Graduate Student Handbook
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SCHOOL OF ARTS & SCIENCES
UNIVERSITY of ROCHESTER

Contents

Introduction

This booklet describes the requirements for the PhD degree in chemistry at the University of Rochester, as well as graduate student expectations and department policies. It is our hope that students will find this to be an informative resource that will help them navigate the various aspects of their graduate education. As such, we highly recommend that students read through this booklet carefully and use it as a first step in addressing questions or concerns they may have related to their graduate experience in the Department of Chemistry. The University also publishes *Regulations and University Policies Concerning Graduate Study*, which provides a description of the general requirements and procedures for all graduate degrees at the University of Rochester. If you have further questions or concerns about the program, please contact the Graduate Studies Coordinator or Faculty Chair of Graduate Studies.

Our PhD degree requirements have evolved to foster the development of creative, independent-thinking chemists ready for a career in the chemical sciences. Chemistry is the central science, overlapping with every other area of the natural sciences. It is our belief that graduate education in chemistry provides quantitative and conceptual skills that enable a researcher to make scientific advances. Our program develops the practice that make one an effective researcher: how to obtain knowledge through texts, journals, and research; formulation of new research questions/hypotheses; and critical evaluation of research. We recommend that students view these degree requirements with their long-range goals in mind.

Mission Statement

The University of Rochester motto is *Meliora* (loosely translated as "Ever Better"), and this ethos drives the Department of Chemistry PhD program. As a department, we strive to foster an environment that holistically supports the intellectual, professional, and personal development of students from all backgrounds. Graduate students (i) conduct cutting-edge, interdisciplinary research with access to advanced facilities and opportunities for collaboration; (ii) learn through frequent and individualized interactions with faculty, peers, and visiting scholars; (iii) build strong networks through structured mentorship and professional development, industry internships, and attendance at prestigious scientific conferences; and (iv) enrich their experiences through programs focused on departmental, university, and community service to broaden access to and participation in the chemical sciences. Through these synergistic experiences, our graduate students likewise embody the spirit of *Meliora*, uplifting our department and the broader community in the pursuit of "Ever Better."

Graduate Student Expectations

The primary mode of education in graduate school is through research, making graduate school **very** different from the student experience during their undergraduate studies. First, education is not limited to times when courses are in session. Second, your progress is measured in terms of your work output. Students are expected to focus on PhD work full-time.

Graduate Student Responsibilities

I acknowledge that I have the primary responsibility for successful completion of my degree. I will…

- Be committed to my graduate education and demonstrate this through my best efforts in my research, teaching, and coursework.
- Practice safe laboratory/work practices and immediately inform my advisor of any safety concerns or violations.
- Maintain a high level of professionalism, self-motivation, engagement, curiosity, and ethical standards.
- Meet regularly with my research advisor and provide them with updates on the progress and results of my activities and experiments.
- Work with my research advisor to select a thesis/advisory committee and to be responsive to their advice and constructive criticism.
- Be knowledgeable about and comply with all requirements of the policies of my graduate program, the graduate school, and the university in both letter and spirit.
- Seek guidance from my research advisor, my thesis/advisory committee, career counseling services, and other mentors for advice on career plans.
- Maintain a detailed, organized, and accurate record of my research as directed by my advisor.
- Be a good lab citizen, take part in shared responsibilities, and use laboratory resources carefully and frugally.
- Treat my advisor, colleagues, and all laboratory personnel with tolerance and respect, contributing to an environment that is safe, equitable, and free of harassment.
- Discuss policies on work hours, sick leave and vacation with my research advisor and notify my advisor and fellow group members in advance of any planned absences.
- Discuss policies on authorship and attendance at professional meetings with my research advisor.
- Work with my advisor to submit research results suitable for publication in a timely manner.

Vacation Time

Vacation time should be coordinated with a student's research advisor and is not related to the beginning and end of semesters. Vacation policies may vary between faculty research advisors, and students should clarify their advisor's specific policies and expectations upon joining a research group. Extended vacations may be possible only after discussion with faculty advisors.

Extended Absences

Absences of more than one month over the course of a year are detrimental to a student's research progress and may violate the employment requirements established by funding agencies that provide the funding for students' stipends. However, there may be cases where an extended absence is necessary, and students may seek parental, medical, or personal leave. All extended absences from the University require approval from the student research advisor and the Graduate Studies Committee. If considering a request for any type of leave, students should notify and consult with their research advisor and the Graduate Studies Coordinator as soon as practicable.

Parental Leave: Graduate students are provided up to eight weeks of leave for the primary caregiver following the birth or the adoption of a child. During the leave period, students will continue to be fully funded by any existing funding sources (e.g., fellowship, assistantship), but will be excused from regular teaching or research duties and may postpone academic requirements. If a student become eligible for parental leave, they should submit the University's Parental Leave Request Form at least 60 days prior to the expected date of childbirth or adoption. If extended time is needed beyond the eight weeks leave, approval for unpaid personal leave must be requested as described below. This text was adapted from the University of Rochester, Graduate Education & Postdoctoral Affairs Graduate Handbook; for additional details, see https://www.rochester.edu/college/gradstudies/graduate-handbook/academic/additional-policies.html#parental_leave.

Leave of Absence: On occasion, a serious personal or health problem may require a student to take a leave of absence. In that situation, students are permitted to take a leave for up to one academic year, or three consecutive semesters including summer. Students should refer to GEPA policies and procedures on Leaves of Absence. Please reach out to the Graduate Coordinator and Chair of Graduate Studies with questions about leaves of absence, or to initiate a leave of absence request.

Research Internships: With research advisor permission, graduate students are allowed to pursue short-term research internships outside the University. To initiate an internship request, students should send an email to the Graduate Studies Coordinator (with research advisor cc'd) who will generate an Internship Approval Form. During the internship period, the student must register CHEM 594 (1 credit) and a sufficient number of additional placeholder credits to maintain full-time status. Following the student's return from the internship, their research advisor will assign a grade for CHEM 594 based on a short write-up of their internship experience. Each internship, up to a maximum of two, counts toward the total required credits for the degree (30 or 32 for master's; 90 for PhD) and will be included in the student's program of study. This text was adapted from the University of Rochester, Graduate Education & Postdoctoral Affairs Graduate Handbook; for additional details, see https://www.rochester.edu/college/gradstudies/graduate-handbook/academic/registration.html#research_internship_policy

Professional Conduct

Graduate students in the Department of Chemistry at the University of Rochester have an obligation to uphold the highest standards to scholarship, scientific investigation and personal and professional integrity (see Graduate Student Responsibilities section above for specific examples). Graduate students are also expected to be familiar with details of the University Academic Honesty Policy. Violations of appropriate standards of professional conduct will be reviewed by the Graduate Studies Committee, the Chair of the Department of Chemistry. In extreme cases, the University Committee on Academic Policy or other University offices as set forward by *Regulations and University Policies Concerning Graduate Studies* may also be included in these reviews. Students may face penalties up to expulsion from the program for failure to adhere to professional conduct.

