one of the following:

EXMD 687	(3)	Medical Ethics and Religious Studies
EXMD 688	(3)	Medical Ethics

BIOE 682 (3) Medical Ethics for Bioethics
La
1 0 0 (3) 165.864 111.64 402 (EXMD) EXMD 681 C 57/F0 ET 0 1 70.50 -24.19edim42568.92.19edm.48 598.12.19edl.48 598.12.69edl.42568.92

12 credits, four 3-credit BIOE or EXMD graduate courses (500, 600, or 700 level) chosen in consultation with the Supervisor.

11.12.7 [illegible]

[illegible]

[illegible]

EXMD 690	(3)	Master's Thesis Research 1
EXMD 692	(9)	Master's Thesis Research 3
EXMD 693	(12)	Master's Thesis Research 4

[illegible]

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3

[illegible]

3 credits from one of the following courses*:

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

* or another course at the 500, 600, or 700 level recommended by the Advisory Committee and approved by the Environment Option Committee.

12 credits of courses at the 500, 600, or 700 level chosen in consultation with the student's academic supervisor.

11.12.8 [illegible]

A minimum of 12 course credits is required for students entering the program with a prior master's degree. Students having only a B.Sc. or M.D. degree and who have been either admitted directly or fast-tracked to the Ph.D. must complete a total of 18 credits. The following courses are highly recommended: EXMD 604D1/D2 Recent Advances in Cellular and Molecular Biology; EXMD 610 Biochemical Methods in Medical Research.

After consultation with their research supervisor and the Director of the Division, students may choose their courses from those offered by Experimental Medicine, Physiology, and Biochemistry, as well as other graduate and advanced undergraduate courses in the medical and allied sciences. Where necessary, students may enrol for credit in courses offered in the physical and mathematical sciences.

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible]

EXMD 701D1	(0)	Comprehensive Oral Examination
EXMD 701D2	(0)	Comprehensive Oral Examination

[illegible]

(12-18 credits)

A minimum of 12 course credits is required for students entering the program with a prior master's degree. Students having been fast-tracked to the Ph.D. must complete a total of 18 credits (9 credits in addition to the 9 which were originally requested upon entry into the M.Sc. program).

11.12.9 [illegible]

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] (6 [illegible])

ENVR 610	(3)	Foundations of Environmental Policy
ENVR 650	(1)	Environmental Seminar 1
ENVR 651	(1)	Environmental Seminar 2
ENVR 652	(1)	Environmental Seminar 3
EXMD 701D1	(0)	Comprehensive Oral Examination
EXMD 701D2	(0)	Comprehensive Oral Examination

[illegible] (12 [illegible])

(6-12 credits)

One of the following courses:*

ENVR 519	(3)	Global Environmental Politics
ENVR 544	(3)	Environmental Measurement and Modelling
ENVR 620	(3)	Environment and Health of Species
ENVR 622	(3)	Sustainable Landscapes
ENVR 630	(3)	Civilization and Environment
ENVR 680	(3)	Topics in Environment 4

* or another course at the 500, 600, or 700 level recommended by the Advisory Committee and approved by the Environment Option Committee.

One to three courses at the 500, 600, or 700 level chosen in consultation with the student's academic supervisor.

11.12.10 [illegible] (30 [illegible])

The core element of the diploma is the Practicum in Clinical Research. It is a six-step program with active “clerkship” or “intern/resident type” participation in each component that is essential to the successful development and evaluation of a clinical trial.

[illegible] (6 [illegible])

EXMD 617	(1)	Workshop in Clinical Trials 1
EXMD 618	(1)	Workshop in Clinical Trials 2
EXMD 619	(1)	Workshop: Clinical Trials 3
EXMD 620	(1)	Clinical Trials and Research 1
EXMD 625	(1)	Clinical Trials and Research 2
EXMD 626	(1)	Clinical Trials and Research 3

[illegible] (6 [illegible])

Two courses chosen from: Experimental Medicine (EXMD), Pharmacology and Therapeutics (PHAR), Epidemiology and Biostatistics (EPIB). With approval, courses from other Allied Health Sciences departments may be considered.

EXMD 627	(18)	Practicum in Clinical Research

11.13 [illegible], Family

11.13.1 [illegible]

Department of Family Medicine
5858 Côte-des-Neiges Road, 3rd Floor
Montreal QC H3S 1Z1
Telephone: 514-399-9103
Fax: 514-398-4202
Email: *graduateprograms.fammed@mcgill.ca*
Website: *www.mcgill.ca/familymed/education/graduate-programs*

11.13.2 About the Family Medicine

The McGill Family Medicine Department is home to an exceptional community of health care professionals, researchers, students, and support staff, whose mission is to contribute to the health of the population and the sustainability of the health care system in Quebec, in Canada, and internationally by:

- training medical students, residents, and other health care professionals to become committed to primary care, contributing to accessibility, continuity, coordination, accountability, patient-centredness, and health promotion and prevention;
- promoting innovation in family medicine and primary health care delivery and practice;
- developing research and scholarly activity to contribute to the academic discipline;
- promoting curriculum innovation and education research;
- engaging in international and global health activities;
- developing and engaging in public policy discussions.

We understand that research in family medicine and primary care is essential to the achievement of excellence in health care delivery, patient care, and education. Our research division is composed of Ph.D. and clinical researchers who dedicate their efforts to producing and translating knowledge that advances the discipline, practice, and teaching of family medicine and primary care while supporting the scholarly activities of clinicians and residents in the Department. We have developed unique and rigorous research programs for **M.Sc.** and **Ph.D.** students that advance academic excellence in family medicine and primary health care through patient-oriented, community-based research with innovative methodologies and participatory approaches.

Ph.D. (*Ad Hoc*)

The Department of Family Medicine offers the possibility of entering a Ph.D. program on an *ad hoc* basis.

section 11.13.5: Master of Science (M.Sc.) Family Medicine (Thesis) (45 credits)

The M.Sc. in Family Medicine is a **research-oriented thesis-based graduate program** in family medicine. The objective is to increase the skills of those interested in carrying out research pertinent to the practice of family medicine.

As many relevant research questions cross conventional boundaries of disciplines and research traditions, we incorporate an **interdisciplinary approach** with an emphasis on **participatory research** and **community engagement**.

This program provides training in epidemiology and statistics as well as in qualitative, quantitative and mixed methods. Students are also oriented for knowledge synthesis and participatory research approaches.

An emphasis is placed on the relevance of the thesis research to family practice and primary health care. Close links are maintained with the main family medicine clinical sites located around Montreal and Quebec.

section 11.13.6: Master of Science (M.Sc.) Family Medicine (Thesis): Bioethics (45 credits)

The objectives of this program are to allow students to conduct innovative research in relation to a bioethical issue pertinent to health care and to acquire a working knowledge of bioethical issues from the current viewpoint of other relevant disciplines such as law, philosophy, and religious studies. A minimum of 45 credits is required including the thesis. The research culminates in the preparation of a thesis.

section 11.13.7: Master of Science (M.Sc.) Family Medicine (Thesis): Medical Education (45 credits)

This program will have very close ties to the *Family Medicine Educational Research Group* (FMER), which is the corollary of the educational innovations in teaching and research conceived and established in the McGill Department of Family Medicine since 2005. The FMER group's ultimate goal is to advance knowledge to:

1. constantly inform family medicine curricula innovations and continuing professional development to better family physicians' clinical practice;
2. significantly contribute to the development of the family medicine education field of inquiry;
3. rigorously develop and inform medical education policy.

This research agenda of FMER is articulated into four interrelated streams:

1. family physician's professional identity formation;
2. information use and technology in the learning episodes of practicing physicians and organizational learning;
3. program evaluation of educational innovations;
4. knowledge synthesis.

11.13.3 M , Fn yAiqAP d

11.13.3.1 Aiq

Our program encourages the following applicants:

- Practicing family physicians
- Undergraduate university students with a strong interest in family medicine research
- Family medicine residents who are completing their residency and would like to continue with their education by completing an enhanced skills program specializing in family medicine research with the possibility of obtaining an M.Sc. degree. If interested, you may learn more about the Clinician Scholar Program *here*.

What do we look for?

High academic achievement: A cumulative grade point average (CGPA) of 3.4 is required out of a possible maximum CGPA of 4.0, or a GPA of 3.6 is required in the last two years of full-time studies.

Proof of competency in oral and written English: TOEFL: International students who have not received their instruction in English or whose mother tongue is not English must pass the Test of English as a Foreign Language (*TOEFL*) with a minimum score of 86 on the Internet-based test (iBT; 567 on the paper-based test (PBT)), with each component score not less than 20.

Note: The TOEFL institution code for McGill University is 0935. For further information, please refer to the *TOEFL website*.

Alternatively, students may submit International English Language Testing System (*IELTS*) scores with a minimum overall band score of 6.5. Original score reports must be submitted (photocopies will not be accepted).

For overseas graduates, an attempt is made to situate the applicant's academic grades among the standards of their universities. Grades are, however, converted to their McGill equivalent. Conversion charts, as well as required admission documentation for each country, are provided by *Graduate and Postdoctoral Studies* and prospective students should refer to these in order to determine if they are admissible to our program.

11.13.3.2 AiqP d

McGill's online application form for graduate program candidates is available at *www.mcgill.ca/gradapplicants/apply*.

See *University Regulations & Resources* > *Graduate* > *Graduate Admissions and Application Procedures* > *: Application Procedures* for detailed application procedures.

All supplemental application materials and supporting documents must be uploaded directly to the McGill admissions processing system.

- **Supervisor:** All students must be matched to a *supervisor* to be admitted to our graduate programs; this matching will occur during the application process (i.e., after the applicant has submitted a complete application). After the application has been received, the applicants will have an opportunity to be chosen for an interview with one of our supervisors if the minimum admission requirements have been met.
- **Application form and fee:** All applicants must complete the *Online Application*

Any applicant having undertaken previous graduate studies (whether at McGill or elsewhere) should make sure that one of the letters of reference is from their graduate supervisor. **Please note:** On the application form, applicants must provide the names and email addresses of referees. McGill will contact these referees via email and invite them to upload reference letters on the applicant's behalf (along with the instructions on how to upload the documents). **Neither of these reference letters should be from the proposed supervisor.**

- **Personal Statement:** Applicants must submit a personal statement in which they:

  1. describe their background and the reasons why they are applying to the desired program;
  2. describe their research interests and with whom they would like to work among the list of potential supervisors;
  3. describe how they hope to impact family medicine practice; and
  4. describe future plans upon graduation from the desired program.

