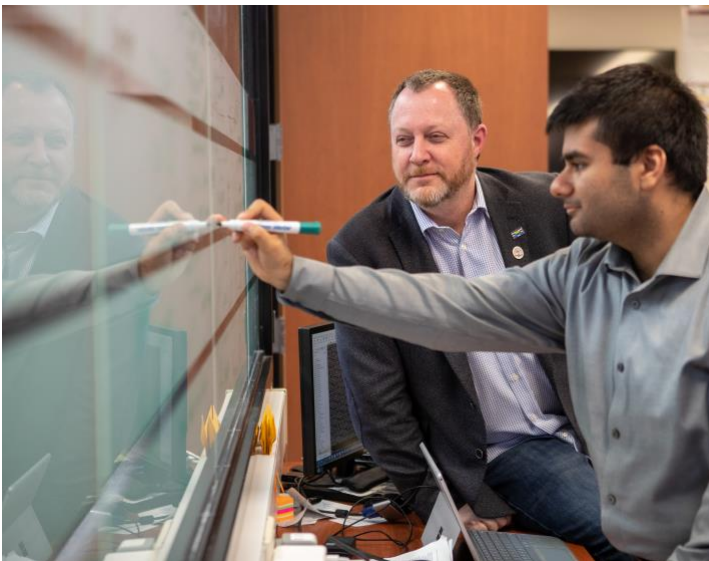
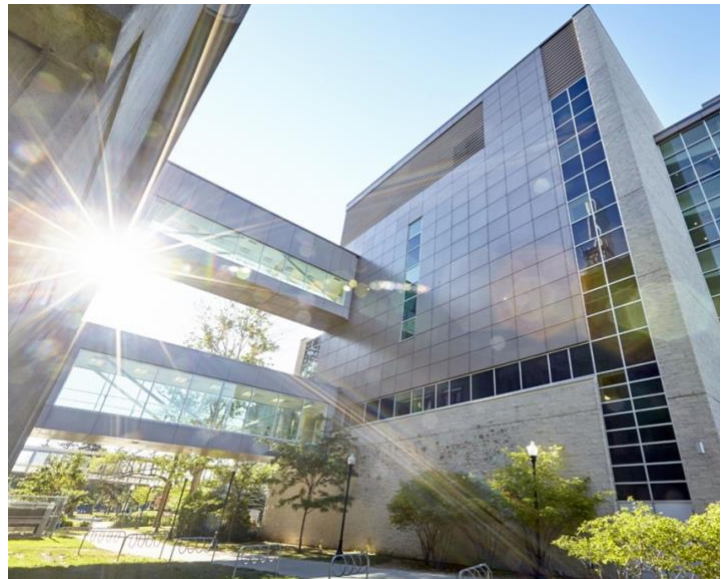


2020-2021



BIOCHEMISTRY AND
BIOMEDICAL SCIENCES
GRADUATE STUDENT
HANDBOOK



This document is not intended to replicate or modify the information found in the School of Graduate Studies (SGS) Calendar available at <https://academiccalendars.romcmaster.ca/index.php?catoid=42>

Approved by the Associate Dean of Graduate Studies, Health Sciences (July 27, 2020)

The purpose of this handbook is to outline the policies and procedures followed by the Biochemistry Graduate Program, which supplement the policies and procedures contained in the SGS Graduate Calendar. If there is any discrepancy between this document and the SGS Calendar, then the SGS Calendar shall prevail. Students and faculty are encouraged to look at the SGS Graduate Calendar for information about:

- Graduate study at McMaster
- General regulations of the School of Graduate Studies
- University policy, regulations and governing bodies
- Graduate fees and financial assistance
- University services
- Fellowships, scholarships, bursaries and other awards
- Student appeals
- Degree program requirements
- The Biochemistry Graduate Program

For further information on the topics covered by this handbook, students are advised to consult the staff in the Biochemistry and Biomedical Sciences office (HSC-4H22), or email bbsgrad@mcmaster.ca. Students should also consult the Graduate Calendar for other relevant information. The Biochemistry Graduate Program expects all students to follow University policies on both academic and research integrity and should be familiar with Sections 6.1 and 6.2 “Regulations Affecting Graduate Students” in the Graduate Calendar.

DEPARTMENT CONTACTS

MATTHEW MILLER
ASSOCIATE PROFESSOR
ASSOCIATE CHAIR AND ASSISTANT DEAN, BIOCHEMISTRY GRADUATE PROGRAM
Email: mmiller@mcmaster.ca
Ext. 22387

LISA KUSH, GRADUATE OFFICER
Email: kushL@mcmaster.ca
Ext. 22064

TWITTER: @MacBiochemGrad
FACEBOOK: @macbiochemrocks
BBS Graduate Student Association Email: mac.bbsgsa@gmail.com

TABLE OF CONTENTS

Message from the Assistant Dean.....	2
Mosaic Student Centre (Enrolment).....	3
Mandatory Courses.....	4
Student Cards.....	5
Policies and Regulations.....	6
Campus Services.....	7
Financial Information.....	8
2020-2021 Stipend Rates.....	10
Direct Deposit Payroll Form.....	11
Updating Home Address.....	11
Laboratory Safety Training.....	12
Health and Dental Plans.....	12
Teaching Assistantships.....	13
Course Requirements (700-Level Courses).....	14
Seminars.....	16
Supervisory Committee Meeting Guidelines.....	17
Master's Requirements.....	19
Master's Thesis Evaluation.....	20
Transfer to the PhD Program.....	21
Doctoral Requirements.....	22
PhD Candidacy Examination.....	23
Doctoral Thesis Evaluation.....	24
Combined MD/PhD Program.....	25
Astrobiology.....	25
Department Awards.....	26
Scholarships and Bursaries.....	27
External Scholarships.....	28

MESSAGE FROM THE ASSISTANT DEAN



As Assistant Dean of the Biochemistry Graduate Program, it is my pleasure to welcome you to our Program!

As the leading research-intensive university in Canada, we pride ourselves on delivering a highly distinguished, world-class graduate training program that leaves our students poised to become global leaders in their fields. Students in our program are focused on solving the most important problems in science today. In the wake of the current COVID-19 pandemic, the need for biomedical scientists to solve the world's most pressing public health issues has never been more pronounced. The research performed in the laboratories of our internationally-recognized faculty members span the entire spectrum of biomedicine – infectious diseases, stem cells, the microbiome, development, metabolism, neurodegenerative diseases, bioinformatics, cancer, and cardiovascular disease – and these are just a handful of examples. Our program is therefore ideally suited to satisfy the curiosity and passion for discovery of anyone interested in the biomedical sciences.

We have adopted a student-centred focus on graduate education. We recognize the complex realities of the modern job market and provide training environments and professional development opportunities that prepare our graduates for their future careers of choice. Our reputation for rigorous and innovative scientific training has left our graduates in high demand at top-tier academic institutions around the world, and in industries that are shaping our economy.

Our laboratories are supported by state-of-the-art infrastructure that only a leading research institution can provide. We have invested heavily to ensure that our students have access to the latest equipment and cutting-edge technologies required to make the kinds of breakthrough discoveries that will leave a lasting impact on their field. This commitment to excellence has placed McMaster firmly in the top 1% of universities in the world, according to international ranking agencies.

The foundation of our excellence lies in the recruitment of only the best and brightest candidates. We value and celebrate diversity, as is reflected in our class of over 120 graduate students. This diversity enriches our community and fosters a culture of inclusion, curiosity, innovation and intellectual fortitude. The exceptional achievements of our students have been recognized by the scientific community at-large, as is evident in the over \$650,000 in external scholarships awarded to our trainees each year.

Recently dubbed “The Brooklyn of Toronto” by the Huffington Post, Hamilton is a large, culturally-diverse city with a rich arts scene, trendy restaurants and beautiful natural features – including over 100 waterfalls! We are ideally situated in the “Golden Horseshoe” area of Ontario, Canada – less than a one hour drive to Toronto, Niagara Falls, or the U.S. border. Hamilton offers all of the amenities of a major international city, but with an affordable cost of living that permits an excellent quality-of-life, especially for students.

Please use the handbook to help guide you successfully through the coming years in our Graduate Program. It is filled with resources that will help you successfully plan and navigate your graduate degree. I look forward to following your scientific achievements in the years to come!

Matthew S. Miller, PhD
Assistant Dean – Biochemistry Graduate Program

MOSAIC STUDENT CENTRE (ENROLMENT)

Mosaic is McMaster's administrative information system. A student can access the student center to enroll in courses and access other services such as transcripts, student accounts, financial aid and human resources. Your MAC ID and password is required to access the system portal at: <http://mosaic.mcmaster.ca>

MCMASTER ID: Your personal ID in Mosaic is 9-digits. This is different from your MAC ID which is required to log into many of McMaster's systems. **You must activate your MAC ID to be set up for email with a university address.**

MAC ID:

MAC ID is your McMaster username that is unique to a student and is used to access various McMaster resources. Applicants are pre-assigned a MAC ID upon applying to McMaster University. For more information regarding activation, please refer to <http://www.mcmaster.ca/uts/macid/>

- Click on "Need help with your MAC ID?"
- I want to activate my MAC ID
- Enter person ID (student number), barcode number and date of birth
- Select Submit

GRADUATE STUDENT E-MAIL:

Every graduate student will receive a McMaster Student email account powered by Google with 25 GB of space. Students are required to activate their McMaster email accounts. Please note, you will receive all Mosaic and department communications at this address. To activate your email account, go to <https://mosaic.mcmaster.ca>. If you require assistance, please contact University Technology Services at uts@mcmaster.ca.

