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

1 . McGill University reserves the right to mak

1 Dean©sWelcome

To Graduate Students and Postdoctoral Fello

3 Impor tant Dates 2017±2018

For all dates relating to the academic year, consult *www.mcgill.ca/importantdates*.

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 in

i. Postdocs have the same pertinent rights as the ones granted to McGill students in the *Handbook on Student Rights and Responsibilities* ("Green Book"), available at *www.mcgill.ca/secretariat/policies/students*.

ii. Postdocs have full graduate student borrowing privileges in McGill libraries through their identity card.

iii. As a rule, Postdocs who are Canadian citizens or who have Permanent Resident status may take courses for credit. Admission to such courses should be sought by submitting application documents directly to the appropriate program by the Postdoc. They must be admitted by the department offering the courses as Special Students. These Postdocs may only be enrolled as part-time students in non-degree granting programs. They will be charged fees for these courses.

iv. Postdocs may be listed in the ate stuF.Nors

Approved by Senate, April 2000; revised May 2014

8.3 Vacation Policy for Graduate Students and Postdocs

Graduate students and Postdocs should normally be entitled to vacation leave equivalent to university holidays and an additional total of fifteen (15) working days in the year. Funded students and Postdocs with fellowships and research grant stipends taking additional vacation leave may have their funding reduced accordingly.

Council of FGSR April 23, 1999

8.4 Leave of Absence for Health and Parental/Familial Reasons

A leave of absence may be granted for maternity or parental reasons or for health reasons (see *University Regulations & Resources* > *Graduate* >

- 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 facilities);
- the individual must arrange for basic health insurance coverage prior to arrival at McGill and may be required to provide proof of coverage.

9 Graduate Studies Guidelines and Policies

Refer to *University Regulations & Resources* > *Graduate* > *: Guidelines and Policies* for information on the following:

- Guidelines and Regulations for Academic Units on Graduate Student Advising and Supervision
- Policy on Graduate Student Research Progress Tracking
- Ph.D. Comprehensives Policy
- Graduate Studies Reread Policy
- Failure Policy
- Guideline on Hours of Work

10 Information on Research Policies and Guidelines, Patents, Postdocs, Associates, Trainees

Refer to *University Regulations & Resources* > *Graduate* > *: Research Policy and Guidelines, Patents, Postdocs, Associates, Trainees* for information on the following:

- Policy on Research Ethics
- Regulations on Research Policy
- Policy on Research Integrity
- Guidelines for Research Involving Human Subjects
- Guidelines for Research with Animal Subjects
- Policy on Intellectual Property
- Regulations Governing Conflicts of Interest
- Safety in Field Work
- Office of Sponsored Research
- Postdocs
- Research Associates

11 Browse Academic Units & Programs

The programs and courses in the following sections have been approved for the 2017–2018 session as listed. The Faculty/School reserves the right to introduce changes as may be deemed necessary or desirable at any time throughout the year.

11.1 Atmospheric and Oceanic Sciences

11.1.1 Location

Department of Atmospheric and Oceanic Sciences
Burnside Hall
805 Sherbrooke Street West, Room 945

section 11.1.7: Doctor of Philosophy (Ph.D.) Atmospheric and Oceanic Sciences

in Dorval, Quebec. Students who do not choose to continue in academia find employment in a variety of areas including research careers at government labs such as Environment & Climate Change Canada.

11.1.3 Atmospheric and Oceanic Sciences Admission Requirements and Application Procedures

11.1.3.1 Admission Requirements

Applicants for the M.Sc. program must meet the general requirements of Graduate and Postdoctoral Studies and hold a bachelor's degree with high standing in atmospheric and oceanic science, physics, mathematics, engineering, or similar.

The normal requirement for admission to the Ph.D. program is a strong background in meteorology, physical oceanography, or related disciplines such as mathematics, physics, and engineering. Many students will have an M.Sc. degree in one of these fields, although this is not a formal requirement. Students without a master's degree in atmospheric science (meteorology) or physical oceanography will enter at the Ph.D. 1 rather than the Ph.D. 2 level, and devote the first year of the program mainly to coursework.

Inquiries should be addressed directly to the *Student Affairs Coordinator*, Department of Atmospheric and Oceanic Sciences; see the *department's website* for more information.

11.1.3.2 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.

11.1.3.2.1 Additional Requirements

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

- Acceptance by a research supervisor – required for Ph.D. program

11.1.3.3 Application Dates and Deadlines

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 Atmospheric and Oceanic Sciences 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	Feb. 28	Feb. 28	Feb. 28
Winter Term:	Feb. 15	Sept. 10	Sept. 15	Sept. 15
Summer Term:	N/A	N/A	N/A	N/A

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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.

11.1.4 Atmospheric and Oceanic Sciences Faculty

Chair

J.R. Gyakum

Emeritus Professors

J.F. Derome; B.Sc., M.Sc.(McG.), Ph.D.(Mich.), F.R.S.C.

H.G. Leighton; B.Sc., M.Sc.(McG.), Ph.D.(Alta.)

Emeritus Professors

L.A. Mysak; C.M., B.Sc.(Alta.), M.Sc.(Adel.), A.M., Ph.D.(Harv.), F.R.S.C. (*Canada Steamship Lines Professor of Meteorology*)

I. Zawadzki; B.Sc.(Buenos Aires), M.Sc., Ph.D.(McG.), F.R.S.C.

Professors

P. Ariya; B.Sc., Ph.D.(York) (*James McGill Professor*) (*joint appt. with Chemistry*)

P. Bartello; B.S.c., M.Sc., Ph.D.(McG.)

J.R. Gyakum; B.Sc.(Penn. St.), M.Sc., Ph.D.(MIT)

M.K. Yau; S.B., S.M., Sc.D.(MIT) (*NSERC/Hydro-Québec Industrial Research Chair in Short-term Forecasting of Precipitation*)

Associate Professors

F. Fabry; B.Sc., M.Sc., Ph.D.(McG.) (*joint appt. with McGill School of Environment*)

D. Kirshbaum; B.Sc.(Ill.), M.Sc.(Johns Hop.), Ph.D.(Wash.)

D. Straub; B.Sc., M.Sc.(SW Louisiana), Ph.D.(Wash.)

B. Tremblay; B.Sc., M.Sc.(Car.), Ph.D.(McG.)

Assistant Professors

C. Dufour; B.Eng.(ISITV, France), M.Sc.(Sud Toulon-Var), Ph.D.(Grenoble)

Y. Huang; B.Sc., M.Sc.(Peking), Ph.D.(Princ.)

T. Merlis; B.Sc.(Col.), Ph.D.(Calif. Tech.)

T. Preston; B.Sc.(Tor.), M.Sc.(W. Ont.), Ph.D.(Br. Col.) (*joint appt. with Chemistry*)

A. Zuend; Ph.D.(ETH Zurich)

Adjunct Professors

L. Barrie; Ph.D.(Goethe)

A. Dastoor; Ph.D.(Indian IT)

L. Fillion; Ph.D.(McG.)

P. Gauthier; Ph.D.(McG.)

P. Kollias; Ph.D.(Miami)

H. Lin; Ph.D.(McG.)

D. Matthews; Ph.D.(Vic., BC)

J. Palter; B.Sc., Ph.D.(Duke)

S.-W. Son; Ph.D.(Penn.)

11.1.5 Master of Science (M.Sc.) Atmospheric and Oceanic Sciences (Thesis) (45 credits)

The M.Sc. degree requires a minimum of 45 credits, up to a maximum of 51 credits. The program includes from 9 to 27 credits of coursework (depending on the student's background).

Thesis Cour ses (24 credits)

ATOC 691	(3)	Master's Thesis Literature Review
ATOC 692	(6)	Master's Thesis Research 1
ATOC 694	(3)	Master's Thesis Progress Report and Seminar
ATOC 699	(12)	Master's Thesis

Students registered in M.Sc. programs are expected to regularly attend both the student seminar series (ATOC 751D1/D2 or ATOC 752D1/D2) and the Department seminar series during the entire period of their enrolment in the program.

Complementary Courses (21 credits)

Must complete or have completed the following courses or equivalent:

ATOC 512	(3)	Atmospheric and Oceanic Dynamics
ATOC 513	(3)	Waves and Stability
ATOC 515	(3)	Turbulence in Atmosphere and Oceans
ATOC 519*	(3)	Advances in Chemistry of Atmosphere
ATOC 521	(3)	Cloud Physics
ATOC 525	(3)	Atmospheric Radiation
ATOC 530	(3)	Paleoclimate Dynamics
ATOC 531	(3)	Dynamics of Current Climates
ATOC 540	(3)	Synoptic Meteorology 1
ATOC 541	(3)	Synoptic Meteorology 2
ATOC 568	(3)	Ocean Physics
ATOC 626	(3)	Atmospheric/Oceanic Remote Sensing
ATOC 646	(3)	Mesoscale Meteorology
CHEM 519*	(3)	Advances in Chemistry of Atmosphere

* Students may select either ATOC 519 or CHEM 519.

