

2022-2023 Graduate Handbook

The information in this handbook contains the policies and procedures followed by the Department of Physics & Astronomy with respect to Graduate Studies. This is a guide of current practices only, not a set of binding regulations.

Graduate studies at McMaster are administered by the Graduate Studies Committee under the regulations of the School of Graduate Studies as described in the current [Graduate Studies Calendar](#).

Please also visit: <https://www.science.mcmaster.ca/graduate-studies/grad-helpful-links.html>

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SESSIONAL DATES

APPLICATIONS AND ADMISSIONS

<https://physics.mcmaster.ca/graduate-studies/how-to-apply.html>

FINANCIAL SUPPORT:

The Department of Physics & Astronomy funds thesis-based M.Sc. students for two years and Ph.D. students for four years. A minimum level of support is guaranteed for this period, providing that progress and performance are acceptable.

The normal maximum term of a M.Sc. can be extended to is three years and for a Ph.D. is six years but there is no guarantee of financial support after two years and four years of the M.Sc. and Ph.D. programs, respectively.

Financial support normally comes from three sources: a Teaching Assistantship, a supervisor (Research Scholarship) contribution, and a Graduate Scholarship funding contribution.

Additional funding is provided for international MSc students due to higher tuition fees, which may include a tuition bursary.

When necessary, supervisors can supplement the minimum level of financial support from their research funds to make offers competitive with other institutions.

Course-based MSc students do not typically receive any financial support.

The following information from the School of Graduate Studies applies regarding payroll:

- Tuition is due term-by-term on September 1, January 1, and May 1st
- Interest on tuition will not begin to be collected prior to the second to last day of those months.
- Lump sum (whole-term) graduate scholarship payment by mid-September, mid-January and mid-May.
- Lump sum (whole-term) research scholarship payment by mid-September, mid-January and mid-May.
- Bi-weekly employment payments during semesters where there is a teaching assistantship.
- *All funding is provided to the student – as such students are solely responsible for paying their tuition.*

Each year the Department receives an allocation of teaching assistantships from the Faculty of Science. TA awards and conditions are subject to the regulations of both the School of Graduate Studies and the McMaster University Graduate Students (CUPE 3906) union. TA positions are assigned for each academic year, and are normally for a total of 260 hours per year (each course is typically 5 hours per week for ~13 weeks, and graduate students TA for 4 courses per academic year).

Students enrolled in course-based MSc programs do not have a teaching assistantship.

Each year, the Department receives an allocation of funds called the "The Graduate Scholarship Fund", a portion of which may be used for recruiting new graduate students and other competitive awards to eligible in-time students. Entrance awards to incoming students are made only for the first year of graduate studies at McMaster, and are not renewable. The amount of these awards are in the letters of offer.

Students are recommended to check their student accounts through Mosaic frequently (at least on a monthly-basis).

SCHOLARSHIPS

GENERAL NOTES

1. In general, in our department, external scholarships are treated in the following way: the student's salary is increased by 45% of the award value; the supervisor's research scholarship contribution is reduced by 45% of the award value, and the departmental scholarship is reduced by 10% of the award value.
2. Most scholarships are only available for Canadian citizens and permanent residents, however occasionally there are awards for international students (not in recent years), such as:
 - International OGS (only one available for the Faculty of Science)
 - Ontario Trillium fellowship (\$40k x 4 years for incoming PhD students who have never been at an Ontario university before)
3. Most scholarships require that students have at least an average of 10 on the 12 point scale (i.e. around an A-) in each of the last 2 years of schooling.
 - Averages for students who have completed at least two years of grad school are computed using only graduate level courses
 - Averages for students who have completed less than two years of grad school are computed using any completed graduate level courses in addition to their last year of undergraduate studies.
4. **All students who are eligible for scholarships (i.e. Canadian and with a high enough average) must apply for the relevant NSERC award in order to be considered for the OGS and OGF awards. You will not get an OGS if you do not apply for NSERC.** Students who currently hold NSERC awards that will end in the

current year must submit a special form (sent to them by the associate chair) to be considered for the OGS. These students are:

- students who have held a NSERC CGS-M in their first year of graduate studies and are not considering starting their PhD in their second year;
 - students who are in year 3 of their PhD.
5. There are a number of McMaster-specific awards (listed below). The departmental policy is that these are awarded to students who do not have NSERC or OGS/OGF funding, and the applications are submitted through AwardSpring.

NSERC

The Natural Sciences and Engineering Research Council of Canada (NSERC) is the largest federal government source of funding for science and engineering research. In particular, they offer a number of postgraduate programs (i.e. funding opportunities for master's and doctoral students) which are detailed below.

CANADA GRADUATE SCHOLARSHIPS-MASTER'S PROGRAM (CGS-M)

- **Value:** \$17,500 for 12 months, non-renewable
- **Eligibility:** Applicants must:
 - be a Canadian citizen or a permanent resident of Canada;
 - be enrolled in, have applied for, or will apply for full-time admission to a master's program (note: applicants who are not currently enrolled in their intended graduate program must submit an application for admission by the deadline for their intended graduate program or by March 15, whichever comes first);
 - have completed, as of December 31 of the year of application **no more than 12 months** of full-time studies in the master's program for which you are requesting funding;
 - not have previously held a CGS-M.
- **Note:** You can also apply for a CMGS-M if you are fast-tracking from a master's into a PhD program within the first 12 months of the master's program. In this case the funding will be for the first year of your doctoral studies.
- **Application procedure**
 - Create or access applications at the NSERC [Research Portal](#).
 - The application requirements are detailed [here](#). Of particular note is that the application requires two references, a [Canadian Common CV](#), an outline of proposed research and transcript.
 - Your application may be submitted to up to five different Canadian institutions. Accepting an offer from one institution automatically declines any other offers from other institutions where you submitted a CGS-M application. Your CGS-M award may only be tenured at the Canadian university where you have accepted their offer.
- **Deadline:** Application must be submitted by **8:00pm (ET) on December 1**. This includes completed letters of reference, so make sure to invite your letter-writers well before this deadline.
- **Additional information:** http://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/CGSM-BESCM_eng.asp

CANADIAN GRADUATE DOCTORAL (CGS-D) AND POST-GRADUATE DOCTORAL (PGS-D)