Stipend and Other Support

Graduate students in the Department of Chemistry are financially supported by a stipend, which is intended to defray living expenses so that students can participate in full time research. Per the University Graduate Student Bulletin, "Graduate fellowships are intended to further the recipients' education and recipients are expected to devote full time to their studies and to any required teaching, research, or training." For this reason, having an additional job outside of the university is generally not permitted without written advisor consent, and any external employment that interferes with full-time work during standard business hours and/or affects academic performance is not allowed. The Department of Chemistry or your faculty advisor also pays the mandatory university health fee, which covers visits to the University Health Service and the University Counseling Center. Please note that all graduate students are required to have health insurance. Students may choose to remain on or purchase external insurance or alternatively can opt-in to University Health Insurance. Students who choose the latter option will have their health insurance covered by the Department of Chemistry or their faculty advisor. Students are also eligible to enroll in dental insurance and a vision plan that will be covered by the Department of Chemistry or their faculty advisor.

All students are eligible to receive the stipend for at least 5 years or the full time they are pursuing their PhD degree, whichever is shorter. Funding for students who require longer than 5 years to complete their degree may be available pending approval by their PhD advisor. The amount of the annual stipend for graduate students is adjusted from time to time to account for inflation. The funds for the stipend come from the University of Rochester when a student is working as a teaching assistant. When a student is supported as a research assistant, the stipend is paid by their faculty advisor. Throughout their degree, graduate students are eligible to compete for external and internal fellowships (see *Fellowships and Awards* section below); if they are successful, stipend levels will be changed to conform to the fellowship requirements.

Students receive a $1,000 professional allowance after they enter the program and participate in the Department of Chemistry Graduate Student Orientation. This funding will be added to a student's first paycheck. The Department of Chemistry provides $500 toward attendance of a regional, national, or international conference related to their PhD research. To access these funds, a student must submit a title and abstract of the planned presentation, along with a 300-word career impact statement to the Graduate Coordinator at least 3 months in advance of the meeting. Additionally, competitive travel awards are offered through the Department of Chemistry to provide additional financial support to offset the cost of meeting attendance.

Selecting a Research Advisor & Thesis Advisory Committee

Choosing a Research Advisor

Choosing a research advisor is one of the most important decisions a graduate student will make. In addition to guiding their PhD research, a research advisor is the student's primary advisor on all academic matters. This is a mentor/mentee relationship that often lasts through the student's entire research career, long after leaving the University of Rochester. Because of this, students should approach the advisor selection process thoughtfully and with an open mind and take every opportunity to ensure they are making an informed decision. Even if you arrive at the University of Rochester expecting that you want to work for a particular advisor, it is strongly encouraged that you engage fully with the advising process. Faculty are not permitted to commit to an individual student prior to the Faculty Advisor Selection Ratification meeting. It is important that you weigh your decision based on research interests, career goals, and advising style preferences.

Faculty Research Talks. The first semester is allocated for students to gain familiarity with the range of research projects underway in the Department of Chemistry. During Graduate Student Orientation and the first two weeks of classes, faculty members will ~30-minute seminars designed to introduce their research group and available projects to first-year graduate students. First-year graduate students are required to attend a specific number of these talks and obtain signatures from faculty members confirming their attendance. If a student is unable to attend a talk or a faculty member has opted to not give a talk, the student should arrange to meet with the faculty member individually to discuss their research. While these short seminars are designed to give first-year students a general idea of the research opportunities in a group, we strongly encourage our students to check out the web page of faculty members they might be interested in, read papers from the group, talk to current students in the research group, and have individual discussions with faculty members about student interest and group expectations.

Lab Rotations. During their first semester, all graduate students are required to complete rotations in three different labs. These rotations, which will last three weeks each, are intended to provide students with valuable insight into the day-to-day experience of students in a given research group. After the Faculty Research Talks are completed and the requisite number of faculty signatures obtained, students will indicate their preference for group rotations, including a fourth alternate choice; this form should be submitted to the Graduate Coordinator by the deadline listed on the form. Students may choose to rotate in the laboratory of a faculty member outside of the Department of Chemistry; this must be approved by the Graduate Studies Committee via a written request submitted to the Graduate Coordinator and signed by both the student and the faculty host. If a student has conducted research in a laboratory the summer before their first semester, you may return to that lab for a rotation, but only *after* rotating in two different groups; any prior on-campus research (e.g. summer research) should be indicated on the form.

Specific rotation experiences will vary depending on the nature of research in a given laboratory and different advisors' expectations for the rotation. However, students will have assigned desk space within a lab for the duration of their rotation and should prioritize participating in that group's events (e.g. group meetings) during their rotation when class and teaching obligations do not conflict. Students should meet with the faculty member at the beginning of their rotation in order to clarify details of the rotation and faculty expectations. Before the end of their rotation, students should meet with faculty to discuss advisor

expectations, mentoring styles, etc., and must obtain a signature for their advisor selection form as proof this meeting has occurred. **Advisor selection forms that do not have three faculty signatures and/or are turned in before three lab rotations have been completed will not be accepted.**

Finalizing Advisor Selection. By the announced deadline (typically the last week of November, immediately after Thanksgiving break), students submit their first choice for a research advisor to the Graduate Studies Coordinator and the Chair of Graduate Studies. After all rotations are complete and prior to submission of Faculty Advisor Choices, students should meet with their prospective advisors to discuss the suitability of the match.

In most years, all students get their first choice of a research advisor. Occasionally, a student will not get their first-choice advisor because the faculty member cannot provide financial support, or because there is a necessity to ensure equitable distribution of students across funded research positions. The distribution of first-year graduate students into research groups is approved by a faculty vote in early December, rendering research group assignments official. Students are expected to begin their PhD research immediately after this meeting.

If a graduate student does not find a suitable research advisor match through this process, they should consult with the Chair of Graduate Studies for next steps.

Graduate students select a faculty member to be their research advisor at the end of their first semester in the program (see above). This faculty member must be tenured, or on the tenure-track. This research advisor may be from the Department of Chemistry, or an affiliated faculty member (see Department website for a list of faculty names). Special circumstances may include the following:

- **Co-advisors:** In collaborative projects, it is acceptable for a student to have multiple research advisors. In these cases, the specific obligation of each research advisor toward the scientific progress and financial support of the student should be provided in writing to the Graduate Studies Committee by the faculty advisors and student.
- **Selecting advisors not affiliated with Chemistry:** Faculty members in other departments may be chosen with the permission of the Graduate Studies Committee in the Department of Chemistry; in these cases it is important that the proposed PhD topic falls under the broad definition of chemistry. The student and their proposed advisor must submit a written request to the Graduate Studies Committee prior to the group selection deadline; this request must include a proposed title of the student's thesis project and a 1-2 paragraph description of the project's relationship to chemistry.

Thesis Advisory Committee

During their second year of graduate school, graduate students in the Department of Chemistry will form a Thesis Advisory Committee. This activity should be completed in consultation with their faculty advisor. A Thesis Advisory Committee is composed of three faculty members, including your research advisor, who offer advice to the student over the course of their degree. Two of these faculty members must be from the Department of Chemistry. The Thesis Advisory Committee administers the Written and Oral Qualifying Exam, provides written feedback to the student on their Third-Year Seminar, contributes to the Fourth-Year Review (and annual reviews thereafter), and makes up part of the PhD Thesis Committee. The faculty members on a student's Thesis Advisory Committee are an important resource for the

graduate student for advice, second opinions, and ideas. When a student is applying for fellowships and employment, they will often need multiple letters of recommendation. Developing mutual familiarity with faculty members on one's Thesis Advisory Committee is a good way to build one's network.

