Interfaculty Studies

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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 Dean's Welcome

Welcome to Graduate and Postdoctoral Studies (GPS) at McGill. You are joining a community of world-class researchers and more than 10,000 graduate students in over 400 programs. GPS is here to support you from admissions through to graduation and beyond. McGill's approach to graduate education emphasizes skills development; we cultivate your academic and professional gro

4   Graduate Studies at a Glance

Please refer to *University Regulations & Resources* > *Graduate* > *: Graduate Studies at a Glance* for a list of all graduate departments and degrees currently being offered.

5   Program Requirements

Refer to *University Regulations & Resources* > *Graduate* > *Regulations* > *: Program Requirements* for graduate program requirements for the following:

- Master's Degrees
- Doctoral Degrees
- Coursework for Graduate Programs, Diplomas, and Certificates

6   Graduate Admissions and Application Procedures

Please refer to *University Regulations & Resources* > *Graduate* > *: Graduate Admissions and Application Procedures* for information on:

- Application for admission;
- Admission requirements;
- Application procedures;
- Competency in English; and
- Other information regarding admissions and application procedures for Graduate and Postdoctoral Studies.

7   Fellowships, Awards, and Assistantships

Please refer to *University Regulations & Resources* > *Graduate* > *: Fellowships, Awards, and Assistantships* for information and contact information regarding fellowships, awards, and assistantships in Graduate and Postdoctoral Studies.

8   Postdoctoral Research

Students must inform themselves of University rules and regulations and keep abreast of any changes that may occur. The *Postdoctoral Research* section of this publication contains important details postdoctoral scholars will require during their studies at McGill and should be periodically consulted 86arostdoctoral

8.2 **Guidelines and Policy for Academic Units on Postdoctoral Education**

Every unit hosting postdocs should apply institutional policies and procedures for the provision of postdoctoral education and have established means for informing postdocs of policies, procedures, and privileges (available at *mcgill.ca/gps/postdocs*), as well as mechanisms for addressing complaints. For their part, postdocs are responsible for informing themselves of such policies, procedures, and privileges.

1. **Definition and Status**

i. Postdoctoral status will be recognized by the University in accordance with Quebec provincial regulations as may be modified from time to time. The eligibility period for postdoctoral status is up to five years from the date when the Ph.D. or equivalent degree was aw

i. Postdocs are subject to the responsibilities outlined at *mcgill.ca/students/srr* and must abide by the policies listed at *mcgill.ca/secretariat/policies-and-regulations*.

8.5   Postdoctoral Research Trainees

Eligibility

If your situation does not conform to the Government of Quebec's definition of a Postdoctoral Fellow, you may be eligible to attend McGill as a Postdoctoral Research Trainee. While at McGill, you can perform research only (you may not register for courses or engage in clinical practice). Medical specialists who will have clinical exposure and require a training card must register through Postgraduate Medical Education of the Faculty of Medicine and Health Sciences—not Graduate and Postdoctoral Studies.

The category of Postdoctoral Research Trainee is for:

Category 1: An individual who has completed requirements for the Doctoral degree or medical specialty, but whose degree/certification has not yet been awarded. An individual in this category will subsequently be eligible for registration as a Postdoctoral Fellow.

Category 2: An individual who is not eligible for Postdoctoral Registration according to the Government of Quebec's definition, but is a recipient of an external postdoctoral award from a recognized Canadian funding agency.

Category 3: An individual who holds a professional degree (or equivalent) in a regulated health profession (as defined under CIHR-eligible health profession) and is enrolled in a program of postgraduate medical education at another institution. This individual wishes to conduct the research stage or elective component of their program of study at McGill University under the supervision of a McGill professor. This individual will be engaged in full-time research with well-defined objectives, responsibilities, and methods of reporting. Applications must be accompanied by a letter of permission from the applicant's home institution (signed by the Department Chair, Dean, or equivalent) confirming registration in their program and stating the expected duration of the research stage. Individuals who are expecting to spend more than one year are encouraged to obtain formal training (Master's or Ph.D.) through application to a relevant graduate program.

Category 4: An individual with a regulated health professional degree (as defined under CIHR-eligible health profession), but not a Ph.D. or equivalent or medical specialty training, but who fulfils criteria for funding on a tri-council operating grant or by a CIHR fello

- Service Point
- Student Rights and Responsibilities
- Student Services – Downtown and Macdonald Campuses
- Residential Facilities
- Athletics and Recreation
- Ombudsperson for Students
- Extra-Curricular and Co-Curricular Activities
- Bookstore
- Computer Store
- Day Care

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

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

- Regulations on Research Policy
- Regulations Concerning the Investigation of Research Misconduct
- Requirements for Research Involving Human Participants
- Policy on the Study and Care of Animals
- Policy on Intellectual Property
- Regulations Governing Conflicts of Interest
- Safety in Field Work
- Office of Sponsored Research
- Postdocs
- Research Associates

12 Browse Academic Units & Programs

The programs and courses in the following sections have been approved for the 2023–2024 session as listed.