- Log into mosaic and select the Navigator Icon
- Select MAC ID and Password Management
- Select "Activate your email account"

ENROLMENT: <https://gs.mcmaster.ca/academic-services/how-enroll>

At the start of each academic year, students must confirm enrolment details before accessing the student centre. This confirmation will include both the citizenship and program of study. Any errors should be reported to your program office. After confirming these details, the student can proceed to the student centre and select courses and access other services.

1. Sign into Mosaic, click on the Student Center tab and then click on "Enroll" under Academics
2. Each class is assigned a unique number related to the term in which it is offered. Select term and continue.
3. Review your choice and then press the "Next" button. Before enrolling into the class, first "Validate" the course to make sure you are eligible to enroll into it. Click the "validate" button.
4. If all is well, you will see a green tick. Click the "Shopping Cart" button to return to shopping cart.
5. To enroll in validated classes, tick the checkbox next to the desired course and then click the "Enroll" button.
6. Review the information on the confirmation screen, then click "Finish Enrolling" button.

MANDATORY COURSES

Students must enroll in a placeholder course for any term in which no academic-accredited courses are being taken. Returning students must enroll in all three terms, regardless of when they intend to complete their degree. Students on a Leave of Absence for an entire term, are the only exception and should not enroll in any courses in the term that they are on leave.

Students in programs charged per term should add SGS 700. Visiting (Research Only) students should enroll in SGS 302. All new students (who will be receiving a credential from McMaster) are required to complete SGS 101 and 201 (titles below) in their first academic term. Anyone who has not completed either of these courses in their first term will automatically be assigned an “F” grade.

- SGS 101-- Academic Research Integrity and Ethics
- SGS 201—Accessibility for Ontarians with Disabilities Act (AODA Training)

Each course will take approximately one hour to complete and consists of watching an online presentation followed by a quiz. Check your Mosaic Student Centre to ensure you are registered in these courses. If they do not appear in your course schedule or in Avenue to Learn, please contact the Biochemistry program staff for assistance.

Note: Students who have taken SGS 101 and 201 for a previous graduate degree do not need to take the courses again. Any student who has taken an AODA equivalent course, either previously at McMaster (e.g. undergraduate welcome week) or at another institution, should contact aoda@mcmaster.ca. They will confirm that this is either complete or equivalent. Please then forward this confirmation to sgsrec@mcmaster.ca. Students in this situation do not need to retake SGS 201.

The course catalog can be accessed via the student center in Mosaic, giving a complete list of available courses offered for the current academic year. If you are not taking an academic course in a term, there is a placeholder course.

SGS 700: Placeholder (mandatory)

Mosaic requires graduate students to enroll in a course **in every term they are an active student (even if defending in first or second term)**. If there is a term in which you are not taking an academic course, you must enroll in “**SGS 700**”. This applies to course based and thesis based students. Students need to replace the course with another before being able to drop the last course in each term. The process is described in the enrollment tab on the School of Graduate Studies website.

SGS 101: Academic Research Integrity and Ethics

ALL new students must complete the "Academic Integrity and Research Ethics Course" administered by the School of Graduate Studies within the first **TERM** after their admission into graduate studies at McMaster University. The purpose of this course is to ensure that the standards and expectations of academic integrity and research ethics are communicated early and are understood by incoming students. A graduate student may not obtain a graduate degree at McMaster without having passed this course. In the event that a student fails this course, they must retake it at the earliest opportunity. After completion, a “P” pass will appear on your student record.

To access the SGS 101 course material after enrolling, please complete the following steps:

- Go to "Avenue to Learn": <http://avenue.mcmaster.ca/?logout=1>
- Login using your MacID and Password.
- Under "My Courses", click on the entry for "**SGS 101: ACAD RESRCH INTEGRTY & ETHICS**".
- Click the Content icon at the top of the page.
- All 5 sections under Content must be viewed before the final quiz is released.
- To access the quiz, click on the Assessments icon at the top of the page. The drop down box will then show Quizzes; click on that link.
- Students must successfully pass the quiz with a mark of 14 out of 20 or greater.
- The student is informed of their mark on the quiz immediately after the electronic submission.
- Please keep a record (screenshot) of your results.

SGS 201: Accessibility for Ontarians with Disabilities Act (AODA) Training

The Ontario government has enacted a Customer Service regulation of the Accessibility for Ontarians with Disabilities Act, 2005, which came into effect in 2010. Senate passed the requirement for all graduate students to complete this training. The AODA Office maintains the course content and a record of all McMaster students who have taken the course. The passing grade for SGS 201 is 10/10. After completion, a "P" pass will appear on your student record. The course content is offered through: <http://www.mcmaster.ca/accessibility/>. If you have any questions about the training modules, you can contact the Accessibility Office directly at: aoda@mcmaster.ca. Once you complete SGS201, please forward a screenshot of your test results to kushL@mcmaster.ca.

STUDENT CARDS

STUDENT CARD:

Your Student ID card identifies you as a McMaster student: It displays your student number, name, photo and contains an encoded magnetic strip that will allow access to a variety of University services. Only students who require access to buildings on campus may be issued cards. Let your Graduate Administrator know if you think you need access to facilities.

HAMILTON STREET RAILWAY BUS PASS CARD (Pick up from Campus Store)

All full-time graduate students are entitled to a 12-month, unlimited ride bus pass from September 1, 2020 to August 31, 2021 with the Hamilton Street Railway (HSR). The HSR U-Pass/PRESTO card belongs to you for your entire school career at McMaster. **PLEASE KEEP AN EYE ON THE GSA WEEKLY EMAIL FOR MORE INFORMATION.** For more details: <https://gsa.mcmaster.ca/services/hsr-bus-pass/>
For HSR bus schedules please visit: <https://www.hamilton.ca/hsr-bus-schedules-fares>

HEALTH SCIENCES CENTER PHOTO ID BADGE (Graduate Student Lounge/Animal Quarters)

Students working in the Health Science Center are required to carry an ID card when on hospital property (you may be asked to present this card to security services personnel at any time). This card will provide access to the Graduate Student Lounge (located on the 4th floor, across from the MDCL bridge), various Health Sciences Research Labs and Animal Quarters (if required). Please contact our Biochemistry Graduate Assistant to obtain your photo badge.

MICHAEL G. DEGROOTE CENTRE FOR LEARNING AND DISCOVERY (MDCL) **KEY CARD AUTHORIZATION PROCESS**

Access to floors 2, 3, 4 and 5 from the elevators, stairwells and bridge connecting the MDCL to the Health Sciences Centre will be unrestricted from 7:00 am to 10:00 pm, Monday to Friday. After 10:00 pm as well as on weekends and holidays, the building will remain locked and will require a security card to gain access and to move between the floors. All offices/labs are secured by conventional door locks. **All key and security card requests should be made through your Principal Investigator (PI).**

POLICIES AND REGULATIONS

SCHOOL OF GRADUATE STUDIES: <https://graduate.mcmaster.ca/>

SESSIONAL DATES (2020-2021): [Click here](#)

ACADEMIC INTEGRITY POLICY:

The University states unequivocally that it demands scholarly integrity from all of its members. Academic dishonesty, in whatever form, is ultimately destructive to the value of the University; furthermore, it is unfair and discouraging to those students who pursue their studies honestly. This policy applies to all registered students and is to be read in conjunction with the “Research Integrity Policy” and “Student Code of Conduct”. Please refer to: <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>

CODE OF STUDENT RIGHTS AND RESPONSIBILITIES:

McMaster is a community dedicated to providing a safe and secure environment in which all community members conduct themselves in a manner that respects community members’ rights, upholds their responsibilities as a member of the community and promotes the educational goals of the University. Refer to: <https://sscm.mcmaster.ca/the-code/>

PETITION FOR SPECIAL CONSIDERATION:

[Section 2.5.9 \(SGS Calendar\)](#) “In those instances where a student acknowledges that the rules and regulations of the University have been applied fairly but is requesting that an exception be made because of special circumstances (compelling medical, personal, or family reasons) the student may submit, in a prompt and timely manner, a Petition for Special Consideration. The appropriate form is available on the School of Graduate Studies website. The student’s supervisor and Associate Chair are normally required to provide their independent assessments of the student’s statement in the petition. Supporting documentation will be required but will not ensure approval of the petition. The authority to grant petitions lies with the School of Graduate Studies and is discretionary. It is imperative that students make every effort to meet the originally-scheduled course requirements and it is a student’s responsibility to write examinations as scheduled.”

STUDENT APPEALS PROCESS:

<http://www.mcmaster.ca/policy/Students-AcademicStudies/StudentAppeal.pdf>

LEAVES OF ABSENCE:

[Section 2.5.7 \(SGS Calendar\)](#) “Leaves of absence are normally granted on a term-by-term basis. Whenever possible the leave should start and end at the beginning of a term (i.e., January 1, May 1, or September 1). During the period of a Leave the student cannot expect to be given supervision or be entitled to use the

University's academic facilities. During a leave of absence, no tuition will be charged, nor will the student be eligible for any scholarship support. Students on a leave of absence have to pay applicable supplemental fees and will be able to use the services associated with those fees."

PARENTING GRANT:

Parenting Grants of up to \$4000.00 will be provided to eligible graduate student parents during an approved leave of one term or more. The grant must be taken in the first term of a parenting leave and cannot be deferred. For more details, refer to: <https://gs.mcmaster.ca/awards-funding/parenting-grant>

COPYRIGHT POLICY: https://milo.mcmaster.ca/faqs/copyright_mac

HUMAN RIGHTS AND DISPUTE RESOLUTION (HRDR) PROGRAM:

<https://equity.mcmaster.ca/program-resources/human-rights-and-dispute-resolution/>

CAMPUS SERVICES

RESOURCES: <https://gs.mcmaster.ca/resources>

Many links found on this site are intended to help students find their footing at the beginning of their McMaster graduate journey.