Students submit preferences for faculty members to serve on their thesis advisory committee prior to **February 1st** of their second year (advisor + two additional faculty members). The Graduate Studies Committee makes assignments based on these preferences and the need for equal distribution of advisor assignments across the department, and will consult further with the student if changes need to be made. Students are encouraged to have a brief discussion with proposed committee members prior to the February 1st deadline to ensure their interest and/or availability to serve on their committee. Graduate Studies will subsequently review these requests and will notify students by February 15th of their finalized committee composition.

Navigating Issues with Research Advisors

Due to the importance of the relationship between Research Advisors and their Graduate Student(s), it is crucial that any problems that arise are handled with compassion and professionalism by both parties, and measures should ideally be taken to resolve such matters proactively. Wherever possible and reasonable, students should approach their Research Advisor with any issues that arise in order to resolve them as quickly and inclusively as possible. Part of a Research Advisor's responsibilities include providing mentorship and guidance, and in many cases an Advisor will be able to help guide their students to find productive solutions to most problems. It is important to note, however, that Research Advisors are often not fully equipped to deal with complex personnel issues themselves, and in such cases they will be expected to help refer students to the appropriate office(s) on campus, including Human Resources, Graduate Education and Postdoctoral Affairs, the University Title IX Office, the Paul J. Burgett Intercultural Center, or the University Counseling Center. In cases where a student does not feel comfortable discussing issues with their primary advisor, they are encouraged to reach out to either the Graduate Coordinator, the Chair of Graduate Studies, or the Department Chair. Alternatively, the Graduate Education and Postdoctoral Affairs office has designated ombudspersons who can provide confidential, impartial and independent advice to help graduate students address their concerns, and information on the current ombudsperson can be found here (https://www.rochester.edu/college/gradstudies/support-resources/ombuds.html).

When a student seeks to leave a research group: Students contemplating leaving their current research advisors should first discuss their concerns with their Research Advisor, or alternatively the Graduate Coordinator or Chair of Graduate Studies. These individuals will offer counsel on strategies to move forward. If it appears that no mutually agreeable resolution can be reached, the student writes a letter to the Chair of the Graduate Studies Committee indicating their desire to leave their research group, along with a statement of future plans. It is the obligation of the student to complete any lab-specific check-out procedures. The student and the research advisor must inform the Graduate Coordinator and Business Office of the date on which the student will be leaving the lab (regardless of whether the student is staying in the Department or leaving the University).

For students who wish to change research advisors, the Graduate Coordinator or Chair of Graduate Studies will advise the student on strategies to identify a new research home. If the student wishes to

remain in good standing in the program, the student must have identified a new research advisor and received their approval prior to departing their current group.

When a faculty member resigns as research advisor: A faculty member may resign as a student's research advisor if the student is making unsatisfactory progress toward their degree. The faculty member must discuss the situation with the Chair of the Graduate Studies Committee or the Chair of the Department of Chemistry prior to resigning as a research advisor. Under usual circumstance (non-disciplinary situations, as defined by the *Graduate Bulletin*), faculty members must adhere to the following procedure to release a student from a research assignment:

1. The student will be informed in writing, preferably preceded by an in-person discussion of specific shortcomings to address. It is incumbent upon the faculty advisor to provide written communication that should clearly state expectations for the student to achieve within a specified timeframe. This written communication must be shared with the Graduate Studies Committee and will become integrated into the student's file.
2. The student will be provided with an opportunity to address the above-mentioned shortcomings. If the explicit expectations are not reached to satisfaction of the faculty, the student will be informed in writing, preferably preceded by an in-person discussion.

Upon advisor resignation, the student has 60 days to find a new research advisor, during which time their stipend is supported by their current advisor. Once the student has identified a new research group and the faculty member has agreed to accept them into their laboratory, the student and their new research advisor must contact the Graduate Coordinator and Chair of Graduate Studies Committee to inform them that the new advisory situation is official. The new faculty advisor becomes responsible for financially supporting the student once this assignment is made official. A student who is unable to find a new research director within 60 days will need to leave the program.

When a faculty member leaves the University: If a faculty member leaves the University of Rochester, a student in good standing with that research group has several options. Students may choose to remain in the Department, joining a different research group and project (see above for the procedure for switching research groups); in this case they have up until the time that the faculty member leaves to identify a new group. For students who are at a more advanced stage in their PhD research (i.e., have completed their Qualifying Exam and have made substantial progress on a project), continuation of their thesis project with the current advisor may be possible either *in residence* (at the University of Rochester) or *in absentia* (at their research advisor's new institution). Students remaining in residence must have a host laboratory in which their research is conducted, but their current research advisor will continue to be responsible for their stipend support and costs associated with research (e.g., instrument charges, chemicals). Written notification of this arrangement must be sent to the Chair of the Graduate Studies Committee and must be approved by the departing research advisor, the head of the sponsoring laboratory, and the Graduate Studies Committee. Students who move with their advisor and complete work *in absentia* retain their Thesis Advisory Committee. In either case, the final thesis is registered and defended at the University of Rochester. University rules regarding the completion of the degree *in absentia* can be found in the *Graduate Bulletin*. A student may also apply to transfer formally to the new institution of their faculty advisor.

Should your faculty advisor pass away or become incapacitated, students should contact the Chair of Graduate Studies Committee as practicable.

Combatting Discrimination and Harassment at the University of Rochester

Title IX is a Federal Civil Rights law that prohibits discrimination on the basis of sex, which can be broadly defined. The University of Rochester has a Title IX Coordinator and Deputy Coordinators that ensure that complaints of sex-based harassment and misconduct are handled promptly, equitably, and within a safe environment. Additionally, the University of Rochester prohibits discrimination of any kind, and any such **bias related incident** should be reported immediately.

Bias-Related Incident Reports: Per the Paul J. Burgett Intercultural Center: "A bias-related incident is characterized as a behavior or act—verbal, written, or physical—which is personally directed against or targets an individual or group based on perceived or actual characteristics such as race, color, religious belief, sex, marital status, sexual orientation, gender identity or expression, national or ethnic origin, disability, veteran status, or age."

If a student has experienced or witnessed an incident involving discrimination of a person or targeted group based on age, disability, ethnicity, gender identity or expression, national origin, race, religion, or sexual orientation, they may submit a Bias-Related Incident Report Form. Information related to what constitutes a bias-related incident, resources, and how to submit a report can be found at the following link: https://www.rochester.edu/college/bic/bias-related-incidents/index.html.

Title IX Complaints: Title IX is a US Federal law that prohibits discrimination based on sex or gender stereotyping including sexual harassment and violence, relationship violence, and stalking in any educational, athletic, or other program or activity of a federally funded school, that jeopardizes a person's equal access to education. If you believe you have been a victim of such behavior by another person associated with the University of Rochester, you may report this to the Title IX office, or another person may file a report on your behalf. Note that faculty, ombudspersons, and the Graduate Coordinator are mandatory reporters, meaning that they are required to report incidents/behavior that constitute a Title IX complaint if you talk to them about your concerns. *However*, it is important to note that this report will remain confidential and an investigation will not be initiated until and unless the complainant consents to pursuing a Title IX investigation. For more information about sexual misconduct and Title IX, options for reporting, and the University Title IX office, see: https://www.rochester.edu/sexualmisconduct/index.html.

