

About This Handbook

The *Graduate Student Handbook* reflects the policy of the **Graduate Program in Chemistry**, as determined by the faculty and in accordance with rules outlined by the Purdue Graduate School and the College of Science.

The Department Head, the Associate Head for Graduate Education, the Assistant Head, and the Graduate Studies Committee share responsibility for oversight and implementation of policies related to all aspects of the graduate program.

This handbook includes both policies and supplementary information. Policies are contained in a grey box; a majority vote of the faculty is required to enact changes in policy and the dates of those meetings are shown.

The general objectives of this handbook are:

1. To provide graduate students with information about the expectations and requirements for completion of their graduate program of study
2. To guide students toward personnel who can assist them
3. To outline policies that relate directly to graduate students
4. To serve as a supplement to the Purdue University bulletins and policies governed by the Graduate School, or interdisciplinary programs (e.g. PULSe).

This is the July 2019 Printing of this handbook.

*It is the responsibility of the
Department of Chemistry to train
graduate students – using course work,
teaching assignments, and research –
so that upon graduation their
attainments are a credit both to
themselves and to Purdue University.*

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Milestones of the PhD Program

This table lists the major events that will typically happen in each semester (though your personal experience may vary), along with the page in this handbook describing the event.

Semester	Milestones
Fall Year 1	August: start! September: first cumulative exam (p. 7) Sept/Oct: thesis interviews and advisor matching (p. 19) November: group placement
Spring Year 1	March: departmental fellowship applications (p. 32) End of semester: plan of study should be submitted (p. 4) End of semester: advisory committee selected (p.21) August: annual report (p. 26)
Fall, Year 2	ANYL DIVISION: Literature seminar (fall or spring, p. 12)
Spring Year 2	March: departmental fellowship applications (p. 32) April: cumulative exams must be successfully completed (p.7) August: annual report (p. 26)
Fall Year 3	Original Proposal Preliminary Exam (p. 10) CHED DIVISION: Seminar second or third year (p. 15)
Spring Year 3	March: departmental fellowship applications (p. 32) PHYS DIVISION: Research seminar deadline (p. 14) INORG DIVISION: Literature seminar (p. 13) CHED DIVISION: Dissertation proposal (p. 12) August: annual report (p. 26)
Fall, Year 4	BIOCH DIVISION: Research seminar (p. 12)
Spring Year 4	March: departmental fellowship applications, including Bilsland (p. 32) ORGA DIVISION: Research seminar deadline (earlier encouraged, p. 13) ANYL DIVISION: Research seminar (p. 12) August: annual report (p. 26)
Fall Year 5	CHED DIVISION: research seminar (p. 12) INORG DIVISION: research seminar (p. 13)
Spring, Yr 5	Thesis defense and deposit (p. 16)
Every Semester	Appointment: Faculty selects TA or RA in July, November, and April. If TA, final assignment will be made in the week prior to the start of the semester in fall, and by the previous finals week for spring and summer. (p. 31) Evaluation: Research grade completed by your major advisor (p. 29)

Requirements of the PhD Program

Completion of the PhD degree requires completion of the following five items. Details on each item are included in this section:

1. Coursework: Successful completion of graduate-level coursework, with the minimum required GPA, as outlined in an approved Plan of Study.
2. Qualifying examinations: Passing at least five cumulative exams within the first four semesters.
3. Preliminary examination: Passing an oral preliminary exam, called the "Original Proposition" or "OP" exam, typically completed in the fifth semester.
4. Seminar requirement: Presentation of a departmental seminar.
5. PhD Dissertation submission and defense: Submission of a dissertation of original research, including at least one peer-reviewed paper (or preprint), and successfully defended in a public presentation and oral examination with a faculty committee.

Exceptions to any of the requirements listed in this section must be approved by the Graduate Studies Committee.

Coursework

The coursework requirements are listed below. Typically, students will complete all coursework in the first three or four semesters.

POLICY: Coursework Required for the PhD:

Each student must earn credit (maintaining a grade-point average no less than 2.8) in a minimum of 18 hours of graduate courses (600 level or approved 500 level). The student is expected to gain approval of their Plan of Study from their Advisory Committee, once established, in order to ensure both depth and breadth in the scope of coursework. The decision to approve the Plan of Study will be performed exclusively by the Advisory Committee. It is strongly recommended that courses in at least three areas of study be completed during the first two semesters. At least nine of the eighteen hours must be in Purdue chemistry courses. No course grade lower than a "C" may be included in the Plan of Study. No changes may be made to a Plan of Study without approval of the student's Advisory Committee. Part of the course requirements may be satisfied by credit in graduate courses from another institution, subject to the approval of the Advisory Committee.

approved by the Faculty, March 23, 2017

The PhD requires 90 credits total on the West Lafayette campus, including both coursework and research (CHM 69900) credit.