STUDENT WELLNESS: <https://wellness.mcmaster.ca/>

Medical assessment and treatment of illness or injury can include a mental health appointment with a physician. All appointments must be booked by email at: wellness@mcmaster.ca. Looking for advice or information on some aspect of your life? Refer to: <https://wellness.mcmaster.ca/topics/>

For crisis support: <https://wellness.mcmaster.ca/crisis-support/>

For a list of resources, helplines and services in mental health, refer to: www.mentalhealthrecovery.com/recovery-resources/crisis-planning.php.

STUDENT SUCCESS CENTRE: <http://studentsuccess.mcmaster.ca/>

The Student Success Center offers a variety of services, resources and programs to help you succeed in your career pursuits.

SKILLS TRAINING: <https://gs.mcmaster.ca/skills-opportunities/skills-training>

This website contains several training modules and links for various topics such as Academic Job Search, Diverse Career Paths for PhDs, Grad Writing Consultations, Intellectual Property, Mentoring Undergraduate Students, etc.

GRADUATE STUDENT SERVICES (GSA): <https://gsa.mcmaster.ca/>

The mandate of the GSA is to promote the welfare and interests of the members through facilities and opportunities for social, athletic and intellectual activities. Contact: macgsa@mcmaster.ca

INTERNATIONAL STUDENT SERVICES (ISS): <https://iss.mcmaster.ca/>

ISS provides support for international students at McMaster University. Detailed information regarding immigration, study permits, University Health Insurance Plan (UHIP) and other areas is provided on their website.

STUDENT ACCESSIBILITY SERVICES (SAS): <http://sas.mcmaster.ca/>

Student Accessibility Services supports students who have a disability or disorder, such as a learning disability, ADHD, mental health disability, chronic medical condition, sensory deficits such as blindness, deafness or hard of hearing, neurological or mobility.

EQUITY AND INCLUSION OFFICE (EIO): <http://hres.mcmaster.ca/>

The EIO (formerly the Office of Human Rights and Equity Services) is a place where students are treated equitably and respectfully in all areas of campus life.

OMBUDS OFFICE: <http://www.mcmaster.ca/ombuds/>

The Ombuds Office provides impartial, independent and informal dispute-resolution advice and assistance to all members of the McMaster University Community free of charge.

FINANCIAL INFORMATION

TYPES OF PAYMENTS: Graduate students may receive up to three separate bank deposits or cheques, depending on what type of funding they receive.

- 1. SCHOLARSHIP FUNDS (Graduate Scholarship, Entrance Scholarship, Department Scholarship, External Scholarships, Tuition Scholarships and Tri-agency Awards).**
These scholarship funds are paid through the Student Center module in MOSAIC. This is T4A income, which means that if you are enrolled full-time, these payments are not taxable. These funds can be viewed under the [View Financial Aid Awards](#) section in MOSAIC and will be paid directly to your student account as a lump sum per term.
- 2. RESEARCH SCHOLARSHIP:** These scholarship funds are paid through the HR module in MOSAIC. These scholarship funds are provided by your supervisor and is T4A income, which means that if you are enrolled full-time, scholarships, fellowships and bursaries received are not taxable. These funds can be viewed on your pay statement and will be paid directly to you via direct deposit as a lump sum per term.
- 3. EMPLOYMENT INCOME:** These employment monies are paid through the HR module in MOSAIC. Teaching assistantships (or Research Assistantships in lieu of Teaching Assistantships) are employment funds from work performed on campus and is T4 income. These monies are covered in the CUPE UNIT 1 collective agreement. These funds less applicable deductions will be paid bi-weekly directly to you via direct bank deposit. These funds can be viewed on your pay statement.

STIPEND: All scholarship payments are paid in a lump sum per term by mid-September, mid-January and mid-May. Students that complete all degree requirements one or more months before the end of a term are required to pay back the internal scholarship support for the months that they were no longer enrolled. External scholarship awards end when students complete their degree requirements. Bi-weekly employment (Teaching Assistant) is paid as earned over the period in which you hold a TA. Please note taxes, CPP, EI, union dues, dental (if eligible), will be deducted from your teaching assistantship income.

TUITION FEES: https://www.mcmaster.ca/bms/student/SAC_fees_grad.html

Tuition fees are assessed on a term by term basis. Supplementary fees are payable in full and are not refundable. **Students are solely responsible for paying their tuition.** Tuition is due term-by-term on mid-September, mid-January and mid-May. Interest on tuition will not begin to be collected prior to the second last business day of those months.

WHERE TO GO FOR QUESTIONS:

DEPARTMENT CONTACT: Questions regarding your pay. Sarah Cumin, Manager Academic and Staff Operations, Biochemistry	cumins@mcmaster.ca Health Sciences Centre, 4N59
TUITION & FEES: Questions about tuition and fees owed can be directed to the Student Accounts and Cashiers office.	student.accounts@mcmaster.ca Gilmour Hall, Room 209
BANK DEPOSITS: Questions about scholarship bank deposit(s) should be directed to the School of Graduate Studies office.	gradpay@mcmaster.ca
EMPLOYMENT INCOME (Teaching Assistantship): Questions about your employment income bank deposits or cheques should be directed to the HR Service Centre.	hr.mcmaster@mcmaster.ca
TA/RA in lieu payments, CUPE Unit 1 dental, Social Insurance Numbers, Personal Tax Credit Returns (TD1 & TD1ON)	https://hr.mcmaster.ca/employees/payroll/teaching-assistants-payroll-information/

OSAP - ONTARIO STUDENT ASSISTANCE PROGRAM

The Ontario Student Assistance Program is a government student loan and grant program that helps students pay for University. OSAP is run by the Ministry of Advanced Education and Skills Development and is funded by the federal and provincial governments. OSAP is open to Ontario residents of any age who are Canadian Citizens, permanent residents or protected persons.

OSAP for Students Studying Full-Time

- <http://sfas.mcmaster.ca/government-aid/osap/full-time-osap/>

OSAP Website: <https://www.ontario.ca/page/osap-ontario-student-assistance-program>

2020-2021 STIPEND RATES

BIOCHEMISTRY GRADUATE STUDENT STIPENDS: A minimum stipend is approved each year by our Department Chair. The 2020-2021 annual support payments for in time, non-scholarship students is as follows:

Master's Base	\$23,581.44
Doctoral Base	\$25,708.39
MD/PhD Base	\$27,077.50
Master's International Base	\$30,717.44
Doctoral International Base	\$26,344.39

NOTE: Salaries of students who hold external or internal scholarships will be adjusted according to our department **stipend rates** listed on our website: <http://biochemgraduateprogram.ca/financing/>

***Important note:** *Full-time Biochemistry students who receive funding as part of their offer of admission are guaranteed financial support for either 2 years (MSc students) or 4 years (PhD students) from the initial date they began in their program.* After 2 years (6 terms) in the Master's Program or 4 years (12 terms) in the Doctoral Program, the only support you could potentially receive would come from your supervisor in the form of a research scholarship. **It is your responsibility to contact your supervisor 3-4 months before your funding ends to discuss the possibility of continued support.** If your supervisor is willing to financially support you beyond the guaranteed timelines, they must confirm with Sarah Cumin, Operations Manager at cumins@mcmaster.ca no later than July 15.

SOCIAL INSURANCE NUMBER (SIN): A student employed as a Teaching Assistant or RA in lieu of TA must have a Social Insurance Number. This is a nine-digit number required by law as an administrative number for authorized federal programs, notably Employment Insurance, Canada Pension Plan and Income Tax. A SIN card is compulsory in Canada to receive government benefits. Please refer to the following website to find a Service Canada Centre near you and to obtain other information you require before you apply <http://www.esdc.gc.ca/en/sin/overview.page>. If you do not have a SIN number, please apply at: SERVICE CANADA CENTRE, 1550 Upper James Street, Hamilton, Ontario. Phone: (905) 572-2211

INTERNATIONAL STUDENT AUTHORIZATION: Visa students are required to present their study permits to the School of Graduate Studies upon their arrival at McMaster and **each** time such authorizations are renewed. Please visit the following link for complete information: <https://www.canada.ca/en/index.html>

PERSONAL TAX CREDIT FORMS:

> <https://hr.mcmaster.ca/employees/payroll/teaching-assistants-payroll-information/>

The University is required by law to deduct Canada Pension Plan and Employment Insurance premiums on all employment income. Income Tax will be assessed on employment income only. Please complete the Personal Tax Credit Return forms (TD1 and TD1ON) and email to the HR Service Centre at hr.mcmaster@mcmaster.ca

DIRECT DEPOSIT FORM

EMPLOYEE CONTACT AND DEPOSIT FORM: <https://registrar.mcmaster.ca/fees/>

1. Payments for research scholarship and employment (TA) will be deposited directly into your bank account. This method of payment is mandatory.
2. All new students must **complete and email the “Employee Contact & Deposit Form”** to the **Human Resources Services Centre - hr.mcmaster@mcmaster.ca**
3. Students are also required to **enter their Banking Information in their Student Services Centre.**
4. If you change your direct deposit banking information, you **MUST DELETE** your old information first and select the **Trash Can Icon**.

SETTING UP AND/OR UPDATING YOUR BANKING INFORMATION IN “MOSAIC”

Students **MUST** set up their banking information in Mosaic and also send the Deposit Form to HR. Please exercise caution when entering in your banking information. For more information, refer to:

<https://registrar.mcmaster.ca/direct-deposit/>

1. Log on to Mosaic using your MAC ID and password.
2. Click “Enrol Direct deposit.”
3. Enter the required Bank Details
4. You will need to agree to the terms and conditions.
5. Finally, click the “Submit” button and your information will be successfully added.