- **Value:** CGS-D: \$35,000 a year (for two or three years); PGS-D: \$21,000 a year (for two or three years)
- **Eligibility:** Applicants must:
 - be a Canadian citizen or a permanent resident of Canada;
 - hold, or expect to hold (at the time you take up the award), a degree in science or engineering from a university whose standing is recognized by NSERC (if you have a degree in a field other than science or engineering, NSERC may accept your application at its discretion);
 - intend to pursue, in the following year, full-time graduate studies and research at the doctoral level
 - have obtained a first-class average (a grade of "A-") in each of the last two completed years of study (full-time equivalent);
 - have completed, as of December 31 of the year of application **no more than 24 months** of full-time studies in the doctoral program for which you are requesting funding;
 - you must not have previously taken up an NSERC PGS B, PGS-D, CGS-D, IPS 2 or a Vanier CGS (see below);
 - you must not hold, or have held, a CGS D or Vanier CGS from either [CIHR](#) or [SSHRC](#).
- **Note:** If you registered in a master's degree and subsequently transferred to a doctoral degree, the months in the doctoral degree will be calculated starting from the date on which you were officially registered in your PhD program.
- **Note:** you will be eligible for only a two-year CGS-D/PGS-D, if:
 - you have completed more than the full-time equivalent of 12 months of your doctoral program.
- **Note:** Scholarship support for graduate studies through NSERC is limited to a lifetime maximum of four years (48 months) of full-time equivalency.
- **Where scholarships can be held:**
 - You may take up your PGS-D at any eligible Canadian university. You may also take it up at any eligible foreign university, provided you have received a previous degree in the natural sciences or engineering from a Canadian university.
 - Without exception, CGS-D awards are tenable only at eligible Canadian universities.
- **Application procedure:**
 - **Note:** If you are interested in a CGS-D, apply for a PGS-D. There is no separate application form (or process) for the CGS-D Program. The highest-ranked PGS-D applicants will automatically be considered by NSERC for a CGS-D.
 - To apply for these scholarships, you must complete and submit [Form 201 on-line](#). Read the [instructions on how to complete Form 201](#).
 - If you are currently registered at Canadian university in a degree program then you must submit your application through that university.
 - If you are currently registered at a foreign university or currently not registered at a university then you must submit your application directly to NSERC.

- A complete application will have the following elements (see the [instructions on how to complete Form 201](#) for more details):
 - Application Profile
 - Personal Profile
 - Addresses
 - Academic Background
 - Work Experience
 - Scholarships and other Awards Offered
 - Location of Tenure
 - Justification for Location of Tenure (PDF applicants)
 - Scholarship/Fellowship Information
 - Thesis Information
 - Key Words/Research Subject Code
 - Outline of Proposed Research (Attachment)
 - Justification for Eligibility of Proposed Research (Attachment)
 - Contributions/Statements (Attachment)
 - Transcripts (Attachment)
 - Reports on the Applicant

- **Deadline:**
 - If you are submitting through a Canadian university then you must consult the School of Graduate Studies at that institution (typically early-October for McMaster; October 3rd in 2022).
 - If you are submitting directly to NSERC then your application must be submitted electronically to NSERC **before 8:00 p.m. (ET) on October 15**. You can only submit directly to NSERC if you were not registered at a Canadian university in the current calendar year.

- **Additional information:** http://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/BellandPostgrad-BelletSuperieures_eng.asp

VANIER CANADA GRADUATE SCHOLARSHIPS PROGRAM (VANIER CGS)

- **Value:** \$50,000 per year for 3 years (non-renewable).

- **Eligibility:** Applicants must:
 - be a Canadian citizen or a permanent resident of Canada or a foreign citizen;
 - be nominated by only one Canadian university
 - be registered as a full-time student at the nominating Canadian university and be pursuing your first doctoral degree
 - not have completed more than 20 months of doctoral studies as of May 1
 - have achieved a first-class average, as determined by your university, in each of the last two years of full-time study or equivalent. Candidates are encouraged to contact the university for its definition of a first-class average; and
 - not have already received a doctoral-level scholarship or fellowship from CIHR, NSERC or SSHRC to undertake or complete a doctoral degree.

- **Where scholarships can be held:**
 - Without exception, the Vanier CGS is tenable only at the eligible Canadian university that submitted the nomination.
- **Application procedure:**
 - Note: Each student can be nominated once. If more than one university is interested in nominating an individual student for a Vanier CGS, the student must choose one university to submit their nomination. Multiple nominations will not be accepted.
 - The application process is initiated when the student informs the faculty of graduate studies at the selected university of their intent to apply to the Vanier CGS program;
 - Applications are prepared by the student and submitted to the university by the nominating university's internal deadline (set in ResearchNet by the nominating university) using the ResearchNet application system.
 - See this page for detailed application instructions.
 - A student who has completed the Vanier CGS electronic application through ResearchNet must submit the application online to the Canadian university that will be putting forward their nomination. Applications submitted by candidates directly to the Vanier CGS program, instead of through a Canadian university, will not be considered.
- **Deadline:**
 - **Each university has its own internal application deadline**, which will appear at the top of each page of ResearchNet. For McMaster, this is typically mid-September.
 - Universities must forward their selected nominations to the Vanier CGS program by early November.
- **Additional information:** <http://www.vanier.gc.ca/>

ADDITIONAL NSERC PROGRAMS

- Aboriginal Ambassadors in the Natural Sciences and Engineering Supplement Program
 - The Aboriginal Ambassadors in the Natural Sciences and Engineering Supplement (AANSE) Program promotes interest and participation in natural sciences and engineering, through the visits of Aboriginal students and fellows to Aboriginal communities and schools. NSERC encourages qualified Aboriginal students and fellows to apply for this supplement.
- Canada Graduate Scholarships – Michael Smith Foreign Study Supplements Program
 - The Canada Graduate Scholarships – Michael Smith Foreign Study Supplements (CGS-MSFSS) Program supports high-calibre Canadian graduate students in building global linkages and international networks through the pursuit of exceptional research experiences at research institutions outside of Canada. You must hold a CGS-M or CGS-D award to apply for this supplement.
- Industrial Postgraduate Scholarships Program
 - The Industrial Postgraduate Scholarships (IPS) Program provides financial support for highly qualified science and engineering graduates. The support allows them to gain research

experience in industry while undertaking advanced studies in Canada. These scholarships are aimed at encouraging students to consider research careers in industry where they will be able to contribute to strengthening Canadian innovation.

- Summer Programs in Japan or Taiwan
 - The Summer Programs in Japan or Taiwan provide graduate students in science and engineering with a hands-on research experience and an introduction to a different culture, language, and university research system.