12.1 Biological and Biomedical Engineering

12.1.1 Location

Duff Medical Building
3775 University Street, Room 316
Montreal QC H3A 2B4
Canada
Website: *mcgill.ca/bbme*

12.1.2 About Biological and Biomedical Engineering

Biological and Biomedical Engineering (BBME) is an interfaculty graduate program administered jointly by the Departments of Bioengineering (Faculty of Engineering) and Biomedical Engineering (Faculty of Medicine and Health Sciences) at McGill. Interdisciplinary in nature, the program includes extensive research areas and broad training, with over 60 world-renowned scientists, and equips students for promising careers in industry, healthcare, academia, and government. Researchers in this field unravel the molecular and physiological mechanisms of life, develop increasingly advanced technologies to transform healthcare, and reverse-engineer naturally occurring biological processes. Graduates of the BBME program are poised to play a critical role in shaping our global future.

Please consult our *website* for additional information.

Research Domains

Ongoing biological and biomedical engineering research at McGill includes:

- artificial cells and organs
- bioinformatics, computational biology

12.1.3 Biological and Biomedical Engineering Admission Requirements and Application Procedures

12.1.3.1 Admission Requirements

For up-to-date admission requirements, please consult *mcgill.ca/bbme/prospective-students/how-apply* and *University Regulations & Resources* > *Graduate* > *Graduate Admissions and Application Procedures* > *: Admission Requirements (Minimum Requirements to be Considered for Admission)*.

12.1.3.2 Application Procedures

McGill's online application form for graduate program candidates is available at *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 *info.bbme@mcgill.ca*.

12.1.3.3 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 Biological and Biomedical Engineering Graduate Program 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 *mcgill.ca/gps/contact/gr >*

BBME 600N1	(1.5)	Seminars in Biological and Biomedical Engineering
BBME 600N2	(1.5)	Seminars in Biological and Biomedical Engineering

Complementary Courses (12 credits)

3 credits from the following quantitative courses:

BIEN 510	(3)	Engineered Nanomaterials for Biomedical Applications
BIEN 530	(3)	Imaging and Bioanalytical Instrumentation
BIEN 550	(3)	Biomolecular Devices
BIEN 560	(3)	Design of Biosensors
BIEN 570	(3)	Active Mechanics in Biology
BIEN 590	(3)	Cell Culture Engineering
BMDE 502	(3)	BME Modelling and Identification
BMDE 503	(3)	Biomedical Instrumentation

MDPH 607	(3)	Medical Imaging

6 credits at the 500-level or higher chosen from a list on the program web site https://www.mcgill.ca/bbme/students/courses or from other courses, at the 500 level or higher, at least 3 credits of which have both life sciences content and content from the physical sciences, engineering, or computer science, with the prior written approval of the Thesis Supervisor and the Graduate Program Director.

12.1.6 Master of Engineering (M.Eng.) Biological and Biomedical Engineering (Non-Thesis) (45 credits)

The M.Eng. in Biological and Biomedical Engineering; Non-Thesis program focuses on the life sciences, the physical sciences, and engineering, industrial practices and processes, and data science related to areas such as biological products, biomedical devices, and medical imaging. Hands-on experience through projects carried out during internships.

Internship Courses (18 credits)

BBME 681	(9)	Internship 1
BBME 682	(9)	Internship 2

Required Courses

BBME 600D1*	(1.5)	Seminars in Biological and Biomedical Engineering
BBME 600D2*	(1.5)	Seminars in Biological and Biomedical Engineering
BBME 600N1*	(1.5)	Seminars in Biological and Biomedical Engineering
BBME 600N2*	(1.5)	Seminars in Biological and Biomedical Engineering

* Students take either BBME 600D1 and BBME 600D2 or BBME 600N1 and BBME 600N2.