UPDATING HOME ADDRESS

(A) Setting up or updating your address in “CAMPUS SOLUTIONS”

It is important that your address information is correct and up to date in Mosaic to ensure you receive important information in a timely manner. You can add a new address or edit an existing address. **Your mailing address is the first address that is taken into consideration when receiving mail from the University.**

1. Sign into Mosaic and select “**Student Centre**”
2. In the Personal Information header, **select the address type** you wish to add/modify.
3. After your selection, it will prompt you to either 1) edit existing address or 2) add a new address.
4. Enter information and select “**OK**” when you are complete.
5. The next screen will require you to confirm your new address. **Verify your address change and correct the effective date.**
6. “**SAVE**”
7. “**OK**”

(B) Setting up or updating your address information in “HUMAN RESOURCES”

If you are paid the following monies – RESEARCH SCHOLARSHIP, TA, and/or RA in lieu of TA, you MUST complete and **return the Employee Contact and Deposit form to the HR Service Centre at hr.mcmaster@mcmaster.ca**

LABORATORY SAFETY TRAINING

Every employee of McMaster University must participate in basic training sessions as it relates to their work environment. **It is important to participate in the safety training that is required for your lab, therefore it is imperative you consult with your supervisor to ensure you attend all appropriate training upon your arrival and prior to the commencement of any laboratory work.** This training is online through the Mosaic system. Follow this link to sign in: <https://eprd.mcmaster.ca/psp/preprd/?cmd=login>. Once you have successfully completed the training, including a quiz for each module, your record will be kept in Mosaic. You can access your training record through Mosaic as well. Each laboratory has a dedicated safety representative. Please consult with your research supervisor to find out who this person is for your lab.

STUDENTS IN HOSPITAL BUILDING – FHS SAFETY OFFICE:

http://fhs.mcmaster.ca/safetyoffice/Worker_Hospital_Lab_Mosaic.html

STUDENTS LOCATED IN OTHER BUILDINGS ON CAMPUS - ENVIRONMENTAL & OCCUPATIONAL HEALTH SUPPORT SERVICES:

<http://www.workingatmcmaster.ca/eohss/index.php>

HEALTH AND DENTAL PLANS

We recommend that you directly contact <http://www.ihaveaplan.ca/> if you have any specific questions about your Graduate Student Association (GSA) Plan and <http://www.cupe3906.org> if you have any specific questions relating to your CUPE Plan.

GRADUATE STUDENT ASSOCIATION (GSA) BENEFITS: All questions about health and dental should first be directed to <http://www.ihaveaplan.ca/> or 1-866-358-4434. If further assistance is still required, please contact macgsa@mcmaster.ca. The GSA Health & Dental Plan automatically covers members who pay GSA and McMaster fees. This includes international students who are paying McMaster fees. Certain exceptions exist. Please check your student account to confirm if you have been charged the plan fees. New summer semester students may be eligible to enroll themselves in the plan. Go to their website to find out more about enrollment. Initiated by your student association, the McMaster GSA Health Plan provides students with unique health benefits. The Plan was designed by students for students to provide many important services and cover expenses not covered by a basic health-care plan (i.e. OHIP), or the equivalent (e.g. UHIP for international students) such as prescription drugs, health practitioners, medical equipment, travel health coverage, and more.

GSA (OPT OUT):

http://www.studentcare.ca/rte/en/McMasterUniversity_ChangeofCoverage_OptOuts

If you are already covered by an equivalent health and/or dental plan, you can opt out and receive reimbursement for the amount of the Plan. Refer to above website for the Change-of-Coverage specific dates.

GSA Non-Essential Fees: Students can opt-out of non-essential supplementary fees.

<https://registrar.mcmaster.ca/supplementary-fees/#tab-3>

DENTAL CUPE 3906 (Teaching Assistants – UNIT 1): <https://cupe3906.org/tas-unit-1/dental-plan/>

CUPE 3906 provides dental coverage for Unit 1 members (excluding undergraduate students) who have a TAship or RAship in lieu of a TAship worth 130 hours or more. Unit 1 consists of Teaching Assistants, Demonstrators, Tutors and Super Tutors, Markers and Research Assistants whose RAship is granted in lieu of a guaranteed TAship. Please note that if you are eligible for the CUPE Dental Plan, you are not eligible for the Graduate Students' Association Dental Plan. As such, you cannot enroll in GSA dental coverage and opt-out of CUPE 3906 coverage. When a TA is hired, on their first pay in the academic year, dental plan premiums for the whole year will be deducted in a single amount by the Employer.

CUPE 3906 (OPT OUT):

Eligibility for the Dental plan runs by **academic year** (i.e., Sept 1st to Aug 31st). The **eligible amount for reimbursement** (i.e., the money that is available to you) runs by **calendar year**. This means that if you are only employed for one academic year your coverage will be terminated at the end of that academic year (i.e., August 31st). To **opt-out of CUPE 3906 dental coverage if you have alternative dental coverage through your parents or spouse**, please fill out the forms available on the CUPE website listed above.

INTERNATIONAL STUDENTS - UNIVERSITY HEALTH INSURANCE PLAN (UHIP):

<https://studentsuccess.mcmaster.ca/international-students/health-insurance/>

UHIP is a compulsory plan for international students (and eligible dependents) at McMaster University who hold a valid study permit issued by Citizenship and Immigration Canada and who are FULLY enrolled in a graduate program. The UHIP coverage period is from September 1 to August 31 of any given year. Exceptions to this rule include exchange students and other students with defined shorter stays at McMaster. International students are automatically enrolled in UHIP every year. It is the student's responsibility to ensure their coverage is correct by checking their account on Mosaic. **After successfully completing enrollment, students will receive a copy of their UHIP card by email.**

TEACHING ASSISTANTS

APPOINTMENTS:

Each year our program receives an allocation of Teaching Assistantships. All current, in-time and incoming PhD students are required to TA for a total of 130 hours (1/2 TA) in the upcoming academic year; unless they have agreed to have their TA position bought out by their supervisor. Additionally, you will be paid 3.0 hours for Health and Safety Training and Orientation per term that you are scheduled to TA. Once all assignments have been made, any remaining vacancies will be posted for MSc students to apply.

CANADIAN UNION OF PUBLIC EMPLOYEES (CUPE) 3906:

If you have been offered a Teaching Assistantship, you will become an employee of McMaster University in addition to being a graduate student. The terms and conditions of your employment are governed by the collective agreement between the Canadian Union of Public Employees, Local 3906 Unit 1 and the University. Collective agreement: <https://cupe3906.org/tas-unit-1/collective-agreement/>
CUPE3906: <http://www.cupe3906.org/>

CONTINUITY OF TEACHING ASSISTANTSHIP FUNDING:

Every regular full-time student, **in a Master's program**, who has been employed as a Teaching Assistant during a part of the first year of study in a program will be re-employed as an assistant during a part of the **one** succeeding year of study subject to his/her maintaining regular full-time graduate status and to his/her ability to perform the work. Full-time students, **in a Doctoral program**, who have been employed as a Teaching Assistant during a part of the first year of study in a program will be re-employed as an assistant during a part of each of the **three** succeeding years of study, subject to his/her maintaining regular full-time graduate status and to his/her ability to perform the work.

HOURS OF WORK FORM:

A meeting between the Course Instructor and Teaching Assistant must be held within 7 days of the TA commencing his/her duties in the applicable academic term. At this meeting, the employment supervisor will describe the work to be done, giving details, including the nature, number of scheduling of specific assignments and the estimated hours of work each will involve. The employee and supervisor will discuss this information, taking into account course enrolment, nature of assignments and expectations for grading and determining reasonable workload. Following this discussion, the "TEACHING ASSISTANT HOURS OF WORK ASSIGNMENT" form must be completed and signed by both parties and returned for the Chair's signature. All TAs must fill in their completed Health and Safety Training dates in addition to signing a Job Hazard Analysis Summary Form.

VACATION: Graduate Calendar [Section 2.5.8](#)

Full-time graduate students are expected to be on campus for all three terms of the university year, as specified in the Graduate Calendar, Section 1.3. In addition to statutory holidays and the week long closing of the University from late December until early January, normal vacation entitlement is **two weeks** of vacation during the year, to be scheduled by mutual agreement with the research supervisor and the employment supervisor. An exception to this allotment requires approval from the supervisor.

COURSE REQUIREMENTS

REQUIRED COURSES FOR ALL GRADUATE STUDENTS: All graduate students, including part-time students, must complete the SGS 101 - Academic Research Integrity and Ethics and SGS 201 Accessibility for Ontarians with Disabilities Act, 2005 (AODA) courses. A graduate student may not obtain a graduate degree at McMaster without having passed both courses.

MSc => **Two half** graduate courses (at the "700-level")
PhD => No **formal course requirements**

In selecting courses, master's students are encouraged to consult with their supervisor. At least one full, 700-level graduate course (or two half courses) must be completed, which must include at least one half, 700-level graduate course in **Biochemistry**. Supervisory committees may recommend a student take courses in addition

to those prescribed by departmental regulations. Students may take 600-level courses, however they do not count towards degree requirements. Under normal circumstances a student who fails to obtain B- in a prescribed course is asked to withdraw from the program. Those allowed to remain in the program must either repeat or replace the failed course. A failing grade in a prescribed course remains on the transcript.

MD/PhD

MD Program Fulfillment: Students must successfully complete the new MD curriculum, electives and clerkship rotations. Horizontal electives **are required** for graduation in the MD/PhD program and must be completed during graduate research block (3 years). A minimum of 80 hours in horizontal electives must be completed satisfactorily. These electives must be documented and evaluated by a clinical supervisor.