GOVERNMENT OF ONTARIO

The Government of Ontario offers scholarships to both domestic and (in the past) international students.

ONTARIO GRADUATE SCHOLARSHIP

- **Value:** \$5,000 per term up to a maximum of \$15,000.
- **Eligibility:** Applicants must:
 - be full-time graduate students at the master's or doctoral levels
 - have a first-class average (average of 10 in each of the last 2 years of study)
- **Application procedure:**
 - Apply for the relevant NSERC award or submit the individualized form if you are a current NSERC holder.

~~Ontario Trillium Scholarship (OTS) — NOT CURRENTLY AVAILABLE~~

- ~~• **Value:** at least \$40,000 per year, renewable for total funding up to four years~~
- ~~• **Eligibility:** Applicants must:
 - Be an international student who has received a temporary resident visa as a member of the student class under the Immigration and Refugee Protection Act (Canada) on the first day of class;
 - Be intending to pursue full-time graduate studies at an eligible Ontario university at the doctoral level in the subsequent academic year;
 - Hold a first class average in the last two years of study;
 - Not currently be studying at an Ontario postsecondary institution at the undergraduate or graduate level;
 - Not be intending to enroll in a qualifying or make-up year;
 - Not have concurrently accepted a scholarship or fellowship from provincial MTCU (i.e., OGS, QEH-GSST) or, federal Tri-Agency (i.e., CIHR, NSERC, SSHRC);
 - Not have failed to repay all or any part of an unearned Ontario Trillium Scholarship.~~
- ~~• **Application Procedure:**
 - Much of the application work is done by the Department, the student will be informed of any required action~~

- ~~**Deadline:** Graduate programs will set their own internal deadline, contact the Physics Department for the deadline~~
- ~~**Additional information:** [found here.](#)~~

INTERNAL SCHOLARSHIPS

McMaster has a list of internal scholarships some of which members of the department of Physics and Astronomy are eligible. These are typically applied for via Mosaic, however some require a recommendation from the chair of the department. Some examples:

Dawes Memorial Fellowship for Graduate Studies in Physics

- **Value:** \$1,200
- **Eligibility:** To be awarded to any full-time graduate student in the Department of Physics and Astronomy
- **Application Procedure:** This award is based on a recommendation needed from the Chair of the Department of Physics and Astronomy. Applications are submitted through AwardSpring.

The Desmond G. Burns Graduate Scholarship

- **Value:** \$4,000
- **Eligibility:** This scholarship is awarded to students in the Department of Physics and Astronomy.
- **Application Procedure:** This award is based on a recommendation needed from the Chair of the Department of Physics and Astronomy. Applications are submitted through Mosaic.

MITACS

- <https://www.mitacs.ca/en>
- Mitacs Globalink Research Award provides funding for Canadians to do research for 12-24 weeks in a large list of countries (including the U.S.). There aren't any deadlines for applications. You just need to contact a potential host supervisor, and they need to agree to support your application.
- Multiple kinds of scholarships and sources of travel funding. Mitacs has two mandates -- to foster international collaboration, and to connect academics to industry. They pay for international students to come to McMaster, for McMaster students to travel outside Canada for collaborations, and for students to work in industrial settings relevant to their work. There are many programs with various deadlines and various kinds of eligibility. Watch for emails from the associate chair or department chair about opportunities, or go to the Mitacs site at <https://www.mitacs.ca/en>. In addition, Mitacs offers workshops on campus covering many useful career-building skills that are run by SGS. Watch for those announcements in the SGS weekly or bi-weekly emails.

TRAVEL SPECIFIC AWARDS

Often when travelling to conferences costs can add up. Although you should be checking with your supervisor to have your expenses reimbursed, you will be able to travel more often if you can find external travel support. Below are some useful scholarships

APS FGSA Travel Scholarship

- **Value:** 500 USD
- **Eligibility:** Applicants must:
 - be awarded a member of the APS-FGSA;
 - be attending a conference in the period of eligibility (3 award periods per year 4 months each);
- **Application procedure:**
 - CV
 - Letter of reference
 - Statement of purpose
- **Deadline:** December/March/June/September 20th.
- **Additional information:** [\[1\]](#)

McMaster GSA Travel Grant

- **Value** \$500 CAD
- **Eligibility** Applicants must
 - Be a student at McMaster (you got this)
- **Application procedure:**
 - CV
 - Letter of reference
 - Statement of purpose
 - Apply via financial aid on Mosaic
 - Submit paperwork in person
- **Deadline:** Early October, February, and June
- **Additional information:** [\[2\]](#)

Canadian Meteorological and Oceanographic Society (CMOS) Scholarship Supplement

- **Value:** \$5,000/year for up to two years
- **Eligibility:** Applicants must:
 - be awarded an Canada Graduate Scholarship-Doctoral (CGS-D) or a Postgraduate Scholarship-Doctoral (PGS-D) award;
 - be studying atmospheric or oceanic sciences in a recognized postgraduate program;
- **Note:** All branches of atmospheric sciences, including hydrology, are acceptable. In the oceanic and limnological sciences, biological research is not accepted, unless it is as an indicator of physical/dynamical/chemical processes.
- **Application procedure:**
 - You must submit the following to CMOS (see address [here](#)):
 - A copy of your Notification of Award from NSERC
 - A copy of your successful scholarship application

- A two-page (12-point font) résumé describing your career goals and academic and extracurricular activities that support your interests in meteorological or oceanographic research
 - A statement of endorsement from your research supervisor describing why you are particularly suitable for meteorological or oceanographic research
- **Deadline:** April 20 of the year in which you are awarded your PGS-D or a CGS-D.
- **Additional information:** http://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/Supplements-Supplements/Oceanography-Oceanographie_eng.asp

Environment Canada Atmospheric and Meteorological Graduate Supplements

- **Value:** \$5,000/year for up to two years
- **Eligibility:** Applicants must:
 - be awarded an Canada Graduate Scholarship-Doctoral (CGS-D) or a Postgraduate Scholarship-Doctoral (PGS-D) award;
 - be studying or planning to study atmospheric or meteorological sciences in a recognized program at a Canadian university.
- **Application procedure:**
 - You must submit the following to the address [found here](#):
 - A copy of your Notification of Award document from NSERC
 - A copy of your successful scholarship application
 - A brief explanation (maximum 300 words) showing how the proposed research will contribute to the advancement of atmospheric or meteorological science
 - Any additional information (e.g., two letters of recommendation).
- **Deadline:** April 20 of the year in which you are awarded your PGS-D or a CGS-D.
- **Additional information:** http://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/Supplements-Supplements/Atmospheric-Atmospherique_eng.asp

OTHER RESOURCES

- See the McMaster School of Graduate Studies (SGS) page on scholarships: <http://graduate.mcmaster.ca/scholarships-and-funding/major-scholarships-awards>

COURSES

At McMaster, each course (lasting a full semester) is worth 3 units. Be aware that some courses are half-courses, which are worth 1.5 units and only last 6 weeks.

