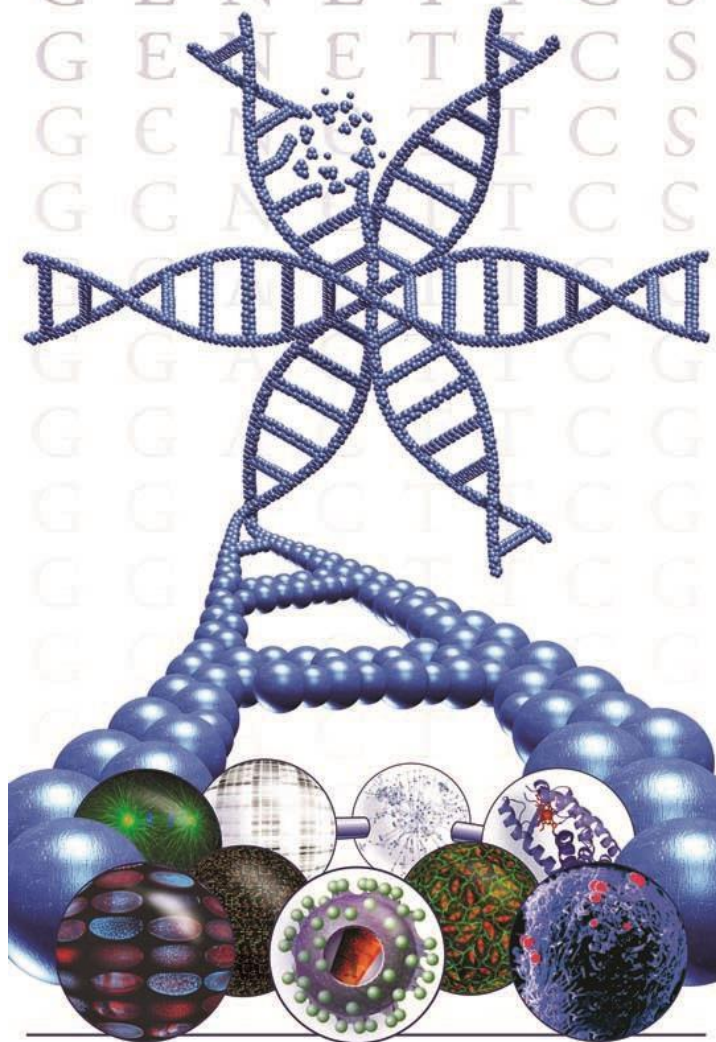


# UNIVERSITY OF TORONTO

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Department of  
MOLECULAR  
GENETICS



[www.moleculargenetics.utoronto.ca](http://www.moleculargenetics.utoronto.ca)

## **Graduate Handbook**

*version 2024c*

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## NEW IN THIS VERSION

### 2024c – July 2024

- Policy/process change: new [Policy on Funding & Program Length](#)
- Policy/process change: new information on the [Use of Emergency Contact Information](#)
- Clarification: updating the language on [Personal Time Off](#) to align with SGS policy

### 2024b – May 2024

- Policy/process change: extension of stipend coverage if students are expected to conduct experiments during thesis writing
- Policy/process change: addition to the [guidance on internships](#) addressing the use of internship work in theses
- Clarification: [Committee Report format](#) and [timeline of meetings](#)
- Clarification: [seminar attendance requirements](#)
- Clarification: time of day for reclass/qual report submission
- Clarification: reclass/qual exam outcomes
- Clarification: remote defences
- Clarification: required materials for the final oral exam booking form

### 2024a

- Policy/process change: Minor updates to the requirements to [Supervisory Committee Composition](#)
- Clarification: recommended length of thesis outlines
- Clarification: added information on the deadlines to submit MSc and PhD theses to examiners
- New info: Updated information about the [RHSE LOA Stipendiary Fund](#)
- New info: Updates to [Organizational Structure](#), including re-organization of Designated Examiners

### 2023c

- Policy/process change: Changes to the process for scheduling a [PhD Final Oral Exam](#)
- Policy/process change: Simplification of the process for the terminal meeting ([MSc/PhD](#)) and receiving permission to write ([MSc/PhD](#))
- Clarification: process for [reclassification/qualification proposal preparation](#)

### 2023b

- Policy/process change: Expanded details and processes for [Time to Completion \(TTC\) and Post-TTC Meetings for PhD Students](#)
- Policy/process change: Details on the [Graduate Research Integrity Workshop](#), required for new incoming students
- Policy/process change: New guidance and requirements related to [authorship](#)
- Policy/process change: New [guidelines on the use of generative artificial intelligence](#)
- Policy/process change: New [guidance on internships](#)

## GRADUATE CURRICULUM AT A GLANCE: Sept 2021 – present

MoGen graduate curricula for all students can be viewed on the [Grad Curriculum page](#).

### Current Curriculum: Entry from September 2021 to present

|               | MSc  | PhD   |
|---------------|--|---|
| <b>Year 1</b> | Rotations (Sept. – Dec./ Jan. – Apr.)<br>MMG1001H (Sept. – Dec. of first year in program)*<br>MMG1003H (Colloquium) (Jan. – May of first year in program)*<br>Attend MMG1111H/MMG1112H Grad Seminars I/II (Sept. – May)*<br>MMG1004H (Programming for Biologists)*#<br>#CBMG track take MMG1344H and MMG1345H instead of MMG1004H<br>Settle in Permanent Lab (Jan./Apr.)<br>Choose Supervisory Committee (Feb. 1/May 1)<br>1 <sup>st</sup> Supervisory Committee Meeting (by Mar. 31/July 31)<br>MMG1113H – Presentation Skills Sept. – Oct. (Jan. entry only) |   |
| <b>Year 2</b> | Attend MMG1111H/MMG1112H Seminars (Sept. – May)*<br>MMG1113H – Presentation Skills Sept. – Oct. (Sept. entry only)<br>2 <sup>nd</sup> Committee Meeting (by Oct. 31/Feb. 28)<br>MMG1114H – Graduate Student Presentation I (Jan. – May)*<br>Pre-Reclassification/Qualification. Meeting (by Mar. 31/Jul. 31) OR<br>3 <sup>rd</sup> (Possibly Terminal) Committee meeting for those not reclassifying<br>Reclassification/Qualification Exam (May/Oct.)<br>Choose Topic Courses (Aug. 15 for Sept. entry students)  |   |
| <b>Year 3</b> | Terminal Meeting (by Oct. 31/Feb. 28)<br>MSc Oral Exam (by Mar. 31/July 31)  | Attend MMG1111H/MMG1112H Seminars (Sept. – May)*<br>Choose Topic Courses (Aug. 15)*#<br>Committee Mtg. (by May 31/Oct. 31)<br>Choose Topic Courses (Jan. 15)*#<br># Note only two Topic courses are needed and MMG1345 counts as one Topics course for CBMG |
| <b>Year 4</b> | Attend MMG1111H/MMG1112H Seminars (Sept. – May)*<br>Choose Topic Courses (Jan. 15)*<br>TTC Committee Mtg. (by May 31/Oct. 31)<br>Choose Topic Courses (Aug. 15)*<br>MMG1115H: Graduate Student Presentation II (Sept. – Dec./Jan.)*  |   |
| <b>Year 5</b> | Choose Topic Courses (Jan. 15)*<br>Committee Mtg. (by May/Oct)<br>Choose Topic Courses (Aug. 15)*  |   |
| <b>Year 6</b> | Terminal Committee Mtg.<br>PhD Oral Exam   |   |

■ September Incoming Class ■ January Incoming Class

\* Both September & January Incoming Classes;

Note that those entering in Sept. will start with MMG1001 (Fall Term), followed by MMG1002 (Winter Term), whereas those entering in Jan. will start with MMG1002 (Winter Term), followed by MMG1001 (Fall Term).

## GRADUATE PROGRAM AT A GLANCE: “CORE” CURRICULUM

MoGen graduate curricula for all students can be viewed on the [Grad Curriculum page](#).

### Core Curriculum: Entry from September 2019 - January 2021

|               | MSc   | PhD  |
|---------------|---|--|
| <b>Year 1</b> | Rotations (Sept. – Dec./ Jan. – Apr.)<br>MMG1001H (Sept. – Dec. of first year in program)*<br>MMG1002H (Jan. – May of first year in program)*<br>Attend MMG1021H/MMG1031Y Seminars (Sept. – May)*<br>MMG1011H – Present in Student Seminars I (Sept. – Oct.) (Jan entry only)<br>Settle in Permanent Lab (Jan./Apr.)<br>Choose Supervisory Committee (Feb. 1/May 1)<br>1 <sup>st</sup> Supervisory Committee Meeting (by Mar. 31/July 31)   |  |
| <b>Year 2</b> | Attend MMG1021H/MMG1031Y Seminars (Sept. – May)*<br>MMG1011H – Present in Student Seminars I (Sept. – Oct.) (Sept. entry)<br>2 <sup>nd</sup> Committee Meeting (by Oct. 31/Feb. 28)<br>MMG1021H – Present in Student Seminars II (Jan. – May)*<br>Pre-Reclassification/Qualification. Meeting (by Mar. 31/Jul. 31) OR<br>3 <sup>rd</sup> (Possibly Terminal) Committee meeting for those not reclassifying<br>Reclassification/Qualification Exam (May/Oct.)<br>Choose Topic Courses (Aug. 15 for Sept. entry students) |  |
| <b>Year 3</b> | Terminal Meeting (by Oct. 31/Feb. 28)<br>MSc Oral Exam (by Mar. 31/July 31)   | Attend MMG1021H/MMG1031Y Seminars (Sept. – May)*<br>Choose Topic Courses (Aug. 15)*<br>Committee Mtg. (by May 31/Oct. 31)<br>Choose Topic Courses (Jan. 15)* |
| <b>Year 4</b> | Attend MMG1021H/MMG1031Y Seminars (Sept. – May)<br>Choose Topic Courses (Jan. 15)*<br>TTC Committee Mtg. (by May 31/Oct. 31)<br>Choose Topic Courses (Aug. 15)*<br>Present MMG1031 Seminar (Sept. – Dec./Jan.)*   |  |
| <b>Year 5</b> | Choose Topic Courses (Jan. 15)*<br>Committee Meeting (by May/Oct.)<br>Choose Topic Courses (Aug. 15)*   |  |
| <b>Year 6</b> | Terminal Committee Mtg.<br>PhD Oral Exam  |  |

■ September Incoming Class      ■ January Incoming Class

\* Both September & January Incoming Classes;

Note that those entering in Sept. will start with MMG1001 (Fall Term), followed by MMG1002 (Winter Term), whereas those entering in Jan. will start with MMG1002 (Winter Term), followed by MMG1001 (Fall Term)

## GRADUATE PROGRAM AT A GLANCE: “LEGACY” CURRICULUM

MoGen graduate curricula for all students can be viewed on the [Grad Curriculum page](#).

### Legacy Curriculum: Entry in January 2019 or earlier

|               | MSc   | PhD   |
|---------------|---|---|
| <b>Year 1</b> | Rotations (Sept. – Dec./ Jan. –Apr.)<br>MMG1010H (Sept. – Dec.)*<br>Attend MMG1015Y/MMG1017H Seminars (Sept. – May)<br>Settle in Permanent Lab (Jan./Apr.)<br>Choose topic courses (Jan. 15)<br>Choose Supervisory Committee (Feb. 1/May 1)<br>1 <sup>st</sup> Supervisory Committee Meeting (by Mar. 31/July 31)<br>Choose topic courses (Aug. 15)*  |   |
| <b>Year 2</b> | Attend MMG1015Y/MMG1017H Seminars (Sept. – May)<br>MMG1015Y – small seminars (October)*<br>2 <sup>nd</sup> Committee Meeting (by Oct. 31/Feb. 28)<br>MMG1015Y – large seminars (Dec-May)*<br>Choose courses (Jan. 15)*<br>Pre-Reclassification/Qualification. Meeting (by Mar. 31/Jul. 31) OR<br>3 <sup>rd</sup> (Possibly Terminal) Committee meeting for those not reclassifying<br>Reclassification/Qualification Exam (May/Oct.)<br>Choose topic courses (Aug. 15)* |   |
| <b>Year 3</b> | Terminal Meeting (by Oct. 31/Feb. 28)<br>MSc Oral Exam (by Mar. 31/July 31)   | Attend MMG1015Y/MMG1017H Seminars (Sept. – May)<br>Choose Topic Courses (Jan. 15)*<br>Committee Mtg. (by May 31/Oct. 31)<br>Choose Topic Courses (Aug. 15)* |
| <b>Year 4</b> | Attend MMG1015Y/MMG1017H Seminars (Sept. – May)<br>Choose Topic Courses (Jan. 15)*<br>Committee Mtg. (by May 31/Oct. 31)<br>Choose Topic Courses (Aug. 15)*   |   |
| <b>Year 5</b> | Attend MMG1015Y/MMG1017H Seminars (Sept. – May)<br>Give MMG1017 Seminar (Sept. – Dec.)<br>Choose Topic Courses (Jan. 15)*<br>TTC Meeting (Mar./Jul.)<br>Choose Topic Courses (Aug. 15)*   |   |
| <b>Year 6</b> | Terminal Committee Mtg.<br>PhD Oral Exam  |   |

■ September Incoming Class      ■ January Incoming Class

\* Both September & January Incoming Classes



## ORGANIZATIONAL STRUCTURE

### Department Leadership

**Timothy Hughes, Chair**

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**Erin Styles, Undergraduate Coordinator**

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**Julie Claycomb, Vice Chair, Education & Operations**

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**Kyle Turner, Learning Strategist, Graduate Programs**

[mogen.learning@utoronto.ca](mailto:mogen.learning@utoronto.ca)

### Graduate Advisory Team

The Grad Team is a group of engaged mentors present in each research node. They serve as the front line of student contact and can help students and faculty to navigate the rules and policies of the Department and School of Graduate Studies (SGS), as well as to help students strategize about challenging situations in their graduate career. Students may contact members of the Grad Team directly to set up appointments to talk about specific issues they are having. The Grad Team also helps to execute the other functions of the graduate program (e.g., recruitment, career development, curriculum planning), and steers the graduate program in an advisory capacity.

### Grad Team Members

**SickKids:** Julie Brill, Julie Lefebvre, Ian Scott, Michael Wilson

**MaRS/OICR:** Lori Frappier, Thomas Hurd, Aaron Reinke

**MSB/Donnelly Centre:** Brenda Andrews, Gary Bader, Scott Gray-Owen, Tim Hughes, Zhaolei Zhang

**LTRI:** Daniel Schramek, Frank Sicheri



## Advisory Committee to the Chair

Oversee graduate and undergraduate programs for the department.

### Committee Members

Richard Collins, Lori Frappier, Timothy Hughes, William Navarre, Sean Egan, Daniel Schramek, Martina Steiner

## Designated Examiners

Designated Examiners take part in various examinations in the department, serving as an important mechanism to achieve parity across students examinations.

- Brenda Andrews
- Irene Andrulis
- Philip Awadalla
- Gary Bader
- Benjamin Blencowe
- Charles Boone
- Julie Brill
- John Brumell
- Brian Ciruna
- Julie Claycomb
- Alan Cochrane
- Ronald Cohn
- Richard Collins
- Sabine Cordes
- Leah Cowen
- Joe Culotti
- Alan Davidson
- Jim Dennis
- Brent Derry
- Peter Dirks
- Daniel Durocher
- Aled Edwards
- Sean Egan
- Oliver Ernst
- Lori Frappier
- Andrew Fraser
- Scott Gray-Owen
- Jack Greenblatt
- Timothy Hughes
- Chi-Chung Hui
- David Kaplan
- Lewis Kay
- Jun Liu
- Jason Moffat
- William Navarre
- Lucy Osborne
- John Parkinson
- Christopher Pearson
- Miguel Ramalho-Santos
- Jim Rini
- Peter Roy
- Steve Scherer
- Ian Scott
- Frank Sicheri
- Lincoln Stein
- Michael Tyers
- Derek Van der Kooy
- Michael Wilson
- Jeff Wrana
- Zhaolei Zhang
- Mei Zhen

Designated Examiners serve the following roles:

- Examiner or Chair of the Reclassification/Qualification Examining Committee
- Chair of the MSc Defence Examining Committee
- Time to Completion (TTC) meetings, as needed

## Course Coordinators

**MMG1001, Foundational Genetic Approaches I:** Dr. Howard Lipshitz

**MMG1003, First Year Colloquium** (formerly part of MMG1002, Foundational Genetic Approaches II): Dr. Julie Lefebvre

**MMG1004, Practical Programming for Biologists** (formerly MMG1002, Foundational Genetic Approaches II): Dr. Philip Kim

**MMG1113, MSc Presentation Skills** (formerly MMG1011 and MMG1015, Small Group Seminars): Dr. Richard Collins

**MMG1111, Graduate Seminars I** (equivalent to MMG1021 Student Seminars II and MMG1015 Seminars): Drs. Richard Collins, Xi Huang, Ran Kafri, Kenichi Okamoto

**MMG1112 Graduate Seminars II** (equivalent to MMG1031 Student Seminars III and MMG1017 Seminars): Drs. Richard Collins, Xi Huang, Ran Kafri, Kenichi Okamoto

**MMG1344H, Foundational Computational Biology I** (CBMG track only): Dr. Kieran Campbell

**MMG1345H, Foundational Computational Biology II** (CBMG track only): Dr. Kieran Campbell

Students who entered the program from September 2021 onwards will be able to register for topic courses using ROSI. Admittance into topic courses will be confirmed by the instructor. For students enrolled prior to September 2021, you will still be enrolled in the umbrella topics course: MMG1041 Topics in Molecular Genetics (or if before September 2019 you will be enrolled in MMG1016, MMG1012 Topic Courses). For the “Core” and “Legacy” curriculum Dr. Lori Frappier and Dr. Sean Egan will coordinate these umbrella courses.

## GRADUATE PROGRAMS

The Department offers both MSc and PhD degrees in Molecular Genetics. Students who enter with a BSc degree may either enter into the MSc Program or be admitted directly into the PhD program (PhD direct entry), depending on their preference and qualifications. Those who enter into the MSc program have several options: a) complete their MSc degree; b) successfully complete a reclassification exam and transfer to the PhD program in their second year; or c) complete their MSc degree then apply for re-admission to the PhD program. Students with a BSc degree who are admitted directly into the PhD program must pass a qualification exam during their second year.

Students who enter with an MSc degree from our program can be accepted into the PhD program (PhD regular) and will not have to repeat the first two years of courses. In most cases, these students must still pass a qualification exam during their second year, unless their MSc Examination Committee gave a specific recommendation to bypass the qualification exam (see [Defending an MSc with Subsequent Admission to the PhD Program](#)).

The Department of Molecular Genetics also offers two professional Master's Programs, each with a duration of two years.

The [Master's of Science Program in Genetic Counselling](#) is offered in collaboration with the Division of Clinical and Metabolic Genetics in the Department of Pediatrics of the Hospital for Sick Children and the Department of Obstetrics and Gynecology at Mount Sinai Hospital, University of Toronto. This MSc in Genetic Counselling Program is accredited as a graduate level training program by the American Board of Genetic Counseling.

The [Master's of Health Sciences in Medical Genomics Program](#) is a two-year, course-based professional Master's in Health Sciences that is the first of its kind in Canada. It has been developed for a new era of research and clinical science, providing professional and practical skills for a world where genetic and genomic data are routinely collected and analyzed across a wide range of patient populations and medical indications. No thesis is required for this degree, and instead training culminates in a Capstone Practicum. Additional details on each of these programs can be found on our website.

## Collaborative Specializations

Members of the department participate in two interdepartmental collaborative specializations that provide students with the opportunity to benefit from the wealth of expertise in the University of Toronto community in areas of research that span the boundaries between traditional departments:

- [Developmental Biology](#)
- [Genome Biology & Bioinformatics](#)
- [Next Generation Precision Medicine](#)

## Computational Biology Molecular Genetics (CBMG) PhD Track

Data and technology increasingly drive molecular genetics, and computational biology plays a critical role in these advances. Computational biologists use physics, math, or computer science methods to model biological processes or analyze genomic data, for example. The availability and continuing generation of large-scale datasets and data analysis have created a high demand

for researchers with advanced computational skills and a strong grasp on molecular biology.

The CBMG track aims to provide students with an immersive computational biology education. Students are admitted to the Molecular Genetics PhD program directly and are provided opportunities and courses specific to their discipline to maximize their training potential, including Foundational Computational Biology I and II (MMG1344 and MMG 1345).

This track is for both life science graduates with some computational expertise as well as quantitative graduates (math, physics, computer science) and is a PhD direct entry track only. It incorporates coursework to provide a strong foundation for all students in both computational methods or molecular genetics knowledge. Learn more on the [CBMG page](#) on our website.

### **Duration of Programs**

The Department of Molecular Genetics has put in place policies and procedures designed to ensure the timely completion of our MSc and PhD degrees. The total length of the MSc program is expected to be 2.5 years. The total length of the PhD program is expected to be 5.5 to 6.0 years after commencing graduate studies in the Department (see “[Time to Completion Meeting](#)”). Students who go beyond the program limit must request an extension from the School of Graduate Studies (please see [SGS Student Forms](#)). Students are encouraged to proactively seek support from the Department if they are encountering barriers delaying their anticipate completion.

### **Equity, Diversity, Inclusivity, and Excellence**

The Department of Molecular Genetics is committed to fostering a research community in which each member can contribute, learn, excel, and benefit from a diversity of perspectives. We attract students, staff, and faculty from a range of backgrounds, and we aim to utilize this diversity to build an ever-stronger training environment as we strive for excellence. We will strive to provide a welcoming and accommodating environment to all - including sexual and gender minorities, racialized people, people with economic disadvantages, and people with disabilities.

The Department of Molecular Genetics and its graduate program operates in the context of the Temerty Faculty of Medicine, the School of Graduate Studies, and the University of Toronto; all of which have fully committed to principles and programs for equity and diversity. We encourage all members of our community, especially our graduate students, to learn more about equity initiatives around campus through the Temerty Faculty of Medicine’s Office of Inclusion and Diversity, and the University of Toronto’s Anti-Racism and Cultural Diversity Office.

To learn more, visit the pages of the [TFoM Office of Inclusion and Diversity \(OID\)](#) and [University of Toronto Anti-Racism and Cultural Diversity Office \(ARCDO\)](#).

## ROTATIONS

Our Department does not require non-visa (domestic) students to pre-arrange a permanent Supervisor prior to joining the program. Instead, rotations are an important feature of our program. New students must rotate through at least three laboratories before choosing a permanent laboratory and Supervisor. Rotations allow students to sample different research areas and thus to make a well-informed choice of research topics, laboratory environments and Supervisors. Students are not allowed to make an official commitment to permanently join a lab until the rotation period is over.

Each rotation spans approximately five weeks. Rotations begin on the first Tuesday after Labour Day in September, and end on the final day of the Fall Term. The exact dates of each rotation will be communicated to students at Orientation each year.

### Arranging Rotations

The Department arranges the first rotation for each student before they start the program. In July, each incoming student will fill out an online survey in which they rank their top five choices of laboratories in which they would like to rotate, from a list of faculty members who have indicated they will be accepting students. The first rotation is then assigned based on the stated preferences of the student, but choices may be limited by the availability of space within faculty members' laboratories. The majority of students are placed within their top three selected labs for this rotation. Students are informed of their rotation assignments by early August.

Second and third rotation choices are entirely up to the student, with consent from the selected laboratory and approval from the Graduate Coordinators. Students should make second and third rotation choices only after starting in the program in September. Students can make more informed rotation choices after they have gained experience in the department. These rotations are arranged through direct communication between students and potential Supervisors and must be finalized at least one week before the commencement of said rotation. These choices will be submitted to the grad administrators through a link supplied by email. More detailed instructions will be provided each year to rotation students.

Students are required to rotate in at least two different geographic nodes of the Department. Students should keep this in mind when planning and selecting rotation labs. The major departmental nodes are: Medical Sciences Building (MSB), Lunenfeld-Tanenbaum Research Institute (LTRI), Donnelly Centre (DC), Ontario Institute for Cancer Research (OICR), Peter Gilgan Centre for Research & Learning (PGCRL), and MaRS West Tower (MaRS).