Courses

Graduate courses are intended to give the student the in-depth knowledge necessary for working at the forefront of chemical research. *Students must complete a minimum of 24 credits of coursework within their first two years of graduate study order to qualify for an en passant MS degree* (please refer to the University policy for full details). In Chemistry, this means that students complete a minimum of 20 credits of formal courses plus two semesters of Chemistry Seminar (CHEM 511, 1 credit) and one semester of First-Year Graduate Workshop (CHEM 585, 2 credits), which are required courses for all first-year students for the fall and spring semesters (see below for details). The formal courses may be any combination of graduate-level (4XX) courses, as long as the courses selected provide an appropriate background for completion of their intended research project. Courses from other departments (e.g., physics, optics, biology, biochemistry, pharmacology, chemical engineering) may be included with the permission of the Chair of Graduate Studies. A student should not ordinarily exceed 12 credit hours total of courses in other departments.

Students with prior graduate experience may use up to four course credits from their previous institution toward the course requirement. This equates to the reduction of a single course requirement for the graduate degree at the University of Rochester. **Important:** Students may only request transfer credits if they received a 4.0/4.0 or equivalent grade; grades below an 4.0/4.0 indicate that the student would benefit from further study of the material. Because courses are not necessarily equivalent at different schools, a syllabus from the previous course needs to be submitted to the Graduate Studies Committee before reduction in the course requirements can be considered. The Graduate Studies Committee also requests the student provide a one-paragraph summary of the material covered in the course, and how it relates to the required coursework they would like to skip.

Students should be aware that they receive a tuition waiver for each semester they are enrolled in the graduate program. If a student exceeds the number of allowed credits (12 credits per semester), or audits a course outside of the College, they may be billed for the excess tuition. Students should consult with the Graduate Coordinator prior to registering for these courses or overloading on credit.

Formal Course Offerings

The Department of Chemistry maintains a list of graduate-level courses (CHEM 4XX); current course offerings can be found on the Department website. The available courses offered vary from year to year, depending on faculty availability. Full-semester (14-week) courses are worth 4 credits. A number of graduate courses are “modular” half-semester (7-week) courses that are worth 2 credits. The split between these classes is after 7 weeks, which falls 2 weeks after the fall break in the fall semester, and at spring break in the spring semester. Modular courses are designed as such to allow students additional flexibility in their course choices. Students must register at the beginning of the semester for courses that take place in the last half of the semester.

Special Course Requirements

First Year Graduate Workshop. First-year graduate students are required to register for First Year Graduate Workshop, CHEM 585, (2 credits) for the fall semester of their first year. First Year Graduate

Workshop meets once a week, and is a special discussion on navigating the transition to graduate school. CHEM 585 is graded S/E (based on attendance).

Chemistry Seminar and Colloquium. First-year students must register each semester for chemistry seminar/colloquium (CHEM 511). Students are expected to attend these seminars regularly. First year students register for CHEM 511 for one credit for both the fall and spring semesters. Attendance will be taken by seminar technical support and submitted to the Graduate Coordinator who will update this information on Blackboard. Students must attend a minimum of 12 seminars to receive a satisfactory grade in CHEM 511.

PhD Research in Chemistry. Students register each term for a sufficient number of credit hours of CHEM 595 (PhD Research in Chemistry) to bring the total credit hours for the term to 12, until a total of 90 credits are achieved. A faculty member must be indicated when registering for CHEM 595 by choosing the CRN for their research director. If registering for CHEM 595 during their first semester, students should choose the Chair of the Graduate Studies Committee. During the first year, if the total number of credit hours is over 12 in a given semester, it is essential to ask the Graduate Studies Coordinator to request permission for a tuition waiver from the Dean. This must be done in order to avoid tuition charges.

Doctoral Dissertation. After students accumulate 90 total credit hours, they register for Doctoral Dissertation (CHEM 999). The only exception is when a student is defending during the summer, in which case the student should register for CHEM 997. Both of these courses carry zero credit hours, but give the student full-time status.

Auditing Courses and Sitting In

Students interested in auditing a course must consult their department graduate coordinator and submit an audit request form to the GEPA office. Students may, in special circumstances, petition the dean of Graduate Education and Postdoctoral Affairs for a waiver of the audit fee. The petition to cover the audit fee must be submitted before the end of the add/drop period via the Audit Fee Waiver Request Form, which must be signed by the student's faculty advisor and the course instructor. Note that the petition will not be approved without a clear rationale for why the student cannot take the class for credit as part of their existing tuition waiver. See the formal Audit Policy on the GEPA website. As an alternative to formally auditing a course, Chemistry graduate students often "sit in" on classes. No formal approval is required to "sit in," but the student should seek prior permission from the instructor.

Grades in Graduate Courses

Grades for graduate courses (and research) are reported using one of the two systems, either letter grades (as indicated below) or S (satisfactory) / E (failure). Please see the *Graduate Bulletin* for more details about AS&E policies for grading in graduate courses.

- **Letter Grades:** A [excellent], A–, B+, B [good], B–, C [poor], E [fail]
- **Satisfactory/Unsatisfactory:** S [satisfactory], E [fail]
- **Administrative Grades:** I [incomplete], IE [incomplete and fail], W [withdrawn], N [no grade reported]

To remain in good academic standing, a student must earn a B– or better in all courses. A letter grade of C in one course automatically places the student on academic probation. A student with a letter grade of E, or two letter grades of C, is considered to have an unsatisfactory record. In such an event, the Graduate Studies Committee reviews the student's records to determine whether they may remain in the graduate program.

Requirements for MS Degree in Chemistry

En Passant MS Degree in Chemistry

Graduate students who obtain a PhD in Chemistry from the University of Rochester will also earn an *en passant* MS degree. This degree is obtained when students complete the degree requirements to advance to candidacy as outlined below. Students must take a minimum of 30 credits to earn an MS degree from the Department of Chemistry at the University of Rochester. 24 of these credits (including CHEM 585 and CHEM 511) must be in coursework. A maximum of 6 credits of CHEM 595 (PhD Research) may be used to reach the 30 minimum credits required for an MS degree. In addition to fulfilling the coursework requirement, students must complete a Written Exam Document to earn the *en passant* MS degree. See "Qualifying Examinations for PhD Candidacy" below.

Terminal MS Degree in Chemistry

A student may earn a terminal MS degree if they decide to discontinue the PhD program. This may happen for many reasons. Graduate Students questioning their future in the program are encouraged to reach out to the Graduate Coordinator and/or Chair of the Graduate Studies Committee to discuss options. However, should a student decide to leave the program with a MS degree, the following options are available:

Master's Degree Plan A (Research-based MS degree in Chemistry). Students must take a minimum of 30 credits to earn a research-based MS degree in Chemistry. 18 of these credits must be in graduate-level course work (including two semesters of CHEM 511). Students will also be required to register for 12 credits of research (CHEM 595). Students will be required to complete a research-based thesis document and oral exam. This will serve as both the written and oral examination component of the MS degree. Students should refer to the guidelines in Qualifying Examinations for PhD Candidacy for more details on completing these requirements. To defend their Master's thesis, the student will need to identify a committee, including their faculty advisor and a second faculty member in the Chemistry department and a faculty member from *outside* of Chemistry. The student is responsible for setting a date, time, and location for their defense, in collaboration with the Graduate Coordinator. More information regarding the Master's defense can be found on the University of Rochester's GEPA website.