PhD Program Fulfillment: MD/PhD candidates must successfully complete required courses, the PhD Candidacy Exam, and submit and defend a research thesis as required by the program in which the student is enrolled. **Required courses:** Course requirement varies depending on the graduate program in which the student is enrolled. There are no course requirements in Biochemistry and Biomedical Sciences.

***AUDITED COURSES:** Graduate Students may request to audit Graduate courses only. This requires a completed form, signed by the instructor and student's supervisor. Upon completion of the course, and subject to confirmation from the instructor that their expectations regarding the student's participation were met (i.e. that the student attended at least 80% of the class), a grade of "AUD" will be recorded on the transcript. No other grade will be assigned. Audited courses have no academic credit and an audited course may not be retaken for credit.

BIOCHEMISTRY 700-LEVEL GRADUATE COURSES OFFERED (2020-2021)

This year the following graduate courses will be offered online by the Department of Biochemistry and Biomedical Sciences.

CATALOG #: **BIOCHEM 720**
DESCRIPTION: **Scientific Communication**
TERM: **2020 Fall: Sept. – Dec. 2020 (720A)**
2021 Winter: January - April 2021 (720B)
INSTRUCTOR: Matthew Miller

NOTE: ***This is a multi-term course for "2nd year" Biochemistry Masters Students.***

This course will introduce students to various methods of scientific communication and provide them with the tools to become better communicators in speaking, writing, and publishing. Topics include effective public speaking strategies, development of effective visual material for presentations and scientific manuscripts, and writing strategies for scientific manuscripts. As part of this course, students will apply the skills learned by presenting a research seminar to the department as part of an ongoing colloquium series, and by writing a scholarly review article on their research topics.

CATALOG #: **BIOCHEM 732**
DESCRIPTION: **WRITING FOR SCIENCE**
TERM: **2021 Winter: January – April 2021**
INSTRUCTOR: Deb Sloboda

Scientific writing spans journalism, manuscripts, patents, posters, grant proposals, commentaries - the list goes on. This course will expose students to a variety of scientific writing, exploring their purpose(s) and how they are evaluated by their intended audiences. A large practical component will have students writing and/or evaluating writing every week. The emphasis will be on guiding students to become better, more effective communicators.

CATALOG Nbr: BIOCHEM (New Course)
DESCRIPTION: Careers/Commercialization - TBA
TERM (2201): January - April 2021
INSTRUCTOR: Leigh Wilson

Details will follow soon. Students will be able to register when winter registration opens.

SEMINARS

PARTICIPATION IN THE DEPARTMENTAL SEMINAR PROGRAM IS MANDATORY FOR ALL GRADUATE STUDENTS

OUR SEMINARS ARE HELD EVERY MONDAY FROM 11:30-12:30 PM. PLEASE REFER TO OUR WEBSITE FOR THIS YEAR'S SEMINAR SERIES SCHEDULE:

<http://biochemgraduateprogram.ca/seminar>

Learning to communicate the results of basic research is an integral part of graduate education. It is also important for students to be exposed to research outside their own area of specialization. Students are therefore expected to attend their colleagues' seminars and make the graduate student seminar series a fixed commitment in their weekly schedules. MSc and PhD students are required to present one and two seminars respectively. Students will receive feedback from faculty and other graduate students following each seminar.

MSc Seminar: Second year master's students will present a 15-20 minute seminar (with 5 minutes set aside for questions from the audience) during our Monday seminar series. This should be a very focused presentation. The problem the student is trying to address should be explained in such a way that any scientifically literate audience member can grasp what they're working on.

PhD Seminars: The first doctoral level seminar will be presented in second year. The student has 45-50 minutes to present reserving 10 minutes for questions from the audience. The second seminar is typically during the last 12 months in the program. The student will have 20-25 minutes to present reserving 5 minutes for questions. Seminars must place the student's sizable body of work in the context of their field. It is important to explain how the specific work contributes to this field.

SUPERVISORY COMMITTEE MEETING GUIDELINES

SUPERVISORY COMMITTEE MEETINGS

University regulations require all graduate students meet formally with their supervisory committee to discuss their progress. Committee meetings provide a tool for both communicating and documenting students' accomplishments and their supervisory committees' expectations. Graduate students are encouraged to familiarize themselves with the [McMaster University Graduate work Supervision Guidelines for Faculty and Students](#) available on the School of Graduate Studies website.

Supervisors are responsible for assembling their student's committee members. The research interests of all committee members will encompass the thesis topic of the student. The committee will consist of the student's supervisor plus two other members (at least one must be a full-time faculty or associate member from the Biochemistry and Biomedical Sciences Department). A third member, whose scholarly interests include the area of the student's main interest, may be from outside the department.

Students are responsible for scheduling their committee meetings on time. The Biochemistry Graduate Administrative Assistant must be notified by the student once the meeting date is confirmed.

Students will be assigned one of five grades by each of their committee members: "excellent", "good", "satisfactory", "marginal" or "unsatisfactory". If marginal is given by any one member, another committee meeting must be held within 3 months to re-assess your progress. In cases where a student receives "unsatisfactory", the program will determine whether the student should be required to withdraw or be allowed to continue in the program until their next committee meeting.

Master students - committee form will be emailed to the student from the Biochemistry administrator. It is the student's responsibility to ensure their supervisor completes, discusses and returns all forms to the Graduate Assistant (HSC-4H22) or kushL@mcmaster.ca as soon as possible for processing in mosaic.

Doctoral students will use the online forms through *Admin Tools* to document their committee meetings. Each student will receive an automated email from the School of Graduate Studies containing a link in order to access the system. It is the student's responsibility to confirm their committee members, and complete their portion of the virtual forms before submitting using *Admin Tools*. Once rated, the student must review their supervisor's comments and submit the completed forms to the Assistant Dean of the Biochemistry graduate program for approval using the online system.

GUIDELINES FOR SUPERVISORY COMMITTEE MEETINGS

Students enrolled in our MSc program are to meet every six months with their supervisory committee. Students enrolled in our PhD program are to meet once a year unless stated otherwise. It is suggested that each meeting have a specific focus as outlined below.

***First Meeting (MSc & PhD students) (4-6 months)**

The first supervisory committee meeting is to be held within 4-6 months of registration in the graduate program. The goal of this initial meeting is to determine whether the student has a well-defined project and whether the student is making the necessary effort to become well versed in the background literature to their field. We expect all students to attempt to master this material within their first year of graduate school. At this first

meeting, the student should also have made some basic progress towards their research goals although it may be of a preliminary nature.

***Second Meeting (MSc students) (9-12 months)**

The second committee meeting is to be held between 9 and 12 months after arrival in the program. It is expected the student will have made further progress in mastering the literature relevant to their field and to have made headway in their research. Students may present a request to be reclassified to the PhD program to their supervisor and Supervisory Committee members.

***Third Meeting (MSc students) (18-20 months)**

The third committee meeting will be held no later than 18 months after initial registration in the program. The purpose of this meeting is to decide what the student needs to do to complete their MSc thesis. Alternatively, if the student has the support of their supervisor and committee members, he/she may request permission for reclassification into the PhD program without obtaining a Master's degree before going beyond 22 months.

Subsequent PhD Meetings (once every academic year)

Every PhD student must have a Supervisory Committee meeting at least once every academic year (between September 1 and August 31). However, if desired or considered necessary by their supervisor, additional meetings may be arranged. The committee meeting report MUST be received by the School of Graduate Studies within two weeks of the end of the academic year.

Direct Admission: PhD Program

Students who enter our PhD program directly with an MSc degree from another McMaster Department or Institution or with only a first degree (BSc) are required to schedule their first Supervisory Committee meeting within **SIX** months of initial registration. A proposal will be prepared and defended at a 2-hour PhD Candidacy Examination following our guidelines at approximately **12** months after initial registration. This meeting will include participation of a chair and their committee members.

COMMITTEE REPORT – Submit a copy to your committee members “one week” before your meeting

Students must submit a 10-20 page (double spaced, not including figures) report to their committee that briefly introduces their project, the work they have done previously (i.e. prior to the previous committee meeting) and since the last meeting. It is imperative that work completed since the previous meeting be identified so that the committee can assess the progress that has been made in the research project..

In addition to having sound scientific judgment, nothing is more central to the career of a scientist than being able to clearly explain scientific concepts in writing. We therefore expect our students to master the art of writing scientifically and these reports are part of this process: they will serve as important dress rehearsals for writing papers and the thesis later on. Any criticisms made of meeting reports will be revisited at subsequent meetings and it is expected that they will have been acted on.

We expect all students to master the literature that is relevant to their project during the first year of graduate studies. This includes those papers that make up the foundation of their project as well as those that deal with relevant technical approaches being used. One-way of assessing progress in this area is the reference list at the end of each report: these should be thorough citations and must be made using one of the formats accepted by journals (see for example http://jb.asm.org/site/misc/journal-ita_org.xhtml).

The standards for presentation of data in these reports are identical to those in the journals: lanes in gels must be labeled, strains on plates must be identified, micrographs must be clearly labeled, and graphs must include error bars as appropriate and so on.

The last page or two of each report should set out what you expect to achieve in the block of time (usually 6 or 12 months) leading up to your next meeting. This does not need to be a detailed description of every technique to be employed, rather the goal is to explain the scientific questions to be addressed and briefly outline the approach that will be taken and the anticipated timelines.

WHAT HAPPENS AT COMMITTEE MEETINGS?