In addition to the minimum GPA of 2.8 to complete the degree, students must have a minimum graduate GPA of 2.5 (out of 4.0) at the end of the first two semesters of graduate study to continue in the graduate program. In exceptional cases, students may apply to the Graduate Studies Committee for a waiver to this requirement.

The Plan of Study is an online form that can be accessed through the MyPurdue system. The Plan of Study is the formal documentation with the Graduate School that identifies the student's major advisor and other members of the Advisory Committee, and lists the approved coursework for the PhD degree.

The Plan of Study is typically completed by the end of the first year (including summer) of study. The student's major advisor and other members of the Advisory Committee play a major role in developing a plan of study, and students should actively include the Committee in consultations about which courses are most appropriate, considering student needs, interests, and experience. No Plan of Study will be approved by the department or the Graduate School without approval of the Advisory Committee.

Students should submit a DRAFT plan of study, which is reviewed by the Main Office to ensure it meets all requirements and guidelines. After review, students can then submit the FINAL plan of study, which is routed to the Advisory Committee, the Main Office, and the Graduate School for formal approval. Students should ensure that the Advisory Committee supports the plan prior to FINAL submission.

The Plan of Study requires you to identify courses as being "Primary" or "Related". Primary courses are those within your division, and related courses are those in other divisions or other departments that support your research and broader chemistry education.

Additionally, you must register for research (i.e. CHM 69900 for the PhD degree or CHM 69800 for the MS degree) in EVERY SEMESTER you spend at Purdue other than your first. Long after you've finished coursework, you will still register for CHM 69800 or CHM 69900, in order to maintain status as a student at Purdue.

Seminars, including division seminars and others, should not be listed on the Plan of Study.

Students wishing to apply previously-earned graduate-level coursework to the Plan of Study (for example, from a Master's Degree earned at a different institution), should consult with the Main Office for details. There are some

restrictions, but typically up to three courses (nine credits) of MS coursework can be applied to the Plan of Study, if the student's committee approves.

Plans of Study can be changed (including when there is a change to the membership of the Advisory Committee); all changes must follow the same guidelines and be approved by the Advisory Committee.

Courses in the Chemistry Department use the prefix CHM, and follow a numbering scheme for the five-digit course number.

- The first number is **5** for dual-level (undergraduate and graduate) courses, and **6** for graduate-level courses where undergraduate students are not allowed.
- The second digit refers to the division within chemistry: **2** for Analytical, **3** for Biochemistry, **4** for Inorganic, **5** and **6** for Organic, **7** for Physical, and **9** for Special Topics and Seminars.
- CHM 69500 is reserved for seminars; there are many different sections and students should register carefully.
- CHM 69600 is reserved for Special Topics courses, which vary from semester to semester (students may take multiple CHM 69600 courses on different topics, with Committee approval).
- CHM 69800 is reserved for MS Research credit, and 69900 is reserved for PhD Research credit.

Course offerings and instructors for each semester are typically determined by each division and reported to the Department Head at least one semester in advance. Descriptions of all courses are available in the University Catalog at <http://catalog.purdue.edu>.

Cumulative Examinations:

Students must pass at least **five** cumulative examinations (or “cumes”) within the first four semesters (fall and spring) of graduate study.

The cumulative exams have four primary objectives:

- **Assessment:** Testing each student’s critical thinking skills and the depth of topical understanding
- **Education:** Promoting the development of critical thinking skills and knowledge depth
- **Active Learning:** Reading and comprehending selected current scientific literature and related foundation concepts, such as textbooks and reviews
- **Feedback:** Making students aware of weaknesses or gaps in their knowledge, and providing points of reference for assessing their own progress through the program

Cumulative exams are typically one of three types:

1. **Foundational Knowledge:** These cume exams are based on important foundational concepts in a given area of chemistry. They may be based on coursework from either 1) Purdue or 2) a prior institution. These exams generally test strength in knowledge of a specific area of chemistry. The topic may or may not be announced prior to the exam.
2. **Analysis of the Literature:** These cume exams are based on primary literature. They should test a student’s ability to read thoroughly, think critically, and analyze a paper or papers in a given field. Students may also be required to apply foundational conceptual knowledge to properly analyze the given paper(s). The paper(s) may be announced ahead of time, or they may be provided at the exam.
3. **Knowledge Obtained in Seminars:** These cume exams are based on departmental seminars in a given area of chemistry. These exams test the students’ ability to extract and retain knowledge from an expert in a field of chemistry.