  The statement should be no more than two (2) pages long.
- **Writing Assessment**
- **Interview**
- **Official Transcripts:** Applicants must submit one (1) official copy of all transcripts for all post-secondary education undertaken (Quebec students need not submit CEGEP transcripts). Unofficial transcripts may be uploaded to the McGill admissions processing system and an official transcript must be sent at a later time when the letter of acceptance has been sent by Graduate and Postdoctoral Studies via Minerva (since this will be a condition of the letter). **Please note:** Official transcripts are not required for studies conducted at McGill University (students may upload a Minerva copy of their McGill transcript with their application and this will be sufficient).
- **Writing Sample (for *ad hoc* Ph.D. and Bioethics option applicants only):** Applicants to our ad hoc Ph.D. program must upload a writing sample to review, preferably a thesis or a published article. For Bioethics option applicants, please upload a sample of your writing skills from your undergraduate studies; it does not need to be a thesis or a publication.

11.13.3.2.1 Addi[illegible]

The items and clarifications below are additional requirements set by this department:

- Curriculum Vitae
- Personal Statement – no more than two (2) pages long
- Writing sample (for *ad hoc* Ph.D. and Bioethics option applicants only)

11.13.3.3 A[illegible]

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Department of Family Medicine and may be revised at any time. Applicants must verify all deadlines and documentation requirements well in advance on the appropriate McGill departmental website; please consult the list at *www.mcgill.ca/gps/contact/graduate-program*.

Professors

Gillian Bartlett; B.A., M.Sc., Ph.D.(McG.)

Howard Bergman; B.Sc., M.D.,C.M.(McG.), C.C.F.P, F.C.F.P.

Jeannie Haggerty; B.Sc.(S. Fraser), M.Sc., Ph.D.(McG.)

Ann Macaulay; M.B., Ch.B.(St. And.), C.C.F.P.

Pierre Pluye; M.D.(P. Sabatier), M.Sc., Ph.D.(Montr.)

Mark Yaffe; B.Sc., M.D.,C.M.(McG.), M.Cl.Sc.(W. Ont.), C.C.F.P., F.C.F.P.

Associate Professors

Eugene Bereza; B.A., M.D.,C.M.(McG.), C.C.F.P.

Anne Cockcroft; M.B., B.S., M.D.(Lond.), F.R.C.P., F.F.O.M., D.I.H.(UK)

Roland Grad; M.D.,C.M.(McG.), M.Sc.(McM.), C.C.F.P.

Charo Rodriguez; M.D.(Alicante), M.P.H.(Valencia), Ph.D.(Montr.)

Ellen Rosenberg; B.A.(Smith), M.D.,C.M.(McG.), C.C.F.P.

Ian Shrier; M.D.,C.M., Ph.D.(McG.)

Pierre-Paul Tellier; M.D.,C.M.(McG.)

Mark Ware; B.A.(Qu.), M.B., B.S.(W. Indies), M.Sc.(Lond.)

Assistant Professors

Anne Andermann; B.Sc., M.D.,C.M.(McG.), M.Phil.(Camb.), D.Phil.(Oxf.), C.C.F.P., F.R.C.P.(C), F.F.P.H.(UK)

Yves Bergevin; B.Sc.(Coll. Stanislas, Montreal), M.D.,C.M., M.Sc.(McG.), C.C.F.P., F.R.C.P.(C), F.C.F.P

Adjunct Professors

Tracie Barnett (Institut Armand Frappier)

Julie Bruneau (Montr.)

Yves Couturier (Sher.)

Catherine Hudon (Sher.)

Amalia Issa (Houston)

Janusz Kaczorowski (Montr.)

Edeltraut Kroger (CEVQ)

Susan Law (Tor.)

Marie-Thérèse Lussier (Montr.)

Emily Marshall (Dal.)

Viv Ramsden (Sask.)

Christian Rochefort (Sher.)

Jon Salsberg (Limerick)

11.13.5 [illegible] F [illegible] (45 [illegible])

[illegible] (24 [illegible])

FMED 697	(12)	Master's Thesis Research 1
FMED 698	(12)	Master's Thesis Research 2

[illegible] (15 [illegible])

FMED 505	(3)	Basic Analysis for Health Data
FMED 509	(3)	Foundations of Epidemiology in Family Medicine
FMED 600	(1)	Mixed Studies Reviews
FMED 603	(1)	Participatory Research: Patient & Public Engagement
FMED 616	(1)	Applied Literature Reviews
FMED 625	(3)	Qualitative Health Research
FMED 672	(3)	Applied Mixed Methods in Health Research

[illegible] (6 [illegible])

6 credits chosen from:

FMED 503	(1)	Survey Research Methods in Primary Care
FMED 504D1	(.5)	Family Medicine Research Seminars
FMED 504D2	(.5)	Family Medicine Research Seminars
FMED 511	(1)	Introduction to Art in Healthcare: Making Art Accessible

Foundations of Tr50Medtlons oalience (1 0 0 1 165.864 171.344 Tm(r50))Tj1 0 0 1 70.52 283.344 Tm(F)Tj 511FMEAd

Advanced Mixed Methods Seminar in Health wx

FMED 505	(3)	Basic Analysis for Health Data
FMED 509	(3)	Foundations of Epidemiology in Family Medicine
FMED 600	(1)	Mixed Studies Reviews
FMED 603	(1)	Participatory Research: Patient & Public Engagement
FMED 616	(1)	Applied Literature Reviews
FMED 625	(3)	Qualitative Health Research
FMED 672	(3)	Applied Mixed Methods in Health Research

[illegible] (3 [illegible])

3 credits from the following:

	(3)	Theoretical Foundations of Learning Sciences

section 11.14.5: Master of Science (M.Sc.) Microbiology and Immunology (Thesis) (45 credits)

M.Sc. student chooses their preferred major research area and research supervisor. Following an interview, the student is presented with a research topic and offered a studentship (amounts vary). Each student must register for our graduate courses (two seminars, two reading and conference courses, and three current topics). If pertinent to the student's research program, the research adviser may advise the student to take additional courses.

Most of our students, after one year, are proficient researchers, and some first authors of a research publication. M.Sc. students may fast-track to the Ph.D. program after three terms of residency. The remaining students advance their microbiology background by opting to enter into medicine, epidemiology, biotechnology, or pharmaceutical disciplines.

section 11.14.6: Doctor of Philosophy (Ph.D.) Microbiology and Immunology

The primary goal of the Ph.D. program is to create a self-propelled researcher, proficient in experimental designs and advanced methodologies applicable to the varied and rapidly changing disciplines in microbiology and immunology. Close research supervision and bi-weekly laboratory sessions impart the requisite research discipline and objective assessment of acquired or published research data.

A Ph.D. student, if promoted from our M.Sc. program, without submitting the thesis, is required to register for one additional graduate seminar and one additional reading and conference course, but the bulk of his/her time is devoted to research. Other requirements include a yearly presentation of the accumulated research data to the Ph.D. supervisory committee, successfully clearing the Ph.D. comprehensive examination, two years after registration into the Ph.D. program, and finally submission of a thesis. The research theme must be original, and the acquired data and hypothesis must be defended orally by the student. Each student receives a stipend for the entire duration and a minimum six-semester residency is required for the completion of the program.

11.14.3 M gm jA P d

11.14.3.1 Aip

Master's

Candidates are required to hold a B.Sc. degree in microbiology and immunology, biology, biochemistry, or another related discipline; those with the M.D., D.D.S., or D.V.M. degrees are also eligible to apply. The minimum cumulative grade point average (CGPA) for acceptance into the program is 3.2 out of 4.0.

Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English. Before acceptance, appropriate exam results must be submitted directly from the *TOEFL* (Test of English as a Foreign Language) or *IELTS* (International English Language Testing Systems) Office. An institutional version of the TOEFL is not acceptable. Applications will not be considered if a TOEFL or IELTS test result is not available.

- TOEFL Internet-Based Test (iBT): a minimum overall score of 86 (no less than 20 in each of the four components)
- TOEFL Paper-Based Test (PBT): a minimum score of 567
- IELTS: a minimum overall band score of 6.5

The TOEFL Institution Code for McGill University is 0935.

Ph.D.

Students who have satisfactorily completed an M.Sc. degree in microbiology and immunology, a biological science, or biochemistry, or highly qualified

Associate Members

Immunology, Autoimmunity, Host Defense: J. Antel, M. Burnier, I. Colmegna, P. Gros, A. Kristof, J. Mandl, A. Orthwein, J. Rauch, M. Saleh, M. Tremblay, C. Tsoukas, S. Vidal

Immunology and Parasitology: P. Rohrbach, B. Ward, M. Ndao, J. Zhang

Microbiology: D. Cuong Vinh, M. Divangahi, C. Liang, D. Nguyen, M. Reed

Molecular Biology: N. Cermakian, S. Hussain, A. Jardim, A. Mouland, K. Pantopoulos, B. Turcotte, J. Xia

Virology: A. Gatignol, A.E. Koromilas, R. Lin, J.Teodoro

Adjunct Professors

A. Descoteaux

J.M. Di Noia

A. Finzi

M. Gotte

N. Grandvaux

G. Kukolj

P. Lau

S. Lesage

S.L. Liu

R. Moutih

C. Paradis-Bleau

A. Petronela

K. Pike

W-K. Suh

MIMM 618*	(3)	Reading and Conference 3
MIMM 619*	(3)	Reading and Conference 4

Any life sciences-related 500-level or above course (3 credits). Department approval required.

* Not offered in every academic year.

11.14.6 [illegible]

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and

Ph.D. students and more than 230 supervisors, the IPN is the largest graduate program in the Faculty of Medicine and one of the largest neuroscience graduate programs in North America.

Neuroscience training within the IPN spans the full spectrum of research fields, from cellular and molecular neuroscience to behavioural and cognitive neuroscience. In addition to laboratory research, the IPN offers an extensive range of courses, hosts an annual *Neuroscience Retreat*, and maintains a seminar program to facilitate communication between students in different neuroscience disciplines. Neuroscience trainees from McGill have gone on to successful careers in academia and industry.

A prospective graduate student may *identify a supervisor* from one of several research streams, spanning the full spectrum of neuroscience research. A student with a bachelor's degree may apply to the **M.Sc.** program; it is common to transfer to the **Ph.D.** program if suitable progress is made. Students with M.Sc. degrees may apply directly to the Ph.D. program. IPN also offers a Ph.D. Rotation program each September.