We have found that students can make better-informed rotation choices once they gain firsthand experience in the department. To help students gain additional insight, the Department holds a yearly Retreat in September. At the Retreat, faculty present talks on their research, over 100 trainees present posters on their work, and there is additional time for informal interaction to learn about rotation labs. During or ahead of the retreat, the Department also hosts a Power Hour, where faculty attempt to summarize their lab's research into a two-minute talk.

Students and Supervisors may not make any final decisions about laboratory choices until near the end of the mandatory rotation period. The date will vary each year and will be communicated to students in the fall. New students are encouraged to seek the advice of senior students and



students currently in the labs they are considering when choosing their rotations and permanent placement. The Grad Team, Learning Strategist, and Graduate Coordinators are also available to counsel students regarding rotation selection.

The Department will send information on Rotation Expectations and Tips when you are notified of your first rotation assignment (in August). Students should also see the “Rocking Your Rotations- A Survival Guide” on our [Rotations page](#) for great tips on how to make the most of the rotation experience.

### **Inability to Find a Permanent Lab**

In rare occasions where a student does not find a permanent lab after the first three rotations, a fourth rotation may be permitted, with approval from the Graduate Coordinators. If a student is unable to find a permanent thesis Supervisor after four rotations, their enrolment in the program will be terminated. Admission to our program does not guarantee that a student will be accepted into a laboratory for their thesis work. It is extremely rare, however, for an accepted student to not find a suitable laboratory to join. Transfers to other Graduate Programs may be possible.

### **International/Visa Student Rotations**

Although international MSc (visa) students are required to find a Supervisor prior to admission, these arrangements are generally not final. Visa students are required to do the same number of rotations as non-visa students, and they are free to join a laboratory other than that of their sponsor. In sponsoring visa students, however, faculty members make a commitment to accept those students into their laboratories if the student wishes to join after completing the mandatory rotations. Once a permanent laboratory is chosen, the procedures for visa students are identical to those for non-visa students.

### **Opting Out of Rotations**

#### **Students Who Have Completed an MSc**

PhD applicants who will receive their MSc prior to starting their graduate program in Molecular Genetics have the option of forgoing rotations and directly joining a lab. To be eligible for opting out of rotations, the applicant must arrange a prospective Supervisor as part of their application package. When the survey for first rotations is sent out, the student should complete the survey indicating that they are willing to forgo the rotation process. The Supervisor should also email the Graduate Coordinator and Graduate Program Coordinator indicating their willingness at this time.

#### **MD/PhD Students**

MD/PhD students may choose to directly enter a lab (with the Supervisor's permission). When the survey for first rotations is sent out, the student should complete the survey indicating that they are willing to forgo the rotation process. The Supervisor should also email the Graduate Coordinator and Graduate Program Coordinator indicating their willingness at this time.

### **Financial Support During Rotations**

Students will be paid the standard stipend during the rotation period. See the [Student Funding section](#) for information on rotation stipends.

### **Switching Labs after Rotation Period**

On rare occasions, a student will move to a different lab and Supervisor to carry out their thesis project after the rotation period has ended. This move can be initiated only by the student, not the Supervisor, and can occur only after the student has discussed the situation in detail with the Graduate Coordinator (and the initial Supervisor when appropriate).

## STUDENT SUPERVISION

## Supervisor

Supervisors are expected to:

- Oversee student research, upholding degree requirements, quality, research integrity, safety, and other mandates. Supervisors set expectations for experimental work and recordkeeping.
- Assist students in identifying members for Supervisory Committees and Examination Committees.
- Monitor student progress, keeping students on track with required Committee Meetings and exams, and accommodating required course work.
- Attend student Committee Meetings, student seminar presentations, and qualification and thesis exams. Students are responsible for scheduling meetings and exams with Supervisors and making them aware of seminar dates. Supervisors are also expected to help students prepare by providing feedback on slides and reports and providing opportunities for practice talks.
- Have regular meetings with students. The Department recommends that students meet one-on-one with their Supervisors at least monthly, though biweekly or weekly are preferred. Consider increasing the frequency of meetings around key program milestones.
- Be communicative and responsive with students, responding to emails within 1-3 business days when possible, and making students aware of availability.
- Create and uphold an inclusive lab environment (see [Equity, Diversity, Inclusivity, and Excellence](#))
- Aid students in understanding relevant policies and accessing useful resources.
- Report payroll changes (external awards, program transfers, leaves of absence, withdrawal/graduation, etc.) to the Business Officer.

## Co-Supervision

If it is in the best interest of a student and their project, the Department will consider allowing the student to be co-supervised by two professors within our Department after consultation with the Graduate Coordinator. The details of the relationship between the student and the two Co-Supervisors (where the student will work, whose lab meetings they will attend, what fraction of the stipend each Supervisor is responsible for etc.) will vary on a case-by-case basis. The details of the relationship, however, should be agreed upon at the onset of the co-supervision. Co-Supervisory arrangements must be discussed by both Co-Supervisors and the student, and then detailed using the [Co-Supervision Form](#), which must be approved by the Graduate Coordinator.

Note that once a Co-Supervisor is appointed, there is no primary/secondary Supervisor; each are considered equal mentors and are equally responsible for the student. If an existing Supervisory Committee member becomes a Co-Supervisor, a replacement for that Supervisory Committee member should be found as soon as possible and approved by the Graduate Coordinator, abiding by the rules of Committee member assignments (below). Co-supervision may involve no more than two Co-Supervisors within the Department. Co-supervisory arrangements with faculty outside of the Department are not permitted by SGS.

If the co-supervised student and/or the Co-Supervisors consider changing the co-supervision status, the Graduate Coordinator should be consulted before any changes are made. Any agreed upon changes to the co-supervisory relationship should then be reported to the Learning

Strategist immediately via an email in which all relevant parties are cc'd. Otherwise, all parties will be held to their initial agreement should any disagreements arise in the future.

## Supervisory Committee

- The Committee monitors a student's progress regularly during their graduate career and provides guidance related to degree completion.
- Committee members counsel, advise and assist the student (both during and outside of Committee Meetings), including assessing work (reports, presentations, exams, and theses), providing project-related expertise, and advising on topic course selection.
- Members of the Committee attend Committee Meetings, exams, and student seminar presentations. It is the responsibility of the student to coordinate scheduling of meetings and exams with Committee members, and to alert them to seminar presentations.
- Committee members write reference letters in support of student award applications and career progression. The student is responsible for requesting letters with sufficient lead time.
- The Committee acts to maintain equal standards of student supervision across the Department. The Supervisor and the Supervisory Committee identify when a student is not making adequate progress and document it on the Supervisory Committee Evaluation Report. In consultation with the student, they devise approaches to remedy the problem, including suggesting additional courses and advising on experimental strategies.
- Committee members also support and advocate for the student in the event of conflict with the Supervisor.

Required timelines for Supervisory Committee meetings are detailed below, though students or Committee members may opt for more frequent meetings.

## Supervisory Committee Composition

The Committee is composed of the student's Supervisor(s) and a minimum of two other University of Toronto graduate faculty members. Students and Supervisors are encouraged to choose a Supervisory Committee that is limited to a total of three faculty members (including the Supervisor) to avoid potential scheduling difficulties that can arise with additional Committee members. However, if the student and Supervisor feel that the benefits of increased expertise on the Committee outweigh any potential scheduling difficulties, additional members may be invited to join the Committee.

### **Of these two Committee members:**

- At least one of these must be a Molecular Genetics faculty member.
- At least one of these must be a Molecular Genetics faculty member from a different node than the student's lab. In some cases, a faculty member from another department can be used to meet this requirement.
- At least one of these must be a Molecular Genetics faculty member who has an arm's-length relationship with the Supervisor and the student (i.e., is not a collaborator on the project, a spouse, etc.).
- At least one of these must have expertise different from that of the Supervisor.

Please note that one Committee member may fulfill multiple (or even all) of these criteria. The choice of additional Committee members is not restricted with respect to their node, departmental affiliation, or arm's length relationship with the student/Supervisor.

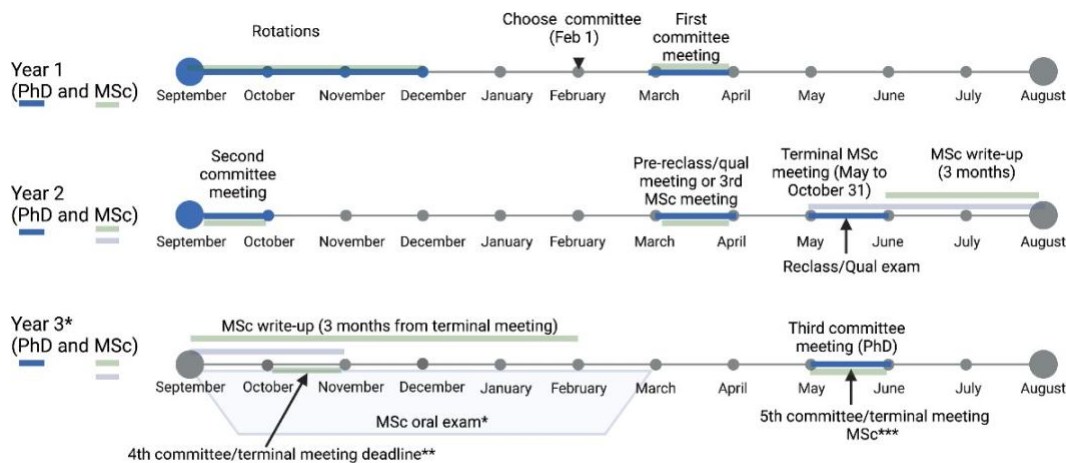
The student and Supervisor jointly choose the Supervisory Committee, which must be approved by the Graduate Coordinator before the first Committee Meeting is arranged. Students are encouraged to identify their committee as soon as possible after choosing their final lab, to leave sufficient time for scheduling the first Committee Meeting. The Supervisory Committee composition must be chosen by **February 1st** (for September entrants) or May 1st (for January entrants) at the latest. More detailed instructions will be provided to students each year.

One of the Committee members will be designated as the permanent chair of the Committee. This member must be a Molecular Genetics faculty member and cannot be the Supervisor or Co-Supervisor. The composition or the Chair of the Committee may be changed provided all parties involved agree. All changes in Supervisory Committee membership (besides changes in the chair) must be submitted to the department for approval by the Graduate Coordinator.

There may be instances when a Supervisory Committee member is on leave or sabbatical for an extended time. During this time, the student and Supervisor should invite an additional member to sit on the Committee if the Committee is composed of the standard three members (including one Supervisor). If there are more than two additional members on the Committee (excluding Supervisor(s)), this is not necessary. The student and Supervisor may decide to maintain this additional member after the original Committee member returns from leave/sabbatical or they may return to the Committee to its original composition. If a desired committee member is on leave or sabbatical and unable to attend the **first** committee meeting, a different member should be chosen, and the student can request to add the member on sabbatical at a later date.

If a student is having difficulties, or at their request, a Designated Examiner or member of the Executive Committee may be assigned to attend one or more Committee Meetings.

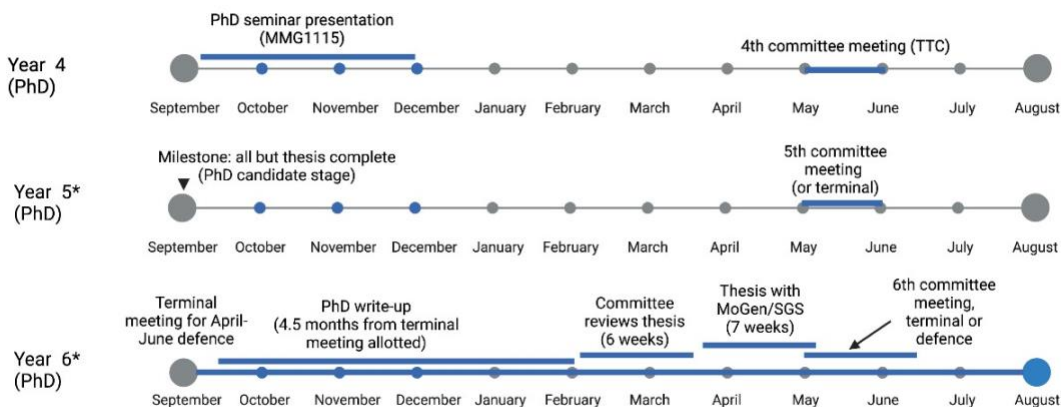
## Committee Meetings



\*MSc students are encouraged to defend their thesis 24 - 30 months into the program. Students in the MSc program longer than 36 months will need to request an extension from the graduate coordinator.

\*\* A fourth committee or terminal meeting for all MSc students must be held by October of year 3.

\*\*\* MSc students who have not graduated by March of year 3 will need to hold a committee meeting every 6 months.



\*PhD students may be eligible to defend in year 5 (4 years in program). Most MoGen students defend in year 6 or 7. Beyond this time students will need to request an extension from the graduate coordinator.

## Setting Up Committee Meetings

Committee meetings must be held at least every six months for PhD students in the first two years of the program and for MSc students. PhD students post-reclassification/qualification must hold meetings at least once per year. A detailed breakdown of each meeting and the respective deadlines [is found below](#). These are minimum requirements for maintaining good academic standing and remaining eligible for funding and continued registration. See the [Policy on Funding & Program Length](#) for more information.

To ensure that deadlines are met, students are encouraged to begin planning meetings six to eight weeks in advance of the desired date. Using [FindTime](#) or [Doodle Polls](#) is a helpful approach to scheduling Committee Meetings (but try to narrow the number of slots to less than ten, so as not to overwhelm your Committee members), and students are recommended to [send a calendar invitation](#) to block off the final time. To further aid in scheduling, the student and Committee should take time at the end of each meeting to discuss availabilities around the time of the next



meeting and ideally pencil in a date. The student should then check in several weeks ahead of the planned date to confirm availability.

Note: the timeline to organize the first committee meeting is tight, so students are encouraged to begin selecting their committee as soon as they've found their final lab and avoid waiting until the final selection deadline.

**Important:** For every meeting, students must complete the [Supervisory Committee Meeting Form](#) at least seven days before the meeting. UTORid login is required; if the form gives a 'no access' error, try loading in a private window or new browser. The student must use the form to provide their meeting details and upload their report, along with their previous evaluation. The form will then automatically email this information to the committee (with a reminder calendar invitation), log the details to the student's file, and provide a link to the evaluation form. Not logging meetings using this form may make it appear that a meeting has been missed.

### Committee Meeting Progress Report

The body of the Committee Meeting progress report should be a maximum of four pages (single-spaced, 12-point uncondensed Times New Roman font, 2 cm margins). The four pages do not include the cover page, title page, 300-word abstract, references, figures, tables, and the summary of achievements.

The start of the report should include:

- A title page: Name, date of entry into the graduate program, project title, list of Committee Members, meeting location, date and time.
- An abstract briefly (300 words or less) summarizing the background and main goals of the research.

The body of the report (4 pages or less) should detail:

- The background for your project.
- The main objective and specific aims of your project.
- A summary of progress described at previous Committee Meetings.\*
- A summary of the progress made since the last Committee Meeting.\*
- A summary of the recommendations or concerns that were made at the last Committee Meeting and an explanation of how these were addressed (or why they were not addressed).\*

*\*These sections are not required for [the first Committee Meeting](#).*

- A summary of what experiments are planned in the near future (i.e., six months to a year), and what goals remain to be achieved to complete the thesis.

The additional sections (not included in the 4-page limit) include:

- [Pre-reclassification/pre-qualification meeting](#) only: A one-page outline of the reclassification/qualification proposal.
- [Time to Completion meeting](#) only: A projected thesis outline and timeline of remaining experiments (more detail [below](#)).
- [Terminal meeting](#) only: A one- to two-page outline of the proposed thesis.
- A summary of achievements since starting graduate school: a list of awards, meeting abstracts, publications (submitted, in press, or published).
- Figures: These should be included in the report to make it easier to describe the research.

- List of references as needed.

In most cases (with supervisory review), students can alter the recommended order to facilitate logical flow. However, omitting components or deviating from the page limits will result in a low mark in the “[Quality of Report](#)” section of Committee Meeting Report and may be reflected in your overall score for the meeting and/or entitle Supervisory Committee members to request a revised report that adheres to these guidelines before the meeting can proceed.

Consult your Supervisor about recommended lengths for each component of the body and whether they have any additional requirements that they would like to see included. It is also recommended that students obtain examples of Supervisory Committee reports from their labmates or other senior graduate students (the GSA has [examples on their webpage](#)).

Be sure that reports are submitted through [the form](#) seven days before each meeting—delays in sharing the report may result in a lower mark for the Quality of the Report section of the Committee Evaluation Report. Establish a timeline with your Supervisor for when they would need to receive any report drafts for review ahead of submission.

### Supervisory Committee Meeting Procedure

At all Committee Meetings:

- Before the start of the meeting, the Supervisor should be asked to leave the room for a few moments, allowing the student time to confidentially discuss any issues, concerns, questions, etc. with their Committee. After this, the student leaves the room, and the Supervisor takes a few moments to brief the Committee on the trajectory of the project and on ways they can help advance the science. **These steps should not be skipped.**
- The student must give a presentation on their experimental progress. This presentation starts with a brief synopsis of the project background, main goals, and key previous findings. The students can expect to be interrupted with questions during the presentation. To leave time for discussion, students should aim for not more than 20-30 minutes’ worth of slides, not including interruptions.
- There should be at least 15 minutes of questions on general background knowledge relevant to the project. These background questions do not all have to be asked at the same time, but the Committee should ensure that this amount of background questioning occurs during the Committee Meeting.
- The student is asked to leave the room at the end of the meeting. The Committee members then candidly discuss their overall impression of the student’s progress.
- A Supervisory Committee Evaluation Report is filled in [online](#) (see below) and marks are assigned for various aspects of the student’s performance in the program.
- The student is invited back into the room for discussion and feedback, provide recommendations, and to review any concerns regarding the project and/or the student. The Committee Chair discusses the marks and recommendations with the student and submits the form on behalf of all Supervisory Committee members.
- The student and Committee should also take time to discuss timing for the next Committee Meeting.
- The student will receive a copy of the evaluation through email. If the email is not received, the student should alert the Learning Strategist for troubleshooting.

The total time for a Committee Meeting, including the oral presentation that is interrupted by questions, and the period of student evaluation and feedback, should not exceed 2 hours.

### Evaluation Report

The Chair of the Committee is responsible for filling out the [Supervisory Committee Evaluation Report](#) at every meeting (except for exams, defences, and the pre-reclass/qualification meeting). The Chair communicates the Committee’s assessment of the student's progress to the student. Other Committee members may then elaborate.

The student will be marked in several categories using a numeric scale between 0 and 100. This scale is aimed at providing a simple, more accurate and easily interpretable evaluation. Committee members are urged to use the full scale and to mark students in relation to other students at the same level, according to the following guidelines:

| Mark (%)    | <60                 | 60-69                    | 70-79                    | 80-89     | 90-100    |
|-------------|---------------------|--------------------------|--------------------------|-----------|-----------|
| Description | <i>Unacceptable</i> | <i>Needs Improvement</i> | Good—average performance | Very good | Excellent |

Marks below 70% are considered [a failing grade](#). Over time, it generally takes improvement on the part of the student to simply maintain the same grade obtained in previous meetings, as the expectations are higher with continued time in the program.

Categories graded are as follows:

- **Background Knowledge:** This must be specifically tested at each Committee Meeting with at least 15 min of questioning in this area. Students are expected to have knowledge in areas that are not directly related to their thesis topic but relevant to their general research area. Questions should be the same type of background questions that are asked on reclassification/qualification exams and MSc and PhD defences. Questions should also probe the student’s ability to place their work in a wider context (i.e., “The Big Picture”).
- **Understanding of the System:** The Committee should evaluate the student’s familiarity with the directly relevant literature and experimental techniques, experimental design, and overall rationale/logic of the project.
- **Initiative/Motivation:** This section is intended to evaluate how engaged in the project the student is. Are they reading the literature and generating their own new ideas for the project? Are they working efficiently and spending their time in the lab productively? Have they taken ownership and initiative over the project and are not simply going through motions?
- **Experimental Skills:** The Committee will assess the quality of the data throughout the presentation. This section addresses whether a student can successfully execute the experiments they have set out to perform, include appropriate controls, and generate high quality data from which conclusions can be drawn. This section also relates to whether students are intrepid in their experiments: Do they attempt and master new techniques?
- **Progress:** Based on the elapsed time, complexity of the experiments, and any other confounding variables, has the student achieved the goals they set out to address since

their last meeting? Have they generated new data? Is the student on an appropriate timeline for their degree?

- **Creativity:** This refers to the student's ability to come up with novel ideas, approaches and/or insights into their research. This area may not be easily evaluated for junior students, so could be left blank.
- **Critical Thinking:** This includes the ability to independently troubleshoot experiments, design proper experiments including controls, critically evaluate data, and construct sensible hypotheses to explain results.
- **Organizational Skills:** This covers whether the student organizes their experiments, data, and thoughts clearly. Are they keeping appropriate notes and records on their experiments? Are they properly maintaining the data they acquire? This also covers how they communicate their data and organize their thoughts. Is the information flow logical and clear or disorganized and nonlinear?
- **Communication with Supervisor:** Does the student initiate discussions about their project, data, and progress? Do they share new data and ideas routinely with the PI?
- **Quality of Report:** Is the report clear, logical, and well-organized? Are there grammatical and spelling mistakes? Are all of the important components included?
- **Quality of Oral Presentation:** This segment addresses how clear, well-organized, and on point the presentation was. Was there sufficient background? Were the questions framed well and data presented clearly, with appropriate conclusions drawn? Did the student speak loudly and clearly enough?

An **Overall Score** is assigned based on the overall performance and component scores. If an Overall Score <70% is assigned, the student must hold another committee meeting within 3 months—see [Lack of Sufficient Progress](#).

### **Committee Meeting Descriptions and Deadlines**

The School of Graduate Studies requires that students meet departmental committee meeting deadlines in order to maintain good academic standing. To meet requirements and to ensure continued progress (and hitting milestones like the reclass/qual exam), it's important not to delay or miss required Committee Meetings. Though it can be tempting to wait until more work has been completed, the Committee Meeting is intended to be a discussion of work in progress, and so it's best to proceed on schedule. Students and Committees are always entitled to request additional/earlier meetings.

Although the Department monitors the timing of Committee Meetings, it is the student's responsibility to schedule these meetings. Professors have been informed that they are expected to respond to the student's emails as soon as possible. If a professor does not respond to a student's email within four days, the student should send an email reminder. If no response to the reminder is received within three days, the student should inform the Learning Strategist or the Graduate Coordinator. They will then contact the professor(s).

If students anticipate not meeting a meeting deadline, they **must** contact the Learning Strategist or Graduate Coordinator to inform them of the challenges and determine how to proceed. If a meeting is missed without informing the department, the School of Graduate Studies indicates that they should be assigned a failing grade for the missed meeting.

### **MSc & PhD: First Meeting**

#### **Month 7: By the end of March of 1<sup>st</sup> year (July for Jan. starts)**

At this meeting, students should outline the broad objectives of their project and the specific short-term goals to be achieved in the first year. Students should demonstrate a grasp of the key issues in the project and some knowledge of important background information. Students may or may not have preliminary data to support the proposed aims of the project.

The initial project should be sufficiently technically feasible such that within one year it will be possible to judge the student's technical and intellectual abilities as they bear on continuing in the graduate program. It is the responsibility of the student, the Supervisor, and the Supervisory Committee to guide the choice of the research project. When considering projects, MSc projects must have the potential to develop further if the student reclassifies into the PhD program. Both MSc and PhD projects should seek to test an interesting hypothesis or further investigate an important biological question. Other factors to consider when choosing a project include the potential novelty of the project, the degree of risk, and the presence of "fall-back" projects if the primary project fails.

### **MSc & PhD: Second Meeting**

#### **Month 13: By the end of September of 2<sup>nd</sup> year (January for Jan. starts)**

By this meeting, the student should have demonstrated intellectual and technical ability along with a good grasp of the general project area. A greater command of background knowledge will be expected at this meeting. The Committee should be satisfied at the second meeting that the problem chosen has a reasonable likelihood of leading to an acceptable reclassification proposal or MSc thesis.