Students should come prepared to give a ~20 minute presentation on what they have described in their meeting report. The presentation should provide the rationale of the project, a description of the experimental approaches being used, an overview of progress, on-going work, and future directions. The Committee will then discuss the project in detail with the student. Students receive a grade and specific recommendations in writing following each committee meeting. Students whose performance is not considered to meet the minimum standards will be graded marginal to unsatisfactory for that meeting. Depending on the circumstances, two subsequent grades of unsatisfactory can be grounds for withdrawal from the program.

Students should feel free to bring up any issues they would like guidance on and to clearly articulate their expectations with their committee members. During the presentation, the committee members may ask questions that are relevant to the project. This can include challenges on the interpretation of data, first principles, and scientific questions that are relevant to the topic or to planned experiments. Committee members may ask the student to briefly explain any of the references they cite in their report.

Students are asked to bring lab notebooks containing relevant experimental observations to each meeting. One important aspect of the scientific method is the reproducibility of each important observation: typically, the most publishable version of an experiment will be shown in the meeting report, however, students must be able to provide evidence that each observation has been made more than once.

MASTER'S REQUIREMENTS

NOTE: A STUDENT WHOSE WORK IS UNSATISFACTORY MAY AT ANY TIME BE REQUIRED TO WITHDRAW FROM THE PROGRAM

The general requirements for the MSc degree appear under the Regulations for Master's degree (Section 3) in the School of Graduate Studies Calendar. The MSc program is typically 18-24 months in length. A candidate is required to spend at least one calendar year in full-time study. The maximum permissible time for completion is limited to **THREE** years from initial registration in the program.

The candidate must complete, with at least B- standing, at least one full, 700-level graduate course (or two half-courses), which must include at least one half, 700-level graduate course in Biochemistry. All MSc students are required to present one public seminar in the Departmental Seminar Program. Meetings of the Supervisory Committee, consisting of the supervisor and two additional faculty members, will take place every 6 months. The candidate is required to present a thesis in a final oral examination that embodies the results of their original research.

Students may request to be reclassified to the PhD program no sooner than 8 and no later than 18 months after initial registration in the MSc program. The candidate must present a request for transfer to the supervisor and the Supervisory Committee and all must be in agreement to proceed with the transfer. Students enrolled in the Master's program beyond 22 months must complete the MSc degree requirements including all course work and the thesis defence prior to admission to the PhD program.

MASTER'S THESIS EVALUATION

Please consult the School of Graduate Studies' Guide for the Preparation of Master's and Doctoral Theses. All graduate theses must conform to the style and form requirements as detailed in the Guide.

MASTER'S DEGREE: <https://gs.mcmaster.ca/current-students/completing-your-degree/masters-thesis/>

MSc DEGREE COMPLETION: *PLEASE FOLLOW THE STEPS LISTED BELOW*

It is the student's responsibility to ensure all program requirements (seminar and course work) have been completed, enrollment is current, and outstanding fees are paid.

STEP 1 – SCHEDULING DEFENCE

Permission to write is given by the student's committee at the third supervisory meeting usually held at the 18-month mark. Acting on behalf of the chair, the time of the defence will be set by the Department Graduate Administrator. The candidate is to inform the Administrator they have started to prepare for their defence approximately 8-12 weeks prior to the anticipated oral examination. Note: A master's thesis defence committee must include a chair (your supervisor), a second faculty member from Biochemistry and a third faculty member.

The administrator will do the following in anticipation of the defence:

1. Confirm the date and time with your committee members.
2. Reserve a room.
3. Prepare and provide thesis examination forms for your supervisor.

STEP 2 – GET YOUR THESIS APPROVED BY YOUR SUPERVISOR

Produce a draft of your thesis to your supervisor 8-12 weeks before your defence. Your draft should be correctly formatted with attention to detail (see MSc guidelines on the SGS website). You will be assessed mainly on its content, but also on its appearance. The draft should be free of typos and poor grammar and illustrations should be sharp not blurry. In addition to your supervisor, it doesn't hurt to get a colleague to read it over as well. Your supervisor should try to give you a reasonable "turnaround time" on drafts, but your revision time also needs to be factored in.

STEP 3 – GET YOUR SUPERVISOR TO SIGN THE "REQUEST FOR THESIS DEFENCE FORM"

When your supervisor has agreed the thesis is ready to defend, then you must have your supervisor and our Graduate Student Advisor sign the "Request for Thesis Defence" form two-three weeks prior to the defence. The signed form is to be returned to the Department Graduate Administrator. This is an important part of the process. By signing this form, your supervisor is stating they feel the thesis is defensible.

STEP 4 – INITIATION OF MASTER'S DEFENCE (MOSAIC)

In your student center, select "My Academics" then the "Thesis Intent – Defend Thesis" link. Check that your supervisor, members and academic plan are correct. If any information is incorrect, you should contact the department administrator before proceeding. You can now enter your abstract and the date, time and room confirmed by your program administrator. Confirm and submit.

STEP 5 – SUBMIT THESIS TO COMMITTEE MEMBERS

Provide a copy of your thesis to your committee members **a minimum of two weeks** prior to your defence. Ask your members if they want you to provide them with an electronic or hard copy.

STEP 6 - DEFENCE DAY

Make sure your presentation is loaded and all fonts, images, animations etc. appear as intended. You will be asked to present a 15-20 minute oral statement of the research that comprises the thesis. Your brief presentation should highlight any major issues dealt with in the thesis, the conclusions which have been reached and the significance of the findings. Notes or other aids may be used, however the statement may not be read from a prepared script.

STEP 7 – FOLLOWING THE DEFENCE

Candidates who have successfully completed their thesis oral examination and made all the revisions and corrections required by the examining committee, must obtain the appropriate signature(s) on the “Final Thesis Submission Sheet. The forms listed below are to be emailed to the Department Graduate Administrator, Lisa Kush: kushL@mcmaster.ca. A copy will be kept in your student file and the originals will be uploaded in mosaic by service request. You are now ready to submit your final thesis copy (pdf format) to MacSphere.

- Final Thesis Submission Sheet
- Copyright Permission Form (if applicable)
- McMaster University Licence
- Report of Examining for Master’s Thesis Examination Oral Defence

Note: Your degree requirements are considered complete when one electronic copy of the thesis is submitted through the E-Thesis module in MacSphere, the forms have been uploaded in mosaic and your student account is clear of any outstanding fees.

TRANSFER TO PHD PROGRAM

GOALS AND OUTLINE

The Department promotes the effective integration of graduate students into the research programs of its faculty members. Since these are on-going programs with long-term objectives, it is for the benefit of the students and the research programs to integrate MSc students intending to proceed to PhD degrees into these long-term objectives as early as practical. To this end a process has been established to assess MSc students’ academic and research ability and potential to carry out PhD studies. Students who have demonstrated this ability may proceed directly to the PhD program without writing up their Master’s thesis provided the following conditions have been met:

1. The student has had his/her first supervisory committee meeting within 4 to 6 months of initial registration in the Master’s program. At this meeting the committee will expect that the student has taken significant steps to master the literature relevant to his/her fields. Some preliminary progress at the bench is also expected.
2. A second meeting held within 9 to 12 months of the student’s first registration will serve to address any shortcomings identified during the first meeting. At this point it is anticipated that the student will have made significant progress in their research. The student must have a solid grasp of the literature relevant to his or her field at this time in order to be *eligible* to transfer to the PhD program.

3. The candidate must present a request to be reclassified to the PhD program to the supervisor and the Supervisory Committee prior to the second (or third) supervisory committee meeting. Approval to transfer will be determined at the conclusion of the supervisory committee meeting at which permission to transfer was requested.
4. All students seeking reclassification to the PhD program from the MSc program must receive approval to transfer before going beyond 22 months following registration in the MSc program. Students enrolled in the Master's program beyond 22 months must complete the MSc degree requirements including all course work and the thesis defence prior to admission to the PhD program.

DOCTORAL REQUIREMENTS

NOTE: A STUDENT WHOSE WORK IS UNSATISFACTORY MAY AT ANY TIME BE REQUIRED TO WITHDRAW FROM THE PROGRAM

A candidate for the PhD degree must comply with the School of Graduate Studies Regulations for the Degree Doctor of Philosophy. Our PhD program is tailored to maximize student productivity and learning through basic research. Our philosophy is that the most important goal of a higher degree is to become an expert in a specific field while maintaining sufficient breadth of knowledge to succeed after leaving graduate school. This includes publication in respected peer-reviewed journals, applications for scholarships, and oral and written presentation skills. Our graduates typically secure top-level international post-doctoral fellowships or have industry placements in leading biotechnology and pharmaceutical research companies worldwide.

The **minimum** time to complete a PhD is **THREE** calendar years beyond the bachelor's level or **TWO** calendar years beyond the master's level. Completion of the PhD degree is normally limited to **SIX** years from initial registration. There is no minimum course requirement for the completion of the PhD degree, unless the student's supervisory committee has made a specific recommendation for additional course work to supplement the student's knowledge in their area of research. The candidate will be required to participate in the Departmental seminar program and meet at least annually with their Supervisory Committee. All PhD candidates must pass a PhD Candidacy Examination, consisting of a written research proposal representing the student's own original proposed work for PhD studies, followed by an oral examination by the PhD Candidacy Examination committee. Students applying to our program who already hold an MSc degree from another institution have the possibility for direct admission into our PhD program subject to approval from our admissions panel. Such students are required to take the PhD Candidacy Examination.

PHD CANDIDACY EXAMINATION

The PhD Candidacy Examination is designed to test students for breadth of knowledge and the ability to integrate ideas. The PhD Candidacy Examination typically takes place at 12 months after the student has begun PhD studies, with an upper limit of 20 months. Candidates must present a thesis that embodies the results of original research and high scholarship. This thesis must be defended in a Final Oral Examination as outlined in the School of Graduate Studies Regulations for the Degree Doctor of Philosophy.