Scheduling:

- Cumulative exams are offered on ten dates in each academic year (August through April).
- All exams are usually held in WTHR 200 on either **Saturday afternoon** from 1:00-3:00 pm (**fall semester**, to avoid conflict with graduate students who are teaching Saturday morning labs) or **Saturday morning** from 10:00 am to 12:00 pm (**spring semester**).

Examination Details:

- Five different exams are prepared for each session, using topics from the traditional areas of chemistry (analytical, biochemistry, inorganic, organic and physical).
- Exam questions are written by faculty from each of the divisions. The identity of the writer is not provided prior to the exam, but the division may elect to share information about the topic that will be tested. Watch carefully for emails from the Graduate Coordinator, which share such details.
- Students may attempt more than one topic during any session.
- Students may complete an exam in any topic; the topic does not need to be in the student's or major advisor's division. Students may repeat a topic, if they find they are more successful in one area of chemistry. For example, passing five cumulative exams in organic chemistry is acceptable.
- The passing score is determined by each division for each exam, with the exception of the Physical Chemistry Division for which a passing grade is always > 50%.
- The department Website has further details, including a posted list of exams topics for the Biochemistry exam, and additional policies for the Organic Chemistry exam. This information is available at www.chem.purdue.edu/academic_programs/exams/index.php

During the Exam Period:

- A maximum of two hours is allowed per cumulative exam session
- Questions regarding the exam are addressed by the proctor during the first 10 minutes only and silence is maintained through the remainder of the exam period.
- Simple calculators may be used at the cumulative examination, but computing calculators, cell phones, or any device capable of storing or accessing other information is not allowed.
- Special exam accommodations must be arranged with the University's Disability Resource Center; it is the responsibility of the student to inform the department of approved exam accommodations.

After the Exam:

- Our goal is to have cumulative exams scored and results distributed within approximately two weeks of the exam date. Please be patient, however; grading delays can happen.
- Individual results are sent privately, in letter form, to each student's postal mailbox and to the major advisor. A copy of the letter is

retained in their main office files. The Main Office will send an email to all graduate students when results are available.

- The overall score distribution and grade cutoffs will be posted on bulletin board 2B (outside BRWN 2124).
- Following grading, students may request to see their exam booklet in the main office, and may review grading with the professor who wrote and graded the exam. However, exam booklets are retained for only 2 months after the date of the exam. Requests and discussions with the professor should happen promptly.

Sources of Help:

- The Graduate Student Advisory Board (GSAB) offers assistance to graduate student concerned about cumes.
- Prior cumulative exams (and, in most cases, their answers) are published on the department's website (For Students > Graduate Programs > Cumulative Exams) at: www.chem.purdue.edu/academic_programs/exams/index.php

Other Important Policies:

- A record of your cumulative exams will be part of your graduate records and visible to your advisor, but not part of your official transcript from Purdue.
- If a student is only able to pass three cumulative exams within the first four semesters, he or she may appeal to the Graduate Studies Committee (with the support of their thesis advisor) to request an extension of one additional semester to complete the remaining two exams in the semester starting the 3rd academic year.
- No student may proceed to their Oral Preliminary Exam (OP) without having first passed five cumulative exams.

- Failure to pass the cumulative exam requirement will require that the student changes their objective from a PhD degree to an MS degree, or leave the university without a degree.