Between the second and third committee meeting, MSc students should work with their Supervisors to determine whether they will proceed with the reclassification exam or finish with an MSc. If the former, they proceed to the [Pre-Reclassification meeting](#); if the latter, they hold a regular third meeting with a time to completion discussion (below).

### **MSc track: Third Meeting & Onward—Time to Completion**

#### **Month 19: By the end of March of 2<sup>nd</sup> year (July for Jan. starts) and at least every six months moving forward**

At this meeting, a clear plan should be agreed upon for the completion of the degree program. It should follow the format of the PhD [Time to Completion Meeting](#), wherein the student discusses a projected thesis outline and plan for further experiments, which is included as an addition to their usual four-page report. The experiments proposed should take no more than **six months** to finish. All other aspects are as other Committee Meetings.

Ideally, the fourth MSc meeting will be a [Terminal Meeting](#). If this isn't the case, the student must continue to hold meetings **at least every six months** and include a 'time to completion' discussion until the Terminal Meeting is held.

### **PhD track: Third Meeting—Pre-Reclassification/Pre-Qualification Meeting**

#### **Month 19: By the end of March of 2<sup>nd</sup> year (July for Jan. starts)**

This meeting cannot be held late if students want to proceed to the exam, and students are reminded that holding this meeting earlier leaves more time for exam preparation.

The pre-reclass/pre-qual meeting has several aims:

- Like all Committee Meetings, the student's progress is evaluated, and constructive advice is provided about the project.
- The student's capability of successfully completing the PhD program is evaluated and they are advised accordingly.
- The student is provided with useful feedback on what to put into the reclass/qual proposal, and what areas should be studied.

Compared to previous meetings, the student's background knowledge and their ability to think scientifically will be probed more deeply to ascertain the likelihood of success at the Reclass/Qual Exam. At the end of the meeting, the Committee will recommend a course of action to the student. In rare cases, the Committee will recommend that the student not proceed with the exam. However, provided that at the Pre-Reclass/Qual Meeting, the student does not receive an overall score below 70% for the second time in a row on their meeting evaluation, the final decision as to whether to proceed with the exam is the student's. The decision not to follow the Committee's advice should only be made after reflection and consultation with the student's Supervisor (and if need be, the Graduate Coordinator). A decision by the student to proceed with the exam, despite advice to the contrary, would be made after the conclusion of the meeting, but by the deadline to submit exam details to the department.

The pre-reclassification/pre-qualification Committee will be composed of the regular Supervisory Committee and a Designated Examiner, assigned by the Graduate Program Coordinator, based on the student's primary or secondary research field. To facilitate this assignment, students will be asked to provide meeting details to the department **in February**.

The pre-reclassification/pre-qualification meeting is conducted in the same manner as other Committee Meetings, though it may include an element of practice for the exam, such as more emphasis on answering questions. Students should discuss with their supervisor what to expect at this meeting. The student prepares a Committee Meeting report in the same manner as in all other Committee Meetings. However, one additional page must be added to the report containing an outline of the reclassification/qualification proposal. The outline should also be covered at the end of the student's presentation during the meeting, and the feasibility of the proposal will be discussed. Committee members will then provide advice about the scope and aims of the project that may be helpful in crafting and defending the proposal. It is strongly recommended that students keep notes on the advice and questions asked to guide their exam preparation.

If the student is proceeding to the Reclass/Qual Exam, they should immediately work with their committee to identify a time for the exam, which must occur by the end of May (September for Jan. starts). As outlined in the [Examinations section](#), only one Supervisory Committee member is required to attend. Students will be required to submit their examination date, time, and committee composition **by April 1<sup>st</sup>** so that they can be assigned an Exam Chair and Designated Examiner—typically, the Designated Examiner carries over from the pre-reclass/pre-qual meeting.



Occasionally, students will hold a pre-reclassification meeting and decide not to proceed to the Reclassification Exam. If this is the case, the student should prepare a [time-to-completion outline](#) (proposed thesis outline and six-month timeline of remaining experiments) for discussion and review by their committee, then hold their next meeting (ideally [Terminal](#)) within the next six months.

### **[PhD track: Reclassification/Qualification Exam](#)**

**Month 21: By the end of May of 2<sup>nd</sup> year (Sept for Jan. starts)**

See the [Examinations section](#) for information about these exams.

### **[PhD track: Fourth Meeting](#)**

**By the end of May of 3<sup>rd</sup> year (Sept for Jan. starts)**

Committee meetings after reclassification/qualification must be held at least once per year or more often if requested by the Supervisory Committee or the student. The next meeting after the reclassification/qualification exam should take place within one year of the exam; however, since May exams can lead to scheduling challenges, students are strongly encouraged to hold their fourth meeting earlier and establish their yearly pattern in a different month.

### **[PhD track: Time to Completion Meeting](#)**

**By the end of May of 4<sup>th</sup> year (Sept for Jan. starts) and at least yearly moving forward**

The Department has put in place policies and procedures designed to reduce the time to completion of our PhD program. Specifically, it is expected that, except in unusual circumstances, a PhD should be defended no more than 5.5 to 6.0 years after commencing graduate studies in the Department.

The Time to Completion (TTC) Committee Meeting is designed to assist in ensuring timely completion of the PhD. **Before the end of the 4<sup>th</sup> year in the graduate program, every PhD student must have a TTC Meeting.** This meeting is not to be delayed because the student or Supervisor do not think the student is ready. Just like the Pre-Reclass/Qual Meeting, this meeting is held at a particular point in the program and is an important assessment of the progress already made as well as what is realistic for the completion of the PhD. It is also a mechanism for students to obtain documented agreement from their Supervisor and Committee about how much more work is expected in their thesis.

The TTC Meeting is conducted in the same manner as other Committee Meetings with the following additional measures:

- 1) The student is given the opportunity to discuss their career plans with the Committee and get their advice on how to achieve their career goals. This is optional, and the student can decline to have this discussion.
- 2) In both the written progress report and at the TTC Meeting, the student must present an additional section including:
  - (i) A projected thesis outline. Students can use the [SGS thesis template](#) as a framework to populate the required sections, noting progress towards each.
  - (ii) A plan outlining exactly which experiments need to be completed along with a realistic estimate of how long this is expected to take. This time may not exceed



two years (i.e., except for writing and defending the thesis, all other aspects should be completed within 5.0 to 5.5 years).

This section can be beyond the four-page report length. There is no required length, but more detail can allow a more productive and specific discussion, as well as a more comprehensive record of what plans were agreed upon. Students are encouraged to consult their Supervisors in preparing this section.

- 3) The Committee reviews the plan and either approves it or recommends modifications. This approval and any feedback are recorded in the evaluation.
- 4) The Committee discusses when to have the next Committee Meeting, which must take place within a year, though Committees are encouraged to consider an earlier meeting.
- 5) All subsequent meetings, held at least yearly until the Terminal, must include a TTC focus: reports should include the section outlined in step 2, with a thesis outline and a plan for completing the remaining experiments, and these should be explicitly presented and discussed for approval by the Committee.
- 6) A Terminal Committee Meeting is held once experiments are complete, in which the student is given permission to write the thesis. This should be no more than 2 years after the initial TTC meeting.

**Yearly Committee Meetings are an absolute, non-negotiable requirement of our program and the School of Graduate Studies.** A student who does not have Committee Meetings each year may not be able to register in the fall and may have their funding or enrollment in the Department terminated. Extensions to the SGS time limit of seven years for the total duration of a PhD will be given only for rare extenuating circumstances.

### **MSc & PhD: Terminal Meeting**

**MSc: Aim for September of 3<sup>rd</sup> year**

**PhD: Aim for May of 5<sup>th</sup>-6<sup>th</sup> year**

At the Terminal Committee Meeting, a detailed outline of the proposed thesis (generally in point form and 1-2 pages in length) is presented. The detailed outline should also be included in the student's Committee Meeting progress report that is distributed to Supervisory Committee members at least one week before the Terminal Committee Meeting.

The student will receive permission to shift to full-time writing the thesis at the Terminal Meeting, via the regular [Committee Meeting Evaluation Form](#) (a separate pdf is no longer used). Students may begin writing parts of their thesis at any time during their degree, but 'permission to write' denotes the point after which no further experimental work should be conducted until the thesis has been submitted to the exam committee. Should experimental work not be completed by the time of the Terminal Meeting, students must present a concise timeline to complete experiments within the next six weeks. The Committee can then post-date permission to write up to six weeks after the meeting.

After receiving permission to write, PhD students are given six months of further stipend coverage and are expected to defend within that period; MSc students are given four months. If delays are anticipated beyond this timeline, students must submit a [Request for Thesis Extension](#). If supervisors expect any additional experimental work during the writing period, the student should be entitled to a corresponding extension of the period of stipend coverage.

Further information about the timelines for the writing and defence period is found in the [Examinations section](#).

### **Meetings for Students Doing Science Outside U of T**

A student's thesis research might occasionally require them to do work at a site outside of Toronto for an extended period of time (e.g., field work, work at a company, work at another University). For work that requires the student to be away from Toronto for more than a month, the student must schedule a Committee Meeting **before** committing to that work in order to get the Committee's approval. The student must also fill out the [SGS Off-Campus Registration Form](#) (found on the [SGS website](#)) and have them signed by the Graduate Coordinator **prior to** committing to the work outside of Toronto.

### **Lack of Sufficient Progress**

If a student's overall progress in the program is deemed by the Supervisory Committee as 'unsatisfactory' or 'needing improvement', they will receive an Overall Score of less than 70% on their Supervisory Committee Meeting Evaluation Report. This report must include a specific description of the problems and how the student may improve their performance.

**A student receiving an overall grade of less than 70% must have another Committee Meeting in less than 3 months.** An additional member of the Graduate Team, Executive Committee, or Designated Examiners may be added at this next meeting to assess the situation. This is determined by the Graduate Coordinator on a case-by-case basis. If the student does not attain an overall grade of over 70% at this next Committee Meeting, the student may be asked to withdraw from the program. If the student is permitted to stay in the program at this point, strict conditions will be established in consultation with the Committee and the Graduate Coordinator to ensure that progress is closely monitored.

### **Individual Development Plan**

The [Individual Development Plan](#) (IDP) is an assessment and planning document intended to open a and guide discussion between student and Supervisor. The IDP covers topics that students have found essential to discuss with their mentors. It encourages both student and Supervisor to think actively about training, and fosters open communication between mentor and mentee. If you have additional questions or objectives related to your training, these meetings are a great time to bring them up and set action steps.

The IDP was initiated in Feb. 2019 and is to be completed every year in association with Committee Meetings. Only the student and Supervisor will view and discuss the IDP, but there is an accountability section included on the Committee Meeting Evaluation Report.

## **COURSE REQUIREMENTS**

### **Important note:**

In 2021 the department updated the curriculum so it is fully compatible with UofT best practices. Students registering in September 2021 onwards will complete the “Current Curriculum September 2021 -” These changes involved splitting up the umbrella courses that were part of the “core” and “legacy” curricula and obtaining course codes for each separate course which can be found and registered in by the students on ROSI.

One major change which we implemented, which affects all MoGen students is that the mandatory attendance and evaluation expectations for the large group seminars have been harmonized and students are only required to attend for 2 years (MSc) and 4 years (PhD).

Previously in 2019, the Department re-structured the required curriculum for both MSc and PhD students. Those students who entered the program in or prior to January 2019 must complete the “legacy curriculum”, detailed first below. Students who entered the program between September 2019 and January 2021 will complete the “core curriculum”, which follows description of the current curriculum below.

### **Graduate Research Integrity Workshop**

As of September 2023, the Department is requiring all incoming students to complete the [Graduate Research Integrity Workshop](#), offered by Research and Health Science Education (RHSE). This workshop addresses research integrity issues that may arise in the course of a degree and career in science, including research misconduct, authorship disputes, and image manipulation. The format and timing of the workshop will be published on the [RHSE page](#) and communicated to students. All incoming students will be automatically enrolled in the workshop, and completion will be monitored by the department.

### **Current Curriculum Sept. 2021 – present**

Note that now that each course has its own course code, each course can have its own syllabi. Each of the courses listed below has a syllabus that can be found on the [Course Descriptions](#) page of the department website or by contacting the course coordinators.

#### **MSc Course Requirements**

MMG1001H: Foundational Genetics Approaches I (0.5 FCE)

MMG1003H: Colloquium (split from the core curriculum course MMG1002H) (0.25 FCE)

MMG1004H: Practical Programming Course for Biologists (split from MMG1002H) (0.25 FCE)\*

- Note that MSc students with high levels of experience in computational biology may enroll in MMG1344 in lieu of MMG1004 with the permission of the instructors.

MMG1111: Graduate Seminars I (register and attend during year 1 and year 2) (0.0 FCE)

MMG1112: Graduate Seminars II (register and attend during year 1 and year 2) (0.0 FCE)

MMG1113: MSc Presentation Skills (0.25 FCE) (formerly MMG1011H/Small Group Seminars)

MMG1114: Graduate Student Presentation I (formerly MMG1015 Topic Seminar) (0.25 FCE)

RST9999Y: Thesis

#### **PhD Course Requirements**

### **All MSc Course/Seminar Requirements\*, plus:**

MMG1111 Graduate Seminars I (register and attend during year 3 and year 4) (0.0 FCE)  
MMG1112 Graduate Seminars II (register and attend during year 3 and year 4) (0.0 FCE)  
MMG1115 Graduate Student Presentation II (Formerly part of MMG1031Y) (Year 4; 0.5 FCE).

\*Note that all CBMG students will enroll in MMG1344 and MMG1345 in lieu of MMG1004 in Year 1.

Two Topics courses (0.25 FCE each)\*\*

\*\* Students may ask for permission to take courses outside of the Department. These requests are considered on a case-by-case basis by the Graduate Coordinator and are rare exceptions in our program given the relevance and diversity of courses we offer. We do not encourage students to take on additional course work beyond what is required for the program. Note that CBMG students who have taken MMG1345 will receive 0.25 FCE and only be required to take one additional Topics course.

RST9999Y: Thesis  
(Along with reclassification or qualification exam)

Information on each of the courses above can be found on the [Course Descriptions](#) page of the department website or by contacting the Course Coordinators.

### **Seminar Attendance Requirements**

Attendance and participation at MMG1111 & MMG1112 is mandatory to receive full marks. You are required to attend and evaluate 18 seminars for each term in which you're enrolled (for each course, 2 terms for MSc students and 4 for PhD students). Evaluations must be completed via a Quercus page that students will receive an invitation to. If you have any concerns about your ability to attend and evaluate sufficient seminars, you are urged to contact the course coordinator as early as possible.

The mandatory seminars attendance requirement reflects the importance the department places on training students in the skill of communicating research results and in receiving a comprehensive education in the broader field of Molecular Genetics.

### **Course Requirements for Reclassification/Qualification**

To reclassify or qualify, a student in the current ("September 2021 - present") curriculum must have:

- Completed and received an acceptable mark (determined by UofT, currently 70% or higher) in MMG1001 and MMG1003, MMG1004. Note that CBMG students will need an acceptable mark in MMG1344 and MMG1345 in lieu of MMG1004.
- Attended and evaluated the requisite number of seminars in MMG1111 and MMG1112 in year 1 and have attended enough seminars in year 2 to still be eligible to meet the requirements for attendance and evaluations for both MMG1111 and MMG1112.
- Must have completed and received an acceptable mark in MMG1113.

- Have completed or be scheduled to complete Graduate Student Presentation I MMG1114.
- No Topic Courses are required prior to qualification/reclassification

## Core Curriculum (Sept. 2019-Jan. 2021 entry into program)

### MSc Course Requirements

MMG1001H: Foundational Genetics Approaches I

MMG1002H: Foundational Genetics Approaches II

MMG1011H: Student Seminars I (Formerly MMG1015 Small Group Seminars)

MMG1021H: Student Seminars II (Formerly MMG1015 Topic Seminar)

RST9999Y: Thesis

### PhD Course Requirements

**All MSc Course Requirements, Plus:**

MMG1031Y: Student Seminars III (Formerly MMG1017)

MMG1041H: Topics in Molecular Genetics II (Two PhD Topic Courses)

RST9999Y: Thesis

(Along with reclassification or qualification exam)

### Course Requirements for Reclassification/Qualification

To reclassify or qualify, a student in the core curriculum:

- Must have completed and received an acceptable mark in MMG1001 and MMG1002.
- Must have completed and received an acceptable mark in MMG1011 and be in the process of completing MMG1021.
- No Topic Courses are required prior to qualification/reclassification.

### Course Descriptions

#### MMG1001H – Foundational Genetic Approaches I

Course Coordinator: Dr. Howard Lipshitz

This course is offered during the Fall term. Students who enter the program in September will take this course first, followed by MMG1002 in the Winter term, while students who enter in January will complete MMG1002 (Winter term) first, then complete MMG1001 in the Fall term of their first year. MMG1001 is composed of three five-week core modules:

1. Genetics Unit
2. Genomics Unit
3. Proteomics Unit

Each module will have its own assignments and format. A combined final exam will be held in January, and marks achieved in each module will be used to calculate the final grade.

#### MMG1002H – Foundational Genetic Approaches II

Course Coordinator: Dr. Philip Kim

This course was offered during the Winter term. MMG1002 entailed:

1. Departmental Colloquium (formerly MMG1010): Instructors, Julie Lefebvre, Lori Frappier, Julien Muffat, Miguel Ramalho-Santos.
2. Introduction to Programming: Instructors, Drs. Philip Kim and Gary Bader
3. Advanced Computational Biology I: Instructors, Drs. Fritz Roth and Quaid Morris

#### 4. Advanced Computational Biology II: Instructors, Drs. Fritz Roth and Quaid Morris

##### **Student Seminar Courses**

**No exemptions for Student Seminars will be granted.** Students should not schedule other courses or TA responsibilities during Student Seminars. TA positions that overlap with Student Seminars should not be taken up until a student has completed the Student Seminars course.

##### **MMG1011H – Student Seminar I**

Course Coordinator: Dr. Richard Collins

MMG1011 entails its own course that was previously the small group seminars portion of MMG1015. MMG1011 takes place in September-October after at least 10 months in the program and entails a seminar presentation in front of a small group of students (~15) and professors (2). This seminar series provides students with experience in preparing and presenting a research seminar that effectively conveys their science to an audience of their peers. In most instances, this will be the first seminar an MSc student has presented on their work. Students will receive extensive constructive and critical feedback that will help them identify and overcome weaknesses in their presentation thus enabling them to improve the presentation. Students will also be expected to give constructive and critical feedback to their fellow student presenters.

At the first meeting of the series, the course coordinator will give a seminar highlighting some of the specific challenges encountered by the types of data and arguments that are frequently presented in molecular biology seminars. The coordinator and the students will identify commonly made mistakes and discuss ways to avoid them.

In subsequent weeks, students meet in small groups of ~15 students. These small-group seminars take place from the end of September throughout October, with specific dates announced in the preceding summer. Attendance at every session is mandatory (no unexplained absences allowed). Each week, 3 or 4 students will present a 15-minute seminar based on their current graduate research and critique the seminars of others. Two professors will also be in the room to help organize, encourage discussion, and evaluate the presentations. Each presenter will be given a set time, uninterrupted, to present the seminar. After the seminar, a typical critique session will consist of the presenter running through their presentation again (slide-by-slide), with comments and constructive suggestions from the evaluators (initially the students, then the faculty) being provided at appropriate places. The group will try to identify what makes a “good” slide “good” and how to revise and improve the less-effective slides. It is expected that opinions will vary among evaluators, and it will be helpful to everyone to hear a range of opinions.

For each seminar, each evaluator will provide written feedback on the form provided. This feedback will be provided anonymously to the presenter to help them revise their seminar for presentation to the department in the second academic term.

Through this course, first year students are required to attend MMG1021/MMG1015 and MMG1031/MMG1017 seminars.

Small group seminar attendance is mandatory and graded. The only acceptable reasons for an absence are that the student is:



- 1) at a scientific conference or adjacent travel day on that date.
- 2) at an out-of-town collaborator's lab and the trip couldn't be scheduled to avoid a seminar date. Students should try to avoid such scheduling conflicts and must let the Course Coordinator know of such issues as soon as they are recognized.

**Grade breakdown:**

80% Presentation in small group

Presentation grade = .2X student avg. mark + .8X Faculty avg. mark

20% Attendance and Participation at MMG1011:

5 small group sessions (including orientation)

In which case missing one small group session will result in a 4% reduction in grade.

**Student Seminars II and III**

Attendance and participation at MMG1021/MMG1031 is mandatory. You are required to attend and evaluate 18 seminars for MMG1021 and 18 seminars for MMG1031 for the first two years in the program. Failure to meet attendance requirement will mean no mark will be given for the course and failure to meet the requirements for coursework could result in having to leave the program. If you have any concerns about your ability to attend and evaluate sufficient seminars, you are urged to contact the course coordinator as early as possible.

The mandatory seminars attendance requirement reflects the importance the department places on training students in the skill of communicating research results and in receiving a comprehensive education in the broader field of Molecular Genetics.

**MMG1021H – Student Seminar II**

Course Coordinators: Dr. Richard Collins, Xi Huang, Ran Kafri, Kenichi Okamoto

Instructors: Scott Gray-Owen, C.C. Hui, Lucy Osborne, Laurence Pelletier, Juri Reimand, Daniel Schramek, Ian Scott, Lincoln Stein

MMG1021 was previously the topic specific seminar portion of MMG1015. This course occurs in the Winter term (Jan. to May), and is usually broken into two parallel sessions, in which 2-3 student present each week. Students will present in front of faculty and peers, generally whose primary research area falls within the same research field. Attendance will not be used to deduct marks, but is instead factored into the overall grade. Seminars are 15 minutes in length.

**Grade Breakdown:**

100% Presentation in a large-group forum

Presentation grade = .2X student avg. mark + .8X Faculty avg. mark

Minimum requirement: 18 MSc and 18 PhD student seminars per year (Years 1 and 2 in the program) must be attended and evaluated by filling out evaluation forms with 1 question We highly recommend to attend all of the seminars and require that you submit your evaluation immediately after the seminars you attend. Failure to attend sufficient lectures and submit evaluations means that you have failed to meet the requirements of the program and you may be



required to leave. If you are having difficulties or have any concerns about your attendance, we urge you to contact the course coordinator before the course is over.

### **MMG1031Y – Student Seminar III**

Course Coordinators: Dr. Richard Collins, Xi Huang, Ran Kafri, Kenichi Okamoto

MMG1031 was previously known as MMG1017, PhD Seminars. In these seminars, students will present a talk to the entire department in the fall term of their 4<sup>th</sup> (as of Fall 2021) or 5<sup>th</sup> year (prior to Fall 2021). Students are enrolled in MMG1031 upon registration in the PhD program. Students admitted directly into the PhD program will begin the requirements of this course only after completion of MMG1011, MMG1021 AND passing their qualification exam. Students complete MMG1031 in the year when they present their PhD seminar. Seminars are 18 minutes in length.

#### **Grade Breakdown:**

100% Presentation in a large-group forum

Presentation grade = .2X student avg. mark + .8X Faculty avg. mark

Students in MMG1031Y must attend and evaluate 18 MSc and 18 PhD student seminars per year (Years 3 and 4 in the program). Evaluations are done by filling out evaluation forms with 1 question. Attendance is required during third and fourth years of enrollment in the program and to receive a grade for this course. We highly recommend to attend all of the seminars and require that you submit your evaluation immediately after the seminars you attend. Failure to attend sufficient lectures and submit evaluations means that you have failed to meet the requirements of the program and you may be required to leave. If you are having difficulties or have any concerns about your attendance, we urge you to contact the course coordinator before the course is over.

### **Topic Courses**

#### **MMG1041H – Topics in Molecular Genetics II**

This course entails two Topic Courses. These Topic Courses for PhD students are to be completed after the reclassification or qualification exam, but can occur during any year of the PhD. Topic Courses are as [described above](#). Discuss which courses would be best to take with your Supervisor before signing up. No waivers are considered.