Or other courses at the 500 level or higher recommended by the Department's Graduate Program Director.

Students with a strong background in atmospheric or oceanic science, or a Diploma in Meteorology, will take at least the 7-credit minimum. Students with no previous background in atmospheric or oceanic science must take the 20-credit maximum.

11.1.6 Master of Science (M.Sc.) Atmospheric and Oceanic Sciences (Thesis): Environment (45 credits)

** This program is currently not offered **

Thesis Courses (24 credits)

ATOC 691	(3)	Master's Thesis Literature Review
ATOC 692	(6)	Master's Thesis Research 1
ATOC 694	(3)	Master's Thesis Progress Report and Seminar
ATOC 699	(12)	Master's Thesis

Students registered in M.Sc. programs are expected to regularly attend both the student seminar series (ATOC 751D1/D2 or ATOC 752D1/D2) and the Department seminar series during the entire period of their enrolment in the program.

Required Courses (6 credits)

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

Complementary Courses (15 credits)

12 credits of Departmental courses chosen from the following:

ATOC 512	(3)	Atmospheric and Oceanic Dynamics
ATOC 513	(3)	Waves and Stability

ATOC 515	(3)	Turbulence in Atmosphere and Oceans
ATOC 519*	(3)	Advances in Chemistry of Atmosphere
ATOC 521	(3)	Cloud Physics
ATOC 525	(3)	Atmospheric Radiation
ATOC 530	(3)	Paleoclimate Dynamics
ATOC 531	(3)	Dynamics of Current Climates
ATOC 540	(3)	Synoptic Meteorology 1
ATOC 541	(3)	Synoptic Meteorology 2
ATOC 568	(3)	Ocean Physics
ATOC 626	(3)	Atmospheric/Oceanic Remote Sensing
ATOC 646	(3)	Mesoscale Meteorology
CHEM 519*	(3)	Advances in Chemistry of Atmosphere

or another course at the 500 level or higher recommended by the Department's Graduate Program Director.

* Students may select either ATOC 519 or CHEM 519.

3 credits of MSE courses chosen from the following:

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 level or higher recommended by the Advisory Committee and approved by the Environment Option Committee.

11.1.7 Doctor of Philosophy (Ph.D.) Atmospheric and Oceanic Sciences

Thesis

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.

Required Courses

(1 credit)

ATOC 700	(1)	Ph.D. Proposal Seminar
ATOC 701	(0)	Ph.D. Comprehensive (General)

Complementary Courses (7 credits)

Students are required to take ATOC 751D1 and ATOC 751D2 OR ATOC 752D1 and ATOC 752D2.

1 credit from:

ATOC 751D1	(.5)	Seminar: Physical Meteorology
ATOC 751D2	(.5)	Seminar: Physical Meteorology
ATOC 752D1	(.5)	Atmospheric, Oceanic and Climate Dynamics
ATOC 752D2	(.5)	Atmospheric, Oceanic and Climate Dynamics

And 6 credits from the Department of Atmospheric and Oceanic Sciences, at the 500 or 600 level, as approved by the Graduate Program Director.

11.2 Biology

11.2.1 Location

Department of Biology
Stewart Biological Sciences Building, Room W4/8
1205 Dr. Penfield Avenue
Montreal QC H3A 1B1
Canada
Telephone: 514-398-5478
Fax: 514-398-5069
Email: *ancil.gittens@mcgill.ca*
Website: *biology.mcgill.ca*

11.2.2 About Biology

The Department offers graduate training in many areas of biology with particular strengths in the following areas:

- Molecular Biology and Genetics
- Cell and Developmental Biology
- Ecology, Biodiversity, and Conservation
- Evolution
- Neurobiology
- Bioinformatics
- Plant Biology

In addition to the regular **M.Sc.** and **Ph.D.** programs, the Biology Department offers specialized programs, known as "concentrations," in the areas of Neotropical Environment (NEO), Bioinformatics, and Environment.

Graduate programs leading to the M.Sc. and Ph.D. degrees are offered. Both are research-intensive degrees, and the emphasis in both programs is on development of the intellectual and technical skills necessary for independent research. The main component of both degrees is a thesis presenting results of this work and the student's original contribution to scientific knowledge. Formal coursework, usually in the form of literature-based seminar courses, is minimal and typically completed within the first year. To complement their classroom and laboratory training, students regularly attend other seminar series and journal clubs and present their own work annually in a formal seminar.

In addition to working with world-class researchers, graduate students in Biology have access to top-notch research infrastructure. The recently renovated Stewart Biology Building and the newly constructed Bellini Life Sciences Complex are equipped with state-of-the-art equipment and facilities for sophisticated imaging, robotic, and genetic techniques, to name a few. These in-house capabilities are complemented by a wide range of field research facilities, which include:

- *Gault Nature Reserve* at Mont St. Hilaire (Quebec);
- *Morgan Arboretum* (Quebec);
- *Huntsman Marine Science Centre* (New Brunswick);
- *Subarctic Research Station* (Quebec);
- *Bellairs Research Institute* (Barbados);
- *Smithsonian Tropical Research Institute* (Panama);
- Limnology research station at the *Wo*

will therefore be able to understand and critically analyze an environmental problem from several perspectives (e.g., social, cultural, scientific, technological, ethical, economic, political, legislative) and at a local, national, regional, and/or international scale. In addition, they will be able to explore and critically assess analytic and institutional approaches for alleviating the selected environmental problem, and to effectively communicate research findings to both specialist and lay audiences.

Coordinated and administered through the *McGill School of Environment* (MSE), the Environment concentration is aimed at students who wish to use interdisciplinary approaches in their graduate research on environmental issues and who wish to benefit from interactions that will occur as they interact

11.2.3.3 Application Dates and Deadlines

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Biology 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*

Professors

Gregor Fussmann; Dipl.(Berlin), Ph.D.(Max Planck)

Andrew Gonzalez; B.Sc.(Nott.), Ph.D.(Imperial Coll., Lond.) (*Canada Research Chair in Biodiversity Science*)

Frédéric Guichard; B.Sc.(Montr.), Ph.D.(Laval)

Siegfried Hekimi; M.Sc., Ph.D.(Geneva) (*Strathcona Chair in Zoology; Robert Archibald & Catherine Louise Campbell Chair in Developmental Biology*) (*on sabbatical July to Dec. 2017*)

Andrew Hendry; B.Sc.(Vic., BC), M.Sc., Ph.D.(Wash.) (*joint appt. with Redpath Museum*)

Paul F. Lasko; A.B.(Harv.), Ph.D.(MIT) (*James McGill Professor*) (*Associate Member in Anatomy and Cell Biology, the Goodman Cancer Centre*)

Louis Lefebvre; B.Sc., M.A., Ph.D.(Montr.)

Laura Nilson; B.A.(Colgate), Ph.D.(Y.026 590.08

Associate Members

Biochemistry: Maxime Bouchard

Centre for Research in Neuroscience: Sal Carbonetto, Yong Rao, Donald Van Meyel

Environment: Colin Chapman

Glen site: Hugh J. Clarke, Daniel Dufort, Teruko Taketo

MCH: Rima Rozen

Medical Genetics, Chair: David Rosenblatt

MNI: Kenneth Hastings

Physics: Paul Francois

Redpath Museum: Rowan Barrett, David Green, Hans Larsson, Virginie Millien, Anthony Ricciardi

Adjunct Professors

BELLUS Health Inc.: Francesco Bellini

Centre National de la Recherche Scientifique (CNRS): Michel Loreau

Humboldt Univ., Berlin: Rudiger Krahe

IRCM: Frédéric Charron, David Hipfner

NRC Lab: Malcolm S. Whiteway

STRI: Andrew Altieri, Rachel Collin, Hector Guzman, Haris Lessios, William Owen McMillan, Mark Torchin

Univ. de Montr

3 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 graduate course at the 500 level or higher recommended by the Advisory Committee and approved by the Environment Option Committee.

11.2.7 Master of Science (M.Sc.) Biology (Thesis): Neotr opical En vir onment (48 credits)

Participation in the MSE-Panama Sympos8 150um presl Me in the Montrh o is alsoommquits/F0 8.6 Tf31 0 0 1 67.52 565.642.54(ENVRis):)mitu1 0 0 1 328.116 665.6

11.2.9 Doctor of Philosophy (Ph.D.) Biology

Thesis

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.