Note: Courses starting with '6' are crosslisted with 4th year undergraduate courses. These courses will generally be three 50 minute lectures per week, and will not run during that corresponding semester's reading week, while grad courses still run during reading weeks. At most one 600-level course can be used to meet the course requirements for the MSc degree. At present, PhD students cannot use 600-level courses to satisfy their degree requirements.

Graduate students can also take courses outside of the physics department (as long as the core course requirements are met, see below). These courses must first be approved by your supervisor, and in some cases the grad chair. Generally, graduate courses offered by Medical Physics, Computer Science, Mathematics, and Chemistry are approved (depending on your research discipline of). Course offerings from some of these key programs are listed below.

Students can also take courses at the Perimeter Institute, or at other universities, without paying additional tuition. Discuss this option with the grad chair to get the appropriate paperwork.

Some relevant courses may also be emailed to you in the weeks leading up to September or January, so keep an eye out for suggested possibly relevant courses.

MSC REQUIREMENTS

Four total courses, of which at most one can be taken at the 600-level. Core courses are encouraged but not required for the MSc.

PHD REQUIREMENTS

Six total courses including at least two core courses. Four of the six courses were taken during the MSc years. The two PhD courses must be at the 700-level. If a student comes to McMaster after doing an MSc elsewhere, they are required to only take two courses. The core course material can be covered during the MSc; if you think you have taken an equivalent to our core courses, bring a course outline to the Associate Chair. If approved, you will still have to take 2 courses but they can be at a more advanced level.

CORE COURSES

Physics 739 Advanced Quantum Mechanics I

Physics 740 Advanced Quantum Mechanics II

Physics 746 Classical Electrodynamics

Physics 750 Statistical Mechanics

COURSES BY YEAR

A list of courses being offered each year will be sent out before registration.

SUPERVISORY COMMITTEES

COMMITTEE FORMATION:

It is the responsibility of the supervisor and the student to ensure that a Supervisory Committee be formed for each M.Sc. and Ph.D. student within eight (8) months of initial registration for students starting in September.

The supervisory committee information must be provided to Rosemary McNeice for Associate Chair (Graduate)'s review and approval. The Supervisory Committee normally reports on the student's progress each academic year (September to August).

Ph.D. & M.Sc. Students: The supervisory committee must consist of at least three members. When there are membership changes in the supervisory committee (e.g., replacements, additions, etc.), the new committee composition must be approved by the Associate Chair (Graduate) prior to holding the next meeting.

SUPERVISORY COMMITTEE MEETING AND PROGRESS REPORTS:

The supervisory committee must meet at least one year with the student. It is both the responsibility of the supervisor and the student to ensure that these meetings take place. Committee meetings are meetings wherein students present their progress to their supervisor committee members. Within the meeting, the student gives a ~15 min research presentation, after which the committee members pose questions and provide feedback regarding the student's progress. The meetings exist to ensure that students remain on track towards completing their degrees and receive necessary guidance.

Committee meetings are **mandatory** for all graduate students. Master's students must complete a committee meeting before the 18th month of their degree. PhD students must complete one committee meeting per year (by the end of October each year), otherwise, the department will be fined \$8000 by the School of Graduate Studies.

First, the student must schedule the meeting. They should correspond with the supervisor and committee members to select a date and time which works for all. Once the meeting has been scheduled, the student is responsible for reserving a meeting room, which can be done through someone in the main Physics office.

Prior to the meeting (~1 week) students are responsible for providing their committee members with a progress report. This report can then be appended to the committee meeting reporting forms (see below). The information contained within this report should include a cumulative list of:

- courses completed (and the marks attained)
- comprehensive examination preparation/completion (if applicable)
- progress in research (summarize research for the committee up to ~1 page)
- conference oral/poster presentations
- publications
- thesis chapters written/revised
- anything else that applies to your project.

MSc students or their supervisors can obtain a set of meeting forms from Rosemary McNeice in advance (via email or paper copy) of the meeting, For PhD students there is an electronic supervisory committee form. It is important to ensure that the supervisory committee member(s) are up-to-date in Mosaic. Please ensure that Rosemary has the most recent information. PhD students can directly submit their progress reports online, with supervisory committee members providing their assessments of the progress directly online for each student.

For the paper forms, each completed supervisory committee report must contain all signatures of all supervisory committee members and the student to be submitted to the Rosemary, after each committee meeting.

For MSc students, on each report the student's progress to date must be rated as "Satisfactory" or "Unsatisfactory". "Satisfactory" indicates that the student has received a passing grade on graduate courses and

that the thesis research is progressing well and on schedule. If an "Unsatisfactory" rating is indicated, another committee meeting must be held between two to four months to further evaluate the student's progress and again only a "Satisfactory" or "Unsatisfactory" rating can be given. All "Unsatisfactory" ratings from committee meetings will be brought to the attention of the Associate Chair who may recommend further courses of action to the student and/or supervisory committee.

For PhD students the progress is rated "Excellent", "Good", "Marginal" or "Unsatisfactory". If a "Marginal" or "Unsatisfactory" rating is given, the student must have another committee meeting within four months to further evaluate the student's progress. The student will receive the committee report via Mosaic after the meeting.

MSc or PhD students receiving two consecutive "marginal" or "unsatisfactory" ratings may be asked to withdraw from the graduate program.

The student must sign this report, and subsequently return it promptly to the Graduate Secretary. Students may photocopy the form if they wish to retain it for their records. Alternatively, students may ask to view it from the Graduate Secretary at any time during their studies.

ABSENCES AND VACATIONS:

Permission for absences longer than two weeks is required from the supervisor, the Associate Chair (Graduate Studies) and the School of Graduate Studies. Please download the form "[Petitions for Special Consideration to the Committee on Graduate Admissions and Study](#)".

Please ensure this form is submitted to the Academic Program Assistant (Graduate) for final required signatures and submission to the School of Graduate Studies.