GENERAL

1. Students must select an Advisory Committee, in conjunction with their thesis supervisor. This committee will consist of the thesis supervisor and two other individuals who will participate in discussions with students about their research program.
2. All Ph.D. students are required to complete a candidacy examination before the end of Ph.D. 3. The exam serves to evaluate the students' ability to perform original scholarship and to demonstrate their suitability for a Ph.D. degree. An M.Sc. student may be eligible to transfer to the Ph.D. program without submitting a master's thesis by taking the *Transfer Seminar/Candidacy Exam*. This exam is allowed if the master's CGPA is 3.3 or higher and if the student's Advisory Committee recommends the student as an appropriate candidate for Ph.D. studies. M.Sc. students who wish to pursue a Ph.D. degree, but who have not obtained the minimum 3.3 CGPA in their M.Sc. coursework while in the IPN, must submit a master's thesis and apply for the Ph.D. level afterwards.
3. Students are required to submit a written thesis proposal (18 months after the start of the program for M.Sc. students, and at least one month prior to the candidacy exam for Ph.D. students). This document must state the hypothesis being tested, the relevant literature, and a summary of the methods that will be used to address the research question. This proposal will then be orally presented to the student's Advisory Committee, which will review the written proposal and communicate its recommendations to the student.
4. Students will present a formal seminar on their research work prior to writing their thesis. This presentation will be attended by the student's Advisory Committee who will report their impressions and recommendations to the student.
5. Before final thesis submission, Ph.D. students must successfully complete an oral defence, which is a final, in-depth, formal presentation of their research.
6. An annual oral informal presentation of research work accomplished will be presented to the student's Advisory Committee.
7. The Graduate Program Committee has instituted a mentorship program by which each student will be matched with a specific member of the Committee. The Program Mentor ensures that the student, the supervisor(s), and other members of the Advisory Committee are aware of and meet key milestones, in a timely manner, throughout the course of the student's graduate study.
8. All incoming students are required to take the workshops on Responsible Conduct of Research. These will be included as part of the milestones for annual progress reports.

section 11.15.5: Master of Science (M.Sc.) Neuroscience (Thesis) (45 credits)

The M.Sc. program offers opportunities to a great diversity of individual interests and backgrounds, and prepares our students for scientific careers in neuroscience and related fields. Programs leading to an M.Sc. degree require the completion of 45 credits of academic and research training.

section 11.15.6: Doctor of Philosophy (Ph.D.) Neuroscience

The IPN offers a highly competitive Ph.D. degree program that prepares students for successful scientific careers in the field of neuroscience. Over half of the students registered in the neuroscience graduate program at McGill University are in the doctoral stream.

11.15.3 [illegible]

11.15.3.1 [illegible]

General

Applicants must hold a bachelor's degree, or its equivalent, from a recognized institution in a field related to the subject selected for graduate work, and must display an adequate background in basic sciences.

The applicant must present evidence of high academic achievement. A standing equivalent to a cumulative grade point average (CGPA) of 3.0 out of a possible 4.0 is required by Graduate and Postdoctoral Studies; however, the Integrated Program in Neuroscience (IPN) prefers applicants to show a higher academic standing, and requires a minimum CGPA of 3.3.

Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit results of the *TOEFL* exam with their application and have a minimum score of 86 on the Internet-based test (iBT; 567 on the paper-based test [PBT]) with each component score not less than 20.

M.Sc. Degree

Bachelor's degree with adequate background in basic sciences, or an M.D.

Ph.D. Degree

Applicants must hold a graduate-level degree in a field related to neuroscience or hav

Professors

A. Aguayo; M.D.(Cordoba Nat.), F.R.C.P.(C) (*Dept. of Neurology and Neurosur*

Professors

S.G. Gauthier; B.A., M.D.(Montr.), F.R.C.P.(C) (*Dept. of Neurology and Neurosurgery*)

B. Giros; M.Sc., Ph.D.(Paris VI) (*Dept. of Psychiatry*)

J. Gotman; M.Eng.(Dart.), Ph.D.(McG.) (*Dept. of Neurology and Neurosurgery*)

V. Gracco; Ph.D.(Wisc.) (*School of Communication Sciences and Disorders*)

A. Gratton; Ph.D.(C'dia) (*Dept. of Psychiatry*)

J. Grodzinsky; Ph.D.(Brandeis) (*Dept. of Linguistics*)

D. Guitton; Dipl. IVK(Univ. Libre de Brux.), B.Eng., M.Eng., Ph.D.(Eng.), Ph.D.(Physiol.)(McG.) (*Dept. of Neurology and Neurosurgery*)

D. Haegert; M.D.(Br. Col.), F.R.C.P.(C) (*Dept. of Pathology*)

E. Hamel; B.Sc.(Sher.), Ph.D.(Montr.) (*Dept. of Neurology and Neurosurgery*)

K. Hastings; B.Sc., Ph.D.(McG.) (*Dept. of Neurology and Neurosurgery*)

R.T. Hepple; Ph.D.(Tor.) (*Dept. of Kinesiology and Physical Education*)

R. Hess; Ph.D.(Melb.), D.Sc.(Aston, UK) (*Dept. of Ophthalmology*)

B. Jones; B.A., M.A., Ph.D.(Delaware) (*Dept. of Neurology and Neurosurgery*)

M. Jones-Gotman; B.A.(Calif.), M.A., Ph.D.(McG.) (*Dept. of Neurology and Neurosurgery*)

T. Kennedy; B.Sc.(McM.), Ph.D.(Col.) (*Dept. of Neurology and Neurosurgery*)

B. Kieffer; Ph.D.(Strasbourg) (*Dept. of Psychiatry*)

F. Kingdom; Ph.D.(Reading) (*Dept. of Ophthalmology*)

P. Lachapelle; Ph.D.(Montr.) (*Dept. of Ophthalmology*)

N. Lamarche; Ph.D.(Montr.) (*Dept. of Anatomy and Cell Biology*)

A. LeBlanc; M.Sc.(Moncton), Ph.D.(Dal.) (*Dept. of Neurology and Neurosurgery*)

M.F. Levin; Ph.D.(P.T.)(McG.) (*School of Physical and Occupational Therapy*)

M. Leyton; M.A., Ph.D.(C'dia) (*Dept. of Psychiatry*) (*William Dawson Scholar*)

G. Luheshi; Ph.D.(Newcastle, UK) (*Dept. of Psychiatry*)

D. Maysinger; M.Sc., Ph.D.(Calif.-LA) (*Dept. of Pharmacology and Therapeutics*)

H.M. McBride; Ph.D.(McG.) (*Dept. of Neurology and Neurosurgery*)

P.S. McPherson; M.Sc.(Manit.), Ph.D.(Iowa) (*James McGill Professor*) (*Dept. of Neurology and Neurosurgery*)

M.J. Meaney; B.A.(Loyola), M.A., Ph.D.(C'dia.) (*Dept. of Psychiatry*)

B. Milner; B.A., Sc.D.(Cant.), Ph.D.(McG.) (*Dept. of Neurology and Neurosurgery*)

T.E. Milner; B.Sc., M.Sc., Ph.D.(Alta.) (*Dept. of Kinesiology and Physical Education*)

J.S. Mogil; Ph.D.(Calif.-LA) (*Dept. of Psychology*)

K. Mullen; Ph.D.(Camb.) (*Dept. of Ophthalmology*)

G. Multhaup; Ph.D.(Cologne) (*Dept. of Pharmacology and Therapeutics*)

A. Olivier; M.D.(Montr.), Ph.D.(Laval), F.R.C.S.(C) (*Dept. of Neurology and Neurosurgery*)

D.J. Ostry; B.A.Sc., M.A.Sc., Ph.D.(Tor.) (*Dept. of Psychology*)

O. Overbury; Ph.D.(C'dia) (*Dept. of Ophthalmology*)

C. Palmer; B.Sc., M.Sc., Ph.D.(Cornell) (*Dept. of Psychology*)

M. Pell; B.A.(Ott.), M.Sc., Ph.D.(McG.) (*School of Communication Sciences and Disorders*)

M. Petrides; B.Sc., M.Sc.(Lond.), Ph.D.(Cant.) (*James McGill Professor*) (*Depts. of Neurology and Neurosurgery, Psychology*)

G. Plourde; M.D.(Laval), M.Sc.(Ott.) (*Dept. of Anesthesia*)

J. Poirier; Ph.D.(Montr.) (*Dept. of Psychiatry and Medicine*)

A. Ptito; Ph.D.(Montr.) (*Dept. of Neurology and Neurosurgery*)

M. Rasminsky; B.A.(Tor.), M.D.(Harv.), Ph.D.(Lond.), F.R.C.P.(C) (*Dept. of Neurology and Neurosurgery*)

Professors

A. Ribeiro-da-Silva; M.D., Ph.D.(Porto) (*Dept. of Pharmacology and Therapeutics*)

R.J. Riopelle; M.D.(Ott.), F.R.C.P.(C) (*Dept. of Neurology and Neurosurgery*)

A. Sadikot; M.D.,C.M.(McG.), Ph.D.(Laval), F.R.C.S.(C) (*Dept. of Neurology and Neurosurgery*)

H.U. Saragovi; Ph.D.(Miami) (*Dept. of Pharmacology and Therapeutics*)

H. Schipper; M.D., Ph.D.(McG.), F.R.C.P.(C) (*Dept. of Neurology and Neurosurgery*)

G. Sebire; M.D., Ph.D.(Paris VI) (*Dept. of Pediatrics*)

T. Shultz; M.Phil., Ph.D.(Yale) (*Dept. of Psychology*)

P. Seguela; Doct. 3e Cycle(Bord.), Ph.D.(Montr.) (*Dept. of Neurology and Neurosurgery*)

M. Shevell; B.Sc., M.D.(Vanderbilt) (*Dept. of Neurology and Neurosurgery*)

E. Shoubridge; M.Sc., Ph.D.(Br. Col.) (*Dept. of Neurology and Neurosurgery*)

W. Sossin; B.S.(MIT), Ph.D.(Stan.) (*Dept. of Neurology and Neurosurg*

Associate Professors

R. Gruber; Ph.D.(Tel Aviv) (*Dept. of Psychiatry*)

R.D. Hoge; Ph.D.(McG.) (*Dept. of Neurology and Neurosurgery*)