### **Legacy Curriculum (Jan. 2019 or earlier entry into program)**

#### **MSc Course Requirements**

MMG1010H: Molecular Genetics Colloquium

MMG 1012H: Topics in Molecular Genetics I

MMG1015Y: Seminar

RST9999Y: Thesis

#### **PhD Course Requirements**

MMG1010H: Molecular Genetics Colloquium

MMG 1012H: Topics in Molecular Genetics I

MMG1015Y: Seminar

MMG 1016H: Topics in Molecular Genetics II  
MMG1017H: Topics in Molecular Genetics III  
RST9999Y: Thesis

### **Course Requirements for Reclassification/Qualification**

To reclassify or qualify, a student **MUST** have either:

- Completed and received an acceptable mark in two Course Topics before the time of the reclass/qualification exam; or
- Completed and received an acceptable mark in one Course Topic before the time of the reclass/qualification exam **AND** be in the middle of taking the second Course Topic at the time of the exam.

### **Course Descriptions**

#### **MMG1010H – Molecular Genetics Colloquium**

This is a mandatory course for all Molecular Genetics Legacy Curriculum MSc. and PhD. students, to be completed during the fall term of the first year of graduate study. The Colloquium consists of ~12 weekly departmental seminars that will be presented by invited world-class scientists. The seminars are open to the entire department. Prior to each seminar, students will read a set of 2-3 designated papers/reviews recommended by the invited seminar speaker to familiarize them with the topic at hand. Student will also meet in small groups of about 10-15 members prior to each seminar to discuss the research papers and develop a set of questions to submit to the seminar speaker prior to the seminar. After attending the seminar, students will meet with the seminar speaker to discuss the research. This course provides first year graduate students the opportunity to develop important skills in evaluating scientific research, while learning about a broad range of research areas from experts in each field.

#### **MMG 1012H - Topics in Molecular Genetics I**

Students must take two topic courses (see definition and descriptions below) in order to complete this course. The mark in this course is the average of the two marks obtained in the topics taken.

#### **MMG 1015H - Seminar (Now also known as MMG1113 (current) MMG1011H and MMG1021H (core))**

Students must give two research seminars and attend the weekly student seminars to obtain a grade for this course. The grade in this course is the average of the grades obtained in the two seminar presentations, minus any marks deducted for attending fewer than 60% of the MSc seminar sessions plus 10 PhD sessions. See the “Student Seminar Courses” section below for a detailed course description.

#### **MMG 1016H - Topics in Molecular Genetics II**

Students must take two course topics (see definition and descriptions below) during their PhD program in order to complete this course. The mark in this course is the average of the two marks obtained in the topics taken.

This course may be replaced by a half course offered by a different department or by a course offered through a participating collaborative graduate program. Course replacements are approved via email by the Graduate Coordinator ([graduate.coordinator@utoronto.ca](mailto:graduate.coordinator@utoronto.ca)) and a

course replacement form (found on the Departmental website) must be submitted to the Graduate Office prior to commencement of the course.

### **MMG 1017H - Topics in Molecular Genetics III**

Students must take one course topic (see definition and descriptions below), give one 18-minute research seminar, attend seminars, and evaluate the requisite number of student seminars, in order to complete this course. To receive a mark in this course the student is required to attend and evaluate 18 MSc seminars and 18 PhD seminars in both year 3 and 4.

### **Topic Courses**

#### **MMG1012, MMG1016, MMG1017, MMG1041**

The formal graduate courses in this department are taught in modules known as “Topics.” Most topics last for 6 weeks with one 2-hour session each week (i.e., 12 total hours in-class), but some adhere to a more compact schedule, with the same number of in-class hours. In-class sessions generally include lectures by professors and presentations by students on current literature. Classes often involve discussion of research papers. Topics are generally evaluated through assignments and class participation. Marks for topics are generally available within 4 weeks after the due date of the last assignment for the topic.

A complete list of topics, their description and schedule can be found on the departmental [website](#). Some topic courses are offered jointly with the Department of Biochemistry, and enrollment is composed of students from both Departments. Most topics are currently being offered every other year with the exception of a few. In 2020, all topic courses will be offered to enable students who need topic courses to graduate complete these requirements. There are also two co-curricular (not for credit) courses on professional development and entrepreneurship that are offered yearly.

### **Topic Course Marks & Feedback**

Within four weeks after the due date of the final assignment or within four weeks after the date on which the last class is held, Topic Course Instructors will provide the Graduate Program Coordinator’s office with the following documents:

- All assignments with marks clearly indicated along with constructive written feedback.
- If used, a completed [‘Topic Course Mark & Feedback’ form](#) (available on the departmental website) for each student. This form describes the breakdown of marks that make up the final grade for the Topic Course. Written feedback should be provided on this form, especially for Topic Courses that do not require students to submit assignments.
- A complete class list with accompanying final grades to be submitted via email in excel format.

The Graduate Program Coordinator’s office will alert students when any forms and/or marked assignments are ready to be picked up.

Grades for individual course topics will not appear on your transcript. The grades received in these topics will be used to calculate the final course grade for MMG1012H/MMG1016H/MMG1017H/MMG1041H depending on what stage of the graduate program a student is in.

### Enrolling in Topic Courses

Topic Courses are generally offered during designated periods (Fall or Winter Term), distributed across the academic year. To enroll in individual Topic Courses, students must submit their request online, via surveys sent out by the Department and posted on our website (found under each topic currently being offered). Registration for topics offered between January and May will open in December and will be due by January 15. Registration for topics offered between September and December will open in July-August and will be due by August 15. An email is sent to all students when enrollment is opened, with instructions for signing up and deadlines.

Enrollment is not on a first come, first served basis. Every effort is made to ensure that students are able to enroll in the topics of their choice. However, some topics may be oversubscribed. If a student cannot be enrolled in their top choices, they will be offered a space in one or more of the other topics they selected and placed on the waiting list for the top choice. Top priority is given to students who are close to finishing their graduate program.

### Course Waivers

The Department previously offered a waiver option for MMG1012H for those students who entered into the PhD program after a previous MSc. As of 2018, we are no longer allowed to do so under SGS regulations. This is because credits earned for one degree may not be applied to the pursuit of another degree. Therefore, students entering into the PhD program after completion of a recognized MSc degree may request a course replacement for MMG1012H. In this situation, the student completes additional MMG1015/MMG1017 (also known as MMG1021/MMG1031) evaluations to earn the credits that would normally be associated with MMG1012H. The Graduate Coordinator and Graduate Administrator will provide additional information to students for whom this is a consideration. **No other courses may be waived.**

### Student Seminar Courses

#### MMG1015Y & MMG1017H

Course Coordinators: Xi Huang, Ran Kafri, Kenichi Okamoto, Richard Collins

The primary goal of the Student Seminar Courses is to provide practical experience and guidance so that students can concisely communicate their research results to an audience of educated, but not necessarily specialist, peers. This is an essential skill for anyone intending to seek a career in scientific research. Completion of this course is mandatory for all graduate students in the program. A secondary goal of the series is to give each student a broad knowledge of all aspects of research undertaken in the department. Students should make every effort to attend all seminars. Students who are presenting in a given year are encouraged to participate in a student debriefing following the presentations (MSc students attend the MSc speaker debriefing and PhD speakers attend the PhD speaker debriefing). **No exemptions for Student Seminars will be granted.** Students should not schedule other courses or TA responsibilities during Student Seminars. TA positions that overlap with Student Seminars should not be taken up until a student has completed the Student Seminars course.

**IMPORTANT:** Online surveys will be used for attendance for all student seminar courses. To be counted as valid, the evaluation must include one question and be submitted with 24 hours of the seminar. The quality of the question will not be graded, but these questions and comments will be provided to the presenter and Supervisor.

### **MMG1015Y Speaking Requirements (all students)**

MSc and PhD students enroll in MMG1015Y in which they will give two 15-minute seminars. Both seminars will be scheduled during the second year of enrollment. The final grade in MMG1015 will consist of the average grade of the two seminar presentations (and the attendance scores for the Small Group Sessions).

### **Small Group Sessions**

Course Coordinator: Dr. Richard Collins

The first MMG1015Y seminar presentation takes place in September-October after at least 10 months in the program and is in front of a small group of students (~15) and professors (2). This portion of MMG1015 has been broken into its own course, MMG1011 in our new Core Curriculum. The first MMG1015 small-group seminar series provides students with experience in preparing and presenting a research seminar that effectively conveys their science to an audience of their peers. Students will receive extensive critical feedback that will help them identify and overcome weaknesses in their presentation. Students will also be expected to give critical feedback to their fellow student presenters.

At the first meeting of the series, the course coordinator will give a seminar highlighting some of the specific challenges encountered by the types of data and arguments that are frequently presented in molecular biology seminars. The coordinator and the students will identify commonly made mistakes and discuss ways to avoid them.

In subsequent weeks, students will meet in small groups of ~15 students. These small-group seminars take place from the end of September throughout October, with specific dates announced in the preceding summer. Attendance at every session is mandatory (no absences allowed). Each week, 3 or 4 students will present a 15-minute seminar based on their current graduate research, and critique the seminars of others. Two professors will also be in the room to help organize, encourage discussion, and evaluate the presentations. Each presenter will be given a set time, uninterrupted, to present the seminar. After the seminar, a typical critique session will consist of the presenter running through their presentation again (slide-by-slide), with comments and constructive suggestions from the evaluators (initially the students, then the faculty) being provided at appropriate places. The group will try to identify what makes a “good” slide “good” and how to revise and improve the less-effective slides. It is expected that opinions will vary among evaluators, and it will be helpful to everyone to hear a range of opinions.

For each seminar, each evaluator will provide written feedback on the form provided. This feedback will be provided anonymously to the presenter to help them revise their seminar for presentation to the department in the winter term.

Small group seminar attendance is mandatory. The only acceptable reasons for an absence are that the student is:

- 1) at a scientific conference or adjacent travel day on that date.
- 2) at an out-of-town collaborator’s lab and the trip couldn’t be scheduled to avoid a seminar date.

Students should try to avoid such scheduling conflicts and must let the Course Coordinator know of such issues as soon as they are recognized.

### **Grade breakdown:**

The grade for the first MMG1015Y small-group seminar will be calculated as follows:

a) The student's seminar presentation (75%)

(Presentation grade =  $.2X$  student avg. mark +  $.8X$  Faculty avg. mark)

b) The student's attendance participation in the post-seminar critique sessions (25%)

The presentation marks will be composed of grades from student and faculty evaluators. The participation mark is assigned by the professor leading the group. Overall, the small group grade contributes 1/3 of the total MMG1015 grade.

### **Full Department Seminars**

Course Coordinators: Dr. Richard Collins, Xi Huang, Ran Kafri, Kenichi Okamoto

Instructors: Scott Gray-Owen, C.C. Hui, Lucy Osborne, Laurence Pelletier, Juri Reimand, Daniel Schramek, Ian Scott, Lincoln Stein

The second MMG1015Y seminar (now known as MMG1021) will be presented within the forum of the full Department (formerly known as "Topic or Field Specific Student Seminars") in the Winter Term. Students will present a 15 minute seminar in front of faculty and peers, generally whose primary research area falls within the same research field. These seminars will take place from January until May.

### **Grade breakdown:**

The first seminar grade will comprise 1/3 of the final grade in MMG1015Y; the other 2/3 will come from the second MMG1015Y seminar.

The topic specific seminar grade will be =  $.2X$  student avg. mark +  $.8X$  Faculty avg. mark.

### **Attendance Requirements**

Students enrolled in both MMG1015 and MMG1017 are encouraged to attend all student seminar sessions, the number of which varies from year to year but is typically around 40. MMG1015 and MMG1017 are Graduate Courses and as such, your attendance is mandatory. Minimum attendance requirements for MMG1015 are to attend and evaluate 18 of the MSc Topic Seminars and 18 total PhD seminars in the first two years in the program (MSc) and first 4 years in the program (PhD). Attendance is measured by filling out an electronic student seminar evaluation form (which will be emailed to you prior to the seminar), including one question for the presenter. Attendees have 24-hours to submit their seminar evaluation forms. The large number of seminars necessary to meet the minimum attendance requirement reflects the importance the department places on training students in the skill of communicating research results and in receiving a comprehensive education in the broader field of Molecular Genetics.

### **MMG1017H Speaking Requirements (PhD Students)**

PhD students must fulfill the course requirements of MMG1017H, which includes presentation of one 18-minute seminar. The final grade in MMG1017 is the average of a student's seminar mark and the mark for one topic course (see Department [website](#) for list of topics offered).



MMG1017 students must evaluate 18 MSc and 18 PhD seminars in each of years 3 and 4 in the PhD program before MMG1017H is considered complete.

### **Grade breakdown:**

The grade for MMG1017 is calculated as follows:

- a) 50% of the grade is from the Topic Course portion of MMG1017. Topic courses are not applied to MMG1017 until all topics for MMG1016 have been completed.
- b) 50% of the grade is from the seminar presentation, where:

Presentation grade = .2X student avg. mark + .8X Faculty avg. mark

**IMPORTANT:** In May/June of each year the Graduate Program Coordinator notifies those students who will be automatically scheduled to give their MMG1017H seminar the following year. These are typically students who will be entering their 4<sup>th</sup> or 5<sup>th</sup> year and who have not yet completed their speaking requirement. If there is any chance a student will graduate from the program during the following year it is very important that they respond to the annual May/June survey to ensure that the seminar is scheduled appropriately. It is exceedingly difficult to accommodate exceptions later in the year.

### **Student Seminar Evaluations**

Following the seminar presentations, faculty members and students scheduled to speak in a given academic year will critique each seminar speaker. This feedback is intended to help presenters identify their strong and weak points, to improve future seminars and to provide feedback on the research project. Students from MMG1017 scheduled to speak in fall term are invited to stay for the PhD debrief. Students from MMG1015 scheduled to speak in winter term are invited to stay for the MSc debrief.

### **Critiquing Guidelines**

Public questions after each presentation should focus on scientific content and clarification of details in the presentation. The post-seminar period is intended for constructive comments on the speaker's presentation skills. The instructor will limit non-productive comments.

### **Completion of Student Seminars**

Students are enrolled in MMG1017 upon registration in the PhD program. Students admitted directly into the PhD program will begin the requirements of this course only after completion of MMG1015 AND passing their qualification exam.

MMG1017 is a continuing enrollment course. It is complete only when the following conditions have been met:

- MMG1017 student seminar is completed, generally in 4<sup>th</sup> or 5<sup>th</sup> year (50% mark)
- Final course topic is completed (50% mark). Topic courses are not applied to MMG1017 until the courses for MMG1016 have been completed. Note that the Topic course component of MMG1017 is not linked to attendance requirements for student seminars. That is, if a student has yet to complete the Topic Course, but has met the minimum attendance requirements and presented their seminar, they no longer need to attend.
- Minimum seminar attendance and evaluation criteria have been met.
- Good standing with SGS has been maintained.

- There are no outstanding obligations that have resulted from lapses in attendance at student seminars for previous academic years.

## Courses Offered by Other Departments

One topic/module offered solely by the Department of Biochemistry ([Biochemistry Graduate Courses](#)) or possibly other graduate departments can count towards 0.25 FCE and be combined with an individual Molecular Genetics topic to complete topic course requirements, upon approval by the student's Supervisor and the Graduate Coordinator. Students must submit a [Topic Replacement Form](#) to the Graduate Program Coordinator prior to commencement of the topic.

Additional topics/modules may be taken upon approval, but will not count towards the degree requirement. Students from the Department of Molecular Genetics must follow the topic enrollment procedures of the host department.

Undergraduate courses may not be used for credit for graduate courses. Students may, from time to time, enroll in such courses, but this requires permission from the Supervisor, Supervisory Committee, and Graduate Coordinator (see below).

In rare instances, students may ask for permission to take courses outside of the Department in preparation for a future degree. These requests are considered on a case-by-case basis, but are generally not approved by the Graduate Coordinator. This is because during a student's time in the program, the student should be focused on their research and Molecular Genetics coursework, and every effort should be made to eliminate additional time commitments and distractions that would contribute to a longer time spent in the program.

## Failing a Course

The School of Graduate Studies requires students to complete all of their graduate courses with at least a B- or 70% grade. Failure to achieve a mark of 70% or greater in any required course may result in the termination of the student's enrollment in the program. If a student fails a core course, they can be asked to leave the Department. If they fail a topic course, they may be asked to do a makeup assignment or take another topic course. In both cases, the Graduate Coordinator(s) will discuss the situation with the Course Coordinator and will also meet with the Supervisor to review overall progress in the program. The student may also be asked to hold a Supervisory Committee Meeting involving a Graduate Coordinator. If a course is repeated, the School of Graduate Studies requires that both the grade in the failed course and the grade in the repeated course be recorded on the student's transcript.

## Undergraduate Courses

Our graduate students may take undergraduate courses relevant to their degree at the University of Toronto free of charge, with the written permission of their Supervisor and approval by the Graduate Coordinator. Graduate students taking undergraduate courses must fill out an [Add/Drop Course\(s\) form](#), obtain signatures from their Supervisor and the course instructor and bring the form to the Graduate Program Coordinator two weeks before the course add deadline.



## EXAMINATIONS

## Reclassification/Qualification Exam

**Reclassification** exams are for students who wish to transfer directly from the MSc program to the PhD program without completing an MSc thesis.

**Qualification** exams ensure that students who have entered the PhD program directly successfully prepare and defend an original research proposal leading to a PhD degree. It also tests a student's general scientific knowledge and technical skills. Students who have successfully defended an MSc in the Department and who have been admitted into the PhD program will generally be exempted from this exam if they continue on the same project and if they had an exemplary MSc defence (see below).

### Timeline

Reclassification/qualification exams will be held during May of the 2<sup>nd</sup> year of studies, for students who started their program in September or during October of the 2<sup>nd</sup> year of studies, for students who started their program in January.

All proposals will be handed in by May 1 at 5:00 pm (October 1 for January admits). These deadlines are absolute.

### To reclassify or qualify, a student who enrolled September 2021 and onwards must have:

1. completed and received an acceptable mark in MMG1001 and MMG1003 as well as MMG1004 or equivalent\* (determined by UofT, currently 70% or higher).  
\*Note that CBMG students will need an acceptable mark in MMG1344 and MMG1345 in lieu of MMG1004.
2. attended and evaluated the requisite number of seminars in MMG1111 and MMG1112 in year 1 and have attended enough seminars in year 2 to still be eligible to meet the requirements for attendance and evaluations for both MMG1111 and MMG1112.
3. completed and received an acceptable mark (determined by UofT, currently 70% or higher) in MMG1113.
4. have completed or be scheduled to complete Graduate Student Presentation I MMG1114.

No Topic Courses are required prior to qualification/reclassification.

### To reclassify or qualify, a student who enrolled prior to September 2021 must have:

1. Completed and received an acceptable mark (determined by UofT, currently 70% or higher) in MMG1001 and MMG1002.
2. Completed and received an acceptable mark in MMG1011 and be in the process of completing MMG1021.

No Topic Courses are required prior to qualification/reclassification.

## Reclassification/Qualification Exam Procedure

Students are required to prepare a proposal describing the research that they intend to carry out during their PhD program. The proposal text should be a maximum of 12 double-spaced (23

lines per page) pages with 2 cm margins and 12-point font. Figures, tables, and references on additional pages are allowed, and the page limit will be strictly enforced. Failure to adhere to the page limits or handing in the proposal past the due date will result in a failing mark in this part of the exam evaluation.

### Proposal Preparation

Proposals must include some background information pertaining to the project and clearly identify the primary objectives of the work. In addition, the student must describe the experimental methods to be employed and their possible limitations. The recommended organization for the proposal is as follows:

- **Abstract:** A 250-word summary of the proposal (not included within the 12-page limit).
- **Introduction** (3 pages): The relevant background of the project. What is known about the system, and what is not known? What are the open questions in the field?
- **Relevant experimental progress** (3-4 pages): The relevant work completed so far by the student. A brief mention of other relevant work done in the laboratory by others that has led to choosing this particular project may also be required to put the proposal into proper context.
- **Rationale** (0.5-1 page): What key question(s) are being addressed? Why has the student chosen to address this question using this particular system? What is the hypothesis or hypotheses to be tested?
- **Specific aims** (4-5 pages): The student describes the specific experiments they intend to carry out during their PhD studies. The purpose of the experiments with respect to the general rationale (part 2) should be made clear. The student should point out possible pitfalls in the experimental design and should suggest alternative approaches. Generally, the student should describe two to three distinct aims. Possible outcomes of the experiments, and how to proceed given these outcomes, should be discussed. Convince the Exam Committee that the experiments are feasible and will produce relevant and significant data.
- **Summary & Potential Impact on the Field (~0.5 pages).**

The student is to write the proposal. Supervisors and other members of the Supervisory Committee are advised to not provide word-by-word feedback or rewriting, but only to ensure that the quality of scientific writing, data figures and legends, and referencing is suitable.

It is strongly recommended that students spend four weeks in April to prepare the proposal and study for this exam. Supervisors should not pressure students to do experiments during this period, though students should anticipate that lab maintenance tasks (e.g., maintaining cell lines or organisms) may continue. It is also recommended that students obtain example proposal from other students in their topic area and within their lab who recently successfully completed the exam.

### Responsibilities Prior to the Exam

- The student must write the proposal and prepare for the exam.
- The Supervisor may not require a student to perform experiments during the four-week preparation period.

- At the end of the pre-reclassification/pre-qualification meeting, the student, Supervisor, and Supervisory Committee must schedule the date and time of the exam in May.
- The student and Supervisor must select and invite the External Examiner to the exam they have scheduled.
- The student and Supervisor must schedule the room for the exam at the date/time established.
- The student must notify the Graduate Program Coordinator and Graduate Administrator of the date, time, room, External Examiner, and Supervisory Committee Members who will be in attendance at the exam. Due by April 1 (Sept. 1).
- The Graduate Program Coordinator will schedule the Designated Examiner and the Chair in the time slot provided by each student.
- The student must distribute the proposal to the reclassification/qualification exam committee by May 1 (Oct. 1) at 5:00 or one week earlier than the exam, if the exam is scheduled within the first week of May (Oct.).
- The student must bring the voting ballots to the exam for all Committee members, along with a single copy of the proposal.

### Reclassification/Qualification Exam Quorum

The composition of the exam committee is as follows (normally 6 members in total):

1. An Exam Chair, who is assigned by the Department.
2. Designated Examiner (see “[Organizational Structure](#)”). Assigned by the Department based on the student’s primary research field. The Designated Examiner who served on the pre-reclass/pre-qual meeting will be carried over if the student indicates that they’ve confirmed their availability. A Supervisory Committee Member who is also a Designated Examiner cannot fulfill this role.
3. External Committee member (an arm’s length U of T faculty member from outside or within the Department). Selected by the student and Supervisor.
4. Supervisory Committee members (usually 2); quorum requires at least one Committee member aside from the Supervisor to be present.
5. Supervisor (If there are Co-Supervisors, only one must be present.)

A minimum of five Committee members must be present for the exam to proceed, including:

- The Supervisor
- The Exam Chair
- The Designated Examiner
- The External Committee Member
- At least one Supervisory Committee Member who is not the Supervisor.

The five members must have read the complete proposal before the exam begins and must be at the examination for its entirety, including the student’s oral presentation. All Supervisory Committee members should attend if possible, but if absolutely necessary due to scheduling problems, an exam may be scheduled knowing that only one regular Supervisory Committee member is able to attend.

**Note** that all reclassification/qualification Exam Committee Members must have an arm’s-length relationship with the student and their work. For example, Professors with whom the student has

had collaborations during their graduate studies in our Department are not allowed to serve as Designated Examiner or External Committee Member for the respective reclassification or qualification exam.

### **The Examination**

1. The student may be asked to briefly leave the room. After this, the examination will commence with the student's uninterrupted oral presentation of their proposal (no more than 20 minutes in length).
2. The Exam Committee then uses the Socratic method to question the student on their knowledge of technical and theoretical matters related to their proposal, and to their general knowledge of the research area. This usually entails one round of questions by most of the Committee and a second, shorter round of questions. The examination, including the oral presentation, should not exceed 90 minutes, but leaves an additional 30 minutes for discussion (totaling 2 hours maximum).
3. The Exam Committee then has a closed-door discussion and votes on the reclassification/qualification. All Committee members including the Supervisor must vote. Abstentions are not permitted. Details of the reclassification/qualification exam evaluation can be found below.