Required Courses (6 credits)

BIOL 700	(0)	Doctoral Qualifying Examination
BIOL 702	(6)	Ph.D. Seminar

Complementary Courses (6 credits)

Two 3-credit courses, or equivalent, at the 500, 600, or 700 level in Biology or other departments, and approved by the Supervisory Committee.

11.2.10 Doctor of Philosophy (Ph.D.) Biology: Environment

Thesis

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.

Required Courses (12 credits)

BIOL 700	(0)	Doctoral Qualifying Examination
BIOL 702	(6)	Ph.D. Seminar
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

Complementary Course (3 credits)

One course chosen from the following:

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

11.2.11 Doctor of Philosophy (Ph.D.) Biology: Neotropical Environment

Participation in the MSE-Panama Symposium presentation in Montreal is also required.

Thesis

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.

Required Cour ses (12 credits)

BIOL 640	(3)	Tropical Biology and Conservation
BIOL 700	(0)	Doctoral Qualifying Examination
BIOL 702	(6)	Ph.D. Seminar
ENVR 610	(3)	Foundations of Environmental Policy

Elective Cour ses (3 credits)

3 credits, at the 500 level or higher, on environmental issues to be chosen in consultation with and approved by the student's supervisor AND the Neotropical Environment Options Director.

11.2.12 Doctor of Philosoph y (Ph.D.) Biology: Bioinf ormatics

Thesis

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.

Required Cour ses (9 credits)

BIOL 700	(0)	Doctoral Qualifying Examination
BIOL 702	(6)	Ph.D. Seminar
COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar

Complementar y Cour ses (6 credits)

Two courses chosen 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

11.3 Chemistr y

11.3.1 Location

Department of Chemistry
Otto Maass Chemistry Building
801 Sherbrooke Street 1.906 Tm(Bioi0a).6 Tf1 0 0 1 80.40sx 0 0 1 162.417 5 8.3 Tf1 0 0 1 67.5pSh4

11.3.2 About Chemistry

Research in Chemistry

Members of the Department are organized into various research themes. Some of the current research interests are listed below, and are presented in much more detail on the *Departmental website*.

Analytical/Environmental

The Analytical/Environmental Thematic Research Group at McGill is involved in a wide range of exciting fundamental and applied research with focus on: state-of-the-art instrumental development in spectroscopy; imaging; chemometric and analytical bio-spectroscopy; artificial intelligence; ultra trace sampling; state-of-the-art atmospheric kinetics and photochemistry; thermochemical, box, and cloud modelling; as well as the development and application of state-of-the-art numerical models of the chemistry of the regional and global atmosphere. Our collective research has direct implications in fields such as materials, environmental, and biomedical chemistry.

Chemical Biology

The Chemical Biology Thematic Research 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 that unite the research being performed in this group is the attempt to learn new chemistry and physics from biological systems.

We have projects relating to pharmaceutically relevant enzymes such as those involved in drug metabolism and antibiotic resistance; development of therapeutic agents in the control of inflammation, cancer and viral infections; the chemical biology of NO; quantification of bioenergetic markers of metabolism; self-assembly mechanisms of the HIV-1 virion capsid; liposome microarray systems to address membrane protein dynamics and recognition; studies on reactive oxygen species translocation across the aqueous/lipid membrane interface; RNAi/antisense technologies; dynamic combinatorial chemistry; protein dynamics and function; mechanistic aspects involved in cellular adhesion and transport in membrane and zeolite channels; and cutting-edge microscopes used to examine transport, motility, and reactivity in cells.

Chemical Physics

The research interests of the members of the Chemical Physics Thematic Research Group are diverse, with groups focusing on high-end laser and NMR spectroscopies, kinetics and modelling of atmospheric chemical reactions, experimental and theoretical biophysical chemistry, polymers at interfaces, and statistical and quantum mechanics. In the field of biophysical chemistry, single molecule spectroscopy is being used to probe enzyme function as well as DNA recombination and repair. Our recent advances in image correlation spectroscopic techniques now allow researchers to precisely follow the macromolecular dynamics in living cells. In a similar vein, breakthrough ultra-fast electron diffraction experiments have opened the window to real-time observation of the making and breaking of chemical bonds. State-of-the-art multi-pulse femtosecond spectroscopy experiments are being applied to interesting and technologically important new materials such as photonic crystals and quantum dot superlattices. A molecular-level picture of polymer dynamics and structure at surfaces and interfaces is being developed through theoretical modelling, high-field solids NMR spectroscopy, electron microscopy, and other surface characterization methods. In the area of atmospheric chemistry, the chemical transformation of the atmosphere is being modelled both experimentally and theoretically to understand how these processes are currently affecting and driving climate change. Finally, we have basic theory projects relating to the experimental work just described, as well as in transport and structure in complex colloidal or zeolite systems, protein dynamics, and fundamental issues in quantum and statistical mechanics.

Materials Chemistry

The chemistry of materials is a rapidly evolving domain of research. Materials chemistry seeks to understand how composition, reactivity, and structure are related to function from a molecular perspective. The functionality of materials is expressed in a variety of areas including photonics, micro- and nano-electronics, biosystems, nanotechnology, drug delivery, catalysis, polymer science, molecular biology, and chemical and biological sensing. Activities of the Materials Chemistry Thematic Research Group are often broadly interdisciplinary. University-wide synergies among members of this group have led to the creation of the *McGill Institute for Advanced Materials* (MIAM) and the *McGill Nanotools Facility*. The latter comprises state-of-the-art **micro/nanofabrication**, atomic manipulation and high-performance computing facilities. MIAM and members of the Chemistry Department have established research that links the *Centre for Self-Assembled Chemical Structures*, the *Centre for Biorecognition and Biosensors*, the *Centre for the Physics of Materials*, and the *Centre for Bone and Periodontal Research*. Synthetic approaches to new materials include research in dendrimers, polynucleic acid architectures, polymers that conduct electrons or light and biopolymers. Polymer and colloid science figure prominently as does research and applications of the chemistry and physical properties of nanostructures. There is significant activity in understanding directed molecular assembly at interfaces and in the application of sophisticated spectroscopic tools to explore them.

Synthesis/Catalysis

The Synthesis/Catalysis Research Activity Group is a collective to develop the state-of-art catalysts, synthetic methodologies, reaction mechanisms, and synthetic routes for organic chemicals, natural products, and materials. The following are the major research activities at McGill: **(1)** Development of novel catalysts and catalytic reactions for highly efficient organic synthesis; Green Chemistry. This includes the study and discovery of novel transition-metal catalysts, biological catalysts, nano- and dendrimer-based catalysts for synthetic purposes; new chemical reactivity such as C-H activation, asymmetric catalysis and theory, multi-component reactions and combinatorial chemistry; innovative chemistry in alternative solvents such as water, sub-critical water, ionic liquids, and liquid CO_2; photocatalytic reactions, reaction mechanisms, and physical organic chemistry; and computational chemistry. **(2)** Synthesis of biological compounds, organic materials, and natural products. Focus areas are total synthesis of natural products, synthesis of DNA and RNA analogues; synthesis of antiviral and anticancer nucleoside analogues, synthesis of amino acid and peptides; synthesis and study of carbohydrate derivatives; design, synthesis, and study of speciality organic chemical and materials.

section 11.3.5: Master of Science (M.Sc.) Chemistry (Thesis) (45 credits)

Please consult the Department for more information about this program.

Emeritus Professors

T.H. Chan; B.Sc.(Tor.), M.A., Ph.D.(Princ.), F.C.I.C., F.R.S.C.

A. Eisenberg; B.S.(Wor. Poly.), M.A., Ph.D.(Princ.), F.C.I.C.

B.C. Eu; B.Sc.(Seoul), Ph.D.(Brown)

Assistant Professors
T. Preston; B.Sc.(Tor.), M.Sc.(UWS), Ph.D.(Br. Col.)
C.J. Thibodeaux; B.Sc.(Louisiana St.), Ph.D.(Texas)

Students entering the program with an M.Sc. degree will normally take three (3) graduate-level courses. Students entering without an M.Sc. degree will normally take five (5) graduate-level courses.

Students may be required to take advanced undergraduate courses if background deficient.

11.4 Computer Science

11.4.1 Location

School of Computer Science
McConnell Engineering, Room 318
3480 University Street
Montreal QC H3A 0E9
Canada
Telephone: 514-398-7071, ext. 00074
Fax: 514-398-3883
Email: *grad.cs@mcgill.ca*
Website: *www.cs.mcgill.ca*

11.4.2 About Computer Science

The School of Computer Science is one of the leading teaching and research centres for computer science in Canada. We offer several **M.Sc.** programs and a **Ph.D.** program; all include coursework and research. In the basic M.Sc. programs, students must choose between the thesis option, and the non-thesis option, which requires a project. The Ph.D. program includes an option in bioinformatics, and the thesis M.Sc. program includes options in bioinformatics and in Computational Science and Engineering. Students are normally funded by their adviser's research grants; in the case of scholarship students, this typically takes the form of a 'top-up' to the scholarship. Research in the School covers a broad range of areas, including:

- **Theory**: algorithms, combinatorial optimization, computational geometry, cryptography, graph theory, logic and computation, programming languages, quantum computing, theory of computation, and scientific computing;
- **Systems**: compilers, computer games, distributed systems, embedded and real-time systems, modelling and simulations, networks, software engineering;
- **Applications**: bioinformatics, machine learning, robotics, computer animation, graphics, and vision.