R. Joober; M.D.(Tunisia), Ph.D.(McG.) (*Dept. of Psychiatry*)

D. Juncker; Dipl., Ph.D.(Neuchâtel) (*Dept. of Biomedical Engineering*)

A. Kania; Ph.D.(Baylor) (*Depts. of Biology, Anatomy and Cell Biology, and Experimental Medicine*)

S. King; B.A.(McG.), M.Ed., Ed.S.(James Madison Univ.), Ph.D.(Virginia Tech) (*Dept. of Psychiatry*)

B. Knauper; Dr.Phil.(Mannheim) (*Dept. of Psychology*)

A. Lamontagne; Ph.D.(Laval) (*School of Physical and Occupational Therapy*)

A. McKinney; Ph.D.(Ulster) (*Dept. of Pharmacology and Therapeutics*)

N. Mechawar; Ph.D.(Montr.) (*Dept. of Psychiatry*)

J. Mendola; Ph.D.(MIT) (*Dept. of Ophthalmology*)

K. Murai; Ph.D.(Calif.) (*Dept. of Neurology and Neurosurgery*)

K. Nader; B.Sc., Ph.D.(Tor.) (*Dept. of Psychology*)

J. Nalbantoglu; B.Sc., Ph.D.(McG.) (*Dept. of Neurology and Neurosurgery*)

C. Pack; B.Sc.(Tufts), Ph.D.(Boston) (*Dept. of Neurology and Neurosurgery*)

H. Paudel; Ph.D.(Okla.), M.Sc.(Nepal) (*Dept. of Neurology and Neurosurgery*)

A. Peterson; B.Sc.(Vic., BC), Ph.D.(Br. Col.) (*Dept. of Neurology and Neurosurgery*)

K. Petrecca; B.Sc., M.D., Ph.D.(McG.) (*Dept. of Neurology and Neurosurgery*)

M. Pompeiano; M.D.(Pisa), Ph.D.(Scuola Sup. Pisa) (*Dept. of Psychology*)

J.C. Pruessner; Ph.D.(Trier) (*Depts. of Psychiatry, Psychology, Neurology, and Neurosurgery*)

D. Ragsdale; B.S.(Ill.), Ph.D.(Calif.) (*Dept. of Neurology and Neurosurgery*)

N. Rajah; Ph.D.(Tor.) (*Dept. of Psychiatry*)

Y. Rao; B.Sc.(Sichuan), Ph.D.(Tor.) (*Dept. of Neurology and Neurosurgery*)

A. Raz; M.Sc., Ph.D.(Hebrew) (*Dept. of Psychiatry*)

A. Reader; Ph.D.(King's Coll., Lond.) (*Dept. of Neurology and Neurosurgery*)

J. Rochford; Ph.D.(C’dia) (*Dept. of Psychiatry*)

B. Rosenblatt; B.Sc., M.D.,C.M.(McG.), F.R.C.P.(C) (*Dept. of Neurology and Neurosurgery*)

E. Ruthazer; A.B.(Princ.), Ph.D.(Calif.-SF) (*Dept. of Neurology and Neurosurgery*)

R. Schirrmacher; Ph.D.(Mainz) (*Dept. of Neurology and Neurosurgery*)

A. Shmuel; B.Med., M.Sc.(Hebrew), Ph.D.(Weizmann Institute of Science) (*Dept. of Neurology and Neurosurgery*)

D. Stellwagen; B.Sc.(Brown), Ph.D.(Calif.) (*Dept. of Neurology and Neurosurgery*)

L. Stone; Ph.D.(Minn.) (*Dept. of Dentistry*)

K.-F. Storch; Ph.D.(Max Planck) (*Dept. of Psychiatry*)

A. Thiel; Ph.D.(Cologne), M.D.(Bonn) (*Dept. of Neurology and Neurosurgery*)

D. Van Meyel; Ph.D.(W. Ont.) (*Dept. of Neurology and Neurosurgery*)

S. Williams; Ph.D.(Montr.) (*Dept. of Psychiatry*)

Assistant Professors

A. Adamantidis; M.Sc., Ph.D.(Liege) (*Dept. of Psychiatry*)

B. Bedell; B.S.(Leigh), M.D.,C.M.(McG.), Ph.D.(Texas) (*Dept. of Neurology and Neurosurgery*)

F. Bedford; Ph.D.(Lond.) (*Dept. of Anatomy and Cell Biology*)

M. Berlim; M.D., M.Sc.(UFRGS) (*Dept. of Psychiatry*)

Assistant Professors

A. Bertone; M.A.(C'dia), M.A., Ph.D.(Montr.) (*Dept. of Educational and Counselling Psychology*)

M-H. Boudrias; B.Sc.(Montr.), Ph.D.(KUMC) (*School of Physical and Occupational Therapy*)

M. Brandon; B.A.(Conn.), Ph.D.(Boston) (*Dept. of Psychiatry*)

J.MhTj 1 0 00 1 380.62 709.8205.993J.MhTj 1 0 01 Tf 1 0 0 1 388.266 709.213.639J.MhTj 1 0 01 70.52 662.68 Tm (J.46.96don; B.A.odeur;on) ()McM2

Assistant Professors

P. Wintermark; M.D.(Lausanne) (*Dept. of Pediatrics*)

S.C. Woolley; B.Sc.(Duke), Ph.D.(Texas-Austin) (*Dept of Biology*)

T.P. Wong; Ph.D.(McG.) (*Dept. of Psychiatry*)

J. Zhang; M.D.(Shanghai II Medical U.), M.Sc.(Paris XI), Ph.D.(Laval) (*Dept. of Neurology and Neurosurgery*)

Lecturer

S. Antel

Adjunct Professors

G. Duncan

M. Ptito

E. Racine; B.A.(Ott.), M.A., Ph.D.(Montr.) (*Dept. of Neurology and Neurosurgery*)

11.15.5 [illegible]

[illegible]

NEUR 696	(6)	Master's Thesis Research
NEUR 697	(9)	Master's Thesis Proposal
NEUR 698	(9)	Master's Seminar Presentation
NEUR 699	(12)	Master's Thesis Submission
NEUR 705	(0)	Responsible Research Conduct

[illegible]

3 credits from the following:

NEUR 630	(3)	Principles of Neuroscience 1
NEUR 631	(3)	Principles of Neuroscience 2

And 6 credits in other courses at the 500 level or higher that are relevant to the program.

Upon recommendation, depending upon their particular background and needs, students may be requested to take additional selected courses at the 500 level or higher.

Note: All M.Sc.-level students must register for a minimum of 12 credits per term during the first three terms of their master's program.

[illegible]

NEUR 631	(3)	Principles of Neuroscience 2
NEUR 700	(0)	Doctoral Candidacy Examination
NEUR 705	(0)	Responsible Research Conduct

[illegible]

6 credits at the 500, 600, or 700 level, approved by the graduate program adviser.

11.16 [illegible]

11.16.1 [illegible]

Department of Epidemiology, Biostatistics and Occupational Health
Purvis Hall
1020 Pine Avenue West
Montreal QC H3A 1A2
Canada
Telephone: 514-398-6258
Email: *graduate.eboh@mcgill.ca*
Website: *www.mcgill.ca/epi-biostat-occh*

11.16.2 [illegible]

The Department offers two graduate degree programs: a **master's** (M.Sc.A.) and **doctoral** (Ph.D.) in occupational health sciences. The master's program is available on campus or in distance education format. Special Student status is encouraged for students who wish to take only specific courses from our M.Sc. program, but there is a maximum of 12 credits overall, with a maximum of 6 credits per semester, for those with Special Student status.

Students are required to have access to a computer and the Internet, as some of the course material is most readily available online.

Note: We are not accepting applications for the Occupational Health M.Sc.A. (Distance) or Ph.D. programs until further notice.

section 11.16.5: Master of Science, Applied (M.Sc.A.) Occupational Health (Non-Thesis) (Resident) (45 credits)

A three-term program leading to the degree of Master of Science (Applied) (M.Sc.A.) in Occupational Health Sciences, appropriate for graduates from engineering and basic sciences, physicians, and nurses. Occupational health training allows candidates to evaluate work environments and reduce or eliminate work hazards using prevention and control.

section 11.16.6: Master of Science, Applied (M.Sc.A.) Occupational Health (Non-Thesis) (Distance) (45 credits)

This program is not currently accepting applicants.

A three-and-a-half-year program completed mostly over the Internet.

section 11.16.7: Doctor of Philosophy (Ph.D.) Occupational Health

This program is not currently accepting applicants.

The objective of this program is to train independent researchers in the field of work environment and health.

11.16.3 [illegible]

11.16.3.1 [illegible]

Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English by appropriate exams, e.g., *TOEFL* (Test of English as a Foreign Language) with a minimum score of 86 on the Internet-based test (iBT), with each component score not less than 20.

M.Sc. Applied Program (Resident) (on campus)

[illegible] (30 [illegible])

Note: Students must pass the Master's Integrative Examination (OCCH 600) before writing their Project.

Each course has a final (proctored) examination at the end of the term.

OCCH 600	(0)	Master's Integrative Exam
OCCH 602	(3)	Occupational Health Practice
OCCH 603	(3)	Work and Environment Epidemiology 1
OCCH 604	(3)	Monitoring Occupational Environment
OCCH 608	(3)	Biological Hazards
OCCH 612	(3)	Principles of Toxicology
OCCH 615	(3)	Occupational Safety Practice
OCCH 616	(3)	Occupational Hygiene
OCCH 617	(3)	Occupational Diseases
OCCH 624	(3)	Social and Behavioural Aspects - Occupational Health
OCCH 625	(3)	Work and Environment Epidemiology 2
OCCH 626	(3)	Basics: Physical Health Hazards
OCCH 627	(3)	Work Physiology and Ergonomics
OCCH 630	(3)	Occupational Diseases for OHNS
OCCH 635	(3)	Environmental Risks to Health

On-campus practicum may be held at the discretion of each professor. These sessions are held in Montreal on the McGill University campus. Their aim is to offer students additional specific learning activities. Participation in the practicum is an essential component of the program.

11.16.7 [illegible] (PhD .) [illegible]

This program is currently not accepting applicants.

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] (2 [illegible])

OCCH 700	(0)	Ph.D. Comprehensive Examination
OCCH 706	(2)	Ph.D. Seminar on Occupational Health and Hygiene

Students are encouraged to take up to 12 credits in areas pertinent to their specialty or in areas necessary to complete their knowledge of occupational health.