Master's Degree Plan B (Course-based MS degree in Chemistry). Students must take a minimum of 30 credits to earn a MS degree from the Department of Chemistry at the University of Rochester. 24 of these credits (including CHEM 585 and CHEM 511) must be in course work. A maximum of 6 credits of CHEM 595 (PhD Research) may be used to reach the 30 minimum credits required for a MS degree. Students must also prepare a literature report that will be reviewed by two faculty members (if necessary, the Chair of Graduate Studies and the Graduate Coordinator will work with the student to identify faculty reviewers); this serves as a written exam required to obtain a graduate degree from the University of Rochester. This document should follow the general structure and guidelines of the Written Qualifying Exam; it will also be assessed in a similar manner. Students should select a relevant topic of current interest in their subfield and provide a comprehensive and in-depth review of the topic. The document should demonstrate the student's knowledge of the topic, provide a critical analysis (i.e., not simply summarizing papers), and provide an outlook for future research into the selected topic.

Timeline for MS Degree. Students who leave the program with a MS degree are typically enrolled full-time for the Fall and Spring of Year 1 and the Fall semester of Year 2. Students who choose to earn a terminal MS degree are not guaranteed stipend support during the summer; exceptions may be made for individuals who are able to identify a research advisor who is willing to fund a research position in their laboratory during the months of May-August. Students should discuss their individual situation with the Graduate Coordinator and/or Chair of Graduate Studies.

Qualifying Examinations for PhD Candidacy

In order to progress in the PhD program and earn a Master's degree en route (also known as *en passant)*, students must successfully complete a Written Document and an Oral Exam, the two components of the PhD Qualifying Exam.

Written Exam Document

Overview. The written component of the Qualifying Exam provides students with an opportunity to demonstrate their understanding of the background and current literature in their field of study. It also helps students to clarify their research goals and strategies. The written document should show critical thinking, clear communication, and a well-structured presentation of the research project. The written document should include an extensive literature review, framing the research approach of relevance to the student's project with a small section dedicated to a discussion of the student's most promising results. The student's research progress is not the focus of this written document. This document will be evaluated by the Thesis Advisory Committee prior to the oral examination. The committee will be using the written document to assess the student's ability to meaningfully interpret and discuss the context of their project.

Format. The written document should adhere to the following guidelines:

- **Sections:** Literature Review/Background (5-7 pages), Research Strategy (3-5 pages), and Findings (if applicable).
- **Length/Formatting:** The total length of the document should not exceed 10-12 pages, excluding cited references; should use 11-point Font (Arial, Helvetica, or Times New Roman); and be single-spaced with one-inch margins.
- **Citations:** References should follow the ACS (American Chemical Society) style, and the student should include at least 10 relevant citations (though more are encouraged).
- **Visuals:** Visuals (figures, schemes, tables) should be included as appropriate and placed near their first mention in the text. Each visual should be clear, properly sized, and include a caption. Formatting and construction of visuals should meet professional standards for the student's research area. All visuals should be referenced within the text and ordered logically.
- **Language/Writing:** The document should be free of grammatical errors, with clear and concise writing. Abbreviations and technical terms should be defined upon their first use. The language used should be appropriate for technical writing–professional, yet accessible to committee members not in

the student's exact research area. Paragraphs should maintain thematic consistency, and the overall document should have a logical flow.

Timeline. Students will assemble a committee of two faculty members, excluding their research advisor, within the Department of Chemistry (or closely affiliated faculty members, with approval from Graduate Studies) and submit their committee preference to the Graduate Coordinator by February 1st. Written documents can be submitted to faculty committees between March 1st and June 30th of a given calendar year. Faculty assess and return written document comments/feedback and scores to the student's research advisor within 3 weeks of receiving the document. Once the written document is submitted to the student's committee, students should schedule the oral exam for six weeks after the submission with the Graduate Coordinator. This will be the student's tentative oral exam date.

Assessment: Minor Revisions, Major Revisions, or Unsatisfactory

A. **Minor Revisions:** If minor revisions are requested, students are expected to make reasonable changes and provide revised document to their committee members 1 week prior to their scheduled oral exam. A clean version of the revised written report should be submitted, along with the originally submitted document annotated with changes made based on committee members' feedback and a letter responding point-by-point to criticism from faculty. Students will be assessed on the requested revisions.

B. **Major Revisions:** If major revisions are needed (significant deficiencies in written document), the oral exam is postponed. Student is given six (6) weeks to address committee comments and resubmit. A clean version of the revised written report should be submitted, along with the originally submitted document annotated with changes made based on committee members' feedback and a letter responding point-by-point to criticism from faculty. Faculty have two (2) weeks to provide feedback and determine whether exam report is of sufficient quality to proceed to the oral examination, at which point the oral exam is rescheduled. If major deficiencies remain, the student receives a failing grade for this assessment and will have six (6) months to resubmit the oral document to advance to candidacy.

C. **Unsatisfactory:** If the submitted document is unsatisfactory, the committee may fail the student outright on their written evaluation. Students will have six (6) months from this first failure to resubmit their document and proceed to their oral exam.

Oral Qualifying Examination

The Oral Exam will occur after the Thesis Advisory Committee has approved the Written Document.

Overview. While there is significant topical overlap between the oral exam and the written document, which will have been assessed prior to the oral exam, the emphasis of each assignment is different. Whereas the written document requires a detailed examination of the literature within the field and experiments that have been completed already, the oral exam may shift this emphasis to assess the student's understanding of fundamental concepts and general knowledge, their understanding of the design of the current project and future directions, and their ability to imagine new solutions and methods if the planned experiments run into problems. As an example, the student may mention that the ligands of an inorganic compound produce a particular energetic ordering of the d-orbitals in the written document, but they would likely not explain ligand field theory, a topic from fundamental inorganic chemistry, in that

document; however, in the oral exam, the committee may ask the student to explain ligand field theory and how it can explain the energies of those d-orbitals.

The number of results at this stage will vary significantly depending on the particular project, and it is recognized that publishable results may not yet be available; however, the student needs to present clear evidence of a substantial research effort and a deep understanding of their experiments to date. Students will be assessed on their general knowledge in chemistry, conceptual understanding, research techniques and methods, significance of research, organization and clarity of presentation, familiarity with literature, project design understanding, and creative problem solving. Each of these areas will be explored by the committee, who will ask questions to get a better understanding of what the student knows and how the student thinks about their project.

Format. Students should prepare material corresponding to a 30-minute uninterrupted PowerPoint/ Keynote presentation, though the actual duration of the exam will be much longer due to discussion. The total duration of the oral exam should not exceed 2 hours.

Timeline. The oral exam will typically be scheduled for the summer following the second year of graduate school or the fall of the third year; specific timelines for individual students will depend on completion of the Written Exam and required revisions. Students will discuss their oral exam performance with their committee immediately after the oral exam.

Assessment. Student performance on the oral exam will be assessed based on their fundamental knowledge, ability to synthesize information to generate new research ideas, and their ability to effectively communicate their science. A detailed rubric can be found on the Department website and will also be sent to students upon scheduling their oral exam. These ratings are aggregated and returned to the student to help them determine areas for improvement. The advisor also submits a written summary of the committee's discussion to the Graduate Coordinator.