If possible, forms should be submitted at least one month ahead of a planned absence. Students are allowed a total of two (2) weeks vacation annually, which may be taken during the mid-term recess or subsequent to the completion of TA duties within an academic term during which they are employed. Scheduling of vacations shall be subject to the academic and residency requirements of the student's program of studies and must be approved by the supervisor.

For summarized details, please visit: [Leave of Absence](#).

SUPERVISOR'S ABSENCE:

If a graduate supervisor leaves the University, or is absent on research leave, or is required by the University to perform other duties that would impair effective supervision, the supervisor must make formal written arrangements for an interim supervisor. Copies of this written arrangement must be given to both the student and the graduate office to be put in the student's file.

STUDENT GRIEVANCE:

A student who is dissatisfied with his/her progress, or feels that the commitments of the supervisor are not being fulfilled, should call a meeting of the supervisory committee to discuss the problem. Students are urged to discuss any problems with their supervisor and/or supervisory committee immediately as they arise. The student or a member of his/her supervisory committee can request the involvement of the Associate Chair (Graduate). If this

procedure is unsatisfactory or inappropriate, the student should request an interview with the Associate Chair (Graduate) who will recommend an appropriate course of action.

CHANGE OF SUPERVISOR:

The initial selection of a supervisor is usually considered a permanent arrangement by the student and professor. If, however, the student and the professor do not work well together, or find that their research interests are not compatible, a request to change supervisors may be made in writing to the Graduate Studies Committee. In all cases, it is recommended that the student discuss proposed changes with all members of his/her supervisory committee and with the Associate Chair (Graduate Studies) before a formal request for change is made.

CONFLICT RESOLUTION:

Although rare, conflicts between supervisors and students do arise. The primary instrument to resolve a conflict should be the Graduate Supervisory Committee. With a proper composition, it is expected that most conflicts will be resolved in a fair and timely manner. However, if a resolution cannot be found, the Associate Chair (Graduate Studies) has the obligation to intervene and, if necessary, participate in the meetings of the Graduate Supervisory Committee, acting as "mediator". If the conflict persists, then it is proposed that the Associate Chair (Graduate Studies) become a de facto member of the graduate supervisory committee with active role and voting right until, in consultation with supervisory committee and BGSC, the conflict is resolved.

WITHDRAWAL FROM THE PROGRAM:

For students who withdraw for reasons other than unsatisfactory reports or failure of an examination, a letter and academic change form from the student and a letter from the supervisor detailing the reasons for withdrawal must be sent to the Associate Chair (Graduate Studies). Students are also required to complete a "Change of Status" form including signatures, and submission to the graduate secretary for final review, Associate Chair's signature and final submission to the School of Graduate Studies.

GRADUATING:

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

Also always check with your supervisor, the grad chair, or Rosemary to find out if there's anything specific to your research group or the department.

TEACHING ASSISTANTSHIPS:

In the Physics and Astronomy Department, all regular (ie. not overtime) thesis-track, full-time graduate students have the opportunity to hold 4 **teaching assistantships** (TAs) per calendar year. In general, most students will perform two TAs in the fall semester and two in the winter semester, with a small number of TA assignments possible in spring/summer. The time commitment for each TA is 65 hours per section, or 260 hours per year. TAing duties for can vary widely, but generally include: supervising labs, leading tutorials, marking assignments, holding office hours, and invigilating tests. Graduate student TAs at McMaster are represented by the Canadian Union of Public Employees (CUPE) Local 3906.

TA ASSIGNMENTS

In late spring of each year, current grad students are asked to compile a list of their preferred TA assignments for the fall and winter semester. A smaller number of TA assignments are also available for the summer semester. Students who wish to be assigned in the summer need to request this when submitting their TA preferences.

In late August, a tentative list of the TA assignments will be circulated by email. Over the next two weeks, as the exact number of TAs required for each course is determined, the assignments for the fall semester will be finalized. Likewise, in December, updated TA assignments for the winter semester will be circulated. If you are a new graduate student in the department, it is very likely that your first TA assignment will be a first year introductory physics course, such as 1D03 (physics for engineering students) or 1A03 (introductory physics for science students).

TA DUTIES:

Your TA supervisor (course instructor, lab coordinator, IA, or head TA) will be your main point of contact throughout the semester. Your TA supervisor is generally responsible for assigning your duties, scheduling your work, and providing specific training or guidance as it relates to your assignment. In the case of courses with weekly lab components, it is common to have weekly or bi-weekly TA meetings to go over the details of the experiment.

Prior to the beginning of your TA assignment, your TA supervisor must provide you with an **Hours of Work** form. This form should provide an outline for the types of duties you are expected to perform over the course of the semester, and an estimate of how your 65 working hours will be allocated. It is important that this form is filled out with adequate detail to avoid ambiguity. The majority of TA disputes are avoided by having a satisfactory Hours of Work form. Signed hours of work forms must be returned to the department office. Once your TA work begins, it is a good practice to keep a log of your hours worked. Working hours include, supervising labs, leading tutorials or workshops, marking, preparation, office hours, and invigilating. If you believe you might be on track to exceed 65 hours of work, contact your TA supervisor immediately!

Graduate student teaching in undergraduate courses is evaluated by the undergraduate students taking the course and the instructor responsible for the course. This information may be used by the Department in preparing recommendations for scholarships and/or job placements.

DEFERRALS, REFUSALS, AND BUYOUTS

Full-time PhD students can **defer** up to 1 term of their TA guarantee (subject to approval from the department). In the case of a deferral, the student's TA guarantee is extended by one term (ie. you can defer a TA for the fall term of year 2, and instead work as a TA in the fall term of year 5). This option is especially useful if you are unable to TA because of course work, fieldwork, or research.

You have the option to **decline** to TA, which means you are refusing the work assignment. Please note that if you decline the TA, as opposed to deferring it, the department is under no obligation to offer you additional work at the end of your guarantee to make up for the work you decline. In some cases, your supervisor may offer to **buyout** your TA. In the case of a buyout, you will receive compensation, but do not have to work. A buyout may affect your eligibility for benefits through CUPE.

TA RIGHTS AND CONFLICT RESOLUTION

If you have a conflict or a concern that you have not been able to resolve directly with your TA supervisor, CUPE will work to mediate the conflict on your behalf. If you are unsure of who to contact, the department has union stewards that can direct you to the appropriate person.