All students must consult the *graduate program website*, where up-to-date information about the graduate programs is posted. Any questions concerning programs should be addressed to the *Graduate Program Coordinator*.

section 11.4.5: Master of Science (M.Sc.) Computer Science (Thesis) (45 credits)

This program is designed for students with a strong interest in research in computer science who hold at least the equivalent of an undergraduate minor in CS. This program combines a strong course component with a research thesis. It is the usual (but not mandatory) entry point for students who wish to do a Ph.D., but is also the program of choice for students who want to find challenging and exciting jobs after their master's.

section 11.4.6: Master of Science (M.Sc.) Computer Science (Thesis): Bioinformatics (45 credits)

Bioinformatics research lies at the intersection of biological/medical sciences and mathematics/computer science/engineering. The intention of the Bioinformatics option is to train students to become researchers in this interdisciplinary field. This includes the development of strategies for experimental design, the construction of tools to analyze datasets, the application of modelling techniques, the creation of tools for manipulating bioinformatics data, the integration of biological databases, and the use of algorithms and statistics.

section 11.4.7: Master of Science (M.Sc.) Computer Science (Thesis): Computational Science & Engineering (45 credits)

This program option is to train graduates in state-of-the-art applications of numerical and modelling methods and computer technology to scientific and engineering problems. CSE is a rapidly growing multidisciplinary area with connections to the sciences, engineering, mathematics, and computer science.

section 11.4.8: Master of Science (M.Sc.) Computer Science (Non-Thesis) (45 credits)

This program is designed for students who want to obtain broad knowledge of advanced topics in computer science but without the requirement of a thesis. It offers an excellent preparation for the job market, but is not recommended for students interested in eventually pursuing a Ph.D.

For further details on our admission requirements, please visit our website at *www.cs.mcgill.ca/academic/graduate/admission*.

Scholarship Deadlines: January 1 for applicants who wish to be considered for scholarship awards; otherwise, March 1 for admission to the Fall term.

11.4.4 Computer Science Faculty

Associate Professors

D. Ruths; B.Sc., M.Sc., Ph.D.(Rice)

C. Verbrugge; B.A.(Qu.), Ph.D.(McG.)

A. Vetta; B.Sc., M.Sc.(LSE), Ph.D.(MIT)

J. Waldispuhl; B.Sc.(Nice Sophia Antipolis), M.Sc.(Paris VII), Ph.D.(École Poly., France)

Assistant Professors

Y. Cai; B.S.(Peking), M.S., Ph.D.(MIT) (*William Dawson Scholar*)

J. Cheung; B.Sc.(Br. Col.), M.Sc., Ph.D.(Tor.)

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

Faculty Lecturer

J. Vybihal; B.Sc., M.Sc.(McG.)

Associate Members

D.J. Levitin (*Psychology*)

D. Schlimm (*Philosophy*)

R. Sengupta (*Geography*)

B.F. Shepherd (*Mathematics & Statistics*)

T.R. Shultz (*Psychology*)

Adjunct Professors

A. Baretto, P.J. Mosterman, T. Perkins, I. Rekleitis, G.O. Sabidussi, H. Vangheluwe

11.4.5 Master of Science (M.Sc.) Computer Science (Thesis) (45 credits)

Thesis Courses (24 credits)

22 credits selected from:

COMP 691	(3)	Thesis Research 1
COMP 696	(3)	Thesis Research 2
COMP 697	(4)	Thesis Research 3
COMP 698	(10)	Thesis Research 4
COMP 699	(12)	Thesis Research 5

Required Course

COMP 601	(2)	Thesis Literature Review

Complementary Courses (21 credits)

At least 21 credits of 500-, 600-, or 700-level COMP courses, including at least 12 credits of 4-credit courses.

Note: Students with an appropriate background can substitute 3 credits by COMP 696 and 4 credits by COMP 697.

11.4.6 Master of Science (M.Sc.) Computer Science (Thesis): Bioinformatics (45 credits)

Thesis Courses (24 credits)

22 credits selected from:

COMP 691	(3)	Thesis Research 1

COMP 696	(3)	Thesis Research 2
COMP 697	(4)	Thesis Research 3
COMP 698	(10)	Thesis Research 4
COMP 699	(12)	Thesis Research 5

Required Courses (3 credits)

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar

Required Course

COMP 601	(2)	Thesis Literature Review

Complementary Courses (18 credits)

6 credits chosen 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

12 credits of 4-credit courses chosen from 500-, 600-, or 700-level Computer Science courses in consultation with the candidate's supervisor.

Note: Students with an appropriate background can substitute 4 credits by COMP 697.

11.4.7 Master of Science (M.Sc.) Computer Science (Thesis): Computational Science & Engineering (45 credits)

Thesis Courses (24 credits)

24 credits selected from:

COMP 691	(3)	Thesis Research 1
COMP 696	(3)	Thesis Research 2
COMP 697	(4)	Thesis Research 3
COMP 698	(10)	Thesis Research 4
COMP 699	(12)	Thesis Research 5

Required Courses

One credit selected as follows:

COMP 669D1	(.5)	Computational Science Engineering Seminar
COMP 669D2	(.5)	Computational Science Engineering Seminar

and

COMP 601	(2)	Thesis Literature Review

Complementary Courses

(minimum 20 credits)

At least 6 courses whereby at least two courses must be from List A, at least two courses from List B, and the remaining credits to be chosen from graduate (500-, 600-, or 700-level) courses in the School of Computer Science. Two complementary courses must be taken outside the School of Computer Science.

Note: Students with an appropriate background can substitute 3 credits by COMP 696 and 4 credits by COMP 697, but still need to take 6-8 credits from List A and 6-8 credits from List B.

List A: Scientific Computing Courses:

CIVE 602	(4)	Finite Element Analysis
COMP 522	(4)	Modelling and Simulation
COMP 540	(3)	Matrix Computations
COMP 566	(3)	Discrete Optimization 1
MATH 578	(4)	Numerical Analysis 1
MATH 579	(4)	Numerical Differential Equations

List B: Application and Specialized Methods Courses:

ATOC 512	(3)	Atmospheric and Oceanic Dynamics
ATOC 513	(3)	Waves and Stability
ATOC 515	(3)	Turbulence in Atmosphere and Oceans
CIVE 572	(3)	Computational Hydraulics
CIVE 603	(4)	Structural Dynamics
COMP 557	(3)	Fundamentals of Computer Graphics
COMP 558	(3)	Fundamentals of Computer Vision
COMP 567	(3)	Discrete Optimization 2
COMP 621	(4)	Program Analysis and Transformations
COMP 642	(4)	Numerical Estimation Methods
COMP 767	(4)	Advanced Topics: Applications 2
ECSE 507	(3)	Optimization and Optimal Control
ECSE 532	(3)	Computer Graphics
ECSE 547	(3)	Finite Elements in Electrical Engineering
ECSE 549	(3)	Expert Systems in Electrical Design
MATH 555	(4)	Fluid Dynamics
MATH 560	(4)	Optimization
MATH 761	(4)	Advanced Topics in Applied Mathematics 1
MECH 533	(3)	Subsonic Aerodynamics
MECH 537	(3)	High-Speed Aerodynamics
MECH 538	(3)	Unsteady Aerodynamics
MECH 539	(3)	Computational Aerodynamics
MECH 541	(3)	Kinematic Synthesis
MECH 572	(3)	Introduction to Robotics
MECH 573	(3)	Mechanics of Robotic Systems
MECH 577	(3)	Optimum Design
MECH 610	(4)	Fundamentals of Fluid Dynamics
MECH 620	(4)	Advanced Computational Aerodynamics
MECH 632	(4)	Advanced Mechanics of Materials

MECH 642	(4)	Advanced Dynamics
MECH 650	(4)	Fundamentals of Heat Transfer
MECH 654	(4)	Compt. Fluid Flow and Heat Transfer

11.4.8 Master of Science (M.Sc.) Computer Science (Non-Thesis) (45 credits)

Research Project (15 credits)

15 credits selected as follows:

COMP 693	(3)	Research Project 1
COMP 694	(6)	Research Project 2
COMP 695	(6)	Research Project 3

Complementary Courses (30 credits)

30 credits (nine courses), of which 12 credits must be of 4-credit courses at the 500, 600, or 700 level of COMP courses.