Students who fail the oral exam may retake the exam if the examining committee deems it appropriate. The second qualifying examination, if permitted, may be taken within six (6) calendar months. If the student does not take and pass their second exam within this time period, the student's position in the PhD program will be terminated and the student will leave the program with a Master's degree.

Third-year Seminar Presentation

The Department of Chemistry requires that each student give a departmental seminar during their third year of study. Typically this occurs in the spring semester during regular seminar slots. The goal of this activity is for students to (i) practice developing, evaluating, and presenting complex research ideas to a professional audience; and (ii) receive constructive, critical feedback on presentation strengths and weaknesses.

The topic of this seminar depends on the student's research emphasis and may focus on the student's research or a literature topic. Students should consult with their research advisor about their expectations for the 3rd year seminar. Students should identify the topic for their 3rd year seminar, with advisor approval, no less than one (1) month prior to their seminar.

The Thesis Advisory Committee provides critical written feedback through a standardized evaluation form and will provide additional verbal feedback to the student following the presentation. This feedback is informal and is not retained in the student's official record.

Fourth-year Review

During a student's fourth year in the program, the student meets with their Thesis Advisory Committee to discuss their research progress, and the remaining steps necessary for successful completion of a dissertation. The purpose of this meeting is to promote timely completion of the PhD degree. This meeting is informational rather than a second oral examination (no formal presentation is required). The discussion should focus on briefly highlighting research accomplishments to date and providing an outline of additional work required to complete the dissertation research, including a tentative timeline for completing that work. The Fourth Year Review is also an excellent time for the student to discuss career directions with their Thesis Advisory Committee.

The fourth-year review must be scheduled by July 15th of the student's fourth year in the program for them to be eligible for departmental fellowships. Requests for fourth-year review meetings to be held after this date must be approved by the Graduate Studies Committee; requests for extensions can be submitted via e-mail to the Chair of Graduate Studies Students, and should include justification and approval from your research advisor. For students on an accelerated track to their degree, the "Fourth Year Review" should occur no less than six months prior to their planned defense date.

Annual Graduate Student Activity Report & Annual Review

In association with the benchmark activities described above, all graduate students are required to complete the Department of Chemistry's Annual Graduate Student Activity Report. *The purpose of the Annual Graduate Student Activity Report and Annual Review Meeting (see below) is to ensure alignment of the student's short- and long-term scientific and professional goals and activities as they progress through the program.* By reviewing recent progress and goals with their Thesis Advisory Committee, students will (i) strengthen their understanding of scientific priorities for degree completion, (ii) receive advising on professional development, and (iii) strengthen their professional relationships with members of their Thesis Advisory Committee. **The report must be completed and submitted to the Graduate Studies Coordinator by July 15th each year**. Students that fail to submit the report by this date will not be eligible for Department of Chemistry Fellowships or awards in the subsequent academic year.

The annual activity report is comprised of the following components:

1. An up-to-date curriculum vitae (CV) including all undergraduate, graduate, and (where relevant) professional activities and recognitions organized in the following sections:
    - Education – List dates attended; institution name and location; degrees earned and in progress; major, minor, and concentration (where relevant); GPA (cumulative & major); graduation honors (where relevant)
    - Scientific or Technical Experience – include graduate research, undergraduate thesis projects, summer research experiences, internships, and any technical/scientific post-

graduate employment. List dates participating; program, university, or company name and location; supervisor name; 1–3 bullet-point summary of project area(s) and contributions

- Teaching Experience – include graduate teaching assistantships, undergraduate teaching assistantships, course-development work, tutoring, and any technical/scientific post-graduate employment. List dates participating; program, university, or company name and location; course name (where relevant); supervisor name; 1–3 bullet point summary of role and contributions
- Awards – include all awards and recognitions received during undergraduate studies, graduate studies, and (where relevant) post-graduate professional roles. List the year awarded; award name; awarding body; 1 line award description
- Publications (where relevant) – include all publications in peer-reviewed journals. Provide full citation information in ACS format (including article name and DOI). Manuscripts under review and/or posted on a preprint server may be included. Manuscripts in preparation should NOT be included.
- Patents (where relevant) – include all patents including provisional patents, patent applications under review, and patents approved
- Presentations – include all oral and poster presentations external to the department. Do NOT included posters at departmental poster sessions, 3rd year talks, etc. List the date; forum/event/conference name and location; presentation title; presentation type (oral or poster)
- Synergistic Activities – include departmental, university, or professional service and/or leadership activities such as serving on departmental committees, taking leadership roles in student organizations, mentoring students, organizing professional events etc.

2. A completed Activity Report worksheet, which focuses exclusively on progress over the past year and near- and long-term research and professional development goals. See document here.
3. (optional) An up-to-date copy of the student's individual development plan (IDP) developed using the ChemIDP tool (https://chemidp.acs.org/) developed by the American Chemical Society.

The combined annual activity report documents must be approved by all members of the student's Thesis Advisory Committee. *First-year (G1) students who have not yet assembled a committee only need to secure approval from their research advisor.*

Along with the submission of the Annual Graduate Student Activity Report, all graduate students in the Department of Chemistry will also schedule an Annual Review Meeting. The date of this Annual Review Meeting will be included on the last page of the Annual Graduate Student Activity Report. For first-year students, the Annual Review Meeting will be a one-on-one meeting and progress assessment with the faculty research advisor. For second-year students, the Annual Review Meeting will be the Oral Qualifying Exam. For third-year students, the Annual Review Meeting should be scheduled in association with the Third Year Seminar Presentation and should include all Thesis Advisory Committee members. This meeting could take place immediately after the Third Year Seminar Presentation. If this is not possible, it should be scheduled shortly thereafter. For fourth-year students and beyond, the Annual Review Meeting will be scheduled with all members of the Thesis Advisory Committee and should take place annually.

The format of the Annual Review Meeting for fourth-year students and beyond is flexible. The Annual Review Meeting for fourth-year students should not take longer than one hour. The Annual Graduate Student Activity Report will be the basis for discussion, but a student's research advisor may also request that a student prepare a short research presentation describing their progress as well. Students should discuss the format of the meeting with their research advisor.

Dissertation & Final Oral Examination

After the student has completed their PhD research to the satisfaction of their research advisor, they submit and defend a doctoral thesis. Information outlining the necessary steps to preparing a PhD defense, as well as a thesis manual, can be found online at https://www.rochester.edu/college/gradstudies/academics/phd-defense.html. Also available online is the graduate academic calendar which can be found at https://www.rochester.edu/college/gradstudies/events/academic-calendar.html. This calendar can be helpful to students when planning for a specific date of degree conferral and registration deadlines.

Approximately three months prior to defending their thesis, the student should consult with the Graduate Studies Coordinator regarding the procedure for registering their thesis for the final exam. Please note that the registration of a PhD thesis is an online process that requires many levels of approvals at the University of Rochester; **it is critical that students submit a PDF of their thesis and the necessary paperwork to the Graduate Studies Coordinator *at least* six weeks before their planned defense.** If a student does not submit their thesis and registration information on time, we cannot guarantee the requested defense date.