11.17 [illegible]

11.17.1 [illegible]

Department of Otolaryngology – Head and Neck Surgery
Jewish General Hospital
3755 Chemin de la Côte-Sainte-Catherine, Suite E-903
Montreal QC H3T 1E2

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Admission to graduate studies is competitive; accordingly, late and/or incomplete applications are considered only as time and space permit.

11.17.4 [illegible]

Chair

N. Sadeghi

Graduate Program Director and Director of Research

B. Segal

Director of Residency Training Program

J. Manoukian

Director of Head and Neck Oncology Program

M.J. Black

Director of Undergraduate Medical Education

J. Young

Director of Fellowship Training

J. Rappaport

Emeritus Professor

J.D. Baxter; M.D.,C.M., M.Sc.(McG.), F.R.C.S.(C)

Professors

S. Daniel; M.D.,C.M., M.Sc.(Otol.)(McG.), F.R.C.S.(C)

S. Frenkiel; B.Sc., M.D.,C.M.(McG.), F.R.C.S.(C)

A. Katsarkas; M.D.(Thess.), M.Sc.(Otol.)(McG.), F.R.C.S.(C)

K. K

[illegible]

- immunology and transplantation;
- autoimmune disorders;
- ophthalmic pathology;
- cell biology;
- pulmonary disease;
- neurodegenerative disorders;
- smooth muscle pathophysiology; and
- gastrointestinal disease.

Modern techniques and equipment include light, fluorescence, and electron microscopy (both transmission and scanning), laser capture, flow cytometry, DNA, RNA, protein analysis, cell culture, advanced immunological, pharmacological, biochemical, and physiological techniques, as well as morphometry and computer-aided analysis.

section 11.18.5: Master of Science (M.Sc.) Pathology (Thesis) (45 credits)

Graduates can directly enter rewarding careers in research, or opt to continue with their studies and obtain a Ph.D. Some combine their research training with subsequent training in medicine, law, or business administration.

section 11.18.6: Doctor of Philosophy (Ph.D.) Pathology

Our graduates enter successful careers in industry, academia, government/international agencies, or clinical medicine, sometimes combining two of these options. They leave McGill with experience in leadership and communication skills in addition to being highly trained in biomedical research, and their career choices include a wide range of administrative and research positions around the world.

11.18.3 Pg A P d

11.18.3.1 A q

Applicants must have a B.Sc. or an equivalent degree with an extensive background in the physical and biological sciences. An academic record equivalent to or better than a cumulative grade point average (CGPA) of 3.2 out of 4.0 at McGill is required for at least the two final full-time years of undergraduate training, with a minimum CGPA of 3.0 overall. All candidates are expected to apply for scholarships and fellowships, which usually require a higher CGPA or other evidence of excellence.

Applicants to graduate studies whose first language is not English must submit the results of the *GRE* and *TOEFL* examinations if they have not completed an undergraduate or graduate degree in a Canadian university or recognized foreign institution where English is the language of instruction.

Students are normally accepted into the M.Sc. program, and those candidates showing exceptional ability may be permitted to transfer into the Ph.D. program after one year of training.

Applicants who already possess an additional degree (M.Sc., M.D.) with appropriate research experience may be allowed to register in the Ph.D. program directly.

For further information, applicants may contact the Teaching Office, Department of Pathology: *gradstudies.pathology@mcgill.ca*.

11.18.3.2 A P d

McGill's online application form for graduate program candidates is available at *www.mcgill.ca/gradapplicants/apply*.

See *University Regulations & Resources* > *Graduate* > *Graduate Admissions and Application Procedures* > *: Application Procedures* for detailed application procedures.

All applications will be evaluated by the Graduate Students Committee. Candidates found suitable must then be accepted by a research director, and adequate funding must be obtained for both personal support and research expenses.

11.18.3.2.1 Ad q

- Personal Statement
- Curriculum Vitae
- Research Proposal (when appropriate)
- GRE may be required for non-Canadian applicants

11.18.3.3 A

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Pathology Department and may be revised at any time. Applicants must verify all deadlines and documentation requirements well in advance on the appropriate McGill departmental website; please consult the list at *www.mcgill.ca/gps/contact/graduate-program*.

	Application Opening Dates	Application Deadlines		
	All Applicants	**Non-Canadian citizens (incl. Special, Visiting & Exchange)**	**Canadian citizens/Perm. residents of Canada (incl. Special, Visiting & Exchange)**	**Current McGill Students (any citizenship)**
Fall Term:	Sept. 15	May 1	June 21	June 21
Winter Term:	Feb. 15	Sept. 10	Nov. 10	Nov. 10
Summer Term:	May 15	Jan. 15	April 1	April 1

Admission to graduate studies is competitive; accordingly, late and/or incomplete applications are considered only as time and space permit.

Pg 0 0 1 80.407 533.529.220.46.56

Assistant Professors

O.E. Ajise; M.D., F.C.A.P., F.R.C.P.(C)

M. Alameldin; M.D.(Alexandria), F.R.C.P.(C)

S. Albrecht; M.D.(Sher.), F.R.C.P.(C)

O. Aleynikova; M.D.(Dal.), F.R.C.P

11.19 [illegible]

11.19.1 [illegible]

Department of Pharmacology and Therapeutics
McIntyre Medical Sciences Building
3655 Promenade Sir-William-Osler, Room 1325
Montreal QC H3G 1Y6
Canada
Telephone: 514-398-3623
Fax: 514-398-2045
Email: *gradstudies.pharmacology@mcgill.ca*
Website: *www.mcgill.ca/pharma*

11.19.2 [illegible]

The Department of Pharmacology and Therapeutics offers training leading to **M.Sc.** (Thesis) and **Ph.D.** degrees.

Pharmacology is a multidisciplinary science that deals with all aspects of drugs and their interactions with living organisms. Thus, pharmacologists study the physical and chemical properties of drugs, their biochemical and physiological effects, mechanisms of action, pharmacokinetics, and therapeutic and other uses. The Department offers broad exposure and training in both basic and clinical research in a range of areas of specialty, including:

- neuropharmacology;
- reproductive pharmacology;
- endocrine pharmacology;
- receptor pharmacology;
- cardiovascular pharmacology;
- cancer;
- developmental pharmacology;
- autonomic pharmacology;
- clinical pharmacology;
- biochemical pharmacology;
- molecular biology;
- toxicology.

The present 51 full and affiliate members of the Department have research laboratories located in the McIntyre Medical Sciences Building and in a variety of hospitals, institutes, and industry including the Douglas Hospital Research Centre, Allan Memorial Institute, Montreal Children's Hospital, Montreal General Hospital, Montreal Heart Institute, Lady Davis Research Institute, Pfizer Canada, and MUHC Research Institute. The participation of researchers from both industry and government ensures the relevance of the Department's applications-oriented training programs.

section 11.19.5: Master of Science (M.Sc.) Pharmacology (Thesis) (45 credits)

The objective of the M.Sc. (Thesis) and Ph.D. degree training programs is to provide in-depth independent research experience in a specific area of pharmacology. The program leading to a master’s degree is designed to provide students the opportunity to acquire knowledge in pharmacology, to conduct a research project, to analyze data, and to write a thesis. Students will also receive essential training in research professionalism and scientific communication.

section 11.19.6: Doctor of Philosophy (Ph.D.) Pharmacology

The objective of the M.Sc. (Thesis) and Ph.D. degree training programs is to provide in-depth independent research experience in a specific area of pharmacology. The program leading to a doctoral degree is designed to provide students the opportunity to acquire knowledge in pharmacology, to conduct an original research project, to analyze data, and to write a thesis. Students will also receive essential training in research professionalism and scientific communication.

11.19.3 [illegible]

11.19.3.1 [illegible]

Candidates are required to hold a B.Sc. degree in a discipline relevant to the proposed field of study; those with the M.D., D.D.S., or D.V.M. degrees are also eligible to apply. A background in the health sciences is recommended, but programs in biology, chemistry, mathematics, and physical sciences may be acceptable.

Admission is based on a student's academic record, letters of assessment, and, whenever possible, interviews with staff members. Students are required to take the Graduate Record Examination Aptitude Test (*GRE*) and the Test of English as a Foreign Language (*TOEFL*) or the equivalent, except as follows: in accordance with McGill policy, only those whose mother tongue is English, who graduated from a recognized Canadian institution (anglophone or francophone), or who completed an undergraduate or graduate degree at a recognized foreign institution where English is the language of instruction are exempt from providing proof of competency in English.

Inquiries relating to all aspects of graduate study should be directed to the *Graduate Coordinator*, Department of Pharmacology and Therapeutics, as early as possible in each academic year.

11.19.3.2 [illegible]

McGill's online application form for graduate program candidates is available at *www.mcgill.ca/gradapplicants/apply*.

See *University Regulations & Resources* > *Graduate* > *Graduate Admissions and Application Procedures* > *: Application Procedures* for detailed application procedures.

11.19.3.2.1 [illegible]

The items and clarifications below are additional requirements set by this department:

- Curriculum Vitae
- Personal Statement
- GRE – required for degrees from outside North America

11.19.3.3 [illegible]

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Department of Pharmacology and Therapeutics and may be revised at any time. Applicants must verify all deadlines and documentation requirements well in advance on the appropriate McGill departmental website; please consult the list at *www.mcgill.ca/gps/contact/graduate-program*.

Application Opening Dates	Application Deadlines		
	Non-Canadian citizens (incl.V	Canadian citizens/Perm. residents of Canada (incl. Special, Visiting & Exchange)	Current McGill Students (any citizenship)

Professors

D. Bernard; Ph.D.(Johns Hop.)

D. Bowie; B.Sc., Ph.D.(Lond.)

P.B.S. Clarke; M.A.(Camb.), Ph.D.(Lond.)

A.C. Cuello; M.D.(Buenos Aires), M.A., D.Sc.(Oxf.), F.R.S.C.

B.F. Hales; Ph.D.(McG.)