Additional rules for the exam process:

- i. The Supervisor (and Co-Supervisor) are not allowed to ask new questions, but can ask clarifying questions, e.g., if a student did not properly understand a previous question.
- ii. In cases where the Chair's area of expertise does not overlap with that of the student being examined, the Chair is strongly encouraged to give their time over to members of the exam who are more knowledgeable in the subject area or are having an insightful conversation with the student during their first Q & A period.
- iii. The Chair will determine which examiners asks questions in round 2 of the Q& A session, placing emphasis on continuing insightful lines of inquiry and allowing questions from those who require additional information to determine pass/fail judgements.

Students are responsible for bringing enough copies of the [Reclassification](#) or [Qualification](#) Exam Evaluation Forms for all members of their Committee and a copy of the proposal to the meeting.

### **Evaluation of the Reclassification/Qualification Candidate**

The exam is intended to probe the breadth and depth of the student's knowledge. The exam committee will evaluate the student and project in three general areas:

- **Feasibility:** If possible, PhD projects should be designed so that any outcome is likely to be of scientific interest and to form the basis of a thesis. In other words, if the results do not turn out as expected, the data might still have sufficient interest to be publishable and constitute the student's PhD thesis. In some cases, a student may wish to start on a risky project where only one outcome would be interesting. In this case, it is important to state why the payoff merits such a high-risk approach. The student should also state how long they will pursue this high-risk project before dropping it, and what criteria will be used to decide that the project cannot be done. In addition, feasible back-up projects should be proposed.

- **Understanding of the Project:** The student is expected to understand all the concepts associated with their proposed area of research. They should also have a thorough understanding of the literature in all aspects related to their proposed area of investigation.
- **Ability to function in a Research Environment:** The student must be able to collect interpretable data, understand the importance of controls, and design and execute internally consistent experiments. To this end, it is very important to include in the proposal information about the research that they have done during their time in the program. Even if this research is unrelated to what the student proposes to do for their PhD thesis, it nevertheless provides an opportunity for the Exam Committee to evaluate their competence in a research environment.

Evaluation of students at Reclassification and Qualification examinations has both objective and subjective components. Because of the latter and because the faculty members are evaluating both the student and the project, it is difficult to state unequivocally the weight to be given to each of the above components. The best way to ensure a positive outcome is to ascertain that one's proposal is feasible and to consider as many of the potential pitfalls as possible. Related to this point, advice on the outline of the proposal from the Supervisory Committee at the Pre-Reclassification/Pre-Qualification meeting is extremely useful. Students should also know the literature relevant to the proposed area of research. The best sources of information and help are the student's Supervisory Committee and senior students who have successfully defended a research proposal at this type of exam. It is extremely helpful to ask fellow students and post-doctoral fellows, especially those with research interests further afield from the research field of the reclassifying/qualifying student, to hold a mock exam prior to the actual exam.

### **Specific Procedure for Exam Evaluation**

Prior to the exam, the Committee is likely to ask the student to briefly leave the room. Following the Oral Exam, the student will leave the room. Prior to any discussion, each examiner will evaluate the student in several different categories. The criteria for which specific marks are given and details of the exam evaluation can be found on the [Reclassification](#) or [Qualification](#) Exam Evaluation Forms. The Committee chair will collate the evaluations, present a summary to the Committee and determine the nature of the subsequent discussion. Once a decision has been reached, the student will be invited back, informed of the decision, and provided with constructive feedback. Copies of the evaluations will be made available to the student, but originals are returned by the Exam Chair to the Graduate Program Coordinator and Graduate Program Administration, and will be kept in the student's file.

**Failure of a reclassification exam** will result in one of the following five outcomes (to be determined by the Exam Committee):

- The student is asked to retake the Oral Exam within 4 to 8 weeks without revising their proposal.
- The student is asked to submit a revised written proposal within 4 to 8 weeks without retaking the Oral Exam.
- The student is asked to submit a revised written proposal and retake the Oral Exam within 4 to 8 weeks.
- The student is asked to complete and defend a MSc thesis.

- The Department terminates the student's enrollment in the program.

**Failure of a qualification exam** will result in one of the following five outcomes (to be determined by the Exam Committee):

- The student is asked to retake the Oral Exam within 4 to 8 weeks without revision of the proposal.
- The student is asked to submit a revised written proposal within 4 to 8 weeks without retaking the Oral Exam.
- The student is asked to submit a revised written proposal and retake the Oral Exam within 4 to 8 weeks.
- In cases where the student does not have an MSc in a related field from U of T, the Committee recommends to the student that they transfer to the MSc program.
- The Department terminates the student's enrollment in the program.

In the situation of a failure, even if the student is given the option to retake the exam, they have the option to ultimately not proceed after discussion with the Supervisor and/or the Supervisory Committee. If the student changes their mind, they must let the Graduate Administrator know as soon as the decision is made or at least two weeks before the rescheduled exam was to occur.

### Transferring to the PhD Program

(For reclassifying students)

- The Exam chair submits the evaluation forms to the Graduate Program Coordinator to be kept in the student's file.
- A copy of the forms is forwarded to the student for their information. The student must bring the evaluation forms to the next Supervisory Committee Meeting.
- If a student passes, they will be asked by the Graduate Program Coordinator to sign a "Program Transfer", which is then forwarded to the School of Graduate Studies for approval.
- The School of Graduate Studies notifies the student of a successful transfer in writing.

### MSc Oral Exam

When all course requirements have been met and the Supervisory Committee has read and approved the thesis, students may schedule an MSc Oral Exam. MSc Oral Exams should take place 2 to 2.5 years after first registration (see "Time Limits for Writing the MSc Thesis" section below). This examination is a formal defence of a thesis based on original scientific research conducted in the Department as well as a test of the student's general scientific knowledge and abilities.

### Requesting Permission to Write the MSc Thesis

Permission to write an MSc thesis is given at a Terminal Supervisory Committee Meeting. A detailed outline of the proposed thesis (generally in point form and 1-2 pages in length) is presented at this meeting. The detailed outline should also be included in the student's Committee Meeting progress report that is distributed to Supervisory Committee members at least seven days prior to the Terminal Committee Meeting. Note that Committee members can also post-date this form up to six weeks after the date of the Terminal Committee meeting should



experiments be completed within that timeframe. If experiments take longer than six weeks, another Terminal Committee Meeting must be scheduled by the student upon completion of all experiments.

Students may begin writing parts of their thesis **at any time**, but after formal ‘permission to write’ is given, the student should be writing their thesis full-time and should not conduct additional experiments until the "Request to set up an MSc Oral Examination" form has been completed by all relevant parties. If supervisors expect additional experimental work during the writing period, the student should be entitled to a corresponding extension of the period of stipend coverage. The Graduate Program Coordinator will record the date that the Supervisory Committee gave the student permission to write their thesis.

### **Time Limits for Writing the MSc Thesis**

Students must defend within **four months** of receiving permission to write.

- Within this, they are allowed **3.5 months** for both writing and obtaining approval of the thesis draft from the Supervisor and Supervisory Committee.
- The 3.5 months **include** time for the Supervisor and Committee Members to critique the thesis, which should take no more than four weeks in total (two weeks for the Supervisor and two weeks for Committee Members). Students must also allow enough time to make the required changes after the Supervisor has critiqued the thesis and then again after the Supervisory Committee members have critiqued the thesis. This means students have **2.5 months** for writing and making changes.
- The [MSc Oral Exam Request form](#) must be submitted at least **three weeks** prior to the agreed-upon date of the examination. Note that final copies of the thesis are no longer required for this form, so the form can be submitted at any point after the Supervisor has approved the full thesis draft.
- The final version of the thesis must be sent to the full Examination Committee at least **two weeks** prior to the examination.

### **Organization and Content of the MSc Thesis**

The thesis should describe the student’s work. This is not the same as a publication describing the work (see below for details). Obtaining an MSc in our Department is not dependent on obtaining publications. Obtaining authorship on a publication, however, is encouraged. Many of our MSc students obtain first-author publications.

The Department strongly encourages students to obtain examples of theses from previous members of their lab. In addition, theses from previous students in the program can be found through the [How Can I Find a U of T Thesis](#) guide.

The fundamental requirement of the MSc is to generate publication-quality data that reaches a significant conclusion. The data might constitute only a portion of a complete paper. In other words, the student's work should culminate in at least a couple of publication-quality figures or tables that they produced themselves and can interpret on their own. The student should be able to propose detailed experiments for the future that are based on their work.



In addition to the SGS format rules for the MSc and PhD theses, we highly recommend using 12-point uncondensed Times New Roman font for clarity.

The thesis should be written in the first person (use of the pronoun “I”), as it describes the student’s individual work: experiments, rationale, hypotheses and conclusions.

- **Introduction:**
  - Should provide the relevant background to the thesis work.
  - Should not be a general survey of every topic touched upon by the work.
  - Should clearly outline the state of knowledge in the field of the research and emphasize the outstanding questions in the field, especially those that are specifically addressed by the MSc research.
  - Should end with a brief outline and rationale for the thesis research. The introduction should not exceed 15 pages.
- **Data Chapter:**
  - Should describe the experiments performed by the student.
  - The MSc thesis consists of one data chapter that contains enough data to reach a significant conclusion. These data should be of publication quality but do not need to be published.
  - Work of collaborators may be included when this work is crucial for the understanding of the student’s own data. When work by collaborators is included, it should be clearly indicated which experiments were done by collaborators. In this case, there must be a general explanation on the cover page of each data chapter outlining the contributions, by experiment, from each person.
  - Use “I” in the body of the chapter to describe the student’s experiments, and the name of the collaborator(s) (or “we”, if appropriate) to describe others’ experiments/data. The chapter must be written to emphasize the student’s own work.
  - The introduction to a data chapter should not repeat material already presented in the general introduction of the thesis.
  - **Figures and tables** not exceeding three pages in length (see the [note below](#) for instructions on how to present very large datasets) should be placed in the body of the chapter, on the page following their first introduction, and not in a separate section at the end of the chapter. Where possible, the legend should be on the same page as the displayed item. Aside from very large datasets or movies (see below), there should be no reference to supplemental materials/figures/tables; all relevant data should be presented in the results section of the data chapter. Sometimes, figures that have been copied into a thesis are of inadequate resolution. Please ensure that all figures within a thesis are at least 300 dpi.
  - In no case is it permissible for a **published or unpublished manuscript to be used as a data chapter without some alteration**. Even in the case of a single author paper by the student, the introduction must be modified to avoid repetition with the thesis introductory chapter. The results section of the chapter will incorporate all supplementary materials as described above.
  - If a study involves **Human Subjects**, a section in the materials section should be included indicating the study was approved by an Institutional Review Board

(specify which), and that informed consent was obtained from all human subjects. If a study involves vertebrate subjects, a section in the materials section should be included that indicates that all related protocols used were reviewed by the appropriate animal care board (specify which).

- The term ‘data not shown’ does not belong in a thesis. Arguments that rely on casual observation because no data was collected should not be present in a data chapter as this provides evidence of poor scientific method. Speculation based on casual observation is permissible within a concluding chapter, so long as it is clearly stated that the argument relies on casual observation and not on real data.
- **Concluding Chapter:**
  - Should begin with an overall summary of the thesis work explaining how the work has advanced the field.
  - Should refer to questions and hypotheses posed in the Introduction and explain how the research has solved (or maybe not solved) these problems.
  - The thesis should end by proposing several future investigations that could further address the key issues in the field.

### **Inclusion of Very Large Datasets, Movies, and References to Published Supplemental Materials**

All data relevant to the MSc thesis must be included within the thesis and distributed to Supervisory and Examining Committee members for editing and evaluation purposes. It is not acceptable to refer to online supplementary materials published by the student within the thesis. The University cannot rely on outside agencies to maintain the integrity of data that are directly relevant to the thesis.

Students must present figures and small tables (not exceeding three pages) within the appropriate data chapter. The appendix of the table should present display items that exceed three pages in length. If the student and Supervisor feel that the data within a very large table (more than ~10 pages) would be better presented in an electronic format, the student may include these data as a CD/DVD appended to the thesis or provide a permanent link to a cloud storage file.

Students should present movies as a series of representative stills in the appropriate data chapter. They should also include the movie on a CD/DVD that is physically appended to the thesis or sent as a permanent cloud storage link.

### **Thesis Formatting**

We strongly recommended that authors use an [SGS guide and thesis template](#). The template can be applied at any stage of the writing process, but using one early on will simplify writing and later PDF conversion. These templates are meant to assist with the formatting and production of a thesis but, whether or not the student uses an SGS template, it is the student’s responsibility to ensure that the thesis meets SGS formatting requirements. In addition to the SGS format rules for the PhD theses, we highly recommend using 12-point uncondensed Times New Roman font for clarity.

### **Technical Requirements**

The thesis must be in PDF format and may also include supplementary files for multimedia, sound, video or HTML pages with embedded files. For specific information please see the [SGS Formatting guide](#).

#### **Guidelines for the Main Text-Based Thesis File:**

- **Font size:** Text must be a minimum of 12 points. A smaller font size may be used for graphs, formulas, and appendices.
- **Line spacing:** Text line spacing must be at least one-and-a-half spaces, except for the thesis abstract, which should be double-spaced. Single spacing may be used for long quoted passages and footnotes.
- **Footnotes and References:** The student and Supervisor must decide the form and location of footnotes and the presentation of references and bibliography. The preferred location for footnotes is either at the bottom of the page or at the end of the chapters to which they refer. The student should consult style manuals in conjunction with the Guidelines. For questions not answered in either the Guidelines or any style manual, we urge students to use their discretion and to maintain a consistent style.
- **Page and margin sizes:** The size of the pages should be 8 1/2" x 11" (21.5 cm x 28 cm), the text reading across the 8 1/2" (21.5 cm) dimension. The left-hand margin should be at least 1 1/4" (32 mm), and the remaining three margins should be at least 3/4" (20 mm) to the main text.

#### **Scheduling the MSc Oral Exam**

The Supervisor must approve the student's thesis prior to the online submission of the "MSc Exam Request" form (available on the Departmental [Forms and Links page](#)). The Supervisory Committee and Supervisor will be emailed by the Graduate Program Coordinator after submission of the form for confirmation. Supervisors are expected to read and return the thesis to their students within two weeks, after which the student will distribute a revised draft to the Supervisory Committee members. The Supervisory Committee members are expected to read and return the MSc thesis with comments within two weeks. Failure of faculty members to meet these deadlines must be reported to the Graduate Coordinator as described below.

Students will submit an "MSc Exam Request" form online once they have confirmed a date and time for the exam with all members of the Exam Committee. This request must be submitted **no less than three weeks prior to the exam**. The student or supervisor must also distribute a final copy of the thesis to each member of the Exam Committee (including the Supervisory Committee members) at least two weeks prior to the exam. Failure to do so may result in rescheduling of the exam.

In general, defences are expected to take place in person. However, the department will approve a remote/virtual defence under some circumstances; the student must discuss this request with a Graduate Coordinator before submitting the Exam Request.

#### **Choosing the MSc Thesis Defence Exam Committee**

The final composition of the Committee is subject to the Graduate Coordinator's approval. The Exam Committee is composed as follows:

- A Designated Examiner from the student's **primary research field** (voting member), will chair the Exam Committee. They are also expected to read the thesis and participate in the examination of the student. (See [Designated Examiners](#) for Committee composition). This member is to be selected and invited by the student and Supervisor, and cannot be a member of the student's Supervisory Committee; they are expected to be arm's-length.
- The student's Supervisor (voting member). The Supervisor may participate in the exam questioning and/or the discussion about the student.
- At least **one** Supervisory Committee member in addition to the Supervisor must be in attendance (voting member). Multiple Committee members are welcome to attend the exam but are not required to do so.
- One 'Arm's-Length Examiner' (voting member). This faculty member must hold a graduate appointment in SGS and may be from within the Department of Molecular Genetics or from another department. This examiner should have an arms-length relationship to both the student and the Supervisor. This member is selected by the Supervisor and student.

The Graduate Program Coordinator will issue a formal exam notice to all parties concerned once the Exam Committee is approved by the department. A copy of the notice is kept in the student's file and recorded on the database. As noted above, the student is responsible for the distribution of the thesis. The student and Supervisor are also responsible for determining the time and place of the meeting.

#### **MSc Exam Quorum:**

Quorum will be

- i) The Supervisor
- ii) The Designated Examiner
- iii) At least one Supervisory Committee member (other than the student's Supervisor); and
- iv) The Arm's-Length Examiner.

#### **Delays in Scheduling the MSc Oral Exam**

If an Oral Exam is not scheduled to occur **within four months** of the date permission was given to write a thesis, the student must submit an "Request to Extend the Time Limit for Completing the MSc or PhD Thesis" [form](#) to the Graduate Administrator, which will be signed by the Graduate Coordinator. This request must include the following information:

1. Which chapters have been written and approved by the Supervisor(s)
2. Which chapters are written but not yet approved
3. Which chapters are incomplete and the reason(s) for this
4. When the student expects to provide the Supervisory Committee with a complete draft of the thesis
5. A realistic timeline for the Oral Exam

If additional details are required, the Graduate Coordinator may contact the student and Supervisor. If the four-month deadline passes without an approved extension, the graduate stipend may be withdrawn due to failure to meet program requirements. **However**, a Supervisor may not withdraw a student's stipend without prior consultation with the Graduate Coordinator. If a student has set up the exam within the required time frame, the stipend must be paid until

both the Oral Exam and thesis revisions recommended by the Exam Committee have been completed.

Supervisors are required to pay students during the thesis writing and defense period for up to 4 months, provided the student has not taken another job. If the thesis writing is delayed such that the submission of the thesis and defense take longer than 4 months, continuation of the stipend is at the discretion of the Supervisor.

### **Delays in Providing Feedback on the MSc Thesis by the Committee**

Since thesis writing and Committee feedback must be completed within a tight timeframe, Supervisors and Supervisory Committee members are obliged to read and provide feedback on the draft thesis promptly. Supervisors are expected to read and return MSc theses to their students in two weeks or less. Committee members are expected to read and return MSc theses with comments in two weeks or less. If students do not receive the corrected thesis within these time frames, they should contact their Supervisor or Committee member by email and obtain a revised deadline for finishing the corrections. If this subsequent deadline is unreasonable or if this deadline is not met, the student should report the situation to the Graduate Coordinator along with appropriate documentation. The Graduate Coordinator will take immediate measures to resolve the situation. It is important for the student to remember that the Graduate Coordinator and Graduate Team are allies in facilitating the timely revision of the thesis.

Students will submit the MSc Oral Request form only after the Supervisory Committee members have read and critiqued the thesis. At that time, Committee members will return the critiqued thesis and any additional suggestions for revisions. Students are expected to incorporate these changes before distributing the thesis to the External Examiner and other Exam Committee members. If there are disagreements between a Committee member and the student and/or Supervisor about the nature and/or extent of the changes to be made to the thesis, the Graduate Coordinator should be consulted. The Graduate Coordinator will decide on how to proceed. It is important to note that this resolution process will not be influenced by prior unofficial arrangements of MSc Oral Exam dates (e.g. having agreed on a date with an External Examiner).

The Department will not tolerate excessive delays by faculty members in reading and approving theses. Offenders will be sanctioned and may lose their graduate appointments.

### **MSc Examination Process**

#### **Oral Presentation**

- Up to 20 minutes in length.
- Uninterrupted presentation of thesis research, including a reasonable introduction, explanation of research aims and accomplishments, and conclusions. A broad description of future aims is acceptable, but should not be treated as future aims that the student themselves would execute. Note that the presentation strategy is different if the student intends to re-apply to the PhD program and work on the same project (see “[Defending an MSc With Subsequent Admission to the PhD Program](#)”).

#### **Questions**

- The Exam Committee will question the student on technical and theoretical knowledge related to the thesis, and to the student’s general knowledge of the research area. The

exam, including the oral presentation, should not exceed 90 minutes, leaving an additional 30 minutes for discussion and deliberation by the Committee.

### **Exam Committee Discussion**

- A closed-door discussion of the thesis and its defence.
- Decide on recommendations.

### **MSc Exam Voting Procedure**

All Committee members must vote by filling out and signing the [MSc Oral Examination Voting Ballot](#) (also found on the [Forms and Links page](#)). Abstentions are not permitted, and two negative votes result in the failure of the exam. The student may be permitted to stage a second defence. If they fail the second defence or are refused a second defence, the department will terminate the student's enrollment in the program and the student will not obtain a degree.

The Chair of the MSc Oral Exam must submit a signed copy of the [MSc Oral Examination Chair's Summary Form](#) (also found on the [Forms and Links page](#)) to the Graduate Program Coordinator immediately after the conclusion of the exam. After a successful defence and completing revisions, the Supervisor must notify the Graduate Program Coordinator in writing (by email) that the student has made all the recommended corrections to their thesis. Upon receipt of a report from the chair of the Exam Committee and the confirmation from the Supervisor, an "MSc Degree Recommendation" form is signed by the Graduate Coordinator and sent to the School of Graduate Studies.

### **Post-Exam Thesis Preparation**

Upon timely completion of the thesis revisions and obtaining written approval from the Supervisor, the student must prepare the thesis for submission to the School of Graduate Studies and the Department. The Supervisor also notifies the Grad Administrator that all revisions are finalized.

SGS has prepared guidelines outlining the regulations for the formatting and preparation of a thesis for electronic submission to the SGS (see [Thesis Formatting](#)). These guidelines, available on the [School of Graduate Studies website](#), must be strictly adhered to. SGS will inform the student of any additional completion requirements such as the payment of library fines, outstanding fees, etc.

Once approved by the Examining Committee, the student must electronically submit the thesis and the associated data to the School of Graduate Studies (SGS). Within one month of it being submitted to SGS, a PDF copy of the thesis must be sent to our Graduate Program Coordinator for archival purposes, including all additional large data sets as permanent links to cloud storage. The Department also requests a hard copy (soft or hardcover), and some Supervisors may additionally require a copy. The U of T Bookstore offers [printing and binding services](#).

### **Defending an MSc with Subsequent Admission to the PhD Program**

All students who wish to gain admission to the PhD program in the Department of Molecular Genetics following a successful MSc defence must submit an application via the SGS application system (see [Application Procedures](#)). These students will fall under the following categories:

- a. Those who intend to continue within the same laboratory and continue the same (or similar) project;
- b. Those who wish to continue within the same laboratory, but pursue a different project (i.e. study a different subject matter, employ a different model system, and/or use an entirely different approach);
- c. Those who intend to join a different laboratory within the Department.

It is important that the Graduate Coordinator and/or Graduate Program Coordinator be informed of the decision for an MSc student to re-enter the Department as a PhD candidate. The Graduate Coordinator or Administrator will generally meet with such students to counsel them on the appropriate path and procedures for their successful defence and re-entry to the Department.

**Note** that the MSc Examining Committee does not make admission decisions. The Committee can only recommend, in a letter to the Graduate Coordinator, whether the requirement of the qualification exam should be waived if the student joins the PhD program. In cases where the student has completed an MSc, applied to our PhD program, but has not distinguished themselves over the course of their MSc, the Admissions Committee will consult with the Chair of the Exam Committee to determine whether their performance during the defence should have an impact on the Admissions Committee's decision.

It is important to note that students who rejoin the Department to complete a PhD are held to the same standards as other PhD students. All PhD students are expected to have one to three complete and original data chapters in their PhD thesis. Results reported in the MSc thesis cannot be re-published as part of the results section of a data chapter within a PhD thesis. They may, instead, be referred to in the introduction or discussion sections of any chapter along with proper citations.

Students who wish to defend their MSc with the intent of applying to our PhD Program in the same laboratory (and continue the same/similar project) in which they did their MSc must:

- Discuss with the Graduate Coordinator their plan to re-enter the Department.
- Inform the Examining Committee Members at least three weeks before the date of the MSc Oral Exam that they wish to be considered for admission to the PhD program.
- Include a "Future Directions" section at the end of the MSc thesis that describes the proposed PhD project. This section should be a maximum of 6 double-spaced (23 lines/page, 12 point font, 2 cm margins) pages and may include additional figures and/or tables. This section should be similar to parts 3 and 4 of the reclassification proposal as follows:
  - **Rationale** - 1 page: What key question(s) is/are going to be addressed? Why address this question using this particular experimental system? What hypothesis or hypotheses will be tested?
  - **Specific aims** - 4-5 pages: Describe the specific experiments that will be carried out during the PhD studies. The purpose of the experiments with respect to the general rationale should be made clear. The student should point out possible pitfalls in experiments and suggest alternative approaches. Generally, the student should describe two to three distinct aims. The student should discuss potential outcomes of the experiments and how they will proceed given these outcomes,



should be discussed. The student should convince the Committee that experiments are feasible and will produce relevant and significant data.