The PhD Candidacy Examination has three purposes. First, it tests the student's preparation for PhD level research by determining whether they have mastered the theoretical background to their fields. Students will therefore be expected to have researched and read the publications that form the foundation of their field as well as the necessary background for the technology they intend to employ. Secondly, it will provide independent assessment of performance to-date and the student's ability to execute the longer-term strategy of the proposed PhD research project. Thirdly, this exam will help reveal the student's strengths and weaknesses. While questioning in the exam can be expected to be rigorous, students are not expected to have the correct answers for everything. A student coming out of this examination therefore will have had an independent evaluation of his/her project and background knowledge, and will have been made aware of areas in which he/she needs improvement. This last point may include the recommendation of specific course work.

PROCEDURE

Students will complete a proposal using the format of a CIHR operating grant. This written proposal must represent the student's own original work; the inevitable input of the supervisor notwithstanding, McMaster University policies on Academic Ethics and Academic Dishonesty apply.

The aim of this proposal is to describe the theoretical background to the project and outline the goals of the research. This document should illustrate that the student's goals have sufficient depth to form the basis of a PhD project and must clearly demonstrate the progress that the student has made during the first 12-18 months as a PhD graduate student. This proposal is expected to be a major exercise in writing and should describe novel research in a concise and informative manner. It must be comprehensible to faculty members who are not necessarily experts in the field. This proposal should include an abstract of not more than 300 words, an introduction to the student's field and basic research direction, a summary of progress and a detailed discussion of the research to be carried out towards a PhD, including hypothesis, rationale and aims. It is important to explain and justify the approach being taken and include a projected time line for the completion of each goal.

There is an absolute length limitation of 20 pages (double-spaced, 12-point font, not including figures or references). The first 2-3 pages should introduce the subject of the student's thesis. Following the introduction there should be a 2-3 page summary of the student's progress. The remaining 14-16 pages should explain the proposed research. Students may subdivide each section in whatever manner they deem to be the most readily digested by the examining committee. References must conform to accepted practices.

Preparation time for this proposal is limited. Students will be assigned a date for their exam 4-5 weeks in advance of their exam. The report must be submitted to the committee members at least one week prior to the exam.

EXAMINATION

The student will give a 15-20 minute presentation outlining the major points of his/her proposal, including accomplishments to-date and the research proposed for the PhD. The exam will then consist of two rounds of questioning from each of the voting Committee members, and can deal with any aspects of the presentation and proposal. The total time for the questioning will not exceed two hours. This committee will consist of members of the candidate's supervisory committee, as well as the examination chair, who will be a member of the BBS Graduate Curriculum and Recruitment Committee. The supervisor will verify the originality of the proposal at the outset of the examination. The Chair will ensure that the exam is conducted in a fair manner in keeping with the objective of this document. In the event that a student is at a loss to answer a particular question, the Chair may ask the examiner for clarification or to move on to a more fruitful line of questioning. The supervisor does ask questions and the Chair is a voting member, but does not examine.

The outcome of the exam will be pass with distinction, pass, or fail and the decision must be unanimous. Failure of the exam will normally result in the candidate repeating the exam within six weeks of the initial exam and prior to the maximum 24-month period. Two failures will lead to withdrawal from the PhD program.

DOCTORAL THESIS EVALUATION

Please consult the School of Graduate Studies Guide for the Preparation of Master's and Doctoral Theses. All graduate theses must conform to the style and form requirements as detailed in the Guide.

DOCTORAL DEGREE: <https://gs.mcmaster.ca/current-students/completing-your-degree/doctoral-degree/>

QUESTIONS: Please contact the School of Graduate Studies Thesis Coordinator at gthesis@mcmaster.ca

IMPORTANT NOTES:

OPTION 1: **Standard process (Graduate Studies)** – Student initiates process minimum 8 weeks prior to defence (refer to the School of Graduate Studies website below).

OPTION 2: **Accelerated process** – Supervisor contacts SGS minimum 6 weeks prior to defence. The timeline is shortened giving students 3-4 more weeks before submitting their thesis.

The process begins when a student and their supervisory committee members agree that the thesis is acceptable to defend. The student will initiate the defence process electronically approximately 2 weeks before submitting their thesis to the School of Graduate Studies. In Mosaic, navigate to your Student Centre and under the "My Academics" tab, select "other academics" and then select "Thesis Intent-Defend my Thesis".

Revision to Sec 2.8.1 Graduate Calendar:

"Prior to the thesis defence and, in the case of a doctoral thesis, before sending out the draft to the external examiner, the entire document must be reviewed for its originality using the University's paid subscription to Urkund. The program/supervisor will review the originality report generated by Urkund and either recommend changes to the document or approve it for the defence. A thesis may not be seen by the thesis examining committee (including the external reviewer in the case of a doctoral thesis) until the Urkund generated report was reviewed and approved by the supervisor or the program, unless authorized by the Associate Dean of Graduate Studies."

The PhD final oral examination takes the form of a brief statement by the candidate and questioning by their committee. Prepare a statement that will take between 15 and 20 minutes to deliver. In preparing, consider you are speaking to an audience who has read your thesis. What you should endeavour to do is stress the main points of your contribution to the advancement of knowledge and the principal technical difficulties either of an experimental or theoretical nature which you have overcome. Notes or other aids may be used but the statement may not be read from a prepared script.

COMBINED MD/PhD PROGRAM

MD/PhD ADMISSION REQUIREMENTS: <http://fhs.mcmaster.ca/mdphd/index.html>

Frequently Asked Questions: <http://fhs.mcmaster.ca/mdphd/faq.html>

Students in the MD/PhD program will complete both the MD curriculum requirements (eligible for MD residency programs), and the PhD curriculum requirements in order to be eligible for particular academic placements across institutions. The program seeks to train individuals who will pursue research as a major priority and to prepare graduates for leadership roles in integrated research initiatives, particularly those involving interdisciplinary and translational health research endeavors. The program expects that McMaster MD/PhD graduates will contribute significantly to the need for clinician scientists in a variety of roles. The MD/PhD program is offered in an integrated format with specific blocks of time provided for activities either in full- or part-time studies in either program. There will be opportunity for flexibility in the arrangement of a student curriculum, if requested and/or deemed appropriate. The MD/PhD program committee and the student's doctoral program will review these requests before making a recommendation to the Associate Deans. The Program utilizes the established MD curriculum and Biochemistry is one of the established graduate programs that participate in MD/PhD training. MD program fulfillment (in the MD/PhD program): The new MD curriculum, electives and clerkship periods. Horizontal electives (optional in current MD program, not optional in the MD/PhD program) must be completed during graduate research block (3 years). A minimum of 80 hours in horizontal electives must be completed satisfactorily. PhD program fulfillment (in the MD/PhD program): Time will be allowed for attendance at regular research group meetings while in the MD curriculum. Attendance at MD/PhD program group meetings (faculty and students) will be held a minimum of 3 times annually. In addition, students must complete the requirements of their PhD program, as outlined in the relevant section of Graduate Calendar, including the PhD Candidacy Examination and the submission and defence of a research thesis (the research proposal should be completed as early as possible in the program).

ASTROBIOLOGY

COLLABORATIVE GRADUATE PROGRAM IN ASTROBIOLOGY:

<https://origins.mcmaster.ca/academic/graduate>

The Origins Institute in collaboration with five "home" departments offers Canada's first graduate program in Astrobiology. The "Collaborative Graduate Program in Astrobiology" offer students a M.Sc. or Ph.D. in the

interdisciplinary science of Astrobiology. Students must be accepted to do graduate studies in any of five participating home departments: Biochemistry, Biology, Chemistry and Chemical Biology, Physics and Astronomy, and the School of Geography and Earth Sciences. Researchers must possess expertise in specific fields such as astrophysics, microbiology, planetary sciences, biochemistry and chemistry, etc. but also must have the training that allows them to work effectively within multidisciplinary teams. For more information, please refer to the School of Graduate Studies Calendar.

DEPARTMENT AWARDS

THE KARL FREEMAN PRIZE FOR BIOCHEMISTRY GRADUATE SEMINARS

The Karl Freeman Prize is awarded annually to graduate students in the department who are deemed to have presented the most outstanding graduate seminars. The School of Graduate Studies awards the prizes on the recommendation of the Department. Prizes are given for first and second place seminar ranking in the MSc and PhD program. This prize was established in 2001 by Karl Freeman, Chair of the Department of Biochemistry from 1973 to 1979 and acting chair for six months during 1982.

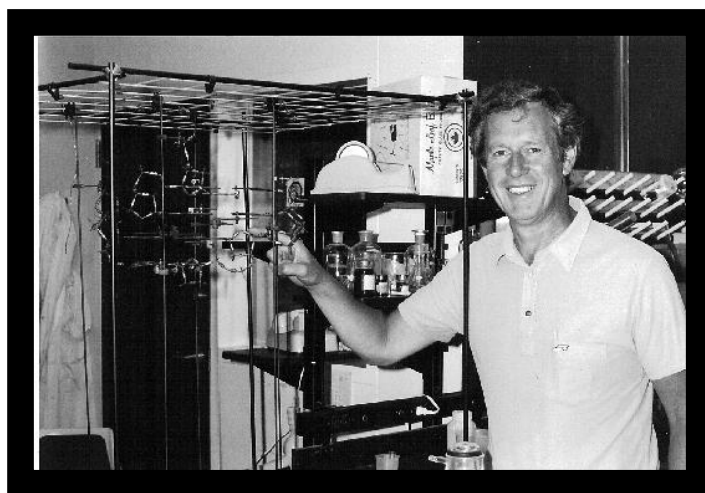
IMPACT AWARDS (RECOGNITION FOR STUDENT PUBLICATIONS)

This award will be presented to Biochemistry and Biomedical Sciences graduate students for highly meritorious contributions to scientific literature during 2020. Up to three awards are given annually for first-authored publication(s) by our graduate students that are evaluated by an external review committee. Nominations should be submitted in the form of a letter to the Chair from the graduate supervisor. The letter should briefly outline the achievements of the candidate, indicating the student's accomplishments with respect to the publication, and should be accompanied by a copy of the publication.