Complementary Courses (24 credits)

Minimum of 12 credits must come from the core courses listed below. At least 6 credits must be chosen from the "quantitative" courses listed below:

Quantitative Core Courses:

BIEN 510	(3)	Engineered Nanomaterials for Biomedical Applications
BIEN 530	(3)	Imaging and Bioanalytical Instrumentation
BIEN 550	(3)	Biomolecular Devices
BIEN 560	(3)	Design of Biosensors
BIEN 570	(3)	Active Mechanics in Biology
BIEN 590	(3)	Cell Culture Engineering
BMDE 502	(3)	BME Modelling and Identification
BMDE 503	(3)	Biomedical Instrumentation
BMDE 512	(3)	Finite-Element Modelling in Biomedical Engineering
BMDE 519	(3)	Biomedical Signals and Systems
BMDE 520	(3)	Machine Learning for Biomedical Data
BMDE 610	(3)	Functional Neuroimaging Fusion
BMDE 660	(3)	Advanced MR Imaging and Spectroscopy of the Brain
MDPH 607	(3)	Medical Imaging

Non-Quantitative Core Courses:

BIEN 535	(3)	Electron Microscopy and 3D Imaging for Biological Materials
BIEN 540	(3)	Information Storage and Processing in Biological Systems
BIEN 580	(3)	Synthetic Biology

BIEN 680	(4)	Bioprocessing of Vaccines
BMDE 501	(3)	Selected Topics in Biomedical Engineering
BMDE 504	(3)	Biomaterials and Bioperformance
BMDE 505	(3)	Cell and Tissue Engineering

CHEE 651	(4)	Advanced Biochemical Engineering

BBME Courses (Quantitative):

BIEN 510	(3)	Engineered Nanomaterials for Biomedical Applications
BIEN 530	(3)	Imaging and Bioanalytical Instrumentation
BIEN 550	(3)	Biomolecular Devices
BIEN 560	(3)	Design of Biosensors
BIEN 570	(3)	Active Mechanics in Biology
BIEN 590	(3)	Cell Culture Engineering
BMDE 502	(3)	BME Modelling and Identification
BMDE 503	(3)	Biomedical Instrumentation
BMDE 512	(3)	Finite-Element Modelling in Biomedical Engineering
BMDE 519	(3)	Biomedical Signals and Systems
BMDE 520	(3)	Machine Learning for Biomedical Data
BMDE 610	(3)	Functional Neuroimaging Fusion

BBME Core (Non-Quantitative):

BIEN 535	(3)	Electron Microscopy and 3D Imaging for Biological Materials
BIEN 540	(3)	Information Storage and Processing in Biological Systems
BIEN 580	(3)	Synthetic Biology
BIEN 680	(4)	Bioprocessing of Vaccines
BMDE 501	(3)	Selected Topics in Biomedical Engineering
BMDE 504	(3)	Biomaterials and Bioperformance
BMDE 505	(3)	Cell and Tissue Engineering
BMDE 508	(3)	Introduction to Micro and Nano-Bioengineering
BMDE 525D1	(3)	Design of Assistive Technologies: Principles and Praxis
BMDE 525D2	(3)	Design of Assistive Technologies: Principles and Praxis
BMDE 650	(3)	Advanced Medical Imaging
BMDE 654	(3)	Biomedical Regulatory Affairs - Medical Devices

Remaining complementary course credits must come from core or non-core complementary courses chosen from BBME courses or from other courses, at the 500 level or higher. The selection of courses must have the prior written approval of the Graduate Program Director.

12.1.8 Doctor of Philosophy (Ph.D.) Biological and Biomedical Engineering

The goal of the Biological and Biomedical Engineering Ph.D. program is for students to gain advanced training in the interdisciplinary application of methods, paradigms, technologies, and devices from engineering and the natural sciences to problems in biology, medicine, and the life sciences. The program will focus in an area of choice while integrating quantitative concepts and engineering tools for the study of life sciences and/or for patient care. As part of the Ph.D. requirement, the student will integrate the scientific method, develop critical and deep thinking, and acquire advanced writing and presentation skills that will entific method, de. Ts/231.su2.6vis(.)Tj/F0 8.6 3itteineed, de 40195.(anced writing of 81 0 38.5rdiscipillsneerim( )Tj1 udy of life scienj1 0 0 1 184.ring Ph.D.

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 Course

BBME 701   (0)   Ph.D. Comprehensive Examination

Students must be registered in this course at the time of the Thesis Proposal and Comprehensive Exam Meeting.

Further courses may be required by the supervisor(s) in consultation with the Graduate Program Director, depending on the educational background of individual students.

12.2   Graduate Certificate in Foundations of Health Science Education

12.2.1   Locations

Institute of Health Sciences Education, McGill University
Lady Meredith House, Room 205
1110 Pine Avenue West
Montreal, Quebec H3A 1A3
Website: *mcgill.ca/ihse/education/graduate-certificate-foundations-hse*

Department of Educational and Counselling Psychology
Education Building, Room 614
3700 McTavish Street
Montreal, Quebec H3A 1Y2
1110 Pine Avenue West
Website: *mcgill.ca/edu-ecp/programs/prodev*

12.2.2   About the Graduate Certificate in Foundations of Health Science Education

As demand increases for experienced health care professionals with the skills to educate the next generation, the Institute of Health Sciences Education and the Department of Educational and Counselling Psychology are proud to offer a new Graduate Certificate in Foundations of Health Sciences Education.