The final defense consists of a departmental seminar followed by a question-and-answer period. The candidate and committee then meet in private for the final oral examination. The committee usually requires some revisions before the PhD thesis is finalized, and the PhD candidate should allow for sufficient time to complete these revisions after the thesis defense and prior to leaving the Department. Following successful completion of the final oral examination and revisions, a final corrected copy of the thesis is uploaded to the PhD registration site by the student. The PhD copy is marked as received and accepted by the Graduate Dean's office. If significant changes are recommended, signatures may be required from the research director and/or other members of the committee indicating that the corrections are satisfactory.

Also included with the final upload of the corrected thesis, the student will be asked to make decisions on public access to their thesis. All theses are eventually publicly accessible, but in order to finish publishing papers and patenting discovers, it is common to request an embargo period (1-2 years) before releasing the thesis to the public. This may be a sensitive issue for some research, so it is best for students to discuss access and publishing plans with their research advisor prior to submission, especially if patentable results have been obtained.

Teaching

All Ph.D. students must participate in the Department's teaching program, which enables graduate students to develop essential communication and leadership skills as teaching assistants (TAs). These skills are highly valued by employers that seeking to fill positions that require Ph.D. degrees, whether in industry, government, or academia. During the graduate orientation week prior to their first semester in the program, students participate in a half-day TA training session. These training sessions focus on introducing students to the spaces in which the introductory lab classes are taught. In addition to the introductory lab courses, including General Chemistry (CHEM 131L/132L) and Organic Chemistry (173/207/208/210), students may also have the opportunity to teach upper-level laboratory courses, lecture courses, or serve as instrument or lab prep TAs.

The upper-level laboratory courses include the advanced synthesis lab (CHEM 234) and physical chemistry labs (CHEM 231/232, CHEM 244). Lecture courses that may be assigned graduate student TAs include general chemistry (CHEM 131/132), inorganic chemistry (CHEM 211), quantum chemistry (CHEM 251), thermodynamics (CHEM 252), and biological chemistry (CHEM 262). Students may also be assigned one or more units of "instrument" or "prep" duties for general and organic chemistry labs. The instrument TA assignment involves coordinating and supervising the collection of NMR spectra for the organic chemistry labs (207, 208/210). Prep TA duties include preparing reagents and equipment for each week's lab, making sure the labs are clean and organized, and removing waste.

Teaching Requirements. Students are responsible for a total of six units of teaching during their Ph.D., where a unit represents 3 hours of contact time, one office hour per week, TA meetings, and grading. This amount of contact time translates to one lab session per week or two 75-minute workshop sessions. One unit of prep TA or instrument TA assignment corresponds to seven hours per week, but does not include a grading requirement. A *typical* teaching assignment consists of two units of teaching during the first semester, two units of teaching during the second semester, and two units of teaching in either the first or second semester of the second year of graduate school. Students who are supported by external fellowships that preclude their participation in teaching (e.g., the NSF GRFP, NIH CBI) should complete their teaching requirement after their fellowship has concluded.

Grading Requirements. Students are responsible for grading lab reports and/or assignments associated with their teaching assignment (i.e. lecture or laboratory section). TAs for the large introductory lab courses (CHEM 131L/132L, CHEM 173L, and CHEM 207/208) are required to grade two midterm exams and a final exam for the lecture components of these introductory courses *in their entirety*. Graduate TAs assigned to support upper-level undergraduate or graduate-level lecture courses may be required to grade two midterm exams or one final exam for introductory courses, dependent on the grading commitment of their assigned course. Individuals assigned to TA upper-level laboratory courses (e.g. CHEM 210, 231, 232, 234, 244) are exempt from additional grading responsibilities. Grading assignments will be made as appropriate by instructional staff and will be communicated to the teaching assistant at least one week prior to the exam. All TAs grading for a particular exam must contribute to the grading until the exam is complete.

Teaching Assistant Expectations. Teaching assignments are made prior to the beginning of each semester and are based on the following criteria: (i) course enrollment, (ii) faculty requests for certain

TAs, and (iii) the expertise and interest of the graduate TA. **Importantly, the obligations of a student's TA assignment take precedence over attendance at group meetings and subgroup meetings.** For example, TAs are expected to leave group meeting early, if necessary, in order to make it to their assigned lab/workshop/TA meeting on-time. For labs, "on-time" is 5 min before students are scheduled to arrive. The staff making the TA assignments make every effort to accommodate a student's schedule, but are not always able to accommodate every group or subgroup meeting obligation. Avoiding conflicts related to a course the TA is taking will be prioritized. Students who are not formally assigned to a lab are not considered to have group or subgroup meeting obligations.

A graduate student who fails to perform assigned teaching responsibilities at an acceptable level will receive a letter describing the problems from the faculty/staff member with immediate responsibility. An acceptable level of performance is defined as showing up for assigned labs/workshops on time (≥5 min *before* the start of class), completing grading assignments according to deadlines set by the instructor, and conducting oneself in a professional and respectful manner toward the students, fellow TAs, and the faculty instructor. A copy of the letter describing deficiencies in TA performance is placed in the student's academic record and will be taken into consideration in fellowship decisions. If a student believes that the charge is unwarranted, they appeal the charge to the Graduate Studies Committee in writing. Upon a second offense, an additional letter documenting issues in behavior is placed in the student's file, and any department fellowship held by the student is cancelled. The student will no longer be eligible for departmental fellowships and is placed on probation. For a student on probation, any additional offense leads to a recommendation for dismissal from the Chemistry graduate program. For especially egregious breach of professional behavior, appropriate action (including a recommendation for dismissal) may be taken by the Department or University. Additional information on consequences of misconduct is provided in the *Graduate Bulletin*.

Outstanding teaching performance is rewarded with special teaching awards each year (Walters Teaching Award, Edward Peck Curtis Award). This teaching performance is assessed based on letters of recommendation from faculty instructors. Students may also receive formal feedback on their teaching performance through the online course evaluation system.

Students entering the program from another graduate program at an institution within the U.S. may request that prior teaching experience be applied toward the teaching requirement. A description of prior teaching activities should be submitted in writing to the Chair of Graduate Studies for approval by the Graduate Studies Committee no later than one month after the start of the semester they matriculate into the program.

Fellowships and Awards

Departmental Fellowships

The Department of Chemistry offers $3,000 fellowship awards to students who demonstrate excellence in their graduate work. As a student progresses through the PhD program, the criteria for fellowship selection change, depending on the specific goals of that phase of the program (see below). The title of the fellowship corresponds to the source of the funds used to support the award, and so there may be variation in the names of the fellowships given below. These fellowship awards are added on to a student's stipend and are distributed over the course of one academic year (September to August).

Eligibility. To be eligible for a Departmental Fellowship, a student must have completed their Annual Graduate Student Activity Report and submitted the document on time. Additionally, a student must be in good standing and plan to be enrolled in the PhD program as of September 1st of the award year. Awards are made based on accomplishments and professional development over the previous year; hence, no preference is given to current fellowship holders in the selection of subsequent fellowships. Students who actively hold external fellowships that prescribe the level of stipend support (e.g., NSF GRFP, DOE SCSGR) or university fellowships (e.g., Sproull, Provost, Hooker, Messersmith) are not eligible to receive additional support through Department of Chemistry Fellowships.

Selection Process. Fellowship decisions are made by the Graduate Studies Committee each summer. A departmental announcement will be issued in June, providing information related to application materials and due dates for Department Fellowship applications. Applications are typically due in mid-July. No formal application is necessary for the Sherman-Clarke Fellowship (first- and second-year students). Fellowship recipients will be notified by the end of August.