11.4.9 Doctor of Philosophy (Ph.D.) Computer Science

Required coursework: Students must take eight graduate courses, of which at least five are computer science courses. These courses should be chosen by the student in consultation with the supervisor (or co-supervisor) and the Progress Committee.

Thesis

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.

Required Courses

COMP 700	(0)	Ph.D. Comprehensive Examination
COMP 701	(3)	Thesis Proposal and Area Examination

Complementary Courses

18-24 credits selected from:

Category A: Theory and Applications

COMP 523	(3)	Language-based Security

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COMP 598	(3)	Topics in Computer Science 1
COMP 599	(3)	Topics in Computer Science 2
COMP 610	(4)	Information Structures 1
COMP 618	(3)	Bioinformatics: Functional Genomics
COMP 627	(4)	Theoretical Programming Languages
COMP 642	(4)	Numerical Estimation Methods
COMP 647	(4)	Advanced Cryptography
COMP 649	(4)	Quantum Cryptography
COMP 680	(4)	Mining Biological Sequences
COMP 690	(4)	Probabilistic Analysis of Algorithms
COMP 760	(4)	Advanced Topics Theory 1
COMP 761	(4)	Advanced Topics Theory 2

Categor y B: Systems and Applications

COMP 512	(4)	Distributed Systems
COMP 520	(4)	Compiler Design
COMP 521	(4)	Modern Computer Games

11.4.10 Doctor of Philosophy (Ph.D.) Computer Science: Bioinformatics

Thesis

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.

Required Courses

COMP 616D1	(1.5)	Bioinformatics Seminar
COMP 616D2	(1.5)	Bioinformatics Seminar
COMP 700	(0)	Ph.D. Comprehensive Examination
COMP 701	(3)	Thesis Proposal and Area Examination

Complementary Courses

Two courses chosen 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

Additional courses at the 500, 600, or 700 level may be required at the discretion of the candidate's supervisory committee. Students who have completed the M.Sc.-level option in Bioinformatics must complete 6 credits of complementary courses not taken in the master's program.

11.5 Earth and Planetary Sciences

11.5.1 Location

Department of Earth and Planetary Sciences
Frank Dawson Adams Building
3450 University Street
Montreal QC H3A 0E8
Canada
Telephone: 514-398-6767
Fax: 514-398-4680
Email: *grad.eps@mcgill.ca*
Website: *www.mcgill.ca/eps*

11.5.2 About Earth and Planetary Sciences

The Department of Earth and Planetary Sciences offers both **M.Sc.** and **Ph.D.** degree programs. Graduate programs are based on research, although some courses are required to build the backgrounds of students. Research in the Department is wide-ranging, and includes:

- studies of the geochemistry of the mantle;
- the nature of processes concentrating metals in hydrothermal mineral deposits;
- e

- mechanisms of faulting;
- the evolution of topography during orogenesis;
- wetland hydrogeology;
- interactions between the cryosphere, solid Earth, and climate systems;
- planetary-scale ocean biogeochemistry (e.g., ocean acidification) and its relationship to global warming.

There is a very substantial interdisciplinary basis to much of the research.

Facilities in the Department include low-temperature and pressure to high-temperature and pressure experimental laboratories, a stable-isotope mass spectrometer, laser-ablation ICP-MS, and electron microprobe, as well as atomic absorption spectrometers. Our students also make substantial use of other

Petrology and geochemistry of intermediate and felsic magmas; understanding physical processes and forecasting eruptions at active subduction-zone volcanoes; geochemistry of volcanic gases, their use for eruption prediction, and their impact on the atmosphere.

section 11.5.5: Master of Science (M.Sc.) Earth and Planetary Sciences (Thesis) (45 credits)

The nature of graduate research in the Department of Earth and Planetary Sciences is highly variable. As a result, students may enter the graduate program with backgrounds in earth sciences, chemistry, or physics, depending on their research interests and the supervisor with whom they wish to work. Students pursuing an M.Sc. are required to take four courses, but their major project is an M.Sc. thesis that typically results in a journal publication. Research for the thesis typically begins in the first year of residence and is completed, together with the written results, in the second year of residence.

Students graduating from the program typically proceed to a Ph.D. or work in the mineral exploration or petroleum industries. Excellent students admitted into the M.Sc. program can be “fast-tracked” from the M.Sc. into the Ph.D. program at the end of the first year if suitable progress has been demonstrated. Such students are required to take a minimum of 18 credits of coursework and a comprehensive oral examination in the Ph.D. 2 year.

section 11.5.6: Master of Science (M.Sc.) Earth and Planetary Sciences (Thesis): En

Adjunct Professors

E. Galbraith, R. Léveillé, H. Short, B. Sundby

Retired Professor

R. Hesse

11.5.5 Master of Science (M.Sc.) Earth and Planetary Sciences (Thesis) (45 credits)

Thesis Courses (33 credits)

EPSC 697	(9)	Thesis Preparation 1
EPSC 698	(12)	Thesis Preparation 2
EPSC 699	(12)	Thesis Preparation 3

Complementary Courses (12 credits)

Four 3-credit 500-, 600-, or 700-level EPSC courses chosen with the approval of the supervisor or the research director and GPS.

11.5.6 Master of Science (M.Sc.) Earth and Planetary Sciences (Thesis): Environment (48 credits)

Thesis Courses (33 credits)

EPSC 697	(9)	Thesis Preparation 1
EPSC 698	(12)	Thesis Preparation 2
EPSC 699	(12)	Thesis Preparation 3

Required Courses (9 credits)

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
EPSC 666	(3)	Current Issues in Geosciences

Complementary Courses (6 credits)

One 3-credit course at the 500, 600, or 700 level chosen with the approval of the supervisor or research director and GPS.

3 credits chosen from 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.

11.5.7 Doctor of Philosophy (Ph.D.) Earth and Planetary Sciences

Highly qualified B.Sc. graduates may be admitted directly to the Ph.D. 1 year. Students with the M.Sc. degree are normally admitted to the Ph.D. 2 year.

* Students are required to take four graduate-level courses in the Ph.D. 1 year, and two courses plus a comprehensive oral examination in the Ph.D. 2 year.

Thesis

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.

Required Courses

EPSC 700	(0)	Preliminary Doctoral Examination

Complementary Courses

Two to six courses (6 to 18 credits) approved at the 500, 600, or 700 level selected in consultation with the student's supervisor and approved by the Academic Standing Committee.

11.6 Geograph y

11.6.1 Location

Department of Geography
Burnside Hall
805 Sherbrooke Street West, Room 705
Montreal QC H3A 0B9
Canada
Telephone: 514-398-4111
Fax: 514-398-7437
Email: *grad.geog@mcgill.ca*
Website: *www.mcgill.ca/geography*

11.6.2 About Geograph y

The Department of Geography offers research and thesis-based graduate programs leading to a **Master of Arts** (M.A.), a **Master of Science** (M.Sc.), or a **doctorate** (Ph.D.). In its scope, our program includes the opportunity to conduct field-based studies in both the natural (i.e., biophysical) and the social sciences. Thematic areas of study include:

- Political, Urban, Economic, and Health Geography;ws.w.80510 Tf1 0 0 1 67.52 483.019 Tm(•)Tj/F7

: Master of Arts (M.A.) Geography (Thesis): Development Studies (45 credits)

The Development Studies Option (DSO) is cross-disciplinary in scope within existing master's programs in Geography, Anthropology, History, Political Science, Economics, and Sociology. Its components include the thesis; required International Development and Geography courses; and complementary courses from the participating departments. This thesis option is open to master's students specializing in development studies. Students enter through one of the participating departments and must meet the M.A. requirements of that unit. Students will take an interdisciplinary seminar and a variety of graduate-level courses on international development issues. The M.A. thesis must be on a topic relating to development studies, approved by the DSO coordinating committee.

: Master of Arts (M.A.) Geography (Thesis): Environment (45 credits)

The Environment option is of

- Curriculum Vitae

11.6.3.3 Application Dates and Deadlines

Application opening dates are set by Enrolment Services in consultation with Graduate and Postdoctoral Studies (GPS), while application deadlines are set by the Geography 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	Jan. 31	Jan. 31	Jan. 31
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.

11.6.4 Geograph y Faculty

Associate Professors
I.B. Strachan; B.Sc.(Tor.), M.Sc., Ph.D.(Qu.) (*cross appt. with Natural Resource Sciences*)
J. Unruh; M.S.(Wisc.), Ph.D.(Ariz.)