THOMAS NEILSON SCHOLARSHIP

The Department of Biochemistry and Biomedical Sciences is pleased to invite nominations for the 2020/2021 Thomas Neilson Scholarship. This award is given to the Biochemistry graduate student deemed to show the greatest potential as an independent scientist at the time of transfer to the PhD program. This award was established in memory of Dr. Thomas Neilson by his family, friends and colleagues as a token of their appreciation and respect.

The Neilson Scholarship will be awarded by the School of Graduate Studies on the recommendation of the Departmental Graduate Admissions Committee, based upon performance in the program with particular emphasis upon the overall academic standing, supporting letters, contributions to teaching, the seminar presentation, the report, research contributions and publications. The award will not necessarily be given every year.



Thomas Neilson joined the Department of Biochemistry in its early years and contributed to its chemical expertise. Among his colleagues, Tom was widely admired for his consummate skill in organic synthesis. Within a short time, he developed convenient procedures for the large-scale synthesis of oligoribonucleotides of defined sequence. This accomplishment was recognized internationally and led to many fruitful collaborations. To his students, Dr. Neilson was a devoted teacher who gave of his time generously. Above all, he was a man of sincerity and integrity who earned the trust and affection of those around him. His career at McMaster sets a worthy example to all of us in academic life.

BIOCHEMISTRY AND BIOMEDICAL SCIENCES GRADUATE STUDENT TRAVEL AWARDS

The Department will grant up to 40 competitive \$500 travel awards each year to assist students planning to attend scientific meetings. To qualify, students must be enrolled on a full-time basis in either the MSc, PhD or MD/PhD program and must present data either as a poster or as a speaker at the meeting they plan to attend. Students who have received a travel award in the past will be eligible for another only if funding permits. Students applying for these awards are strongly encouraged to apply for travel funds from other sources including, in particular, the GSA. There are three application deadlines: **September 11** (for meetings scheduled between September and March 30); **March 19** (for meetings scheduled between April 1 and June 24); and **June 4** (for meetings scheduled between June 25 and August 31). Students must apply to the department by the deadline in advance of the meeting they are to attend. The completed application form must be accompanied by a one-page (maximum) letter explaining the relevance of the meeting to the advancement of their education and how it will benefit their work. The Associate Chair, Graduate Studies will review and approve applications.

SCHOLARSHIPS AND BURSARIES

The School of Graduate Studies website lists various scholarships and bursaries. An email will be sent to students relaying the various deadline dates. Before applying for a McMaster scholarship, it is important to prepare your application. Graduate students are now able to apply for graduate bursaries through Mosaic's Student Centre. This guide will lead you through the online process for McMaster awards and bursaries that are available in Mosaic <https://gs.mcmaster.ca/current-students/scholarships/>

GENERAL BURSARY, INTERNAL BURSARIES AND ACADEMIC GRANTS:

Scholarships and bursaries are funding provided by McMaster to help you pay for school. For more information how to apply, go to [Student Financial Aid and Scholarships](#).

GRADUATE STUDENT ASSOCIATION (GSA) TRAVEL GRANTS

The GSA awards a number of travel awards (up to \$500) every semester (Sept-Dec, Jan-Apr, May-Aug) for travel to conferences to present, or to undertake research relevant to their field of study. GSA Travel Awards are funded from the proceeds of the GSA Development Fund, which is sustained by contributions from Graduate Students and the University. Students can apply through "Aid by Application" in Mosaic. For more information, see <https://gsa.mcmaster.ca/gsa-funding/travel-grants/>

EXTERNAL SCHOLARSHIPS

There are a number of external awards available from provincial and national funding agencies. All graduate students are encouraged to compete for awards provided he/she meets the eligibility requirements. Please read and follow all instructions carefully. All award recipients must provide a copy of any external funding documentation to Sarah Cumin, Operations Manager, Biochemistry and Biomedical Sciences {cumins@mcmaster.ca} to adjust stipends accordingly.

******IMPORTANT******

For more specific instructions and department deadlines, please refer to our department website under the “External Scholarships Tab” at: <http://biochemgraduateprogram.ca/financing/>

For all major scholarship and award guidelines, please refer to the School of Graduate Studies website: <https://graduate.mcmaster.ca/awards-funding/scholarships>

CANADA GRADUATE SCHOLARSHIPS (MASTER’S) – CIHR AND NSERC

The CGS-M Awards Program provides financial support to high-caliber scholars who are engaged in eligible Master’s or, in some cases, doctoral programs in Canada. The CGS-M Program supports up to 2,500 students annually in all disciplines and is administered jointly by Canada’s three federal granting agencies: CIHR, NSERC and SSHRC. This is a one-year award valued at \$17,500. The selection process and post-award administration are carried out at the institutional level, under the guidance of the three agencies. Applicants must complete their application using the Research Portal, hosted by NSERC. Applications must be submitted no later than December 1. The results are made available through the portal April 1st of the following year. For more information, please refer to the “External Scholarships” Tab under the Funding Section on our website.

VANIER (Doctoral) – CIHR or NSERC

The Vanier Canada Graduate Scholarships (CGS) program is designed to attract and retain world-class doctoral students who demonstrate leadership skills and a high standard of scholarly achievement in doctoral studies. The program helps attract top doctoral students to Canadian universities by offering a significant financial award to assist candidates during their studies. A Vanier CGS is valued at \$50,000 per year up to three years. Canadian, Permanent Residents and International students are eligible to be nominated. The VANIER competition is separate from the doctoral (CIHR/NSERC) Canada Graduate Scholarship (CGS) competition, therefore students **MUST** submit an application to **BOTH** competitions to be considered for both awards. There is a two-stage internal review process in place at McMaster to help identify the strongest applications and to select the most competitive candidates in each research mandate of CIHR or NSERC. In order to submit a Stage 1 Letter of Intent package at McMaster, you will need the support of your current or proposed department and supervisor. Please contact the Biochemistry Graduate Assistant for details for details how to submit a Stage 1 Letter of Intent package.

NSERC (Doctoral) – NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA

To be eligible for support from NSERC, you must and/or will be undertaking a program of study or research in one of the fields that NSERC supports. In addition, the research must be supervised by a faculty member whose own research field is in a field that NSERC supports. In cases where the proposed research is deemed to fall within the mandate of either CIHR or SSHRC, **NSERC will not accept the application**. If you hold or have held a CGS from another federal granting agency (CIHR or SSHRC), you are not eligible to apply to NSERC for support at the same level. Scholarship values are: CGS-D (\$35,000 per annum) and PGS-D (\$21,000 per annum). Duration: 2 or 3 years. NOTE: There is an internal McMaster deadline to submit your application through NSERC's On-Line System. For more information, please refer to the "External Scholarships" Tab under the Funding Section on our website or contact the Biochemistry Graduate Assistant.

CIHR (Doctoral) – CANADIAN INSTITUTE OF HEALTH RESEARCH

Doctoral Research Awards are intended to provide special recognition and support to students who are pursuing a PhD degree in a health-related field in Canada or abroad. These candidates are expected to have an exceptionally high potential for future research achievement and productivity. Candidates interested in applying for a CGS Doctoral Award must apply for a Doctoral Research Award (DRA); all DRA candidates will be automatically considered for a CGS based on CGS eligibility requirements and ranking in the DRA competition. If you already hold, or have held, any federally funded doctoral award, you are not eligible for a CGS Doctoral Award unless the term of the doctoral award awarded was less than the maximum allowed and you continue to meet the eligibility requirements for a DRA described below. For this competition, applications will be accepted in all areas of health research. As of the application deadline, all candidates must have completed a minimum of 12 months of graduate study at the Master's or Doctoral level. The program is open to applicants who are Canadian Citizens and Permanent Residents of Canada at the time of application. Value = \$30,000 scholarship, \$5,000 research allowance per annum. Duration: 3 years. *NOTE: Students must be nominated by the School of Graduate Studies. For more information, please refer to the "External Scholarships" Tab under the Funding Section on our website or contact the Biochemistry Graduate Assistant.

OGS – Ontario Graduate Scholarships and Queen Elizabeth II Graduate Scholarships in Science and Technology (QEII-GSST)

The Ontario Graduate Scholarship (OGS) Program provides funding to full-time students at the master's and doctoral levels. The Ontario Graduate Scholarship is a one-year award with a value of \$15,000 (\$5,000 per term) and the Ontario Graduate Fellowship is a one-year award with a value of \$12,000 (\$4,000 per term). If you apply for a CGS-M or CGS-D through McMaster, you will automatically be considered for one of these provincial awards. This award will be withdrawn if you are offered and accept any major government external awards or, if you fail to maintain registration as a full-time graduate student. Students entering the first or second year of graduate studies at the time of the application deadline *must have achieved a first-class average (which is 10/12 or 80/100 at McMaster) in each of the last two completed years of study (full-time equivalent)*. Incoming applicants for new admission and Canadian Graduate Scholarship (CGS) applicants are automatically considered for these awards. Students entering the third year or beyond of graduate studies at the time of the application deadline must have an overall average of at least A- (or equivalent) on all graduate courses completed. Please contact the Department Graduate Assistant for more information.