Cumulative Exam Schedule for 2019-2020 Academic Year

Fall Semester 2019	Spring Semester 2020
<u>1:00pm – 3:00pm</u>	<u>10:00am – 12:00 noon</u>
August 24, 2019	January 18, 2020
September 14, 2019	February 8, 2020
October 12, 2019	February 29, 2020
November 9, 2019	March 28, 2020
December 7, 2019	April 18, 2020

Cumulative Exam Schedule for 2020-2021 Academic Year

Fall Semester 2020	Spring Semester 2021
<u>10:00am – 12:00 noon</u>	<u>10:00am – 12:00 noon</u>
August 29, 2020	January 16, 2021
September 19, 2020	February 6, 2021
October 17, 2020	February 27, 2021
November 14, 2020	March 27, 2021
December 5, 2020	April 24, 2021

Preliminary Examination

The oral preliminary examination establishes each student's candidacy for the PhD degree. The preliminary exam must be completed and defended by the end of the fifth semester (fall and spring) of graduate study, unless an extension is granted by the Graduate Studies Committee. In the Department of Chemistry, this examination consists of two features, the Original Proposition (OP) and the Dissertation Research Summary:

An Original Proposition (OP):

- The OP must originate with the student. Some divisions require that the OP not be related to their doctoral research or prior research work if the student entered the program with an MS degree.
- The OP should include a concise statement of the problem or hypothesis to be tested, its significance and originality, why the proposal is superior to previous approaches (if applicable), how it is proposed to address the problem, what difficulties can be expected in the course of the project (and their solutions), and what will be accomplished by addressing the project.
- Although the student is expected to have a complete knowledge of the area(s) related to the OP, the written OP document should not include an extensive review of an area.
- The OP should outline a research program, as opposed to a single experiment.

A Dissertation Research Summary:

- The Dissertation Research Summary will be primarily based on the second year research report (see p. 26). However, as appropriate,

At least three weeks prior to your exam date, you must:

1. Confirm the date and time (2 hours) with all members of the committee.
2. Consult with the Main Office to reserve a room and verify all deadlines.
3. The Main Office will complete the online "Request for Appointment of Examining Committee" form (Form 8). Date, time, room, and committee member names are required.

Your OP document and dissertation research summary must be submitted to the Main Office at least two weeks before the scheduled exam date.

The Graduate School requires all approvals on the Form 8 by two weeks before the exam date; starting early ensures time for your major advisor and the Department Head proxy to sign.

students should add a supplement to be up-to-date (to include accomplishments completed after the second year report but before the preliminary exam), and should include a discussion of directions that future research might take. The summary should also discuss any improvements noted by the student's Advisory Committee when they received the second year written report. Students who complete the OP prior to the fifth semester should submit the second year research report early.

Proceedings of the Examination:

- The oral examination will begin with a presentation by the student
- The committee will discuss the original proposition and research summary.
- The committee will feel free to interrupt the student at any time and probe, by detailed questioning, the depth of the student's understanding of the proposal and research.
- The committee shall meet with the student in the absence of the major professor at the conclusion of the Oral Preliminary Examination in order to counsel the student regarding any issues about their experience in graduate school.

Dress should be professional; snacks and refreshments for the committee are not necessary.

Seminar Requirements

All students will present a formal seminar in their division's seminar series. The timing and content of the seminar must be consistent with the guidelines below (varying by division). Students should register for one credit hour of seminar in the semester when their seminar will be presented, and should register for zero credit hours in the semesters when they do not present.

The following statements have been prepared by the respective divisions to outline seminar policies. All requirements and expectations are subject to change. For further information, consult with the faculty member charged with teaching the seminar and/or the Division Head.

Analytical Chemistry: Tuesdays, 3:30pm, WTHR 320

Faculty and student attendance at seminars is essential to the success of this program. First year graduate students will attend seminars and participate in discussion, but do not present seminars. Second year students present literature seminars of about 20 to 25 minutes. Please sign up with the seminar chairperson. We will try to honor assignments but some changes may be inevitable to accommodate schedules of faculty candidates and other visitors. Fourth (or Final) year students are encouraged to present a research seminar. It may be advantageous to schedule it before job interviews. Sign up with the seminar chairperson.

Biochemistry: Mondays, 3:30pm, BRWN 4102

Graduate students in the Biochemistry Division must give one seminar open to the general academic community. This seminar shall be given in the fall semester of the fourth year, following advancement to candidacy. The subject of this seminar shall be an introduction to the student's research and their research accomplishments to date. The seminar should also present a clear outline and plan for finishing the dissertation work. A second seminar given in conjunction with the final oral examination and defense of the thesis shall be open or closed to the general academic community at the discretion of the major professor.

Chemical Education: Wednesdays, 4:30pm, BRWN 4102

First-year students are expected to attend the CHM 695 seminar program and participate in the discussion of these seminars. During their second or third year, each student will present a seminar. This seminar can describe work the student has done or survey an area of research in science education. During the final year, each student is expected to present a seminar that describes the work being done for the PhD degree.