Assistant Professors
Y. le Polain de Waroux; Ph.D.(Louvain)
G. MacDonald; M.Sc., Ph.D.(McG.)
K. Manaugh; Ph.D.(McG.)
S. Moser; Ph.D.(Sing.)
M. Riva; M.Sc., Ph.D.(Montr.) (*joint appt. with the Institute for Health and Social Policy*)
B. Robinson; Ph.D.(Wisc. Mad.)

Adjunct Professor
J. Wu

11.6.5 Master of Science (M.Sc.) Geography (Thesis) (45 credits)

Thesis Courses (30 credits)

GEOG 698	(6)	Thesis Proposal
GEOG 699	(24)	Thesis Research

Required Course (3 credits)

GEOG 631	(3)	Methods of Geographical Research

Complementary Courses (12 credits)

12 credits, four 3-credit courses at the 500 level or above selected according to guidelines of the Department. GEOG 696 can count among these complementary credits for students with an appropriate background.

9 credits of courses at the 500 level or higher selected according to guidelines of the Department. GEOG 696 can count among these complementary credits for students with an appropriate background.

3 credits, one course chosen from the following:

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 level or higher recommended by the Advisory Committee and approved by the Environment Option Committee.

GEOG 701	(0)	Comprehensive Examination 2
GEOG 702	(0)	Comprehensive Examination 3

Complementary Courses

Two courses at the 500, 600, or 700 level selected according to guidelines of the Department.

11.6.9 Doctor of Philosophy (Ph.D.) Geography: Environment

The option consists of the thesis and comprehensive examination, required courses (9 credits) from Geography and Environment and complementary courses (9 credits) in Environment or other fields recommended by the research committee and approved by the Environment Option Committee.

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous w

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.

section 11.7.6: Master of Science (M.Sc.) Mathematics and Statistics (Thesis): Bioinformatics (48 credits)

Bioinformatics research lies at the intersection of biological/medical sciences and mathematics/computer science/engineering. The intention of the Bioinformatics option is to train students to become researchers in this interdisciplinary field. This includes the development of strategies for experimental design, the construction of tools to analyze datasets, the application of modelling techniques, the creation of tools for manipulating bioinformatics data, the integration of biological databases, and the use of algorithms and statistics. Students successfully completing the Bioinformatics option at the M.Sc. level will be fluent in the concepts, language, approaches, and limitations of the field.

section 11.7.7: Master of Science (M.Sc.) Mathematics and Statistics (Thesis): Computational Science & Engineering (47 credits)

CSE is a rapidly growing multidisciplinary area with connections to the sciences, engineering, mathematics, and computer science. CSE focuses on the development of problem-solving methodologies and robust tools for the solution of scientific and engineering problems.

section 11.7.8: Master of Science (M.Sc.) Mathematics and Statistics (Non-Thesis) (45 credits)

The Department of Mathematics and Statistics offers programs with concentrations in applied mathematics, pure mathematics, and statistics leading to the master's degree (M.Sc.).The non-thesis option requires a project and eight approved courses.

Ph.D. Programs in Mathematics and Statistics

: Doctor of Philosophy (Ph.D.) Mathematics and Statistics

The Department offers a course of studies leading to the Ph.D. degree. It differs substantially from the master’s programs in that the student must write a thesis that makes an original contribution to knowledge. The thesis topic is chosen by the student in consultation with the research supervisor. The thesis must be examined and approved by an internal examiner (normally the research supervisor), an external examiner and the Oral Examination Committee. The student must make an oral defense of the thesis before that Committee. In addition, the student has to pass comprehensive examinations.

: Doctor of Philosophy (Ph.D.) Mathematics and Statistics: Bioinformatics

Bioinformatics research lies at the intersection of biological/medical sciences and mathematics/computer science/engineering. The intention of the Bioinformatics option is to train students to become researchers in this interdisciplinary field. This includes the development of strategies for experimental design, the construction of tools to analyze datasets, the application of modelling techniques, the creation of tools for manipulating bioinformatics data, the integration of biological databases, and the use of algorithms and statistics. Students successfully completing the Bioinformatics option at the Ph.D. level will be fluent in the concepts, language, approaches, and limitations of the field and will have the capability of developing an independent bioinformatics research program.

11.7.3 Mathematics and Statistics Admission Requirements and Application Procedures

11.7.3.1 Admission Requirements

In addition to the general Graduate and Postdoctoral Studies requirements, the Department requirements are as follows:

Master's Degree

The normal entrance requirement for the master's programs is a Canadian honours degree or its equivalent, with high standing, in mathematics or a closely related discipline in the case of applicants intending to concentrate in statistics or applied mathematics.

Applicants wishing to concentrate in pure mathematics should have a strong background in linear algebra, abstract algebra, and real and complex analysis.

Applicants wishing to concentrate in statistics should have a strong background in linear algebra and basic real analysis. A calculus-based course in probability and one in statistics are required, as well as some knowledge of computer programming. Some knowledge of numerical analysis and optimization is desirable.

Applicants wishing to concentrate in applied mathematics should have a strong background in most of the areas of linear algebra, analysis, differential equations, discrete mathematics, and numerical analysis. Some knowledge of computer programming is also desirable.

Students whose preparation is insufficient for the program they wish to enter may, exceptionally, be admitted to a Qualifying year.

Ph.D. Degree

A master's degree with high standing is required, in addition to the requirements listed above for the master’s program. Students may transfer directly from the master’s program to the Ph.D. program under certain conditions. Students without a master's degree, but with exceptionally strong undergraduate training, may be admitted directly to Ph.D. 1.

11.7.3.2 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.

11.7.3.2.1 Additional Requirements

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

- Personal Statement – In the personal statement, the applicants should clearly explain their choice of preferred research group(s) and preferred area(s) of research, as well as providing relevant information that will not be reflected on their transcripts
- Research Proposal (optional) – If applicants have a specific research problem of interest that they want to pursue, they may discuss the details in the research proposal
- Applicants in pure and applied mathematics should provide a GRE score report, if available

For more details, please consult *www.mcgill.ca/mathstat/postgr*

Emeritus Professors

John C. Taylor; B.Sc.(Acad.), M.A.(Qu.), Ph.D.(McM.)

Jian-Jun Xu; B.Sc., M.Sc.(Beijing), M.Sc., Ph.D.(Rensselaer Poly.)

Sanjo Zlobec; M.Sc.(Zagreb), Ph.D.(N'western)

Professors

Masoud Asgharian; B.Sc.(Shahid Beheshti), M.Sc., Ph.D.(McG.)

Peter Bartello; B.Sc.(Tor.), M.Sc., Ph.D.(McG.) (*joint appt. with Atmospheric and Oceanic Sciences*)

Rustum Choksi; B.Sc.(Tor.), M.Sc., Ph.D.(Brown)

Henri Darmon; B.Sc.(McG.), Ph.D.(Harv.), F.R.S.C. (*J*

Assistant Professors

Yi Yang; B.S.(Sichuan), M.S., Ph.D.(Minn.)

Associate Members

Xiao-Wen Chang (*Computer Science*)

Luc P. Devroye (*Computer Science*)

Pierre R.L. Dutilleul (*Plant Science*)

Leon Glass (*Physiology*)

James A. Hanley (*Epidemiology and Biostatistics*)

Hamed Hatami (*Computer Science*)

Lawrence Joseph (*Epidemiology and Biostatistics*)

Anmar Khadra (*Physiology*)

Michael Mackey (*Physiology*)

Erica E.M. Moodie (*Epidemiology and Biostatistics*)

Prakash Panang

Master's

(minimum 22 credits)

Two courses from List A, two courses from List B, and the remaining credits to be chosen from graduate (500- or 600-level) courses in the Department of Mathematics and Statistics. Two complementary courses must be taken outside the Department of Mathematics and Statistics.

List A - Scientific Computing Cour   ses:

CIVE 602	(4)	Finite Element Analysis
	(4)	Modelling and Simulation

MECH 654	(4)	Compt. Fluid Flow and Heat Transfer

11.7.8 Master of Science (M.Sc.) Mathematics and Statistics (Non-Thesis) (45 credits)

Research Project (16 credits)

MATH 640	(8)	Project 1
MATH 641	(8)	Project 2

Complementary Courses (29 credits)

At least eight approved graduate courses, at the 500, 600, or 700 level, of 3 or more credits each.

11.7.9 Doctor of Philosophy (Ph.D.) Mathematics and Statistics

Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous w

- *GRE* – recommended but not required

A list of supporting documentation required by the University can be found at *www.mcgill.ca/gradapplicants/apply/prepare/checklist/documents*.

11.8.3.3 Application Dates and Deadlines

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 Physics 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	Dec. 15	Dec. 15	Dec. 15
Winter Term:	Feb. 15	Sept. 10	Sept. 10	Sept. 10
Summer Term:	N/A	N/A	N/A	N/A

Please note, the Ph.D. program with a research emphasis on medical physics only accepts students in Fall.