In this interdisciplinary program, learners will gain knowledge of current education theories, as well as the expertise to apply this knowledge in health sciences

If you are an international applicant and wish to find out whether you qualify under McGill University's CGPA Guidelines for Graduate Admissions, visit Educational Credentials and Grade Equivalencies.

Proficiency in English

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 a *TOEFL* or *IELTS* exam with their application. Consult the *Institute for Health Sciences Education's website* for details.

12.2.3.2 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 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 *mcgill.ca/gps/contact/graduate-program*.

Information on application deadlines is available at *mcgill.ca/gradapplicants/how-apply/application-steps/application-deadlines*.

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

12.2.4 Graduate Certificate (Gr. Cert.) Foundations in Health Sciences Education (15 credits)

The Graduate Certificate in Foundations in Health Sciences Education focuses on theoretical and evidence-based knowledge and practical skills in the areas of teaching and learning, curriculum and course design, assessment and evaluation, leadership, and scholarship as applied to health sciences education. Program content includes contemporary educational and psychological concepts, theories, and evidence-based practices relevant to specific contexts in which health and health science professionals practice, and the different educational roles they are likely to assume. The blended learning format includes face-to-face instruction, and synchronous and asynchronous online learning. The program includes project-based assignments that build on one another, provide opportunities to integrate courses, and explore their application to authentic personal contexts.

Required Courses (15 credits)

EDPE 657	(3)	Learning, Cognition, and Motivation in Health Sciences Educ
EDPE 658	(3)	Introduction to HSE Curriculum and Program Development
EDPE 659	(3)	Introduction to Assessment and Evaluation in HSE
HSED 601	(3)	Introduction to Leadership in Health Sciences Education
HSED 602	(3)	Introduction to Scholarship in Health Sciences Education

12.3 Neuroscience (Integrated Program)

12.3.1 Location

Montreal Neurological Institute, Room 141
3801 University Street
Montreal QC H3A 2B4
Website: *mcgill.ca/ipn*

12.3.2 About the Integrated Program in Neuroscience

1. Students must select an Advisory Committee, in conjunction with their thesis supervisor. This committee will consist of the thesis supervisor and two (maximum three) 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 3.5 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 3.5 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 research question, present the hypothesis being tested, review the relevant literature, summarize the methodology used, and present the research data to date. This proposal will then be orally presented to the student's Advisory Committee members, who will review the written proposal and communicate their 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 12.3.5: 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 intensive academic and research training.

section 12.3.6: Doctor of Philosophy (Ph.D.) Neuroscience

The IPN offers a highly competitive Ph.D. 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.

12.3.3 Neuroscience (Integrated Program) Admission Requirements and Application Procedures

12.3.3.1 Admission Requirements

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) seeks applicants with a higher academic standing, and thus, 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 a *TOEFL* or *IELTS* exam with their application. Consult the Integrated Program in Neuroscience's *website* for details.

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 have an M.D. degree, preferably with postgraduate training. Applicants will also be considered for admission if enrolled in the Doctor of Medicine & Master of Surgery with Ph.D. (Joint M.D.,C.M. & Ph.D.) program through the Faculty of Medicine and Health Sciences at McGill University.

Students currently registered in the Master's in Neuroscience may be permitted to transfer to the Ph.D. program without submitting a master's thesis. Applicants are expected to have attained a high scholastic standing equal to, or greater than, the minimum cumulative grade point average of 3.5 out of 4.0 in all levels of study. In exceptional circumstances, a student **may** enter the Ph.D. program directly from their undergraduate degree if a CGPA of 3.7 is attained and if the student already presents extensive research experience.

To meet incoming students' diversity of individual interests and backgrounds, a graduate program is designed for each student at the time of entry. As part of the admission process, each applicant will identify, with the participation of the prospective thesis supervisor and the Graduate Studies Committee, a research thesis topic and the coursework required to complete the training deemed necessary for the degree. These decisions become an integral part of the graduation requirements for the student.

12.3.3.2 Application Procedures

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

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

Adjunct Professors

E. Racine; S. Harnad; M. Jones-Gotman; O. Overbury

12.3.5   Master of Science (M.Sc.) Neuroscience (Thesis) (45 credits)

Required Courses (36 credits)

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

Complementary Courses (9 credits)

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.