Inorganic Chemistry: Tuesdays, 12:30pm, BRWN 4102:

Students present a literature seminar, ordinarily the semester after passing the oral preliminary exam, as well as a research seminar near the end of their studies.

- Prior to the literature seminar the student will submit a one-page abstract with references. The student will normally base the talk on several papers, critically evaluate the work, and put it into a broader perspective.
- Literature seminars should be approximately 25 minutes, including time left for questions.
- As much as possible, two students should be scheduled to present literature seminars within one regularly scheduled block.
- The focal points for the Faculty Evaluation will include the choice of topic, evidence of the command of the subject matter, organization, clarity of presentation, and effectiveness of the use of the time allotted.
- Attendance will be the primary criterion for satisfactory performance by non- presenters enrolled in the course.
- Each year the Division will choose a recipient(s) for the Ian P. Rothwell Award, based upon Faculty evaluations, for the best literature seminar as well as the best research seminar. This distinction includes a small financial award.
- Thesis defenses will be open for the public and considered to be research seminars. In order to increase both student and faculty attendance, thesis defenses should be, whenever possible, scheduled for the normal inorganic seminar time slot of Tuesdays at 12:30 pm in BRWN 4102.

Organic Chemistry: Tuesdays, 4:30pm, WTHR 104

The divisional seminar is intended to provide a weekly gathering of the students and faculty at which significant material from the field of Organic Chemistry, as broadly defined, will be presented and discussed at the highest professional level. Such meetings and discussions are an important part of professional life and regular attendance at and participation in the seminars is expected of students and faculty alike.

The seminar program includes a wide variety of speakers from Nobel laureates to nervous graduate students; being asked to present a seminar is one mark of acceptance as a professional. Each doctoral candidate is expected to present one seminar within the Organic Chemistry seminar series. The experience of preparing and presenting a seminar is often cited

by returning alumni as one of the more valuable parts of their professional training.

The seminar requirement for Ph.D. candidates within the Organic Division is such that students have the option of selecting a topic from either (a) PhD dissertation research, or (b) independent literature search.

This requirement should be fulfilled not later than the end of the student's eighth semester. Earlier presentations are highly encouraged.

One or more recent reprints and/or preprints (in press or submitted) as well as approval by his/her research advisor and the seminar chair will determine if a student qualifies for the option (a). It is expected with option (a) that the student will include in his/her seminar a discussion of the current and background literature relevant to their laboratory accomplishments. For both options, a 1-2 page abstract, complete with references (titles included), along the lines of a long abstract for an ACS National Meeting must be distributed the week before seminar.

Physical Chemistry: Wednesdays, 12:30pm, BRWN 4102

The Physical Division seminar provides a weekly forum for outside speakers, as well as faculty, students, and postdocs from Purdue, to present their latest research results. This gathering is well attended by faculty and students within the Physical Division as well as individuals with related interdisciplinary interests from all over the University. Active participation by new graduate students is vital for the continuing success of the program.

Physical Chemistry graduate students are required to give at least one research talk, either in the Physical Division seminar or in any one of the other divisional seminars in the Department. The format for a Physical Division seminar should be decided by consultation with the student's research advisor and the seminar chair. A seminar in any other divisional program should conform to the guidelines for that series. This requirement should be met by the end of the student's sixth semester, unless an extension is recommended by the student's research advisor.

The Ph.D. Dissertation Proposal in Chemical Education

After they satisfy the cumulative exam and original proposal components of the candidacy exam, graduate students working toward a Ph.D. in chemical education will prepare and present a dissertation proposal in chemical education that describes the research they intend to do for their Ph.D. degree. The proposal will survey relevant literature, describe the goals of the research, and provide detailed information about the research methodology that will be used in the study as described in the document: **Proposal for Dissertation Research in Chemical Education** (available on the Division of Chemical Education Web pages at the Department of Chemistry Web site).

The Ph.D. dissertation proposal in Chemical Education will be presented in an oral exam. The committee that will hear the dissertation proposal will consist of the four faculty the student expects will participate in the oral defense of the Ph.D. dissertation.

Thesis Requirements

Candidates for both the PhD and Master's Degree in Chemistry must submit a Thesis describing the results of their research. Regulations regarding the preparation of the Thesis are described in ***A Manual for the Preparation of Graduate Theses*** (8th Revised Edition). This manual is available from the Graduate School Thesis and Dissertation Office at <http://www.purdue.edu/gradschool/research/thesis/index.html>.