T. Hébert; Ph.D.(Tor.)

D. Maysinger; Ph.D.(USC)

A. McKinney; Ph.D.(Ulster)

G. Multhaup; Ph.D.(Cologne)

A. Ribeiro-da-Silva; M.D., Ph.D.(Oporto)

B. Robaire; Ph.D.(McG.)

H. Saragovi; Ph.D.(Miami)

M. Szyf; Ph.D.(Hebrew)

J. Trasler; M.D.,C.M., Ph.D.(McG.)

Associate Professors

S. Nattel; M.D.,C.M.(McG.)

J. Tanny; Ph.D.(Harv.)

E. Zorychta; Ph.D.(McG.)

Assistant Professors

B. Castagner; Ph.D.(Col.)

L. Münter; Ph.D.(Free Univ., Berlin)

J.F. Trempe; Ph.D.(Oxf.)

Associate Members

M. Alaoui-Jamali; Ph.D.(Paris IV)

C. Baglole; Ph.D.(Calg.)

L. Diatchenko; M.D., Ph.D.(RNRMU)

L. Fellows; M.D., C.M.(McG.) Ph.D.(Oxf.)

S. Gauthier; M.D.(Montr.)

T. Geary; Ph.D.(Mich.)

B. Jean-Claude; Ph.D.(McG.)

B. Keiffer; Ph.D.(Strasbourg)

S. Kimmins; Ph.D.(Dal.)

S. Laporte; Ph.D.(Sher.)

C. O'Flaherty; Ph.D.(Buenos Aires)

P. Rosa-Neto; M.D.(Lisbon), Ph.D.(Aarhus)

S. Rousseau; Ph.D.(Laval)

Y. Shir; M.D.(Israel), Ph.D.(Johns Hop.)

L. Stone; Ph.D.(Minn.)

M. Ware; M.B.B.S.(West Indies)

T. P. Wong; Ph.D.(McG.)

Adjunct Professors

B. Allen, B. Boivin, S. Chemtob, Y. De Koninck, G. FitzHarris, J. S. Joyal, T. Sanderson

Affiliate Members

M. Boucher; Ph.D.(Montr.)

section 11.20.5: Master of Science (M.Sc.) Physiology (Thesis) (45 credits)

11.20.3.2 Application Procedures

McGill's online application form for graduate program candidates is available at *www.mcgill.ca/gradapplicants/apply*.

See *University Regulations & Resources* > *Graduate* > *Graduate Admissions and Application Procedures* > *: Application Procedures* for detailed application procedures.

Applications should be submitted as early as possible in order to facilitate processing. However, no applications will be considered after the application deadlines.

11.20.3.2.1 Additional Requirements

The items and clarifications below are additional requirements set by this department:

- Curriculum Vitae
- Personal Statement
- GRE and TOEFL – for applicants whose undergraduate degree is not from a North American university
- List of supervisor preferences

11.20.3.3 Application Deadlines

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Physiology Department and may be revised at any time. Applicants must verify all deadlines and documentation requirements well in advance on the appropriate McGill departmental website; please consult the list at *www.mcgill.ca/gps/contact/graduate-program*.

Application Opening Dates	Application Deadlines		
A Tmhange)	**Non-Canadian citizens (incl. Special, Visiting & Exchange)**	**Canadian citizens/Perm. residents of Canada (incl. Special, Visiting & Exchange)**	**Current McGill Students (any citizenship)**

Professors

Monroe W. Cohen; B.Sc., Ph.D.(McG.)

Ellis J. Cooper; B.Eng.(Sir G. Wms.), M.Sc.(Surr.), Ph.D.(McM.)

Kathleen Cullen; B.Sc.(Brown), Ph.D.(Chic.)

Leon Glass; B.S.(Brooklyn), Ph.D.(Chic.) (*Rosenfeld Professor of Medicine*) (*joint appt. with Medicine*)

Phil Gold; C.C., B.Sc., M.Sc., Ph.D., M.D.,C.M.(McG.), F.R.C.P.(C), F.R.S.C. (*Douglas G. Cameron Professor of Medicine*) (*joint appt. with Medicine*)

John Hanrahan; Ph.D.(Br. Col.)

Gergely Lukacs; M.D., Ph.D.(Budapest)

Michael Mackey; B.A., Ph.D.(Wash.) (*Drake Professor of Medicine*)

Sheldon Magder; M.D.(Tor.) (*joint appt. with Medicine*)

Jacopo P. Mortola; M.D.(Milan)

John Orlowski; B.Sc.(McG.), M.Sc., Ph.D.(Qu.) (*James McGill Professor*)

Premsyl Ponka; M.D., Ph.D.(Prague) (*joint appt. with Medicine*)

Alvin Shrier; B.Sc.(C'dia), Ph.D.(Dal.) (*Hosmer Professor of Physiology*)

John White; B.Sc., M.Sc.(Car.), Ph.D.(Harv.) (*joint appt. with Medicine*)

Associate Professors

Maurice Chacron; Ph.D.(Ott.)

Erik Cook; Ph.D.(Baylor Coll., Tx)

Mladen Glavinovic; B.Sc.(Zagreb), M.Sc.(Tor.), Ph.D.(McG.)

Michael Guevara; Ph.D.(McG.)

Russell Jones; Ph.D.(Tor.)

Ursula Stochaj; Ph.D.(Cologne)

Assistant Professors

Claire Brown; B.Sc.(St. Mary's), Ph.D.(W. Ont.)

Gil Bub; B.Sc., Ph.D(McG.)

Anmar Khadra; B.Sc.(C'dia), M.Sc., Ph.D.(Wat.)

Connie Krawczyk; B.Sc.(Guelph), Ph.D.(Tor.) (*joint appt. with Microbiology & Immunology*)

Arjun Krishnaswamy; B.Sc. Ph.D.(McG.)

Judith Natalia Mandl; B.Sc.(Warw.), Ph.D.(Emory)

Anastasia Nijnik; M.Biochem., Ph.D.(Oxf.)

Masha Prager-Khoutorsky; B.Sc., Ph.D.(Hebrew)

Reza Sharif-Naeini; B.Sc.(Montr.), M.Sc., Ph.D.(McG.)

Melissa Vollrath; B.Sc.(Wisc.), Ph.D. (Baylor Coll., Houston)

Associate Members

Anaesthesia: Steven Backman

Biomedical Engineering: Robert Kearney

Associate Members

Neurology and Neurosurgery: Jack Antel, Massimo Avoli, Daniel Guitton, Christopher Pack, David Ragsdale, Ed Ruthazer, Amir Shmuel, Jesper Sjöström

Ophthamology: Curtis Baker

Otolaryngology: Bernard Segal

Pediatrics: Charles Rohlicek

Pharmacology and Therapeutics: Daniel Bernard, Terence Hebert

Psychiatry: Nicolas Cermakian, Bernardo Dubrovsky

Research in Neuroscience: Charles Bourque, Sal. T. Carbonetto

Adjunct Professors

P. Haghighi, J. Martinez-Trujillo

Associate Professor Post-Retirement

Ann Wechsler; B.A.(Tor.), M.Sc., Ph.D.(McG.)

PHGY 602	(2)	Literature Search and Research Proposal
PHGY 604	(0)	Responsible Conduct in Research
PHGY 607	(3)	Laboratory Research 1
PHGY 608	(3)	Laboratory Research 2

[illegible]

6 credits to be chosen from the following:

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics

11.20.8 [illegible] (PhD) Physiology

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] (18 hours)

PHGY 604	(0)	Responsible Conduct in Research
PHGY 701	(0)	Ph.D. Comprehensive Examination
PHGY 703	(1)	Ph.D. Progress Seminar 1
PHGY 704	(1)	Ph.D. Progress Seminar 2
PHGY 720	(1)	Ph.D. Seminar Course 1
PHGY 721	(1)	Ph.D. Seminar Course 2
PHGY 722	(1)	Ph.D. Seminar Course 3
PHGY 723	(1)	Ph.D. Seminar Course 4
PHGY 724	(1)	Ph.D. Seminar Course 5
PHGY 725	(1)	Ph.D. Seminar Course 6

[illegible] (9 hours)

9 credits of Physiology or Science at the 500 level or above, in consultation with the GSAAC and the candidate's supervisor.

11.20.9 [illegible] (PhD) Physiology [illegible]

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to kno

BINF 621	(3)	Bioinformatics: Molecular Biology
BMDE 652	(3)	Bioinformatics: Proteomics
BTEC 555	(3)	Structural Bioinformatics
COMP 618	(3)	Bioinformatics: Functional Genomics

11.20.10 [illegible]

The Graduate Option in Chemical Biology is centered on the pursuit of an original research project under the direction of one or more program mentors. This research training is augmented by student participation in lecture and seminar courses and in a series of thematic workshops, all of which are designed to expose students to the diverse approaches and research issues that characterize the current state of the field. Students with training in this interdisciplinary approach will be highly qualified to seek careers in academic research as well as the pharmaceutical and biotechnology industries.

[illegible]

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

[illegible] [illegible]

BIOC 610	(1)	Seminars in Chemical Biology 1
BIOC 611	(1)	Seminars in Chemical Biology 3
BIOC 689	(1)	Seminars in Chemical Biology 2
BIOC 690	(1)	Seminars in Chemical Biology 4
PHGY 604	(0)	Responsible Conduct in Research
PHGY 701	(0)	Ph.D. Comprehensive Examination
PHGY 703	(1)	Ph.D. Progress Seminar 1
PHGY 704	(1)	Ph.D. Progress Seminar 2
PHGY 720	(1)	Ph.D. Seminar Course 1
PHGY 721	(1)	Ph.D. Seminar Course 2
PHGY 722	(1)	Ph.D. Seminar Course 3
PHGY 723	(1)	Ph.D. Seminar Course 4
PHGY 724	(1)	Ph.D. Seminar Course 5

[illegible] [illegible]

6 credits from the following:

CHEM 502	(3)	Advanced Bio-Organic Chemistry
CHEM 503	(3)	Drug Discovery
PHAR 503	(3)	Drug Discovery and Development 1

11.21 [illegible]

11.21.1 [illegible]

Department of Psychiatry
1033 Pine Avenue West
Montreal QC H3A 1A1
Canada

Telephone: 514-398-4176
Fax: 514-398-4370
Email: *graduate.psychiatry@mcgill.ca*
Website: *www.mcgill.ca/psychiatry*

11.21.2 About Psychiatry

McGill University's Department of Psychiatry is one the most prestigious in the world. In the 1950s and 60s, Heinz Lehmann conducted the first North American clinical trials for antipsychotic and antidepressant medications. Theodore Sourkes identified the core neurobiological features of Parkinson's disease, and Eric Wittkower and Jack Fried brought together scholars from Anthropology and Psychiatry to create Transcultural Psychiatric Studies. Since then, faculty members and graduate students continue outstanding research in addictions; Alzheimer's and childhood disorders; eating, personality, and mood disorders; stress; trauma; and psychosis. The work is conducted in people and animal models, and also benefits from expertise ranging from neuroimaging and epigenetics to mental health services and public policy. Our work remains at the cutting edge of research on health, disease, and recovery.

section 11.21.5: Master of Science (M.Sc.) Psyc

Professors

L.J. Kirmayer; B.Sc., M.D.,C.M., Dipl.Psych.(McG.) (*James McGill Professor*)

E. Latimer; B.A.Sc.(Wat.), M.S., Ph.D.(Carn. Mell)

M. Lepage; B.A.(C'dia), Ph.D.(UQAM)

M. Leyton; Ph.D.(C'dia) (*William Dawson Scholar*)

G. Luheshi; Ph.D.(Newcastle, UK)

A. Malla; M.B.B.S.(Panjab)

M.J. Meaney; B.A.(Loyola), M.A., Ph.D.(C'dia) (*James McGill Professor*)

V.N.P. Nair; M.B., B.S.(Kerala), D.P.M.(Mys.)