TA INCOME AND BENEFITS

The hourly rate of pay for graduate student TAs is outlined in the current collective agreement <https://hr.mcmaster.ca/employees/total-rewards/teaching-assistants/>. This salary is distributed over 8 biweekly payments during the semesters you are working as a TA. It is worth noting that scholarship salary payment is evenly distributed throughout the year. As a result, your total income will fluctuate throughout the year, and is likely to be significantly lower in the summer. The payment schedule can be viewed on the CUPE website or on your Mosaic account.

Graduate students who TA for at least 130 hours/year will receive **dental benefits** through CUPE. This plan provides a maximum of \$1000 of coverage (\$2000 for family coverage) for dental services (e.g. cleanings and fillings) per *calendar* year. For major restorative work such as a crown or a bridge, get your dentist to submit an estimate to the insurance company to check against your coverage before paying anything. Other benefits provided by CUPE are a health care spending account, which has a maximum entitlement of \$250 per twenty four month period. This coverage primarily covers vision care. Students who do not TA for at least 130 hours per academic year (including those who have been bought out of their TA) do not qualify for the CUPE dental plan, and are covered by the GSA dental plan instead (which offers \$750 of coverage per year)

COMPREHENSIVE EXAM

NOTE THESE ARE REGULATIONS FOR STUDENTS IN PHYSICS & ASTRONOMY PROGRAMS, NOT RADGRAD.

GENERAL INFORMATION

The comprehensive examination is an oral examination which lasts approximately two hours, and will normally take place within 24 months after a student first registers in the PhD program. The examinations for all the candidates in a given academic year will occur within a week or two, at the end of February or beginning of March. The examining committee will consist of three faculty members, with one designated as chair. The supervisor of the student will also be present, but does not participate in the examination procedure.

The student will be given approximately 30 minutes before the committee members arrive to review the exam questions. These questions (usually 1 per examiner) would be the starting point for follow up questions and discussion during the exam. The student may take this 30 minutes to write down ideas and formulate solutions with no external aids.

Once the members arrive, the student will give a fifteen-minute presentation about his/her research at the beginning of the examination. The presentation should explain the context and motivation of his/her intended thesis topic, plus progress he/she has made.

After the presentation, the examiners may ask the student about their research before diving into the exam. The exam will start by the committee members asking you about the questions which were provided to the student earlier.

and further extending them by asking follow-up questions. As a student, you are expected to be able to communicate your idea for how to solve a set of question with other physicists (the examiners in this case). The back and forth discussion (examination) will continue for about two hours after which you will be asked to leave the room and go home without discussing the outcome of the exam with others.

Following each examination, the examining committee will discuss and evaluate the performance of the candidate. As soon as possible following the last examination, the committee will present its recommendations to the department at a faculty meeting. The possible recommendations are: Pass with Distinction, Pass, and Fail. At this time the performance of all the candidates will be discussed and a final decision regarding student standings will be taken by the department as a whole. The academic record and research progress of candidates who receive a failing grade will undergo a wider examination, in order to decide whether they will be allowed to repeat the exam the following year, or be asked to withdraw from the program. Students will be notified in writing of their grade immediately following this meeting. This information will be the student's to disseminate as they see fit; no information regarding the grades, or distribution of grades, will be released by the department.

WHEN AND HOW

You will first hear about comprehensive exam at your committee meeting, which should be sometime during the late summer (7-8 months before you actually write your exam). This is the best time to ask any general questions that you may have. You should receive an email regarding comps sometime early September, this email will provide you with more information about the exam. Your supervisory committee must submit a reading list ~4-5 months before you write your exams that it is clear what material you are responsible for on your exam. The time, and location of the exam will be decided by the Graduate Secretary and you will be notified once the details have been confirmed.

COMPREHENSIVE EXAM COMMITTEE MEMBERS

Your supervisor and the chair of the comprehensive examination will decide who will be on the exam committee. You will be notified about this information as soon as it has been decided. If you have any major concerns about this decision, you should speak with your supervisor or the comps chair immediately.

READING LIST

Your reading list will contain a list of books and research articles that you will be tested on. In general, it contains materials that your supervisor and supervisory committee members think are essential and that you should know. The exact number of items on the reading list (number of books and articles) will be different for each person. Your supervisor, the comprehensive exam chair and all members of the exam committee will be aware of what is on the reading list and to what depth the student is expected to know the content on the list. If you have any concerns about the material you should speak with your supervisor.

STUDY GUIDE

Writing the comprehensive exam is probably one of the more stressful things you would be doing in your second year of PhD, so it is important to plan your study to minimize any unnecessary stress. The following information is meant to be only a guide.

Form study groups: You could form study groups with other students, preferably in your field, who are writing the comprehensive exam.

Practice exams with your supervisor: It is extremely useful to go through few practice exams with your supervisor, preferably in the same room your writing your exam in. Being able to explain the solution to a problem verbally is as important as knowing how to solve a problem.

Time management: Although you may have TA duties and a demanding research schedule, it is very important to schedule your comps study in advance. You should try to leave at least one week before your exam date to review the content on your reading list.

Start early: It is recommended by the department to start studying in late December or early January.

Seek help: It is extremely helpful to speak with students who have already written comps in the previous years and ask them for tips and tricks.

ACADEMIC INTERACTIONS

PHYSICS AND ASTRONOMY COLLOQUIUM

The Physics and Astronomy Department's colloquium is held every Wednesday in ABB-102 at 15:30. Tea, coffee, cookies, and fruit are served at 15:10 in ABB 273 lounge. Attendance is important, especially for talks outside your field. The schedule can be found [here](#) and you will receive emails advertising the talks. The speaker typically meets with interested students immediately following the colloquium in third floor lounge.

If you would like to meet with the speaker please see let the host of the speaker know.

Speakers can be requested by emailing the Colloquium organizing committee.

OTHER TALKS

There are occasional Origins Institute public lectures beginning at 8pm (early seating is encouraged). See [here](#) for the dates and titles of upcoming public talks. Admission is free.

On Mondays at 15:30 the Brockhouse Institute for Materials Science (BIMR) hosts speakers

<https://brockhouse.mcmaster.ca/events/>.

SYMPOSIUM DAY

Each year, typically in the undergraduate fall break, we organize a full day of talks by second year graduate students. All graduate students in Physics & Astronomy and Radiation Sciences graduate programs are expected to present one talk during their time as a graduate student (during second year of MSc or during second year of PhD if you came to McMaster directly for your PhD). Emails reminding you of this expectation and with further details are sent in late August. There are prizes for best talks and fellow graduate students and post-docs serve as sessions chairs. This is an excellent opportunity to give a research talk to a friendly audience and update the department on your work to date.