- Upon fulfilling all requirements for a MSc, the student must submit an online SGS application for the PhD program in our Department. The Graduate Coordinator, in consultation with the Chair of the Admissions Committee, and one or more Admissions Committee members, will promptly review the student's application (as these situations often occur outside of normal application cycles). MSc students are held to a higher standard than BSc students and it is often the case that we will not admit students with a MSc into our PhD program. However, if the application is approved, the student will be enrolled into the PhD program at the beginning of the following term. Given that the student would be enrolled in the MSc program until the end of term, the student will remain an officially enrolled student throughout the transition. However, it is important to consider timing of defence/re-entry to make the transition as seamless as possible.

Students are expected to answer the same types of questions that would be asked at a reclassification exam, whether they are planning to continue the same project or not.

**Note:** The caliber of performance required for acceptance into the PhD program is significantly higher than for a terminal MSc degree. Students may successfully pass the MSc Oral Exam but not be admitted to the PhD program.

Students who wish to defend their MSc with the intent of applying to our PhD Program and joining a different laboratory in which they did their MSc (or remain in the same lab, but pursue a different project):

- Do not have the option of writing a "Future Directions" as part of their MSc thesis solely for the purposes of waiving the Qualification exam.
- Upon fulfilling all requirements for a MSc, must submit an online SGS application for the PhD program in our Department. The Graduate Coordinator in consultation with the Chair of the Admissions Committee, and one or more Admissions Committee members, will promptly review the student's application (as these situations often occur outside of normal application cycles). MSc students are held to a higher standard than BSc students and it is often the case that we will not admit students with a MSc into our PhD program. However, if the application is approved, the student will be enrolled into the PhD program at the beginning of the following term. Given that the student would be enrolled in the MSc program until the end of term, the student will remain an officially enrolled student throughout the transition.

Students who rejoin our Department and stay in the same lab should not do rotations. Students who plan to join a different lab can rotate in up to three labs upon joining the PhD program. At the discretion of the Graduate Coordinator, the student may have the option of forgoing rotations if they have significant experience in the lab in which they want to join.

The PhD Qualification Exam will only be waived for students who:

- I. Continue within the same laboratory and continue the same (or similar) project;
- II. Successfully defend their MSc with a special "Future Directions" section associated with both the written thesis and the Oral Exam; AND

III. Have a letter (email) from the Chair of the exam attesting to the student's outstanding performance.

For this to occur, the student must meet with the Graduate Coordinator ~6 weeks prior to the exam and discuss why they should not have a PhD Qualification Exam. In the rare case that the Graduate Coordinator concurs, they will notify the MSc Examining Committee to hold the student to a higher standard. The Chair of the Oral Exam must indicate whether the student is exceptional and should be granted a waiver of the PhD Qualification Exam.

In almost all cases, a student who successfully defends their MSc and transfers to a different lab as a PhD student will be required to undergo the PhD Qualification Exam.

It is important to note that in general, work done in partial fulfillment of an MSc degree cannot be used in partial fulfillment of a PhD degree. However, students who complete an MSc degree in our Department and subsequently begin a PhD here will not need to repeat courses completed during the MSc. Only additional [PhD curriculum requirements](#) will apply. Necessary course substitution options or special exemptions will be implemented by the Graduate Coordinator upon re-admission of the student to the Department.

## PhD Oral Exam

When all course requirements have been met and the Supervisory Committee has read and approved the thesis, students may proceed to the PhD Oral Exam. The Department expects that the typical PhD student will take about 5.5 years after first registration to complete the PhD-related research, course work and thesis writing (see "Time Limit for Writing the PhD Thesis" below). It is the Department's expectation that a PhD thesis will contain one to three complete data chapters. The PhD thesis exam is a formal defence of a thesis based on original scientific research as well as a test of the student's general scientific knowledge and abilities.

## Requesting Permission to Write the PhD Thesis

Permission to write a PhD thesis is given at a Terminal Supervisory Committee Meeting. A detailed outline of the proposed thesis (generally in bullet point form and typically longer than a page) is presented at this meeting. The detailed outline should be included in the student's Committee Meeting progress report that is distributed to Supervisory Committee members at least seven days before the Terminal Committee Meeting. Note that Committee members can also post-date this form up to six weeks after the date of the Terminal Committee meeting should experiments be completed within that timeframe. If experiments take longer than six weeks, another Terminal Committee Meeting must be scheduled by the student upon completion of all experiments.

The Graduate Program Coordinator will record the date that the Supervisory Committee gave the student permission to begin writing the thesis. Students may begin writing parts of their thesis **at any time**, but after formal 'permission to write' is given, the student should be devoted full-time to thesis writing and should not conduct additional experiments until the "PhD Oral Exam Request" form has been submitted online. Exceptions to this guideline can arise over the course of the writing period. For example, reviews from a submitted manuscript might compel the student to perform additional experiments, or holes in the thesis may become apparent during the writing process that necessitates additional experimentation. The student's discretion should be

applied here. Under no circumstances, however, should new experimental avenues be explored at this point in the program. If supervisors expect additional experimental work during the writing period, the student should be entitled to a corresponding extension of the period of stipend coverage. (See “[Commitments that Conflict with the Completion of a Student’s Degree](#)”)

### Time Limits for Writing the PhD Thesis

Students must defend within **six months** of receiving permission to write.

- Within this, they are allowed **4.5 months** for both writing and obtaining approval of the thesis draft from the Supervisor and Supervisory Committee. The [PhD Oral Exam Request](#) must be submitted within four months of receiving permission to write via the Committee Meeting evaluation.
- The 4.5 months **include** time for the Supervisor and Committee Members to critique the thesis, which should take no more than six weeks in total (three weeks for the Supervisor and three weeks for Committee Members). Students must also allow enough time to make the required changes after the Supervisor has critiqued the thesis and then again after the Supervisory Committee members have critiqued the thesis. This means students have **three months** for writing and making changes.
- The [PhD Oral Exam Request](#) form must be submitted at least **eight weeks** prior to the agreed-upon date of the examination. Failure to meet this deadline will likely result in the exam request being denied. Note that final copies of the thesis are no longer required for this form, so the form can be submitted at any point after the Supervisor has approved the full thesis draft.
- The final version of the thesis must be sent to the External Examiner at least **six weeks** prior to the examination **by the Supervisor**. Students must not contact the External Examiner themselves.
- The final version of the thesis must also be sent to the full Examination Committee at least **four weeks** prior to the examination.

### Organization and Content of the PhD Thesis

The Department strongly encourages students to obtain examples of theses from previous members of their lab. In addition, theses from previous students in the program can be found through the [How Can I Find a U of T Thesis](#) guide.

The fundamental requirement of the PhD is to make a contribution to knowledge. First-author research publications are the standard evidence that this requirement has been met. Papers also illustrate that the students can finish projects, and can document and interpret their work. It is thus a standard expectation that PhD projects would lead to such publications, and that graduates would strive to obtain first-author publications during their thesis studies.

However, obtaining a PhD in the Department is not dependent on the work being published at the time of graduation, and though it is preferred that the student has participated in at least one manuscript submission, completion of the degree should not be delayed by publication strategies or lengthy review processes that are beyond the control of the student. The Committee must nonetheless agree that the work meets the same standards as a journal publication and constitutes a substantive body of work that is appropriate for the PhD.

A typical PhD thesis includes between one and three data chapters, with one being the minimum requirement.

The thesis should be written in the first person (use of the pronoun “I”), as it describes the student’s individual work: experiments, rationale, hypotheses, and conclusions.

- **Introduction:**

- Should provide the relevant background to the thesis work.
- Should not be a general survey of every topic touched upon by the work.
- Should clearly outline the state of knowledge in the field of research and emphasize the outstanding questions in the field, especially those that are specifically addressed by the thesis research.
- An excellent Introduction will be interesting to read and will propose hypotheses (possibly novel) to explain data in the literature. This is the student’s chance to demonstrate mastery of the subject matter of the thesis studies. Students should not be afraid to express their opinions. This is the student’s thesis, and their opportunity to write their own story. The Introduction should end with a brief outline and rationale for the thesis research. The Introduction should not generally exceed 25-30 pages.
- Frequently, excellent Introduction sections may be published as Review articles in the field of the student. The student and Supervisor may wish to coordinate these efforts to obtain such a publication.

- **Data Chapters:**

- Students should aspire to have one to three data chapters in their thesis. Note that the data chapters are not required to be published papers. A data chapter should contain enough data to reach a significant conclusion that could be published in a high-quality journal for the field in question.
- The data chapter(s) should describe the experiments performed by the student.
- Work of collaborators may be included when this work is crucial for the understanding of the student’s own data. When work by collaborators is included, those experiments done by collaborators should be clearly indicated. There must be a general explanation on the cover page of each data chapter outlining the contributions from each person.
- In the body of the chapter, use “I” to describe the student’s experiments, and the name of the collaborator(s) (or “we”, if appropriate) to describe others’ experiments/data. The chapter must be written to emphasize the student’s own work.
- The introduction to a data chapter should not be a direct copy of material already presented in the general introduction, but rather a summary of key points needed to provide the context for that data chapter.
- **Figures and tables** not exceeding three pages in length (see the [note above](#) for instructions on how to present very large datasets) should be placed in the body of the chapter, on the page following their first introduction, and not in a separate section at the end of the chapter. Where possible, the legend should be on the same page as the display item.

- Aside from very large datasets or movies (see above), there should be no reference to supplemental materials/figures/tables; all relevant data should be presented in the results section of the data chapter.
- Sometimes, figures that have been copied into a thesis are of inadequate resolution. Students must ensure that all figures within a thesis are at least 300 dpi.
- It is never permissible for a published or unpublished manuscript to be used as a data chapter without some alteration. Even in the case of a single author paper by the student, the introduction must be modified to avoid repetition with the thesis introductory chapter, and all supplementary materials will be incorporated into the results section of the chapter as described above.
- If a study involves **Human Subjects**, a section in the materials section should be included that indicates that the study was approved by an Institutional Review Board (specify which), and that informed consent was obtained from all human subjects. If a study involves **vertebrate subjects**, a section in the materials section should be included that indicates that all related protocols that were used were reviewed by the appropriate animal care board (specify which).
- Finally, the term ‘data not shown’ does not belong in a thesis. Arguments that rely on casual observation because no data was collected should not be present in a data chapter because this provides evidence of poor scientific method. Speculation based on casual observation is permissible within a concluding chapter, so long as it is clearly stated that the argument relies on casual observation and not on real data.
- **Concluding Chapter:**
  - Should begin with an overall summary of the work that explains how it has advanced the field. Students should refer to questions and hypotheses raised in the Introduction and explain how the research has solved (or maybe not solved) these problems. This chapter can propose hypotheses and models, and should emphasize the student’s own view of the field. The thesis should finish by suggesting several future investigations that would further address the key issues in the field.

### **A Note on the Inclusion of Very Large Datasets, Movies, and References to Published Supplemental Materials within the Thesis**

See the [corresponding section](#) above.

### **Thesis Formatting**

See the [corresponding section](#) above.

### **Scheduling the PhD Oral Exam**

The Supervisor and all Supervisory Committee members must approve the student’s thesis prior to the online submission of the “PhD Oral Exam Request” form (available on the Departmental [Forms and Links](#) page). The Supervisory Committee and Supervisor will be emailed by the Graduate Program Coordinator after submission of the form for confirmation. Supervisors are expected to read and return the thesis draft to the student within three weeks, after which the student will distribute a revised version to the Supervisory Committee members. The

Supervisory Committee members are then expected to read and return the thesis with comments within three weeks. Failure by faculty members to meet these deadlines should be reported to the Graduate Coordinator as described below.

Students will submit the "[PhD Oral Exam Request](#)" form online once they have confirmed a date and time for the exam with all members of the Exam Committee. This request may be submitted at any point after the Supervisor has approved the draft of the student's thesis and no less than **8 weeks** prior to the exam. This allows the Graduate Program Coordinator sufficient time to find rooms for the public seminar and subsequent Oral Examination, and have the Exam Committee approved by the School of Graduate Studies. Failure to meet this deadline will likely result in the exam request being denied.

To complete the form, students will need the date, time, and location of the seminar and exam, committee composition, and a 1-page double-spaced abstract. Note that final copies of the thesis are no longer required for this form. A curriculum vitae for the proposed External Examiner/Appraiser must also be provided, along with other details about them. If a student cannot find a current CV online for the prospective External Examiner/Appraiser, the Supervisor must obtain one on the student's behalf. It is important to note that the student must not have any contact with the External Examiner prior to the PhD thesis defence, including the distribution of the thesis. This communication should be carried out by the Supervisor.

In general, defences are expected to take place in person (though the External Examiner and SGS-assigned Chair may join virtually). However, the department will approve a remote/virtual defence under some circumstances; the student must discuss this request with a Graduate Coordinator before submitting the Exam Request.

The student's Supervisor will send the External Examiner/Appraiser the edited PhD thesis at least **six weeks** prior to the exam date. The student and supervisor must also ensure that the thesis is distributed date to all other Exam Committee members at the same time, or at least **four weeks** prior to the exam.

The External Examiner/Appraiser must submit a written appraisal of the thesis to the Graduate Program Coordinator at least 2 weeks prior to the exam. If the report is not received by that date, the School of Graduate Studies may cancel the examination and request another six weeks' notice for rescheduling.

### **Choosing the PhD Oral Exam Committee**

The "Request to set up a PhD Oral Examination" form includes a list of proposed Exam Committee members. The Graduate Program Coordinator will ensure that all the Exam Committee members are willing to serve and will be available for the exam. Final composition of the Committee is subject to the Graduate Coordinator and SGS approval.

#### **The Exam Committee is composed of:**

1. **An Arm's-Length Molecular Genetics Department member** within the student's primary research field, chosen and invited by the student and Supervisor. This person must not have been involved with the student's research project.

2. The student's **Supervisor**.
3. **Supervisory Committee members** (usually 1 or 2)
4. An **External Examiner/Appraiser** (a faculty member from another university, who must be at least an Associate or Full Professor or equivalent). The External Examiner must have an arm's-length relationship to both the candidate and the Supervisor. The student is not permitted to have any contact with the examiner prior to the exam. An External Examiner cannot be used more frequently than once every two years for Committees with substantive overlap of members with whom the external has served within the past two years (i.e. more than three voting members.). The External Examiner is selected by the student and Supervisor.
5. An **Academic Faculty Member** from another University of Toronto department. This examiner cannot have been closely involved in the supervision of the thesis. This member is selected by the student and Supervisor.
6. An **Exam Committee Chair** - a non-voting member appointed by the School of Graduate Studies.

Thesis Defence Exam Committee members from the University of Toronto must be Full Members of the Graduate School.

Both the student and Supervisor should bear in mind that the Department has very limited funds to pay the expenses of the External Examiner. The Department will cover up to \$500 for travel expenses (Supervisors are responsible for any amount above this), a standard 1-2 night accommodation and a \$250 honorarium, if and only if the External Examiner presents a Departmental Seminar on campus. All additional expenses are the responsibility of the Supervisor. The Graduate Program Coordinator can help to schedule the Departmental Seminar as needed and at the request of the Supervisor.

### **Delays in Scheduling the PhD Oral Exam**

If a PhD Oral Examination is not scheduled within 4.5 months from the time permission was granted for thesis writing, the student must submit a "[Request to Extend the Time Limit for Completing the MSc or PhD Thesis](#)" form to the Graduate Administrator for the Grad Coordinator to sign. See the appropriate form for details, which includes proposing a new realistic timeline for the Oral Exam.

If the 4.5-month deadline passes without an approved extension, the graduate stipend may be withdrawn due to failure to meet program requirements. HOWEVER, a Supervisor may not withdraw a student's stipend without prior consultation with the Graduate Coordinator. If a student has set up the exam within the required time frame, the stipend must be paid until both the Oral Exam and thesis revisions recommended by the Exam Committee have been completed.

Supervisors are required to pay students during the thesis writing and defense period for up to 6 months, provided the student has not taken another job. If the thesis writing is delayed such that the submission of the thesis and defense take longer than 6 months, continuation of the stipend is at the discretion of the Supervisor.

### **Delays in Approval of PhD Thesis**



Since thesis writing and Committee approval must be completed within a tight timeframe, Supervisors and Supervisory Committee members are obliged to promptly read and approve a draft thesis. Supervisors are expected to read and return theses to their students in three weeks or less. Committee members are expected to read and return theses with comments in three weeks or less. If a student does not receive the corrected thesis within these time frames, they should contact the Supervisor or Committee member by email and obtain a revised deadline for finishing the corrections. If this subsequent deadline is unreasonable or if this deadline is not met, the student should report the situation to the Graduate Coordinator along with appropriate documentation. The Graduate Coordinator will take immediate measures to resolve the situation. Students should keep in mind that the Graduate Coordinator and the Grad Team are allies in this situation.

The PhD Oral Exam form can be submitted any time after the Supervisor has read and critiqued the thesis. Committee members will return the critiqued thesis and any additional suggestions for revisions. Students are expected to incorporate these changes before distributing the thesis to the External Examiner and other Exam Committee members. If there are disagreements between a Committee member and the student and/or Supervisor about the nature and/or extent of the changes to be made to the thesis, the Graduate Coordinator should be consulted. The Graduate Coordinator will decide on how to proceed. Note that this resolution process will not be influenced by prior unofficial arrangements of PhD exam dates (e.g. having agreed on a date with an external examiner).

The Department will not tolerate excessive delays by faculty members in reading and approving theses. Offenders will be sanctioned and may lose their graduate appointments.

### **PhD Examination Process**

#### **Public Seminar**

- 40-45 minutes in length
- Given prior to the PhD Oral Examination.
- Exam Committee members may not ask questions.

#### **Oral Examination**

- Follows immediately after the public seminar.
- Up to 120 minutes in length, varies depending on Committee size (~10-15min per examiner).
- The Exam Committee questions the student on their knowledge of technical and theoretical matters related to thesis, and on general knowledge of the research area.

#### **Discussion**

- The student leaves the room, and the Exam Committee has a closed-door discussion of the thesis and its defence and deliberates the outcome. Approximately 15 minutes.

#### **Possible Outcomes of the PhD Oral Exam** (taken from the [SGS website](#))

At the conclusion of the PhD thesis defence, the Exam Committee decides whether or not the written thesis and oral defence are acceptable. If the thesis defence is deemed unacceptable, then the examination is adjourned. The PhD candidate will fail and be ineligible to receive the PhD degree if the thesis remains unacceptable at a reconvened examination.

If the thesis defence is deemed acceptable, the Committee decides whether:

1. The thesis is acceptable in its 'present' form
2. The thesis requires 'minor corrections'. Minor corrections involve typographical errors, errors in punctuation or problems in style; they must be correctable within one month. The Supervisor will inform the Candidate of the necessary corrections and must certify in writing to the PhD Examinations Office (via our Graduate Program Coordinator) that the corrections have been made. Or
3. The thesis requires 'minor modifications'. Minor modifications are more than changes in style and less than major changes in the thesis. A typical example of a minor modification is clarification of textual material or the qualification of research findings or conclusions. Minor modifications must be feasibly completed within three months. The Chair of the Examination Committee must appoint a supervising Subcommittee to be approved by the Examination Committee and a Convener is thus designated. The Convener of the Subcommittee shall report with a brief written statement the necessary minor modifications preferably before the Examination Committee disperses, but as soon after the examination as possible and ensure that the Candidate, Supervisor, and PhD Examinations Office receives a copy of the statement (via our Graduate Administrator). The Convener of the Subcommittee shall also within three months of the date of the examination report in writing to the PhD Examinations Office and the Examination Chair the state of completion of the required minor modifications (via our Graduate Administrator).

### **Post-Exam Thesis Preparation**

See the [corresponding section](#) above.

### **Commitments that Conflict with the Completion of a Student's Degree**

Students often pursue other academic endeavors after completing a MSc or PhD Arrangements for the commencement of these endeavors are sometimes made by students prior to the scheduling of the thesis defence date, or even before formal permission is given by the Supervisory Committee to write the thesis. This may result in a desire to complete the degree in what may be an unrealistic timeframe. The Supervisor and Supervisory Committee members are sometimes put in a position of choosing between upholding the academic standards of the Department or being sympathetic to the student's career plans. In these situations, it is important that all concerned consider the following:

- It is the Supervisory Committee's primary role to assist in educating the student in the art of doing science and all that this entails, including upholding the standards that have given our Department its excellent reputation.
- It is the **student's** responsibility to ensure that any external deadline is met. If completion of the MSc/PhD degree is not possible within the proposed timeline, the student must defer entrance to the post-graduate program or other opportunity.
- The student should consult the Supervisor and Supervisory Committee regarding planned time to completion of a degree before making commitments with a fixed deadline to other academic programs or employment options.
- The student should be aware of the time allowed for a Supervisory Committee member to critique their thesis (See "[Scheduling the MSc Oral Exam](#)", and "[Scheduling the PhD](#)

[Oral Exam](#)”). These timelines do not include any vacation time that a Committee member might take. Professors cannot be expected to read theses while on vacation.

- The student should be aware that many faculty members submit grant applications to CIHR or other agencies at various times throughout the year. These faculty members typically focus exclusively on grant writing for a month or more ahead of each deadline. Hence, finding non-Supervisory members willing to sit on the student’s Examining Committee can be a challenge during these periods.

The minimum time required by our Department to approve and finalize an Oral Exam after the Graduate Program Coordinator receives the appropriate form is **3 weeks for a MSc** and **7 weeks for a PhD**. This timeline is not negotiable. It is set by SGS to enable the External Examiner and Examining Committee to properly review the thesis and for the External Examiner to submit a critique of the thesis.

**Note:** Simultaneous registration in two full-time academic programs is a violation of the School of Graduate Studies rules.

## STUDENT FUNDING

For cohorts starting September 2024 and later, PhD students are guaranteed five years of funding, and will be automatically granted two additional one-year funding extensions as long as they have maintained good academic standing and met program requirements in the previous academic year. MSc students starting September 2024 and later are guaranteed three years of funding, with one automatic one-year extension under the same conditions. If they obtain 'permission to write' within a funded period, students will also be funded through the defence and submission of Supervisor-approved corrections to their thesis to SGS, as long as the defence occurs within the standard timeline after permission to write (6 months for PhD and 4 months for MSc). Submission of the corrected thesis represents program completion, and stipend coverage must then stop. See the [Policy on Funding & Program Length](#) for full details.

Students who began their program before September 2024 receive stipend coverage for the full duration of their program, including coverage of the standard writing period (see above), as long as they maintain good academic standing. See the [Policy on Funding & Program Length](#) for full details.

Funding will come from various [scholarships/fellowships](#) that the student has applied for and been awarded, and in the absence of that, from the Supervisor's grant. The [Temerty Faculty of Medicine's Harmonized Base Funding Agreement](#) currently governs the stipend amount and top-up policies for students in all eight Basic Science departments (see the RHSE [Financial Support page](#) for details). They calculate yearly stipend amounts based on an estimate of living expenses (living allowance) and the current year's tuition fees. For those students who extend their PhD program beyond six years (direct entry PhD students) or beyond seven years (students who reclassified into the PhD program), SGS reduces the student's tuition fees by ~50%, and the tuition portion of their stipend is decreased accordingly.

See the [Funding page](#) for more information.

## Tuition Fees

All students are responsible for paying their own tuition fees by the deadlines set by the University of Toronto. Many students choose to defer tuition fees until April of the academic year. This must be done in August/September before the academic year begins. The Department is unable to pay the fees on any student's behalf because this will disqualify them from receiving a tax credit. Students who are in arrears are not eligible to register with the School of Graduate Studies. Current tuition fee schedules are posted on the [Student Accounts website](#). Please note that tuition is reduced in extension years and program fees are prorated by month for final-year PhD students.

## Administration of Student Funding

During a student's rotation period, the stipend is paid through the Department. Once a student has settled into a permanent lab, payment of the stipend is administered through the node at which the student is located. General enquiries, including about taxes and similar issues, should be directed to the Business Officer in the student's node. The final thesis lab for each student will be invoiced by the Department for the entire stipend paid to the student during the rotation period.