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

11.8.4 Physics F aculty

Chair

P. Grutter

Director of Graduate Studies

T. Webb

Emeritus Professors

J. Barrette; M.Sc., Ph.D.(Montr.)

J.E. Crawford; B.A., M.A.(Tor.), Ph.D.(McG.)

S. Das Gupta; B.Sc., M.Sc.(Calc.), Ph.D.(McM.) (*Macdonald Emeritus Professor of Physics*)

N.B. de Takacsy; B.Sc., M.Sc.(Montr.), Ph.D.(McG.)

R. Harris; B.A.(Oxf.), Ph.D.(Sus.)

C.S. Lam; B.Sc.(McG.), Ph.D.(MIT)

D.G. Stairs; B.Sc., M.Sc.(Qu.), Ph.D.(Harv.) (*Macdonald Emeritus Professor of Physics*)

J.O. Strom-Olsen; B.A., M.S., Ph.D.(Camb.)

M.J. Zuckermann; M.A., D.Phil.(Oxf.), F.R.S.C.

Post-Retirement Professors

Z. Altounian; Ph.D.(McM.)

F. Buchinger; Ph.D.(Johannes Gutenberg)

Professors

R. Brandenberger; Dip.(ETH), A.M., Ph.D.(Harv.) (*Canada Research Chair*)

A. Clerk; B.Sc.(Tor.), Ph.D.(Cornell) (*Canada Research Chair*)

J. Cline; B.S.(Harvey Mudd), M.Sc., Ph.D.(Cal. Tech.)

F. Corriveau; B.Sc.(Laval), M.Sc.(Br. Col.), Ph.D.(ETH) (*Affiliated I.P.P. Scientist*)

C. Gale; B.Sc.(Ott.), M.Sc., Ph.D.(McG.) (*James McGill Professor*)

G. Gervais; B.Sc.(Sher.), M.Sc.(McM.), Ph.D.(N'western)

Professors

M. Grant; B.Sc.(PEI), M.Sc., Ph.D.(Tor.), F.R.S.C. (*James McGill Professor*)

P. Grutter; Dip., Ph.D.(Basel), F.R.S.C. (*James McGill Professor*)

H. Guo; B.Sc.(Sichuan), M.Sc., Ph.D.(Pitt.), F.R.S.C. (*James McGill Professor*)

D. Hanna; B.Sc.(McG.), A.M., Ph.D.(Harv.) (*Macdonald Professor of Physics*)

S. Jeon; B.Sc.(Seoul National), M.Sc., Ph.D.(Wash.)

V. Kaspi; B.Sc.(McG.), M.A., Ph.D.(Princ.), F.R.S.C. (*Canada Research Chair*) (*Lorne Trottier Chair in Astrophysics and Cosmology*)

S. Lovejoy; B.Sc.(Camb.), Ph.D.(McG.)

N. Provatas; Ph.D.(McG.) (*Canada Research Chair*)

K. Ragan; B.Sc.(Alta.), Ph.D.(Geneva) (*Macdonald Professor of Physics*)

D.H. Ryan; B.A., Ph.D.(Dub.)

M. Sutton; B.Sc., M.Sc., Ph.D.(Tor.) (*James McGill Professor*) (*Rutherford Professor*)

P. Wiseman; B.Sc.(St. FX), Ph.D.(W. Ont.) (*joint appt. with Chemistry*)

Associate Professors

B. Coish; Ph.D.(Basel)

A. Cumming; B.A.(Camb.), Ph.D.(Calif., Berk.)

K. Dasgupta; M.Sc., Ph.D.(TIFR)

M. Dobbs; B.Sc.(McG.), Ph.D.(Vic., BC) (*Canada Research Chair*)

P. Francois; Ph.D.(Paris VII)

M. Hilke; B.Sc., M.Sc., Ph.D.(Geneva)

A. Maloney; B.S., M.S.(Stan.), Ph.D.(Harv.) (*William Dawson Scholar*)

W. Reisner; B.A.(Reed), Ph.D.(Princ.)

S. Robertson; B.Sc.(Calg.), M.Sc., Ph.D.(Vic., BC) (*Affiliated I.P.P. Scientist*)

R. Rutledge; B.Sc.(USC), Ph.D.(MIT)

B. Siwick; B.Sc., M.Sc., Ph.D.(Tor.) (*Canada Research Chair*) (*joint appt. with Chemistry*)

B. Vachon; B.Sc.(McG.), Ph.D.(Vic., BC)

A. Warburton; B.Sc.(Vic., BC), M.Sc., Ph.D.(Tor.)

T. W

Associate Members

K. Gehring (*Biochemistry*)

P. Kambhampati (*Chemistry*)

A. Khadra (*Physiology*)

J. Kildea (*Medical Physics*)

I. Levesque (*Medical Physics*)

M. Mackey (*Physiology*)

11.9 Psyc hology

11.9.1 Location

Department of Psychology
2001 McGill College Avenue, 7th Floor
Montreal QC H3A 1G1
Canada
Telephone: 514-398-6124/514-398-6100
Fax: 514-398-4896
Email: *gradsec@ego.psych.mcgill.ca*
Website: *www.mcgill.ca/psychology*

11.9.2 About Psyc hology

The aim of the Experimental program is to provide students with an environment in which they are free to develop skills and expertise that will serve during a professional career of teaching and research as a psychologist. Coursework and other requirements are at a minimum. Success in the program depends on the student's ability to organize unscheduled time for self education. Continuous involvement in research planning and execution is considered a very important component of the student's activities. Students are normally expected to do both master’s and doctoral study.

M.A. and **M.Sc.** de

- Curriculum Vitae
- Graduate Record Examination (GRE) – See above for details.

11.9.3.3 Application Dates and Deadlines

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 Psychology 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	Dec. 1	Dec. 1	Dec. 1
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.

11.9.4 Psyc hology F aculty

Chair

J. Lydon

Graduate Program Director

D. Titone

Emeritus Professors

F.E. Aboud; B.A.(Tor.), M.A., Ph.D.(McG.)

A.S. Bregman; M.A.(Tor.), Ph.D.(Yale)

D. Donderi; B.A., B.Sc.(Chic.), Ph.D.(Cornell)

V. Douglas; B.A.(Qu.), M.A., M.S.W., Ph.D.(Mich.)

K.B.J. Franklin; B.A., M.A.(Auck.), Ph.D.(Lond.)

F.H. Genesee; B.A.(W. Ont.), M.A., Ph.D.(McG.)

A.A.J. Marley; B.Sc.(Birm.), Ph.D.(Penn.)

R. Melzack; B.Sc., M.Sc., Ph.D.(McG.) (*E.P. Taylor Emeritus Professor of Psyc*

Professors

B. Ditto; B.S.(Iowa), Ph.D.(Ind.)

B. Knauper; D.Phil.(Mannheim)

R. Koestner; B.A., Ph.D.(Roch.)

H. Hwang; B.A.(Chung-Ang), Ph.D.(McG.)

D.J. Levitin; A.B.(Stan.), M.S., Ph.D.(Ore.) (*James McGill Professor*)

J. Lydon; B.A.(Notre Dame), M.A., Ph.D.(Wat.)

J. Mogil; B.Sc.(Tor.), Ph.D.(Calif.-LA) (*E.P. Taylor Professor of Psychology*) (*Canada Research Chair in Genetics of Pain*)

K. Nader; B.Sc., Ph.D.(Tor.) (*James McGill Professor*)

D.J. Ostry; B.A.Sc., M.A.Sc., Ph.D.(Tor.)

C. Palmer; B.Sc.(Mich.), M.Sc.(Rutg.), Ph.D.(Cornell) (*Canada Research Chair in Cognitive Neuropsychology Performance*)

M. Petrides; B.Sc., M.Sc.(Lond.), Ph.D.(Cant.)

T.R. Shultz; B.A.(Minn.), Ph.D.(Yale)

M. Sullivan; B.A.(McG.), M.A., Ph.D.(C'dia)

D. Titone; B.A.(NYU), M.A., Ph.D.(SUNY, Binghamton)

D.C. Zuroff; B.A.(Harv.), M.A., Ph.D.(Conn.)