12.3.6   Doctor of Philosophy (Ph.D.) Neuroscience

Students with an M.Sc. degree continuing in this Department will receive credit exemptions for graduate coursework accomplished (including NEUR 630 or NEUR 631). It may be recommended that they take specialty courses related to their field of study in neuroscience. Students with an M.Sc. degree from another program will be required to takw

12.4 Quantitative Life Sciences

12.4.1 Location

Telephone: 514-398-4826
Email: *coordinator.qls@mcgill.ca*
Website: *mcgill.ca/qls*

12.4.2 About Quantitative Life Sciences

Quantitative Life Sciences is the broad application of mathematical, computational, and other quantitative methods to study biological systems at all scales—from single molecules to the environment. It is part of a rapidly expanding field that includes such specializations as systems biology, bioinformatics, biophysics, medical informatics, computational biology, computational pharmacology, computational neuroscience, and mathematical biology.

section 12.4.5: Doctor of Philosophy (Ph.D.) Quantitative Life Sciences

Please refer to the *QLS website* for further details.

12.4.3 Quantitative Life Sciences Admission Requirements and Application Procedures

12.4.3.1 Admission Requirements

General

Applicants are expected to hold an undergraduate degree in one of the following areas (or equivalent): biology, chemistry, physiology, genetics, engineering, computer science, mathematics, statistics, physics, or chemistry.

Applicants must have a strong quantitative background. Such a background may be obtained by having at least the equivalent of a minor in computer science, mathematics, statistics, physics, chemistry, or engineering.

Applicants who do not have a formal education in life sciences must have a demonstrated interest in the field, for example, through an undergraduate research project or the completion of life-science courses.

Applicants are expected to have attained a high academic standing equal to, or greater than, the minimum Cumulative Grade Point Average of 3.3 (out of 4.0 at McGill University) in **all** levels of study.

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) with each component score not less than 20. Further information on English profiom a 2Tj1 0 0 1 204.2 403.243 T Tm39Further infory 0 1 67.52 31-on Pr

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

12.4.4   Quantitative Life Sciences Faculty

Assistant Professors

Biochemistry: U.D. Akavia, M. Vera Ugalde, I. Watson

Bioengineering: N. Reznikov

Biology: A. Hayer, T. Ohyama, L. Pollock, R. Reyes, S. Weber

Biomedical Engineering: N. Li-Jessen

Computer Science: Y. Li

Diagnostic Radiology: S. Bhatnagar

Electrical and Computer Engineering: A. Emad

Epidemiology, Biostatistics and Occupational Health: S. Bhatnagar, A. Russell,

CHEM 520	(3)	Methods in Chemical Biology
COMP 551	(4)	Applied Machine Learning
MATH 682	(4)	Statistical Inference
PHYS 519	(3)	Advanced Biophysics
PHYS 559	(3)	Advanced Statistical Mechanics
QLSC 611	(3)	Directed Readings

Life Sciences

BIOC 605	(3)	Protein Biology and Proteomics
BIOL 551	(3)	Principles of Cellular Control
PHGY 518	(3)	Artificial Cells
PHGY 520	(3)	Ion Channels
QLSC 611	(3)	Directed Readings

Computational and Statistical Molecular Biology Stream

Quantitative

BIOS 601	(4)	Epidemiology: Introduction and Statistical Models
BMDE 502	(3)	BME Modelling and Identification
COMP 551	(4)	Applied Machine Learning
COMP 561	(4)	Computational Biology Methods and Research
COMP 598	(3)	Topics in Computer Science 1
HGEN 677	(3)	Statistical Concepts in Genetic and Genomic Analysis
MATH 523	(4)	Generalized Linear Models
MATH 533	(4)	Regression and Analysis of Variance
MATH 680	(4)	Computation Intensive Statistics
MATH 682	(4)	Statistical Inference
QLSC 611	(3)	Directed Readings

Life Sciences

BIOC 603	(3)	Genomics and Gene Expression
BIOL 551	(3)	Principles of Cellular Control
EXMD 602	(3)	Techniques in Molecular Genetics
HGEN 661	(3)	Population Genetics
HGEN 692	(3)	Human Genetics
PHAR 503	(3)	Drug Discovery and Development 1
PHAR 505	(3)	Structural Pharmacology
QLSC 611	(3)	Directed Readings

Ecosystems Stream

Quantitative

ENVB 506	(3)	Quantitative Methods: Ecology

MATH 523	(4)	Generalized Linear Models
MATH 525	(4)	Sampling Theory and Applications
MATH 533	(4)	Regression and Analysis of Variance