Second-Year Students. Second-year students are eligible to compete for the Sherman Clarke Fellowship (SCF). Criteria for this award is primarily focused on student academic performance. Recipients will typically have excellent grades (> 3.7 GPA). Evidence for satisfactory performance in teaching is also a criterion for this award. No application is required for consideration for the SCF; the Graduate Studies Committee obtains student GPAs from the Office of Graduate Education and Postdoctoral Affairs. Note that the SCF is also awarded to incoming first-year students, as decided by the Graduate Recruiting Committee. Students who received the SCF in their first year are eligible to receive the SCF again in their second year.

Third-, Fourth-, and Fifth-Year Students. There are a number of named fellowships available to students who have advanced to candidacy. Criteria for these awards primarily focus on excellence in research, usually demonstrated through publications and presentations. To apply for one of these named fellowships, students submit a CV, two letters of recommendation from faculty members, a 2-page statement of research accomplishments (Arial or Times ≥ 11 point font, with 1-inch margins), and a 300-word statement describing service/activities. While statements can include information summarizing student achievements over their entire time as a graduate student, the most successful applications will focus on accomplishments/progress made over the past academic year. Specific guidelines for fellowship applications will be communicated via e-mail to students and faculty from the Chair of Graduate Studies.

University Fellowships

The University of Rochester awards additional fellowships each academic year to graduate students in the natural sciences: for second and third year students, the *Donald M. and Janet Barnard Fellowship*, and for students in their third year or above, the *Elon Huntington Hooker* and *Agnes and George Messersmith Fellowships*. The Chemistry Department is allowed to make a limited number of nominations for each of these fellowships, and as such, will limit nominations of graduate students from our department to one university-level fellowship per academic year. A departmental announcement will be issued early in the Spring semester, providing information related to application materials and due dates for University Fellowships. It is noted that typically University Fellowships are due during the month of January, with quick turnarounds. Students interested in being nominated for these awards are encouraged to begin working on their application materials at the end of the prior semester. While specifics of the requirements for each fellowship change from year to year, typically students will need to submit an up-to-date CV and a two-page summary of research activities. To be considered for nomination, students must submit their application material to the Graduate Studies Committee, which will select the students who are most likely to be competitive at the University level. Application materials are typically identical to those for upper-level, department fellowships. Students who are awarded University fellowships receive a $3000 fellowship award on top of their stipend.

In a given year, the University may decide to open additional fellowship competitions to students. Many of these applications will have a limited number of submissions from each department. In these cases, announcement of the fellowship competitions will be made via e-mail, and applications will be initially submitted to the Graduate Studies Committee, who will select individuals to advance to the University competition. Additional compensation for these alternative fellowships is set by the University and will likely vary from amounts indicated for other University and Departmental Fellowships. Please contact the Graduate Coordinator if you have questions.

External Fellowships

There are a number of external sources of funding support that are specifically designed to support the stipends of graduate students. Students are strongly encouraged to apply for these fellowships. These fellowships typically specify the stipend that the student is to receive and conditions of the award; the department must follow the fellowship sponsor's policies. In the event that the award is less than the current departmental stipend level, the award will be supplemented by the student's research advisor, as allowed, to bring the student's stipend to the fellowship level provided by the department.

Examples of external fellowships include (but are not limited to): National Science Foundation Graduate Research Fellowships, National Institute of Health F31 Fellowships, Department of Energy SCSGR Fellowships, George and Daisy Soros Fellowship, and National Defense Science and Engineering Graduate Fellowships. For additional opportunities, students may wish to consult the list of funding opportunities maintained by Johns Hopkins University (https://research.jhu.edu/rdt/funding-opportunities/graduate/).

Graduate Student Awards

The Department recognizes outstanding graduate students with two honorific awards each year. A departmental call for nominations will be issued early in the Fall semester, and the deadline for nomination is typically mid-October. Award recipients are recognized at the Department's annual Fall Awards Ceremony.

W.D. Walters Teaching Award. The *W. D. Walters Teaching Award* recognizes outstanding undergraduate teaching by graduate teaching assistants. This award memorializes the late Professor W.D. Walters and the standards of excellence and achievement he exemplified. It also recognizes the department's appreciation for the commitment and achievements of the awardees and consists of a cash prize. Nominees must have at least two semesters of teaching experience at the University of Rochester. Nominations should come from faculty who have directly supervised the student in their role as teaching assistants in undergraduate courses.

Outstanding Graduate Student Award. The *Outstanding Graduate Student Award* was established at the request of an alumnus who wanted to recognize excellence in research, leadership, and service by a senior graduate student. Eligible students must be in their fourth year or later. Recipients must exemplify the following qualities: (1) a passion for learning and a steadfast diligence in research; (2) a dedication to teaching and mentoring, (3) a commitment to helping their community. Recipients must demonstrate *outstanding service* to the Department, as well as to the University and/or larger scientific community. In addition, the recipient must have made significant intellectual contributions to their group's research. Application materials include a CV and letters of recommendation (one or more from a faculty member, and one or more from a non-faculty member, i.e. students, peers, staff, etc). The award consists of a medal, a cash prize and the winner's name on a plaque to be placed in the Chemistry Department Office.

University Awards. The University also gives two awards to graduate students: the *Edward Peck Curtis Award for Excellence in Teaching by a Graduate Student* and the *Outstanding Dissertation Award*. These awards have a limited number of submissions from each department. As such, a student must be nominated by the department following an internal competition. Nominations for these awards will be solicited from faculty for consideration by the Graduate Studies Committee.

External Limited Submission Awards. There are a number of external awards for which graduate students can apply. Many of these awards are 'limited submission', i.e., a department or university may only nominate a restricted number of students. It is the Department's policy that all internal selection processes for limited submission awards are coordinated by the Graduate Studies Committee. Students that identify a limited submission award opportunity that requires departmental endorsement should contact the Chair of Graduate Studies at the earliest opportunity to coordinate the nomination process.

Travel Awards. The Department of Chemistry provides up to $500 toward the attendance of one (1) conference related to the student's PhD research. For information on how to access these funds, please consult the Graduate Coordinator. Additionally, travel awards for both domestic and international conferences are awarded annually on a competitive basis. Calls for applications will be solicited in November for awards to support travel in the following calendar year. Every research group can submit one domestic and one international travel grant application per year. Groups with >6 graduate students may submit one additional application (either domestic or international) that will be considered if awards

remain after considering the initial pool of applicants. As such, we encourage interested students to consult with their advisors prior to applying for travel awards. Successful applicants will be offered reimbursement for 75% of expenses up to a maximum reimbursed amount of $1500 (for domestic conferences, including Canada) or $2500 (for international conferences); students' research advisors are responsible for reimbursing the remaining 25% of conference costs. Students are eligible for one departmental travel award (domestic or international) during their time as a student at the University of Rochester. Applications will consist of the following materials: (i) a one (1) page statement on how attendance will benefit the student's professional growth; (ii) a Curriculum Vitae; (iii) a recommendation letter from their research advisor that specifically addresses the importance of attending that particular conference (may be submitted separately by the advisor). Only students who will be presenting research at the conference (i.e. poster or oral presentation) are eligible.