JOURNAL CLUBS

Astro Journal Club

Journal club meets every Thursday at noon.

We aim for each grad student to give 2 talks per year; one paper talk and one research-related talk. Talks should be around 20-25 minutes long, including time for questions. Research talks can be shorter (a CASCA length talk for example, 12 min).

Paper talks should be on recently published papers, culled from astro-ph, ApJ, MNRAS, A&A etc. Grad students should clear their paper choice with their supervisor first.

Talks should be suitable for a general astronomy audience. This means that you should have some introduction slides for your paper topic. You may have to read some outside sources to do this.

If anything here is unclear there is a more detailed syllabus [here](#)

Some JC slots this year will be used for astro-ph sessions. At these, everyone is encouraged to bring an interesting & recent astro-ph article to discuss. The discussions are informal, and you are encouraged to sign up papers ahead of time so the organizers can prepare and everyone can have a look. We will be sending around a google doc that you can use to sign up.

Our website can be found [here](#)

At times other journal clubs have also been organized including Condensed Matter, Theoretical physics and soft condensed matter & biophysics.

Condensed Matter Journal Club

The Condensed Matter Journal Club is intended for condensed matter physicists of all varieties. The club meets once a week on Thursdays between 12:00 & 13:00 hours in ABB-A204. At these meetings a member delivers a talk describing a recent publication or topic of contemporary interest in the field, followed by a lively discussion. Usually these talks are given by graduate students in the department, however occasionally the club may also host talks by speakers visiting from other institutions. These meetings provide a good opportunity for students to practise their speaking skills in a friendly environment and we encourage all graduate students to give at least one talk per year at these meetings.

More information can be found on our [website](#)

Theoretical Physics Journal Club

The theoretical physics journal club is intended to be broad in scope, but to focus on issues in theoretical physics. We meet weekly with bi-weekly lectures and bi-weekly informal discussion interspersed; we meet in ABB-319. We typically give a speaker a two-week block. The first week speakers give a lecture on a topic of their choosing to acquaint the other members with the subject matter, and then suggest a relevant paper related to the chosen topic for discussion the following week. Occasionally a speaker will choose to give a second lecture in lieu of a paper. More information can be found on our [website](#).

SUMMER COLLOQUIA

During the summers weekly talks by local (McMaster) are organized.

OFFICE SPACE

Graduate student office space is organized each summer in preparation for the coming year with new students arriving in September and some students finishing up. We do our best to put students working in similar research areas in offices together but given constraints this is not always possible.

COMPLAINTS

Office temperature too hot or cold? Is the cleanliness of an office, washroom, or other area a concern? Ergonomics an issue?

Email a Gripe Committee Student Advocate first. They advise on a course of action, and keep a log of complaints so that systematic issues can be addressed. Otherwise, you can reach out to someone in the departmental office about your concerns.

LIVING IN HAMILTON

Your experience during your time in graduate school will be shaped as greatly by your time spent off campus as the time spent on it. Hamilton can offer a lot of different things to a lot of different people, and finding the aspects of the city that you enjoy most can make a huge difference in your happiness and productivity during your time at McMaster.

WHERE TO LIVE

The part of the city that you choose to live in will probably be the greatest deciding factor in determining what sides of Hamilton you see or do not see. Fortunately, McMaster's location within Hamilton gives you a lot of different options when choosing where to live with options ranging from a gritty urban core with a thriving arts scene, to century homes in a friendly neighbourhood, to an idyllic small town setting, all within biking distance of campus. Typically students will live in one of five different areas, depending on their lifestyle preferences; more specifically, popular locations include

Westdale: Located within walking distance of the university and is serviced by three different bus routes during the year. It's heart is located along King street and has a variety of small shops, restaurants, cafes and one pub. It also has a heritage theatre (under construction at the time of this writing), and a Food Basics at King and Longwood.

Downtown: Downtown Hamilton has a lot of different stuff going on, and has a number of commercial corridors. The main areas of interest are:

- James South
- James North
- International Village
- King West
- Jackson Square and Gore Park

Southwest Hamilton (Locke St. Neighbourhood)

Emerson/Ainslie Woods – lots of student housing

Dundas – small town feel, easy bike or bus ride from campus

GETTING AROUND

All graduate students at McMaster have access to the [HSR bus service](#) included in their student fees.

Hamilton also has a bike share program, [SoBi](#). They have many payment plans.

For those looking to drive to and park on campus, see <https://parking.mcmaster.ca> for details regarding parking pass pricing.

For transportation outside the city of Hamilton there the following services: [GO transit](#) (bus and train service to the greater Toronto area)

HOUSING

Rent varies depending on the living accommodations you choose (e.g. one bedroom apartment or a bedroom in a house), and its location within the city. Housing costs in Hamilton have greatly increased in recent years.

For a list of housing ads (including prices) targeted towards McMaster Graduate students/Faculty/Staff <https://offcampus.mcmaster.ca>. There will be a new graduate residence opening downtown in September 2023.

GROCERIES

In terms of groceries, you can check out the [Metro](#), [Fortinos](#), [Food Basics](#), and [Nations](#) flyers to get an idea of prices (you can use the postal code L8S 4L8 if prompted).

Major grocery stores

[Metro in Dundas](#)

[Fortinos in West Hamilton](#)

[Fortinos at the King and Dundurn](#)

[Nations in Jackson Square](#)

[Food Basics in Westdale](#)

[No Frills on Main East](#)

Farmer's Markets

[Hamilton Farmer's Market](#) (indoor Tues and Thurs-Sat 8-6 all year)

[Locke St Farmers Market](#) (Sat 9-1 Jun- Oct)

[Ottawa Street Farmers Market](#) (Sat all year 9-1)

[Dundas Farmer's Market](#) (Thurs 3-7 Jun-Oct)

[Durand Urban Farm Market](#) (Wed 3-7 Jun-Oct)

[McMaster Farm Stand](#) (Wed and Thurs 11-4 April-November)

RESTAURANTS, BARS, AND CAFÉS

ON CAMPUS

For Hours and Locations, visit the <https://hospitality.mcmaster.ca>

OFF CAMPUS

Too many to include, but important neighbourhoods:

- Westdale
- Locke St
- James St. North and King William
- James St. South and Augusta
- Ottawa St. North
- Dundas

TRAVEL

Fill the travel claim form found at <https://physics.mcmaster.ca/contact/faculty-resources.html>

Details can be found on Microsoft Teams

[To Make a Travel Claim SOP.docx](#)

EQUITY AND INCLUSION

The Department of Physics & Astronomy endorses McMaster's statement on Building an Inclusive Community with a Shared Purpose:

At McMaster University, an inclusive community is one in which there is real, visible and meaningful representation of the diversity evident in the wider community at all levels and in all constituencies on campus (faculty, staff, students, administration). It is a community in which all members feel safe and empowered, valued and respected for their contributions to the shared purposes of the University; research and education excellence. It is a community where the rights of all individuals and groups are protected. Inclusion occurs when an organization provides equitable access to its services, benefits and opportunities, when systems and structures facilitate full participation by all members and where members are treated equitably and fairly and are recognized for their contributions. The key ingredients are equitable access, participation (especially in decision-making processes) and equal attention to the needs and aspirations of all.