Associate Professors

J. Bartz; B.A.(C'dia), M.A., Ph.D.(McG.)

M. Dirks; B.A.(McM.), M.S., M.Phil., Ph.D.(Yale)

G. O'Driscoll; B.A.(Welles.), Ph.D.(Harv.) (*William Dawson Scholar*)

K. Onishi; B.A.(Brown), M.A., Ph.D.(Ill.)

J. Ristic; B.A., M.A., Ph.D.(Br. Col.) (*William Dawson Scholar*)

Assistant Professors

R. Bagot; B.Sc.(S. Wales), Ph.D.(McG.)

J. Britt; B.A.(Colo.), Ph.D(Balt.)

C. Falk; B.Sc.(Wisc.), M.A., Ph.D.(Br. Col)

O. Hardt; B.Sc., M.Sc.(Trier), Ph.D.(Ariz.)

L. Human; B.A., M.A., Ph.D.(Br. Col.)

R. Otto; B.Sc.(Calif.), Ph.D.(Texas)

S. Racine; B.Sc.(McG.), M.A., Ph.D.(Mich. St.)

M. Roy; B.Sc., Ph.D.(Montr,)

S. Sheldon; B.Sc.(Alta.), M.A., Ph.D.(Tor.)

D. Vachon; B.Sc.(Tor.), M.Sc., Ph.D.(Purd.)

A. Weinberg; B.A.(Wesl.), M.A., Ph.D.,(Stony Brook) (*Canada Research Chair*)

Lecturer

P. Carvajal

Associate Members

AnesthesiaD214 0 l569.48 478.o9.48.8431 RGET6 0 07 1947831.23.3.6D4 Tm569.48 478.o9. Tm4 0 07 2o9. Tm4 0 0ethesiun(.̀8)24 569.48 478.o9.48.8431 Ch7 196.8

Associate Members

Montreal Neurological Institute and Hospital: J. Armony, A. Dagher, L.K. Fellows, D. Guitton, M. Jones-Gotman, M. Lepage, B. Milner, E. Ruthazer, W. Sossin, V. Sziklas, R. Zatorre

Schulich School of Music: S. MacAdams

Psychiatry: D. Dunkley, F. Elgar, M. Leyton, J. Pruessner, A. Raz

Adjunct Professors

M. Bruck, Y. Chudasama, P. Delisle, S. Harnad, Z. Pleszewski, H.-T. Yu, P. Zelazo

Part-Time Appointments

J. LeGallais, J. Russell

Professional CAS

R. Amsel, *Associate Professor*

I. Bradley; B.Sc., M.Sc.(Tor.), Ph.D.(Wat.), (*Part-time*) *Assistant Professor*

Z. Rosberger; B.Sc.(McG.), M.A., Ph.D.(C'dia), (*Part-time*) *Associate Professor*

11.9.5 Master of Science (M.Sc.) Psychology (Thesis) (45 credits)

Thesis Courses (27 credits)

PSYC 690	(15)	Masters Research 1
PSYC 699	(12)	Masters Research 2

Required Courses (18 credits)

		Master's Comprehensive

12 credits (one course per term in Year 2 and Year 3) chosen form the following list:

PSYC 710	(3)	Comparative and Physiological Psychology 1
PSYC 711	(3)	Comparative and Physiological Psychology 2
PSYC 712	(3)	Comparative and Physiological Psychology 3
PSYC 713	(3)	Comparative and Physiological Psychology 4
PSYC 714	(3)	Comparative and Physiological Psychology 5
PSYC 715	(3)	Comparative and Physiological Psychology 6
PSYC 718	(3)	Learning and Motivation
PSYC 722	(3)	Personality and Social Psychology
PSYC 723	(3)	Personality and Social Psychology
PSYC 724	(3)	Personality and Social Psychology
PSYC 725	(3)	Personality and Social Psychology
PSYC 727	(3)	Personality and Social Psychology
PSYC 728	(3)	Ethics and Professional Issues
PSYC 729	(3)	Theory of Assessment
PSYC 730	(3)	Clinical Neuroscience Methods
PSYC 732	(3)	Clinical Psychology 1
PSYC 733	(3)	Clinical Psychology 2
PSYC 734	(3)	Developmental Psychology and Language
PSYC 735	(3)	Developmental Psychology and Language
PSYC 736	(3)	Developmental Psychology and Language
PSYC 740	(3)	Perception and Cognition
PSYC 741	(3)	Perception and Cognition
PSYC 742	(3)	Perception and Cognition
PSYC 743	(3)	Perception and Cognition
PSYC 744	(3)	Perception and Cognition
PSYC 746	(3)	Quantitative and Individual Differences
PSYC 747	(3)	Quantitative and Individual Differences
PSYC 748	(3)	Quantitative and Individual Differences
PSYC 749	(3)	Quantitative and Individual Differences
PSYC 752D1	(3)	Psychotherapy and Behaviour Change
PSYC 752D2	(3)	Psychotherapy and Behaviour Change
PSYC 753	(3)	Health Psychology Seminar 1
PSYC 754	(3)	Health Psychology Seminar 2
PSYC 755	(3)	Health Psychology Seminar 3
PSYC 756	(3)	Health Psychology Seminar 4

0-12 credits from the following (students without a master's degree from McGill need to take all 12 credits):

PSYC 650	(3)	Advanced Statistics 1
PSYC 651	(3)	Advanced Statistics 2
PSYC 660D1	(3)	Psychology Theory
PSYC 660D2	(3)	Psychology Theory

Note: The Department of Psychology does not ordinarily require an examination in a foreign language however, all students planning on practicing clinical psychology in the province of Quebec will be examined based on their proficiency in French before being admitted to the professional association.

Doctor of Philosoph y (Ph.D.) Psyc hology: Langua

PSYC 743	(3)	Perception and Cognition
PSYC 744	(3)	Perception and Cognition
PSYC 746	(3)	Quantitative and Individual Differences
PSYC 747	(3)	Quantitative and Individual Differences
PSYC 748	(3)	Quantitative and Individual Differences
PSYC 749	(3)	Quantitative and Individual Differences
PSYC 752D1	(3)	Psychotherapy and Behaviour Change
PSYC 752D2	(3)	Psychotherapy and Behaviour Change
PSYC 753	(3)	Health Psychology Seminar 1
PSYC 754	(3)	Health Psychology Seminar 2
PSYC 755	(3)	Health Psychology Seminar 3
PSYC 756	(3)	Health Psychology Seminar 4

At least 3 credits 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
SCSD 652	(3)	Advanced Research Seminar 1
SCSD 653	(3)	Advanced Research Seminar 2
SCSD 654	(3)	Advanced Research Seminar 3

0-2 from the following:

EDSL 711	(2)	Language Acquisition Issues 3

0-3 credits of statistics from the following list:

EDPE 676	(3)	Intermediate Statistics
EDPE 682	(3)	Univariate/Multivariate Analysis
LING 620	(3)	Experimental Linguistics: Methods
PSYC 650	(3)	Advanced Statistics 1
PSYC 651	(3)	Advanced Statistics 2

Students who have taken an equivalent course in statistics will be deemed to have satisfied this requirement for the Language Acquisition Option.

These 3 credits are only required for students who have not previously taken an equivalent course in statistics.

0-12 credits from the following (students without a McGill master's degree need to take all 12 credits):

PSYC 650	(3)	Advanced Statistics 1
PSYC 651	(3)	Advanced Statistics 2
PSYC 660D1	(3)	Psychology Theory
PSYC 660D2	(3)	Psychology Theory

Note: The Department of Psychology does not ordinarily require an examination in a foreign language however, all students planning on practicing clinical psychology in the province of Quebec will be examined based on their proficiency in French before being admitted to the professional association.

11.9.8 Doctor of Philosophy (Ph.D.) Psychology: Psychosocial Oncology

The Ph.D. thesis topic must be germane to psychosocial oncology and approved by the PSO coordinating committee.

Thesis

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.

Required Courses (12 credits)

NUR2 705	(3)	Palliative Care
NUR2 783	(3)	Psychosocial Oncology Research
PSYC 701	(0)	Doctoral Comprehensive Examination

One graduate seminar each term during Y

PSYC 753	(3)	Health Psychology Seminar 1
SWRK 609	(3)	Understanding Social Care
SWRK 668	(3)	Living with Illness, Loss and Bereavement

11.10 Redpath Museum

11.10.1 Location

Redpath Museum
859 Sherbrooke Street West
Montreal QC H3A 0C4
Canada
Telephone: 514-398-4086
Fax: 514-398-3185
Email: *redpath.museum@mcgill.ca*
W

Associate Professors

Hans C.E. Larsson; B.Sc.(McG.), Ph.D.(Chic.)

Virginie Millien; Maîtrise(Paris VI), DEA, Ph.D.(Montpellier II)

Assistant Professor

Rowan Barrett; B.Sc.(Guelph), M.Sc.(McG.), Ph.D.(Br. Col.) (*CRC Tier 2 Chair in Biodiversity Science*)

Associate Members

Biology: Graham A.C. Bell, Lauren Chapman

Chemistry: David N. Harpp (*Tomlinson Chair in University Science Teaching*)

Earth & Planetary Sciences: Jeanne Paquette

McGill School of Environment: Colin Chapman

Adjunct Professors

Robert Holmes, Henry M. Reiswig, Michael Woloch