R. Palmour; B.A., Ph.D.(Texas)

J. Paris; M.D.,C.M.(McG.)

J.C. Perry; M.D.(Duke)

R.O. Pihl; B.A.(Lawrence), Ph.D.(Ariz.) (*Psychology*)

J. Poirier; Ph.D.(Montr.)

R. Quirion; M.Sc., Ph.D.(Sher.)

C. Rousseau; M.Sc.(McG.), M.D.,C.M.(Sher.)

L.K. Srivastava; B.Sc., M.Sc.(Allahabad), Ph.D.(J. Nehru)

H. Steiger; Ph.D.(McG.)

B. Thombs; B.A.(N'western), M.A.(Ariz.), Ph.D.(NYU)

G. Turecki; M.Sc., M.D.,C.M., Ph.D.(McG.) (*William Dawson Scholar*)

C.-D. Walker; B.Sc., Ph.D.(Geneva)

A. Young; B.A., M.A., Ph.D.(Penn.)

Associate Professors

J. Armony; B.Sc.(Buenos Aires), M.Sc., Ph.D.(NYU)

P. Assalian; Dip.Psychol.(McG.), M.B.,Ch.B.(Cairo)

S. Beaulieu; M.D./Ph.D.(Laval)

M. Berlim; M.Med., M.D.(Rio Grande do Sul)

V. Bohbot; B.A.(McG.), M.A., Ph.D.(Ariz.)

M.J. Brouillette; M.D.,C.M.(Sher.)

J. Caron; B.A., M.A.(Moncton), Ph.D.(UQAM)

N. Casacalenda; M.D.(Sher.), F.R.C.P.

E. Chachamovich; M.D.(Rio Grande do Sul), Ph.D.(Edin.)

D. Charney; M.D.,C.M.(McG.)

J.B. Debruille; M.D.(Paris XI), Ph.D.(Paris VI)

D. Dunkley; B.Sc.(Tor.), Ph.D.(McG.)

F. Elgar; M.Sc.(Nfld.), Ph.D.(Dal.)

P. Étienne; M.D.(Liege)

C. Fichten; B.Sc.(McG.), M.Sc.(C'dia), Ph.D.(McG.)

C. Flores; B.Sc., M.A., Ph.D.(C'dia)

D. Frank; Dip.Psychol., M.D.,C.M.(McG.)

R. I. Fraser; M.D.(Dal.)

G. Galbaud du Fort; M.D., Ph.D.(Paris) (*joint appt. with Epidemiology and Biostatistics*)

Associate Professors

K.G. Gill; B.Sc.(Br. Col.), M.A., Ph.D.(C'dia)

G. Gobbi; M.D.(Rome), Ph.D.(Cagliari)

I. Gold; Ph.D.(Princ.)

A. Granich; M.D.(McG.), F.R.C.P.

B. Greenfield; M.D.(Wash.)

N. Grizenko; M.D.,C.M.(Sher.)

D. Groleau; B.Sc., M.Sc., Ph.D.(Montr.)

R. Gruber; B.A., M.S., Ph.D.(Tel Aviv)

K. Igartua; M.D.,C.M. F.R.C.P

Associate Professors

S. Williams; Ph.D.(Montr.)

G. Wiviott; B.Sc.(Wisc.), Gr.Dip.Psychiat.(McG.), M.D.,C.M.(NYU)

T.P. Wong; B.Sc., M.Ph.(HK), Ph.D.(McG.)

P. Zelkowitz; Ph.D.(McG.)

M. Zoccolillo; B.Sc.(New Orleans), M.D.(Norfolk)

Assistant Professors

L. Amirali; M.D.(Athens)

D. A

Assistant Professors

H. Dymetryszyn; Ph.D.

M. Elie; B.Sc., M.D.,C.M.(McG.)

M. Elsabbagh; Ph.D.(Qu.)

C.P. Ernst; B.Sc.(McG.), M.Sc.(Br. Col.), Ph.D.(McG.)

J. Errunza; M.D.(McG.)

K. Faridi; M.D.(Calg.)

K. Fathalli; M.D.(Tunis)

A. Fielding; M.D.,C.M.(McG.)

E. Foley; B.Sc.(Tor.)

J. Friedland; M.D.(Calg.)

G. Gagnon

M. Gauthier; M.D.,C.M.(Montr.)

K. Geagea; M.D.,C.M.(SJU)

M.-C. Geoffroy; Ph.D.(Montr.)

J. Glass; B.A.(Boston), M.D.,C.M.(McG.)

K. Goddard; M.D.,C.M.(Manit.)

M. Grignon; B.A.(Montr./Ott.), M.A.(Ott.)

P. Habib; M.D.(Beirut Med. Sch.)

M. Habra; B.A.(McG.), M.A., Ph.D.(Br. Col.)

B. Hayton; B.A.(Williams), M.D.,C.M.(McG.)

L. Hoffman; M.D.(McG.)

F. Ianni; B.Sc.(McG.), M.D.,C.M.(Montr.)

H. Iskandar; Dip.Psychol.(McG.), M.B.,Ch.B.(Alexandria)

S. Iyer; M.A.(Mumbai), Ph.D.(Nebraska–Lincoln)

C. Jolicoeur; M.D.,C.M.(Laval)

J. Joly; M.D.,C.M.(McG.)

M. Kapuscinska; M.D.,C.M.(Medical U. Gdansk)

S. Karama; Ph.D.(Montr.)

F. Key

M. Koch; M.D.(McM.)

T. Kolivakis; M.D.(Athens)

R. Kronick; M.D.(McG.)

R. Kuyumjian; M.D.,C.M.(McG.)

P. Lageix; B.Sc., M.D.,C.M.(Paris IV)

S. Lamarre; B.A., M.D.,C.M.(Laval)

M. Laporta; Dip.Psychol., M.D.,C.M.(McG.)

L. Laporte; B.A.(McG.), M.Psychol., Ph.D.(Montr.)

M. Larose; M.D.(Laval)

M. Lashley; Ph.D.(McG.)

J.D. Leccia; M.D.(Provence Aix-Marseille)

E. Levy; Gr.Dip.Psychiat.(McG.), M.Ed.(Sher.)

E. Libman; B.A., M.Sc., Ph.D.(McG.)

Assistant Professors

E. Lizondo; M.D.,C.M.(Nat. Univ. Central Buenos Aires)

G.L. Low; B.A.(Qu.), Dip.Psychol.(McG.), M.D.,C.M.(Ott.)

N.C.P. Low; M.D., M.Sc.(McG.)

W. Ma; M.D., M.Sc.(Tongji), Ph.D.(McG.)

S. K. Margolese; Ph.D.

R. Martins; Ph.D.(Montr.)

N. Masrouha; M.D.(Sher.)

T. Measham; B.Sc., M.D.(McG.)

X. Meng; Ph.D.

M. Messier; B.A.(Montr.), M.B.A.(HEC)

G. Meterissian; Gr.Dip.Psychiat.(McG.), M.D.,C.M.(Montr.)

T.M. Milroy; B.Sc., M.D.,C.M.(Md.), Gr. Dip. Psychiat.(McG.)

M. Miresco; M.D.,C.M.(McG.)

J.P. Near; Ph.D.(W. Ont.)

T. V. Nguyen; M.D.

K. O'Donnell; Ph.D.(Imp. Coll. Lon.)

J.A. O'Neil; B.A.(C'dia), Dip.Psychol., M.D.,C.M.(McG.)

M.A. Ouimet; D.M.D.(Sher.), Gr.Dip.Psychiat.(McG.)

M. Piat; Ph.D.(Laval)

L. Pinard; M.D.(Montr.), F.R.C.P.(C)

Z. Prelevic; Dip.Psychol.(McG.), M.D.,C.M.(Belgrade)

M. Rabinovitch; B.Sc., M.D.,C.M.(McG.)

S. Rej; M.D., M.Sc.(McG.)

S.B. Rosenbloom; B.A.(C'dia), M.A.(York)

C. Roy; B.Sc.(McG.), M.D.,C.M.(Dal.)

J. Russell; Ph.D.(McG.)

T. Said; B.Sc.(McG.), M.D.,C.M.(Sher.)

H. Schwartz; M.D.(McG.)

M. Segal; B.A.(C'dia), B.Sc.(O.T.)(McG.), M.D.,C.M.(Ott.)

J. Seguin; B.A., B.Sc., M.D.,C.M.(Ott.)

T. Semeniuk; B.Sc., M.Ed., M.D.,C.M.(Alta.)

J. Shah; M.Sc.(Lond.), M.D.(T

Assistant Professors

L. Tourian; M.D.(McG.)

A. Traicu; M.D.(McG.)

J. Tremblay; B.A.(Montr.), M.Sc.(McG.), M.D.,C.M.(Montr.)

F. van den Eynde; M.A.(Florence), Ph.D.(King's College), M.D.(Ghent)

S. Vida; B.Sc.(Ott.), M.D.,C.M.(McG.)

- Interview session – Students applying to the concentration in Surgical Education or in Surgical Innovation may be requested to attend an interview session either in person, by phone, or via Skype.

11.22.3.3 A[redacted]

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by Experimental Surgery and may be revised at any time. Applicants must verify all deadlines and documentation requirements well in advance on the appropriate McGill departmental website; please consult the list at *www.mcgill.ca/gps/contact/graduate-program*.