In seeking to build an inclusive community with a shared purpose, McMaster University strives to embody these values: **RESPECT; COLLABORATION; DIVERSITY**

A Respectful Community is one where freedom of expression, belief, and diversity of knowledge occur in a framework of dignity, respect, and public engagement.

A Collaborative Community is one where participants jointly move the academic vision forward in respectful and non-confrontational ways, having regard for personal and collective safety and well-being.

A Diverse Community is one that enables us to learn from our differences and that affirms our shared accountability for achieving access, equity, and meaningful inclusion of under-represented groups at all levels of the campus community.

See: [Statement-Inclusivity.pdf](#)

WHO TO TALK TO

In general, if a student feels that there are issues pertaining to diversity, harassment, or discrimination, they should discuss their concerns with someone that they trust and are comfortable with. Within the department, students can go to their supervisor or their TA supervisor; the Associate Chair; or the Department Chair. They can also talk to any other faculty member.

Outside the department, students can contact the Associate Dean of Graduate Studies for the Faculty of Science (adeangss@mcmaster.ca). The McMaster Ombuds office gives impartial advice to all members of the McMaster community [1]. Students can also contact the Office of Equity & Inclusion [2]. If the matter is related to TAing, the union may have some advice [3].

There are a number of groups within and outside the department who have diversity issues as part of their mandate, including the Graduate Women in Physics & Astronomy (GWIPA) and Women in Science & Engineering (WISE); McMaster Open Circles [4]; Queer Students Community Centre [5] (mostly for undergraduates) or lgbtq@mcmaster.ca (mostly for people who are not undergraduates -- no webpage for this group yet). MSU Diversity Services [6] is also set up for undergraduates, but they will be able to direct you to an appropriate office/community/contact person.

STRATEGIES TO DEAL WITH HARASSMENT

Harassment is defined as a course of vexatious comments or conduct that is known or ought reasonably to be known to be unwelcome. For a fuller definition and more information on dealing with harassment, this page [7] is quite useful. To summarize

If you are being harassed, you can do some or all of the following: ask for help; tell the harasser to stop; keep a record; protect yourself; and get support. If you witness harassment, you can do some or all of the following: offer support to the target of harassment; tell the harasser to stop; make a record; and get support.

As TAs and senior members of the McMaster student community, you are advised to be a role model; set clear expectations; monitor your workplace; and contact the Equity & Inclusion Office for support and guidance.

RELEVANT MCMASTER POLICIES

All Human Rights and Equity Policies: [8]

Of particular, note is the policy on Discrimination and Harassment as well as the Sexual Violence policy. All graduate students should read these policies carefully, as you have duties and obligations as "Persons in Authority" in your roles as TAs. As a general rule, if you are approached by a student with a questionable situation, you should contact the Equity & Inclusion office for advice; but you may be called on to do more than that, so you should be aware of your responsibilities.

DEPARTMENT EDI ACTIVITIES

- Committee – <https://physics.mcmaster.ca/edi.html#edi-committee> department committee with faculty, staff, post-doc, graduate and undergraduate student representatives
- Department Website with resources - <https://physics.mcmaster.ca/edi.html>
- Promoting Inclusivity in Physics & Astronomy PIPA <https://physics.mcmaster.ca/pipa/>

GRADUATE STUDENT COMMITTEES:

LIAISON COMMITTEE

The graduate student liaison committee acts as the main body through which the department/faculty members and graduate students communicate with each other. The main responsibility of the liaison committee is running the "Gripe Session" every year in October. During the Gripe Session issues concerning the following are discussed amongst the graduate students:

- Offices & Physical Environment
- Research Support & Scholarships
- Courses & Teaching Assistantships
- Committee Meetings & Comprehensive Exams
- New Students
- Computing
- Grad Student Committees
- Academic Interactions
- LGBTQ+
- Anything else students are concerned about

The liaison committee is responsible for summarizing the main points of the discussion and submitting them to the Graduate Chair in a report. The department does their best to address the concerns of the students in the following year.

The liaison committee also helps the department to recruit new students. Members help to organize lunches for prospective students with a small group of current graduate students. Members of the liaison committee also act as representatives of the department at graduate program fairs such as the one held during the Canadian Undergraduate Physics Conference (CUPC) held in October every year.

The chairs of the liaison committee are responsible for organizing and running the Gripe Session. The gripe session was born from the concern that graduate students did not have a resource for help with problems that came up throughout the year. In particular, the chairs are responsible for addressing graduate student issues that require urgent attention and cannot wait to be dealt with at the next year's Gripe Session. The chairs are also responsible for keeping a log of gripes that come up throughout the year.

ENTERTAINMENT COMMITTEE

The Entertainment Committee is responsible for helping graduate students to maintain a healthy balance between work and play. The responsibilities of this committee may include helping to organize the Departmental BBQ. And the department holiday party.

The Entertainment Committee may also take a more active role in grad student life and organize more events throughout the year. In particular, more events at the beginning of the year are useful to help integrate new students into the department.

DEPARTMENT MEETING REPRESENTATIVES

RECRUITING AND OUTREACH COMMITTEE

This committee was formed to identify volunteers for various department outreach events, such as:

- Demos for visiting students
- Program fairs
- ELEVATE

UNION STEWARDS

All graduate students who hold Teaching Assistantships are a part of CUPE 3906. Every department has at least one Union Steward that acts as a liaison between the members of the union and the executive of the union. The department steward is responsible for relaying important information to members about the union including upcoming meetings, major changes that effect the members, etc. The department steward is also responsible for voicing the concerns of members to the executive.

SCIENTIST ASSOCIATION AT MAC (SCIGSA)