Students and Supervisors are required to fill out Graduate Education Management System (GEMS) agreements online, detailing all funding sources for a student by October 1 each year.

Students and Supervisors will be notified each year when the GEMS system is operational. GEMS agreements are important and enable the Department to maintain quotas for fellowships and funding, thus it is critical for the Department to achieve 100% compliance. For more information see the [RHSE's page on GEMS](#).

Students must ensure that any changes or problems with stipend payments are brought to the attention of their Business Officer as soon as possible. It is particularly worth noting that in cases where awards are concerned, it is the student's decision whether to accept or decline an award as well as the duration for which they may accept the award. The onus is thus on the student to inform their Business Officer as to which award they are accepting, when and for how long. Students must also notify the Graduate Program Coordinator of all awards and funding changes. On the other hand, it is in effect the Supervisor and Supervisory Committee's decision to terminate a student's stipend if they fail to fulfill the requirements of this handbook, in consultation with the Graduate Coordinator.

Up to one month's notice may be required to make payroll changes. Students must inform the Graduate Administrator and relevant Business Officer personally of the following changes:

- Selection of a permanent lab
- Change of Supervisor
- Receipt or cancellation of an award
- Long-term leave of absence
- Withdrawal from the program
- Completion of the degree (if it coincides with the Supervisor's decision to terminate stipend payments)

Any attempt to retain an award while registered as a full-time student in another program is in clear violation of the rules of the awarding body and the School of Graduate Studies. The student must familiarize themselves with the rules of the award they have accepted and abide by those rules.

## Awards & Scholarships

Students are encouraged to apply for external scholarships from such agencies as:

- [Natural Science and Engineering Research Council \(NSERC\)](#)
- [Canadian Cancer Society Research Institute](#)
- [Canadian Institutes of Health Research \(CIHR\)](#)
- [Vanier Canada Graduate Scholarships](#)
- [Ontario Graduate Scholarships \(OGS\)](#)

Applications and eligibility requirements are available on the respective websites.

Apart from these major awards/scholarships, the School of Graduate Studies ([Awards & Funding page](#)) and the Temerty Faculty of Medicine's Research and Health Science Education Office ([Graduate Student Financial Support page](#)) maintain full lists of available awards and scholarships to which graduate students can apply.

## Other Earnings

Graduate students in the Department are strongly encouraged to focus first and foremost on their thesis work. To ensure students in their first term of our program focus on their rotations and course work, we do not recommend that students take on TA positions during this time. Academic studies and research should remain as the first priority.

Students may earn from additional sources but are expected to work as full-time students even if they take on other work, i.e., degree productivity and coursework must not be affected.

## Policy on Funding & Program Length

### Policy for PhD students

- (1) PhD students are guaranteed five years of funding, so long as they maintain good academic standing. This includes ‘regular’ PhD students, direct-entry PhD students, and those who start as MSc students and transfer to the PhD, with the five years counted from the start of their MSc registration.
  - a. Students who began their program before September 2024 should, in alignment with their funding confirmation letters, continue to be funded beyond the five-year guarantee, so long as they maintain good academic standing.
- (2) To remain in good standing, all students must hold committee meetings at least once per year, with meetings every six months required before the qualification exam.
  - a. Students post-qualification/reclassification should hold their annual committee meeting by the end of May (September for January entry). This maintains a yearly timeline following the second-year exam, and ensures that students have adequate time to repeat committee meetings within the academic year if necessary.
  - b. Starting in fourth year, meetings must feature a time-to-completion (TTC) discussion. Students must prepare a thesis outline and timeline of tasks remaining for completion of the degree, to be included in their report and discussed at the meeting. The supervisor and committee must record whether they agree that the student’s timeline and thesis outline are feasible.
  - c. The department recognizes that students often encounter challenges scheduling committee meetings. Per SGS, “A student who encounters difficulties arranging a meeting of [their] committee should consult the chair, director, or graduate coordinator of the graduate unit in advance of the relevant deadline for doing so.”<sup>2</sup> Molecular Genetics students should contact the Graduate Coordinators or Learning Strategist if they are experiencing challenges arranging meetings.
  - d. Per SGS regulations, if a student does not hold a meeting by the required deadline “through their own neglect” (i.e., without seeking departmental support), they “will be considered to have received an unsatisfactory progress report from the committee”<sup>2</sup>, i.e., a failing grade for that meeting, and will be considered “not in good standing”. They will be reminded to hold another meeting within the next three months and warned that not restoring good standing risks termination of funding or registration.
  - e. If students subsequently have not held the meeting by the three-month deadline (for post-qualification/reclassification students, this would be August, or December for January entrants) and remain not in good standing, their case will be reviewed by the Graduate Coordinators, who may terminate funding or



- “recommend to the School of Graduate Studies the termination of registration and eligibility of that student.”<sup>2</sup>
- (3) To maintain good academic standing, students must also “make satisfactory progress towards the completion of the degree”<sup>2</sup>, and demonstrating satisfactory progress requires regular communication with supervisors.
- a. Students who have been absent from the lab and unresponsive to communications from their supervisor for more than a month without an approved Leave of Absence or other documented agreement with their supervisor will be considered "not in good standing" and funding may be stopped. Students are encouraged, wherever possible, to discuss anticipated absences with their supervisor and to apply for a Leave of Absence when necessary.
    - i. Supervisors will email the student and department about the student’s absence.
    - ii. The department will take additional steps to attempt to contact the student and inform them that funding will be cut off a month after this communication.
    - iii. At the point of funding cutoff, the student’s case will be reviewed by the Graduate Coordinators, who may additionally “recommend to the School of Graduate Studies the termination of registration and eligibility of that student.”<sup>2</sup>
    - iv. Should students re-establish contact with their supervisor and the department while still registered, the Graduate Coordinators will consider the resumption of funding, pending determination that the student has restored good academic standing.
- (4) Students and supervisors should make all efforts to have students complete degree requirements within the time limit for the PhD.
- a. Program extensions are available beyond this limit, but intended to be used in “exceptional circumstances”.
  - b. Students are encouraged to meet with the Learning Strategist for a Program Mapping Meeting by the end of the 5<sup>th</sup> year, to plan out timelines, discuss barriers, and discuss strategies for on-time completion. Students are encouraged to continue these meetings at least yearly.
  - c. Students who will not have held a terminal meeting by the end of the 7<sup>th</sup> year must meet with the Graduate Coordinator or Learning Strategist to discuss the need for a Program Extension. At these meetings, students are encouraged to identify barriers to on-time completion and potential sources of support.
  - d. Particularly in sixth year and above, students may request that the department assign another departmental faculty member to join their next committee meeting, to provide an arm’s-length perspective on the student’s progress and timeline for program completion. This request should be made to the Learning Strategist or Graduate Coordinators, ideally more than one month before the committee meeting in question.
- (5) The following modifications will be made to the process above for students who began September 2024 or later:

- a. Students who do not hold a TTC meeting by the end of years 5 or 6 will automatically be ineligible for continued funding in the following year; by default, funding will end at the end of August.
  - b. Students *\*must\** meet with the Learning Strategist for a Program Mapping Meeting at the end of the 6<sup>th</sup> year in order to be granted an extension into the 7<sup>th</sup> year.
  - c. Students will not be eligible for funding beyond seven years, and supervisors may not pay students for more than seven years. Students *\*may\** register by requesting a Program Extension, but they will need to pay their own tuition and fees.
- (6) Students who hold a successful terminal meeting during a funded period are granted six months of stipend and tuition support from the date of receiving ‘permission to write’.
- (7) Leave of Absence (LOA) time is not counted and therefore students who have taken an LOA will be offset in the schedule above. It is up to the students to orchestrate this offset with the Graduate administrative team. Students who started in January will also have their dates offset accordingly.

### Policy for MSc students

- (1) MSc students are guaranteed three years of funding, so long as they maintain good academic standing.
- a. Students who began their program before September 2024 should, in alignment with their funding confirmation letters, continue to be funded beyond the three-year guarantee, so long as they maintain good academic standing.
- (2) To remain in good standing, all students must hold committee meetings at least every six months.
- a. Students should hold their committee meetings by the end of March and September (July and January for January entry).
  - b. Starting at the third meeting, meetings must feature a time-to-completion (TTC) discussion. Students must prepare a thesis outline and timeline of tasks remaining for completion of the degree, to be included in their report and discussed at the meeting. The supervisor and committee must record whether they agree that the student’s timeline and thesis outline are feasible.
  - c. The department recognizes that students often encounter challenges scheduling committee meetings. Per SGS, “A student who encounters difficulties arranging a meeting of [their] committee should consult the chair, director, or graduate coordinator of the graduate unit in advance of the relevant deadline for doing so.”<sup>2</sup> Molecular Genetics students should contact the Graduate Coordinators or Learning Strategist if they are experiencing challenges arranging meetings.
  - d. Per SGS regulations, if a student does not hold a meeting by the required deadline “through their own neglect” (i.e., without seeking departmental support), they “will be considered to have received an unsatisfactory progress report from the committee”<sup>2</sup>, i.e., a failing grade for that meeting, and will be considered “not in good standing”. They will be reminded to hold another meeting within the next three months and warned that not restoring good standing risks termination of funding or registration.
  - e. If students subsequently have not held the meeting by the three-month deadline and remain not in good standing, their case will be reviewed by the Graduate

- Coordinators, who may terminate funding or “recommend to the School of Graduate Studies the termination of registration and eligibility of that student.”<sup>2</sup>
- (3) To maintain good academic standing, students must also “make satisfactory progress towards the completion of the degree,”<sup>2</sup> and demonstrating satisfactory progress requires regular communication with supervisors.
- a. Students who have been absent from the lab and unresponsive to communications from their supervisor for more than a month without an approved Leave of Absence or other documented agreement with their supervisor will be considered "not in good standing" and funding may be stopped. Students are encouraged, wherever possible, to discuss anticipated absences with their supervisor and to apply for a Leave of Absence when necessary.
    - i. Supervisors will email the student and department about the student’s absence.
    - ii. The department will take additional steps to attempt to contact the student and inform them that funding will be cut off a month after this communication.
    - iii. At the point of funding cutoff, the student’s case will be reviewed by the Graduate Coordinators, who may additionally “recommend to the School of Graduate Studies the termination of registration and eligibility of that student.”<sup>2</sup>
    - iv. Should students re-establish contact with their supervisor and the department while still registered, the Graduate Coordinators will consider the resumption of funding, pending determination that the student has restored good academic standing.
- (4) Students and supervisors should make all efforts to have students complete degree requirements within the time limit for the MSc.
- a. Program extensions are available beyond this limit, but intended to be used in “exceptional circumstances”.
  - b. Students are encouraged to meet with the Learning Strategist for a Program Mapping Meeting by the end of the 2<sup>nd</sup> year, to plan out timelines, discuss barriers, and discuss strategies for on-time completion. Students are encouraged to continue these meetings at least yearly.
  - c. Students who will not have held a terminal meeting by the end of the 3<sup>rd</sup> year must meet with the Graduate Coordinator or Learning Strategist to discuss the need for a Program Extension. At these meetings, students are encouraged to identify barriers to on-time completion and potential sources of support.
  - d. Particularly in third year and above, students may request that the department assign another departmental faculty member to join their next committee meeting, to provide an arm’s-length perspective on the student’s progress and timeline for program completion. This request should be made to the Learning Strategist or Graduate Coordinators, ideally more than one month before the committee meeting in question.
- (5) The following modifications will be made to the process above for students who began September 2024 or later:

- a. Students who have not held two committee meetings in their third year will automatically be ineligible for continued funding in the following year; by default, funding will end at the end of August.
  - b. Students *\*must\** meet with the Learning Strategist for a Program Mapping Meeting at the end of the 3<sup>rd</sup> year in order to be granted an extension into the 4<sup>th</sup> year.
  - c. Students will not be eligible for funding beyond four years, and supervisors may not pay students for more than four years. Students *\*may\** register by requesting a Program Extension, but they will need to pay their own tuition and fees.
- (6) Students who hold a successful terminal meeting during a funded period are granted four months of stipend and tuition support from the date of receiving ‘permission to write’.
- (7) Leave of Absence (LOA) time is not counted and therefore students who have taken an LOA will be offset in the schedule above. It is up to the students to orchestrate this offset with the Graduate administrative team. Students who started in January will also have their dates offset accordingly.

## References

1. [SGS: Maintaining Good Standing](#)
2. [SGS General Regulations, Section 7](#). Good Academic Standing and Satisfactory Academic Progress, Time Limits, Supervision, and Candidacy

## Appendix A: Clarification of PhD requirements

*Standard minimal expectation for PhD.* The main requirement for the PhD is a “contribution to knowledge”, which typically takes the form of a first- or co-first-author paper. The publication process is unpredictable; a submission (or a submission-ready manuscript) is often considered sufficient if the supervisor and committee agree. Equivalent contributions to e.g. larger studies may also be considered as a bona fide “contribution to knowledge” if the work done by the student is suitable for PhD thesis chapter(s) (e.g. collaborative work or consortium studies, in which key contributions are often recognized by middle-authorships). The supervisor and supervisory committee must decide what is suitable. In such cases, the traditional two-data-chapter standard may be useful, but it should not be enforced as a requirement.

It is common that students and supervisors disagree about whether a project is “done”. Submission of a manuscript is a clear standard, but students and their supervisors also often disagree on whether a manuscript is submission-quality. The supervisory committee has the responsibility of making this assessment. The department encourages committees to take a more liberal view for students who are beyond five years. Students have multiple resources within the Department to contact with concerns: their committee, the grad team, the Learning Strategist, the Graduate Coordinators (faculty and staff), and the Chair.

*Going beyond the minimum should not be forced upon students or labs.* Students often exceed the main requirement of the PhD (e.g., submit first- or co-first-author papers in their 3<sup>rd</sup> or 4<sup>th</sup> year), choosing to stay longer than required in order to bolster their academic credentials. If this strategy is the student’s choice, and the supervisor and committee support it, then the Department will also support it, up to the program Time Limit. Conversely, a PhD student with a first- or co-

first-author paper at least submitted, who has completed all other program requirements, should not be prevented from graduating, provided there is enough material for a credible PhD thesis.

Many students do not intend to pursue an academic career, and will not benefit from the additional work. Supervisors and committees should not be forcibly upholding higher standards than what is required by the institution in which the student is registered.

Similarly, if a student has satisfied the basic requirement, but wants to stay longer, while the supervisor prefers graduation, the committee should encourage graduation, and should not agree to extensions beyond five years. Students should be aware that laboratories face funding, space, and time/attention constraints.

Students and faculty should consider that academic credentials can also be boosted by doing a short postdoc in the PhD lab, or another local lab, and that writing a PhD thesis can be an effective way to regroup on stalled or confusing projects.

### **Appendix B: Related matters**

- (A) Student financial support mechanisms (e.g. U of T Opens, Dean's stipend support) will only be available to MSc students in years 1-2 and PhD students in years 1-4 (MSc-holding, direct entry, and MSc transfer students are treated equally).
- (B) The Department recognizes that students may need to hold secondary jobs and may have e.g. family obligations that can limit lab time and delay degree progress. We encourage students to discuss these issues with their supervisor, their committee, and the Learning Strategist or a Graduate Coordinator. Our graduate programs are full-time, and cannot function if the labs are not productive, because productivity is required to obtain funding for the research projects and the student stipends. Students who have stopped working, are working only part-time, or claim to be working offsite yet are accomplishing very little, are therefore creating financial and logistical problems for their supervisor and for the department. They are also not following the arrangement that was agreed upon by the department, the supervisor, and the student. These situations may compromise degree progress and standing, and should be discussed well in advance.

## **OTHER REQUIREMENTS, RECOMMENDATIONS, AND SUPPORTS**

## Relevant Policy

Students are responsible for being aware of relevant policies and procedures, including (but not limited to):

- The [Code of Behaviour on Academic Matters](#) and the [Code of Student Conduct](#)
- The Policies on [Workplace Violence](#) and [Workplace Harassment](#)
- The [Policy on Sexual Violence and Sexual Harassment](#)
- Policies and guidelines on [Ethical Conduct in Research](#), [Human Research](#), and [Animal Research](#)

## Academic Honesty

### Academic Honesty & Plagiarism

- *You are in a graduate program, and thus should take the university Honour Code (Resources: U of T's [Academic Code](#) and [Website](#)) very seriously.* Please familiarize yourself with the guidelines for policies including academic honesty, plagiarism, cheating. The work you do in this program must be your own. Do not falsify or misrepresent your data.
- Be sure to **cite your sources** to avoid issues of plagiarism and dishonesty.
- **Collaboration** is a key component of science and will play a prominent role in our curriculum and your training. When collaborating with other students, fairly attribute their contributions. Respect others' opinions, fairly divide work, and communicate regularly with your team.
- Talk to your instructors or Supervisor immediately if you have questions or doubts about what constitutes academic dishonesty. Plagiarism in courses will result in a failing grade, and the incident will be reported to SGS for disciplinary action.

### Authorship

One of the strengths of our Department is the breadth and depth of collaboration that students have the opportunity to engage in. However, students and supervisors must ensure that all collaborators explicitly discuss authorship and acknowledgment of work performed, and all decisions must be approved by the individuals involved before work is published or included in a thesis. Use of any materials from other sources, such as figures and datasets, must only occur with explicit, documented permission.

Students and supervisors will be required to attest that these steps have been taken upon submission of an oral exam request form, and so it is important to have these discussions as early as possible.

### Guidelines on the Use of Generative Artificial Intelligence

In response to the rapid development of novel artificial intelligence tools, the Department has created a set of broad guidelines for the use of generative artificial intelligence (AI) by our students. These guidelines take as a starting point the [Guidance on the Appropriate Use of Generative Artificial Intelligence in Graduate Theses](#) developed by SGS, but include academic activities beyond thesis writing, and have restrictions beyond those set out by the SGS Guidance. Our departmental guidelines will continue to evolve, but are based on the following core principles:



- Learning how to write and communicate your thoughts without assistance is a key element of a graduate education.
- You hold ultimate responsibility for what you write and produce as a scientist.
- Anything included in a scientific document that was not produced directly by you should be appropriately credited.

With these principles in mind, the Department has established the following guidelines, which all students are expected to adhere to, and all Supervisors and Supervisory Committees are expected to uphold:

1. All documents produced during students' degrees, including committee and examination reports and final theses, must ultimately be written by students themselves, based on ideas conceived of or formulated by them. Students may not copy and paste text drafted by generative AI tools.
2. Students should obtain and document general approval from their Supervisor and Supervisory Committee before using generative AI at any other stage of the writing process, including brainstorming or grammatical proofreading.
3. Any use of generative AI for other research activities—including literature search, code generation, analysis, or audio/image generation—must be undertaken cautiously, given the risk of spurious or biased data being generated. Such use must only happen with explicit, documented approval of the Supervisor and Supervisory Committee. Students are ultimately responsible for the accuracy of their work, and so they must understand the function, output, and limitation of the tools that they use; Supervisory Committees may assess this understanding.
4. If students receive approval to make use of generative AI, they must comprehensively document when and how they used these tools in all works whose content was in any way derived from the use of these tools.

Per SGS Guidance, “Unauthorized use of generative AI tools for scholarly work at the University of Toronto may be considered an offence under the [Code of Behaviour on Academic Matters](#), and research misconduct as defined in the [Policy on Ethical Conduct in Research](#) and the [Framework to Address Allegations of Research Misconduct](#).”

Within the scope allowed by the above guidelines, students are encouraged to bear in mind the following considerations and cautions:

- Engaging in challenging work is a key part of learning, and students should avoid any use of artificial intelligence that compromises opportunities to develop useful skills of their own.
- Students are responsible for accounting for and defending their work orally at committee meetings, qualification/reclassification examinations, and defenses. Therefore, it is in students' best interests to ensure that they fully understand how all data are generated and interpreted.
- Many academic publishers have policies on generative artificial intelligence that are different from or more restrictive than the guidance here. Students must therefore be aware of and adhere to publishers' requirements when submitting work.

- The use of generative artificial intelligence carries twofold intellectual property risks: First, generative AI may produce content derived substantially from others' work, without attribution. Second, submitting content to generative AI tools risks inclusion of that content in training datasets and subsequent use by others.

The landscape of generative artificial intelligence tools will continue to evolve, and our Departmental guidelines will continue to evolve accordingly. Students are responsible for staying informed of current guidelines and maintaining an ongoing dialogue with their committees about any proposed uses.

## Professionalism

Being a graduate student is an opportunity to learn and grow as a scientist. The following practices and tips will help you to succeed not only in MoGen, but in all professional settings going forward. Some points adapted from this [post](#).

### Email and Communication

- **Check your university email regularly** for announcements related to class and professional opportunities, as well as for essential university communication.
- **Reply promptly** to any emails requiring response. Use proper email etiquette. (Resources: [Emailing your Professors](#) | [Emailing Professionally](#) )
- **Proofread** emails, blogs, & other public materials online. These represent you and your brand.
- It's okay to send a **follow up email** as a *polite nudge* if the person has not replied. The length of time varies based on circumstance, but two business days for faculty, longer for professional contacts. Be patient: remember that your Supervisor and coworkers have multiple duties.

### Technology Use

- You may **use technology in the classroom**, except when expressly prohibited, to take notes, refer to e-readings, look up references, and work on tasks as directed. You should, however, create a plan and be mindful to **limit distractions** (close tabs with social media, email, news sites, and off-task items, or install a Web Blocker (e.g. [Freedom](#)) if you struggle with self-control in this area).
- Be mindful of your use of **cell phones**, mobile devices, and other distractions when in lab or engaging with others in a professional context. Silence your phone when in meetings or seminars. Focusing your attention on the science and the moment you are in is both a good grad school and life strategy.

### Respect

- **Please respect your peers and other professionals in person and online.** No bullying or disrespect will be tolerated. If you are experiencing any problems, please speak with your Supervisor or a member of the Grad Team immediately, so we can work together to resolve any issues.
- All students have a right to an **education free of harassment.** Each of us also carries the responsibility of ensuring our peers are experiencing a harassment-free education. (Resources: Office of the Vice Provost, Students [Website](#))

- Be an **active listener**. (Resource: [What Great Listeners Actually Do](#)). Be respectful of different points of views. Be calm and judicious in your responses. Think before you react.
- In this program, you will create a **professional presence online** (resumes, portfolios, LinkedIn, etc.). Remember, *nothing you post online is truly private*, and anything could be viewed by future employers. Consider the image you're cultivating before posting.
- On all **social media** accounts used in this program, including department accounts, as well as students' personal accounts used for assignments, etc., students are expected to uphold professional standards that meet university and professional codes of conduct.

## Professional Conduct

- **Be humble**. Know what you know, but listen to learn more. We aspire that you'll leave this program with the understanding that there's lots more to learn, and that you can learn from people who aren't necessarily like you or who study different things.
- **Show up prepared**: read for class, prepare for presentations, meetings with your Supervisor, lab meetings, etc. You will get more out of and contribute more to meetings in which you enter prepared and thoughtful.
- **Networking** is a great way to develop contacts. It engages you in a professional community. Networking can happen digitally via Twitter, email, etc. Networking also gives you facetime with the people who are actually hiring.
  - Keep in touch with your professors, your peers, and other professional contacts from your time in graduate school. These people can bolster your professional success.
  - Our yearly [Alumni Symposium](#) and regular career workshops provide additional opportunities for networking. The MoGen website has career advice [here](#).
- Have a **positive attitude**. People will respond to your attitude. Practice being interested in other people by asking them questions about their work. Always be **courteous**.
- **Follow through** if you say you'll do something. Don't promise more than you can deliver, but also don't sell yourself short. This is true in networking and in your scientific efforts. What you deliver helps to build your reputation.
- **Don't be late**. If it is impossible to be on time with something (e.g. a task or a meeting), communication is key. Let the person know as soon as possible and propose an alternative ("I could submit this on Thursday."). If it is a classroom assignment/project, communicate with your team members, if relevant, and talk with the professor before the due date to *ask* if an extension is possible.
  - Attend class. Don't be late to class, lab meetings, seminars, meetings with your Supervisor, etc. If you're going to be late, communicate with your Supervisor ASAP **before** you're due to arrive.
- **Own your mistakes**. Learn from them. Take criticism for your mistakes in stride and improve going forward.
- **Own your project**. Read the literature deeply. Talk with others in your lab about your science daily. Think about your science outside of the lab. When your experiments go awry, think about why this might be the case and go to your Supervisor with **solutions** instead of problems (X Problem + Y Solution. What do you think?). Scientists are creative problem solvers!