	Application Opening Dates	**Application Deadlines**		
	All Applicants	**Non-Canadian citizens (incl. Special, Visiting & Exchange)**	**Canadian citizens/Perm. residents of Canada (incl. Special, Visiting & Exchange)**	**Current McGill Students (any citizenship)**
Fall Term:	Sept. 15	April 30	June 15	June 15
Winter Term*:	Feb. 15	Sept. 1	Nov. 1	Nov. 1
Summer Term:	N/A	N/A	N/A	N/A

** Application to the Graduate Certificate in Surgical Innovation is only available for the Fall term.*

Admission to graduate studies is competitive; accordingly, late and/or incomplete applications are considered only as time and space perm; ac4.9cls 1

Professors

P. Metrakos; B.Sc., M.D.(McG.), F.R.C.S.(C)

D.S. Mulder; M.D.(Sask.), M.Sc.(McG.)

A. Philip; M.Sc., Ph.D.(McG.)

L. Rosenberg; M.Sc., M.D., Ph.D.(McG.)

D. Shum-Tim; M.Sc., M.D.,C.M.(McG.)

R. St. Arnaud; Ph.D.(Laval)

T. Taketo-Hosotani; B.Sc., M.Sc., Ph.D.(Kyoto)

M. Tanzer; M.D.,C.M.(McG.), F.R.C.S.(C)

C.I. Tchervenkov; B.Sc., M.D.,C.M.(McG.), F.R.C.S.(C)

J.I. Tchervenkov; M.D.,C.M.(McG.), F.R.C.S.(C)

R. Turcotte; M.D.(Montr.)

Associate Professors

M. Basik; M.D.,C.M., M.Sc.(McG.)

S. Bergman; M.Sc., M.D.,C.M.(McG.), F.R.C.S.(C)

O. Blaschuk; B.Sc.(Winn.), M.Sc.(Manit.), Ph.D.(Tor.)

R. Cecere; M.D.,C.M., B.Sc.(McG.), F.R.C.S.(C), A.B.S., F.A.C.S.

D. Fleiszer; B.Sc., M.D.,C.M.(McG.)

S. Fraser; B.Sc., M.D.(Tor.), M.Sc.(McG.), F.R.C.S.(C)

M. Gilardino; M.D.,C.M., M.Sc.(McG.), F.R.C.S.(C), F.A.C.S.

L. Haglund; B.Sc., Ph.D.(Lund)

K.J. Lachapelle; M.Sc., M.D.,C.M.(McG.)

J. Lapointe; M.D., Ph.D.(Laval)

L. Lessard; B.Sc., M.D.(Laval), F.R.C.S.(C)

A. Meguerditchian; M.D., M.Sc.(Montr.), F.R.C.S., F.A.C.S.

C. O'Flaherty; D.V.M., Ph.D.(Buenos Aires)

S. Paraskevas; M.D., Ph.D.(Laval)

P. Puligandla; M.D., M.Sc.(W. Ont.), F.R.C.S.(C)

J. Sampalis; M.Sc., Ph.D.(McG.)

T. Steffen; M.D.(Switz.), Ph.D.(McG.)

A. Thomson; Ph.D.(Lond.)

D. Zukor; B.Sc., M.D.,C.M.(McG.)

Assistant Professors

A. Dragomir; M.Sc., Ph.D.(Montr.)

J. Faria; M.D.,C.M., M.Sc.(McG.), F.R.C.S.(C)

J. Fiore; M.Sc.(Fed. U. Sao Paulo), Ph.D.(Melb.)

L. Haglund; B.Sc., Ph.D.(Lund)

O. Huk; B.Sc., M.D.,C.M.(McG.), M.Sc.(Montr.)

P. Jarzem; B.Sc., M.D.(Qu.)

E. Lee; B.A.(Boston), M.Sc., Ph.D.(McG.)

K. Mackenzie; B.Sc.(Br. Col.), M.D.,C.M.(McG.), F.R.C.S.(C)

E. Mitmaker; M.D.(TJU), M.Sc.(McG.), F.R.C.S.(C)

Assistant Professors

M. Petropavlovskaia; M.Sc., Ph.D.(Moscow)

N. Saran; M.D., B.Sc.(Br. Col.)

K. Shaw; M.D.,C.M., M.Sc.(McG.)

Associate Members

M.N. Burnier

M. Cantarovich

J.C. Chen

F. Cury

C.E. Ferland-Legault

P. Goldberg

A. Gursahaney

J. Henderson

D. Juncker

S. Komarova

J.J. Lebrun

N.M. Makhoul

S. Mayrand

M. Murshed

P.H-N. Nguyen

S. Prakash

L.A. Stein

M. Tabrizian

B.M. Willie

Professor of Practice

S. Arless; B.Sc.(McG.)

11.22.5 [illegible] ge y (45)

The M.Sc. in Experimental Surgery offers a graduate-level training program in experimental surgery, leading to a Master's degree. This program allows for a hands-on learning experience for students to develop skills necessary to work within multidisciplinary teams in the creation of novel, needs driven, and marketable prototypes used in development of novel surgical and medical devices. As such participants work in multidisciplinary teams. The program offers both specialized and broad-based training through the use of the most recent techniques in molecular biology, biochemistry, pharmacology, physiology, pathology, bio-informatics, and genomics.

[illegible] e(30)

EXSU 690	(4)	M.Sc. Research 1
EXSU 691	(4)	M.Sc. Research 2
EXSU 692	(4)	M.Sc. Research 3
EXSU 693	(18)	M.Sc. Thesis

[illegible] e(12)

EXSU 601	(6)	Knowledge Management
EXSU 605	(3)	Biomedical Research Innovation

And:

3 credits from the following:

EDPE 575	(3)	Statistics for Practitioners
EPIB 507	(3)	Biostats for Health Sciences
EXSU 606	(3)	Statistics for Surgical Research

[illegible] (3 [illegible])

3 credits, taken from 500, 600, or 700 level courses in consultation with the Research Advisory Committee.

Depending on their individual background, students may be asked by their Research Supervisory Committee to take additional courses.

11.22.6 [illegible] [illegible] (45 [illegible])

The M.Sc. in Experimental Surgery, Concentration in Global Surgery, emphasizes health care needs specifically within the surgical field in resource-limited settings. It comprises three main pillars: research, education, and mentorship. Through extensive research work, students will participate in the design and implementation of innovative approaches in surgical care and injury surveillance, advancing the surgical capacities in low and middle income countries. Students will also participate in global surgery academic activities with professionals from partner countries and Canada to engage in learning and knowledge transfer experience through training and courses. Students choosing this option will have the opportunity to engage in international research projects including injury epidemiology surveillance and assessment of surgical access through the study of databases. The thesis must be relevant to global surgery.

[illegible] (30 [illegible])

EXSU 690	(4)	M.Sc. Research 1
EXSU 691	(4)	M.Sc. Research 2
EXSU 692	(4)	M.Sc. Research 3
EXSU 693	(18)	M.Sc. Thesis

[illegible] (12 [illegible])

EPIB 507	(3)	Biostats for Health Sciences
EPIB 521	(3)	Regression Analysis for Health Sciences

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3 m427.52725953m569..48725953l569..487603l427.527603lhfgBT1 0 0 1 27.527363673 TmFr

EXSU 690	(4)	M.Sc. Research 1

EDPH 689	(3)	Teaching and Learning in Higher Education
EXSU 603	(3)	Skills Acquisition and Performance
EXSU 605	(3)	Biomedical Research Innovation

EXMD 610	(3)	Molecular Methods in Medical Research
EXSU 620	(3)	Surgical Innovation 1
EXSU 621	(3)	Surgical Innovation 2
EXSU 623	(6)	Surgery Research Project 2
EXSU 684	(3)	Signal Transduction
FMED 619	(3)	Program Management in Global Health & Primary Health Care
PHGY 517	(3)	Artificial Internal Organs
PHGY 518	(3)	Artificial Cells
		Molecular Ph

EXSU 605	(3)	Biomedical Research Innovation
EXSU 620	(3)	Surgical Innovation 1
EXSU 621	(3)	Surgical Innovation 2

And:

3 credits from the following:

EDPE 575	(3)	Statistics for Practitioners
EPIB 507	(3)	Biostats for Health Sciences
EXSU 606	(3)	Statistics for Surgical Research

[illegible] (3 credits)

3 credits at the 500 level or higher, chosen in consultation with the program director.

Some courses may be substituted with equivalents if timetabling requires it.

11.22.12 [illegible] (30 credits)

The cores of this 30-credit program are two-fold. Firstly, two innovation courses are offered by the McGill Department of Experimental Surgery (EXSU 620-Surgical Innovation & 621-Surgical Innovation 2) and supporting courses are delivered by the McGill Department of Surgery with some sessions in those courses provided by external partners: Local Industry (Regulatory & IP), the John Molson School of Business (JMSB) (lean start-up), Concordia University (software design), and L'École de technologie supérieure (ETS) (prototyping). Secondly, fundamental business and management courses provided by the School of Continuing Studies (McGill) and JMSB are taken concurrently and reinforce the innovation project team experience. Students embark on a hospital-based needs finding process by observing all aspects of clinical activity in their focus themes. The trainees learn basic prototyping skills, start-up organization, and project management. This is supplemented by a basic statistics course and an introduction to the current status of biomedical research innovation. This graduate diploma then gives a business-oriented training in the surgical innovation process.

[illegible] (15 credits)

12 credits in:

CORG 556	(3)	Managing and Engaging Teamwork
EXSU 605	(3)	Biomedical Research Innovation
EXSU 620	(3)	Surgical Innovation 1
EXSU 621	(3)	Surgical Innovation 2

And:

3 credits from the following:

EDPE 575	(3)	Statistics for Practitioners
EPIB 507	(3)	Biostats for Health Sciences
EXSU 606	(3)	Statistics for Surgical Research

[illegible] (9 credits)

CACC 520	(3)	Accounting for Management
CMR2 542	(3)	Marketing Principles and Applications
CPL2 510	(3)	Communication and Networking Skills

Or:

9 credits of graduate-level courses taken at Concordia University, chosen in consultation with the program director/adviser.

[illegible]

6 credits at the 500 lever or higher, taken in consultation with the program director/adviser.

Some courses may be substituted with equivalents at the 500 level or higher if timetabling or background of the student requires it, e.g., prior qualification in accounting.