## Tips for Getting the Most out of this Graduate Program

- Make a **calendar** with important tasks + deadlines. Set alerts for *approaching* deadlines. Plan ahead – don't procrastinate! And then, check your calendar regularly to see what is coming.
- Start building yourself a “**brand**” by wearing your passion on your sleeve. Standing out helps you get ahead in this field and helps you surround yourself with other passionate people.
- **Thank** those who support your research & professional development (librarians, archivists, Supervisors, reference writers, draft readers, etc.)
  - **Be kind and gracious** to the librarians, archivists, and others who support your research. Treat them as professionals. Express your gratitude to them, and remember that some may become potential bosses, colleagues, and mentors.
  - Similarly, be kind and gracious to community members and others you involve in your research and projects. They are sharing their time, their memories, and their lives with you – be sure to thank them and respect them.
- **Embrace opportunities** for further professional development – conferences, collaborations, volunteering with science outreach. All of these things will help you network and build a diverse range of experiences.
  - **Be ambitious.** Take on opportunities where you'll meet new people and try new things outside of your comfort zone.
- **Attend department events and take advantage of university resources.** Take the lead in figuring out what you want or need from graduate school, postdoc training, and jobs beyond academics, and take advantage of the resources and opportunities available to you.
- **Support your colleagues:** take the time to listen to them, go to coffee or a happy hour with them, attend events or presentations they organize. Discuss your successes and failures. They are your support network through grad school and beyond.
- **Self-Care:** Maintain your friendships, outside hobbies and routines, and your health. Graduate school is overwhelming and can quickly take over your life. Get a good night's sleep. Your health and well-being should still be priorities!
- Be attuned to your **mental health**. Anxiety and stress can creep up on you. Please reach out if you're overwhelmed or need assistance. (Resources: [RHSE](#) counselling, [SGS](#) wellness resources, [U of T Health and Wellness](#))
- Don't undervalue what you've learned here. (e.g., “I've only taken one class in this specialization.”) Sell your strengths and keep a running list of your strengths & experiences on your portfolio/resume/LinkedIn.
- **Ask questions ASAP when you get stuck or confused.** It's better to ask early on, rather than staying stuck and not being able to continue on.

## Accommodations and Accessibility

The [Statement of Commitment Regarding Persons with Disabilities](#) affirms that “the University will strive to provide support for, and facilitate the accommodation of individuals with disabilities so that all may share the same level of access to opportunities, participate in the full range of activities that the University offers, and achieve their full potential as members of the

University community.” To support this aim, students can learn more about accommodations processes and access support via [Accessibility Services](#).

## Personal Time Off

### Summary

The School of Graduate Studies (SGS) recently updated their [Personal Time Off Policy](#), which applies to students in any research-centered graduate program or any full-time professional program with a duration longer than 12 months.

The basic rules are as follows:

- Graduate students are entitled to 15 days (three work weeks) of personal time off per year.
- Supervisors must allow a student to take their 15 days, usually when and as requested by the student. In rare exceptions the supervisor may need to negotiate dates if there is a time sensitive and mission-critical task that cannot be adjusted.
- Students are responsible for giving sufficient notice.
- It should not be a student’s responsibility to keep the lab operations going such that they are not able to leave (i.e. maintaining cells for an entire lab). However, the student *\*is\** responsible for ensuring that animals, cells, or reagents critical to their own project will be maintained in their absence by coordinating with the PI and others in the lab well in advance.
- It is not acceptable for a student to plan time off that disrupts their ability to complete their coursework or other relevant work that has a clear deadline (e.g. scholarship applications).
- The following do **NOT** count toward personal time off:
  - Sick days.
  - Weekends.
  - University holidays (days when the university is closed including the two-week winter holiday).
  - Holidays not observed by the university (when advance notice is given).
  - Days in class or preparing large topic course assignments.
  - Days preparing for reclass exams.
  - Time spent preparing for committee meetings. (*We encourage supervisors to clearly set expectations for how long it should take to prepare for a meeting.* )
  - Days at conferences, technical workshops, or the departmental retreat including travel to/from.
  - Lab/PI organized retreats and excursions including lab picnics.
  - Time spent doing departmental outreach activities including graduate recruitment days and the career symposium.
  - Time served as a TA in a Molecular Genetics (or sister department) class.

### Full Policy and Guidelines

SGS policy states that students are entitled to at least 15 personal time off (‘vacation’) days per year (three M-F work weeks). This departmental policy complies with the SGS guidelines but is

intended to be more specific for our program and a few important decisions about implementation are being left to individual labs.

Having a transparent and clearly stated policy that is consistently applied across all students in the lab will go a long way in preventing conflicts when potential issues arise. Students should not be surprised by the rules established by their supervisor, and they should see that the policy is applied equitably. Supervisors should not change the enforcement of this policy based on, e.g., upcoming grant deadlines and lab funding.

We also encourage supervisors to formalize and communicate their leave policies because it this is consistent with the type of practice students will experience in the workplace after graduation.

**From the SGS Personal Time Off Policy:**

*“Your supervisor is required to accommodate your request for personal time off. If there are disagreements regarding the details of the time off, or scheduling time off, please engage with your graduate coordinator, graduate chair, or program director, who will help you negotiate your time off with your research supervisor. You may also discuss your time off with members of your supervisory committee.”*

**Managing disruption:** The supervisor is required to accommodate requests for personal time off, but they can negotiate specifics under exceptional circumstances. Supervisors should give clear reasons, backed by their own written policy, if they deny a specific request at a specific time.

Supervisors should ask that students communicate time away from lab well in advance, preferably as soon as the student has made their plans. For planned absences of more than a day or two, students should give their supervisors and lab mates at least two weeks advance notice.

Students in labs that have tricky high-maintenance projects should be encouraged to plan and communicate personal time off as far in advance as they can. Supervisors should have contingency plans in place so that no single student is essential for the critical operation of the lab, even if that means the supervisor themselves must do bench work for a period of time. Essentially, it is not the responsibility of the student to forego a vacation to maintain cell lines for others in the lab.

However, it is the responsibility of the student to ensure their own research projects are not affected by their personal vacation days, and it is their responsibility to hand off key duties during their absence (e.g., leaving on a camping trip without making the necessary advance arrangements about how their cell lines will be maintained during their absence would not be good practice).

**Religious holidays:** We must avoid situations where only ‘university sanctioned’ religious holidays are deemed worthy of observance. Supervisors and students should communicate with each other well in advance about any religious observances that are not observed by the University, and what time will be required for their observance. Supervisors must accommodate any religious observance that they have been made aware of with sufficient notice.

**Scientific conferences, workshops, retreats:** Days spent at conferences, technical workshops related to their project, the annual career symposium, graduate recruitment days (presenting their data or representing the lab), and retreats are not personal days. Time spent in travel to/from conferences are also not counted as personal time. Days before or after a conference that students take to explore and vacation should usually count as personal days.

**Professional activities:** Many students participate in Science Rendezvous, SciHigh, and other outreach or professional development programs. We encourage supervisors to allow their students to participate in these types of activities without sacrificing personal days. Supervisors may want to be up front and limit the number of days their students spend on outreach and science education projects (departmental recommendation is 10 days per year).

Time that students spend working toward a career unrelated to their project or Molecular Genetics degree (e.g. a week-long training workshop in management or commerce, preparing for the MCAT or LSAT, etc.) should count as personal time off.

**Lab outings:** Lab retreats, outings, and picnics that are organized or endorsed by the supervisor will not count as personal days. If students in a lab decide amongst themselves to go to Canada's Wonderland for a day, it is appropriate that they use their personal time off to do so.

**Study and writing time:** Preparation for committee meetings, studying for reclass and core/topic courses, and writing papers for publication will not count toward personal time taken away from the lab. While many students can accomplish these tasks relatively efficiently (e.g., assembling their committee reports and associated slides within two or three days), others may have less experience or be uncertain about the appropriate level of effort and time to invest. It therefore may be helpful for the supervisor to discuss reasonable timeframes, check in on progress, and provide support and guidance as needed.

**Teaching:** Students may take some time from lab to serve as a TA on a course, and these days should not count as personal time off. The time devoted toward being a TA should be discussed separately between the supervisor and student without personal time being considered.

**Sick days:** Days taken from lab work due to illness are not counted as personal days. Although a supervisor may ask a student to provide a medical note from a physician (which includes the duration or expected duration of the absence and the date the student was seen by a health care professional), the supervisor should be mindful that this can place hardship on the student (e.g. financial burden or the student being too sick to visit a health professional). We instead encourage a discussion between the supervisor and student to help create a culture of trust. Supervisors should proceed carefully, maintain student privacy, and assume nothing. Students cannot be asked to provide information about the diagnosis or treatment of a medical condition unless there is a workplace-associated hazard involved (e.g., an immunocompromised student must inform a PI of their condition if the lab works with a dangerous pathogen).



If there are concerns about absence from the lab, supervisors or students are advised to contact the graduate team for advice. In some cases, they may be able to connect the student with supports through Accessibility Services or determine whether absences may merit the student taking a formal leave of absence.

**Leaves of absence:** Formal leaves of absence do not apply to personal time off as students on leave are not receiving a stipend. Their available leave days are ‘frozen’ during the duration of the leave and resume when they return.

**Monitoring and compliance:** The Department has no ability to monitor attendance outside of courses. We will leave it to individual supervisors to decide if personal days beyond 15 per year are allowed and encourage them to state their lab policy clearly in writing and apply it consistently across all members of the lab.

**Carryover:** Supervisors should set a clear ‘start date’ for the annual turnover of personal days. The department suggests labs use the calendar year, January to December, because students start in labs in January after rotations. Supervisors should consider allowing ‘carryover’ of a few unused personal days for to the next year; five days may be a reasonable baseline. However, supervisors should not allow students to bank large amounts of personal time off. Vacation time should be spread evenly throughout a student’s career; students should not go a long time without a vacation.

## Leave of Absence

Graduate students may experience a temporary or permanent interruption during their studies. If it may be necessary to take time out from the graduate program the students should make an appointment to see the Learning Strategist or Graduate Coordinator as soon as possible. An official leave of absence is not included in the time limit for completion of the degree and a student is exempt from paying fees for the duration of the leave. However, some benefits may cease during the leave, so it is important to plan accordingly. The Graduate Coordinator and Learning Strategist can help students to navigate the application for a leave of absence. See the [SGS website](#) for more information.

A student may apply to the Graduate Coordinator for a one-session to three-session leave during the program of study for the following reasons:

- Serious health or personal problems which temporarily make it impossible to continue in the program, or
- Parental leave by either parent at the time of pregnancy, birth or adoption, and/or to provide full-time care during the child’s first year. Parental leave must be completed within twelve months of the date of birth or custody. Where both parents are graduate students taking leave, the combined total number of sessions may not exceed four sessions. Students should consult with their Supervisors on this point, as some funding agencies have provisions to allow for paid parental leave.
- [See below](#) for information on the use of Leaves of Absence for internships

Leaves should ideally coincide with the start and end of a session. A leave should therefore begin on the first day of term, for a period of four, eight or twelve months. The degree time limit will

be extended by the number of sessions that the student is on leave. If it is necessary for a leave to begin in mid-session, it is necessary to contact the Director of Student Services at the School of Graduate Studies to make special arrangements.

While on leave, students are temporarily withdrawn from the graduate program and do not pay fees for the leave period. Please consult the Fees section of the SGS web site for more information on fees for students on a Leave of Absence. If a student returns from leave and is immediately ready to defend the thesis, fees are charged for the session(s) in which the student was on leave.

### **Stipendiary Support on Leave (RHSE, SGS)**

Students are not paid a stipend during a Leave of Absence. However, the Research and Health Science Education office in the Temerty Faculty of Medicine, jointly with the department, provides a Leave of Absence (LOA) Stipendiary Fund to support students for one term who have requested an LOA due to health issues. Please contact the Learning Strategist to apply for this Fund. [Parental Grants](#) are also available to students who are taking a parental leave. Visit the School of Graduate Studies website for details.

During a leave, a student may not make demands on the resources of the University, such as using library facilities, attending courses, or expecting advice from a Supervisor/Supervisory Committee. Research Reader privileges are available at the library for a fee, and a student may make individual arrangements to consult with faculty and Supervisors. Students also have the option of opting into receiving access to [Student Life](#), [Hart House](#), and [Faculty of Kinesiology & Physical Education](#) services for a fee (see [Understanding Leaves of Absence from SGS](#)).

Students are not eligible for graduate awards during a leave. Note that award granting agencies, such as CIHR and NSERC, have their own leave policies for award holders. Students must consult with the appropriate funding agency.

If a student requires a leave, it is necessary to complete the [Request for Leave of Absence form](#) available on the SGS website and to submit it to the Graduate Administrator for the Graduate Coordinator to sign.

### **Guidance on Internships**

Some educational programs feature (or facilitate) internships, co-ops, or placements (hereafter referred to collectively as “internships”). These are periods of work experience relevant to the field of study. Depending on the academic program and the host, these periods can vary in duration from a few weeks (e.g. during a summer break) to over a year. They can be paid or unpaid; full-time or part-time. The Department understands the value that internships have for student career goals. They often lead to future employment.

### **Internships within Molecular Genetics MSc/PhD program**

The Molecular Genetics MSc/PhD program (the “Program”) does not have a formal internship feature. In fact, such opportunities, wherein the student is hired and/or paid (usually by a company), will not be considered within the Program. Instead a leave of absence (LOA) is required.

The Program, and the responsibilities agreed to by both the thesis supervisor and the student, are inconsistent with full-time internships or co-op placements. First, the program itself was designed, approved, and continues to be funded as a continuous, full-time endeavor. Second, the research stipend and tuition are typically paid by the supervisor using grant funding that can only be used to compensate researchers working on the project. Students holding independent research funding (e.g. from NSERC or CIHR) should verify impacts of an internship, as some awards will assume a full-time research and study program.

It should also be considered that students in the Program typically work as part of an integrated research team, continued success of which depends on full commitment of each team member. Even when individual projects are largely independent, the overall funding of a laboratory will depend on timely completion of individual projects.

As well, intellectual property policies of the institution apply to the Program. Use of research information should follow standard academic practices. Data and project-specific knowledge derived from the student's thesis project may not necessarily be available for use in an internship.

In order to minimize impact to both research labs and degree progress, it is expected that students that intend to pursue internships follow these guidelines:

- (1) To avoid compromising progress on the thesis project, a full-time internship should ideally be no longer than one term, and arranged during a time that does not compromise the research – e.g. while a paper is submitted, while awaiting a key result from a collaborator, or just after the “permission to write” meeting, at which point all experiments should be completed. Students are also encouraged to take summer internships, as there are fewer structured departmental and program activities.
- (2) Students must discuss the internship with their supervisor and with the Learning Strategist, at least one term (four months) in advance of the start of the intended internship, so that it can be planned in a way that facilitates progress towards the degree and lab functioning.
- (3) Internships should be pursued only after the student has achieved PhD candidacy (i.e. completed all coursework, including seminar attendance and presentations – normally, only students beyond their fourth academic year will meet this expectation).
- (4) Students doing an internship are expected to take a Leave of Absence (LOA), unless they have completed all degree requirements except for the defense (see below). The LOA is granted by SGS, not the Department. Please note that SGS policy currently interprets personal hardship very broadly especially when in line with department and academic goals. Additional information and links to the LOA Form are found at <https://www.sgs.utoronto.ca/resources-supports/understanding-leaves-of-absence/>. Please indicate that the LOA is being requested for the purpose of an Internship when completing the form.
- (5) Students must be familiar with the terms of the LOA:

- a. Students will not have access to their supervisor's lab, or their supervisor, the library, gym, other campus facilities, etc. during the LOA. Students on LOA can, however, pay to opt-in to certain services as described on the LOA form.
  - b. The stipend and tuition will be suspended during the LOA, and the time on leave will not be counted as part of the length of the degree.
  - c. The LOA assures students that their place in the academic program will be preserved, but students cannot expect that important lab project(s) will be put completely on hold. Thus, an unfinished thesis project may be impacted by research developments that occur during the LOA. Students should discuss the implications of the LOA on the project with the supervisor.
- (6) Students doing an internship should be aware of conflict-of-interest (CoI) rules. If the internship is in the same area as their PhD project, they must discuss with the supervisor what aspects of unpublished work in the laboratory should be considered confidential and of potential value to the lab and the University. Students should be aware that violating CoI and/or confidentiality presents a potential liability for the company or organization sponsoring the internship.
  - (7) Because Leaves of Absence are intended as a pause from academic progress, work generated during an internship cannot be incorporated into students' theses. Theses should only include work produced under the supervision of U of T graduate faculty members during terms in which the student is registered.
  - (8) Students who have completed all degree requirements except for the defense can forfeit the stipend and start a job. Students taking an internship under such circumstances should not take a Leave of Absence, because it would prevent them from graduating.
  - (9) International students should be aware that there may be visa, immigration and post-graduation issues relevant to an LOA and paid employment outside the University. Please ensure you meet with an Immigration Advisor at the Centre for International Experience prior to requesting an LOA.
  - (10) If you have government student loans (e.g., OSAP), a leave of absence can impact your funding and your repayment status. Contact the University Registrar's Office at <http://uoft.me/client-services> to discuss your options.
  - (11) The above guidelines do not apply to students who engage in external industry-facing collaborative work as part of their research toward their dissertation. For example, some students may receive a MITACS funded grant as part of an agreement between their host lab and a biotech company that involves a period spent working with the industry partner. Students in these situations do not need to apply for a LOA. They will typically receive their normal stipend, must pay tuition, and should not be formally paid or hired by the partner (although additional housing costs while visiting the industry partner are usually covered by the grant or the partner). Students in these situations must remain current in terms of seminars, coursework, committee meetings, and other aspects of their degree program. Intellectual property concerns are usually negotiated between the head of the lab and the industry partner (with the guidance of the funding agency and the University) and the terms of the agreement should be clearly communicated to the student.

## Additional references

For more information on intellectual property ownership, students and supervisors in the Program are encouraged to review the intellectual property experiential learning modules in the following link: <https://experientialmodules.utoronto.ca/intellectual-property/>

Students and supervisors are also encouraged to review the *Working Group on Graduate Student Involvement in Research Opportunities with Industry, Findings & Recommendations* (<https://www.sgs.utoronto.ca/wp-content/uploads/sites/253/2020/12/WGROI-Final-Report-Sept-18-2020.pdf>) and the *Researcher's Guide to Industry Partnerships* (<https://research.utoronto.ca/partnerships/establish-partnership-industry>).

## Use of Emergency Contact Information

Students are expected to maintain regular contact throughout their programs. Should a student's supervisor indicate to the Department that they are unable to contact them despite making reasonable efforts to do so, the Department will make additional efforts to get in touch, to maintain academic progress and verify well-being. To assist in this process, the Department asks students to provide additional contact information, including a phone number, a non-U of T email, and 1-2 emergency contacts, through an Emergency Contact Form.

Standard communication from the Department will make use of students' U of T or node-based email addresses, or phone as needed. A non-U of T email provided on the Emergency Contact Form will only be used in circumstances where we are otherwise unable to reach a student. Emergency contacts will only be used after the supervisor and the Department have been unable to contact the student via email or phone. The emergency contact will be called and/or emailed by a Departmental staff member. We will share with the emergency contact that the student in question is a student in our program and that we have been unable to reach them, and request that the emergency contact verify your well-being and put us in contact with them. No other information—personal or academic—will be shared with this contact. The Emergency Contact Form includes a consent to disclose information, which is in addition to section 42(1)(h) of the *Freedom of Information and Protection of Privacy Act* (FIPPA) which permits the University to disclose personal information in compelling circumstances affecting the health or safety of an individual.

The contact information provided in the Emergency Contact Form will be treated as strictly confidential and will be saved on a secure SharePoint site accessible only to Departmental staff members (not faculty) on a strict need-to-know basis. We ask students to alert their emergency contact(s) that they have provided their information.

Students are under no obligation to complete the Emergency Contact Form and provide consent; their decision to complete or decline to complete will have no effect on any official University outcomes.

## Termination of Enrollment/Withdrawal

A student's enrollment in the program may be terminated without obtaining a degree under the following circumstances:

1. Failure to achieve the goals set by the Supervisory Committee within a reasonable period of time (see "[Lack of Sufficient Progress](#)"); and upon unanimous decision by the Supervisory Committee.

2. Failing any course in the program.
3. Two negative votes at a Reclassification exam, MSc Oral exam, PhD Qualification, or PhD Oral exam.
4. Failure to meet the requirements of the School of Graduate Studies [General Regulations](#).

The student's stipend will be terminated upon termination of enrollment.

## Lapsed Candidacy

Students must be registered annually until all degree requirements are met. Students who fail to register and do not have an approved leave may only apply to re-register if they are within the maximum time allowed for the degree program. Students wishing to re-register must apply to the Department of Molecular Genetics, and the Department and the School of Graduate Studies must approve the reinstatement. Reinstated students will be required to pay fees owing for any sessions in which they did not register.

## Mental Health and Wellness Resources

We understand that many of our students (and staff/faculty) may experience anxiety, depression, and other mental health challenges. If you feel that you are struggling, please know that you are not alone and that we have several resources to help.

*In crisis, visit the closest Emergency Room or call 911*

Molecular Genetics maintains a list of resources on our [Health and Wellness page](#).

Another great place to start looking for support is the university's [Mental Health](#) page, with an extensive list of mental health and wellness resources.

<https://mentalhealth.utoronto.ca/>

The **U of T My Student Support Program** (U of T My SSP) provides students with real-time and/or appointment-based confidential, 24-hour support for any school, health, or general life concern at no cost to you. You can call or chat with a counsellor directly from your phone whenever, wherever you are. You can access U of T My SSP 24/7 by calling 1-844-451-9700. Outside of North America, call 001-416-380-6578.

The Molecular Genetics GSA Committee on Mental Health has compiled an excellent guide to mental health and wellness resources that can be found on the departmental website.

Additional resources were compiled below by the students in the Medical Biophysics Department:

### Counselling Services

#### **School of Graduate Studies Embedded Counsellors** (free)

During the academic year, RHSE provides dedicated counselors for students in the Faculty of Medicine. Information about these counselors can be found at the RHSE ([Student Health and Wellness page](#)). The Grad Team can also help you to contact these counselors.

Phone: 416-978-8030, Ext. 5.

Book an appointment for counselling by phone or walk-in at 214 College Street, Room 111

**OISE Psychology Clinic** (~\$25/session)



Email: oiseclinic@utoronto.ca, Phone: 416-978-0620

Location: 252 Bloor Street West, Suite 7-296

**Free Walk-In Counselling Services:** List of locations at [UTGSU Walk-in Counselling](#)

### **Conflict or Challenges in Professional Relationships**

#### **Centre for Graduate Mentorship & Supervision (CGMS)**

Email: [cgms@utoronto.ca](mailto:cgms@utoronto.ca), Phone: 416-978-2379

### **Community Helplines: 24-hour access to anonymous support (unless otherwise noted)**

**Good 2 Talk Student Helpline:** 1-866-925-5454

**Distress Center Hotline:** 416-408-4357

**Suicide Prevention Hotline:** 1-800-273-8255

**Gerstein Center Mental Health Crisis Line:** 416-929-5200

**Assaulted Women's Helpline:** 416-863-0511

**My SSP for International Students:** 1-844-451-9700

**Anishnawbe Health Mental Health Crisis Line for Aboriginal students:** 416-891-8606

**Drug and Alcohol Helpline:** 1-800-565-8603

**Ontario Mental Health Helpline:** 1-866-531-2600

**Ontario Problem Gambling Helpline:** 1-888-230-3505

**Sexual Assault & Domestic Violence Care Centre:** 416-323-6040

**Toronto Rape Crisis Centre:** 416-597-8808

**LGBTQ Youthline** (peer support, open Sun-Fri 4-9pm): 1-800-268-9688

### **Confidentiality**

As per University of Toronto guidelines, the Department of Molecular Genetics administration requires the expressed written permission of the student in question before we are able to communicate with people outside of the University of Toronto (parents, other family members etc.) regarding the status of said graduate students in our program.