The Chemistry Department requires that PhD candidates include, as part of their Thesis, at least one reprint of a published article based on the student's research. Alternatively, a preprint based on the thesis research and written for submission to a peer-reviewed journal may be substituted. Note that this requirement is in addition to the short abstract described in the Thesis Preparation manual.

In accord with Graduate School policy, the Department of Chemistry has a resident Thesis Format Advisor who is responsible for verifying correct thesis format. Students must make an appointment with the Thesis Format Advisor to have their format reviewed at least four weeks before the final oral examination. *Please allow ample time for corrections to be made.* Final format approval must be complete not later than three weeks prior to the final oral examination date. The thesis should be complete, with the exception of minor corrections, approved by the research advisor, and ready for defense.

The graduate Dean requires that all final examinations be scheduled with the Graduate

POLICY: Thesis Defense

The thesis defense will consist of two parts:

The first part will involve a public presentation of the student's research accomplishments, with time and format arranged to permit questions from the audience. Immediately following the presentation, the candidate will be examined on the material in the thesis and on related topics by her/his examining committee which will consist of at least four faculty members, three members from the original plan of study committee plus one additional faculty member (this committee member does not need to be added to the Plan of Study).

Unless otherwise approved by the graduate studies committee, the fourth committee member must meet the same criteria as the other three committee members. If it is deemed desirable by the student, after consultation with the existing committee members, an additional (fifth) committee member can be added, pending approval by the graduate school (this additional committee member may be a person who would not normally qualify to be a primary member of the committee).

Approved by the Faculty November 3, 2015

School not later than two weeks prior to the examination date. The Chemistry Department therefore requires a three notice before the exam date. The receptionist in the Main Office (BRWN 2100) will assist students in preparing the paperwork and getting a room their final examination *after* they have passed thesis format review.

Copies of the thesis must be distributed to the student's examining committee at least one week prior to the final oral examination. It is the student's responsibility to duplicate and distribute their thesis. Some committee members may prefer an electronic copy. Students should check with each of their committee members to determine their preference.

After the completion of the final oral examination and after all final corrections to the thesis have been made, students can with the Thesis Format Advisor again to verify final format. The thesis must be deposited with the Graduate School Thesis Office, prior to the last day of classes (in fall and spring), and by mid-July (in summer).

The table below shows **approximate** deadlines for steps leading up to graduation with the PhD or MS. **THESE DATES ARE APPROXIMATE: You should confirm exact dates with the departmental format advisor (for thesis formatting dates) or with the receptionist in the Main Office.**

	TO GRADUATE IN AUGUST	TO GRADUATE IN DECEMBER	TO GRADUATE IN MAY
Preliminary Exam complete (all courses, all cumes, pass OP), with all digital signatures	the last day of the <u>previous year</u> summer term (early August)	the last day of the <u>previous year</u> fall term finals week (mid Dec)	the last day of the <u>previous year</u> spring term finals week (mid May)
Plan of Study approved and finalized (for MS students; PhD POS is due before OP)	Sunday before summer semester (Mod 1) classes start (mid May)	Sunday before fall semester classes start (mid Aug)	Sunday before spring semester classes start (early Jan)
Declare candidacy and enroll in CAND 99100 (or declare exam-only or degree-only), enroll in appropriate CAND course	Upon registration for summer, but no later than first week of June	Upon registration for fall, but no later than third week of Sept	Upon registration for spring, but no later than second week of February

	TO GRADUATE IN AUGUST	TO GRADUATE IN DECEMBER	TO GRADUATE IN MAY
Pass Format with Department Format Advisor	First appointment at least four weeks before defense date, final format approval at least three weeks before the defense date	First appointment at least four weeks before defense date, final format approval at least three weeks before the defense date	First appointment at least four weeks before defense date, final format approval at least three weeks before the defense date
Schedule Final Oral Exam (Form 8; deadline for <u>all</u> signatures and approvals)	Three weeks before the exam date, not later than late June	Three weeks before the exam date, not later than mid November	Three weeks before the exam date, not later than early April
Pass Exam (Form 11; deadline for <u>all</u> signatures and approvals)	Mid July	One week before the end of classes, late November	One week before the end of classes, mid April
Deposit Thesis	Late July		
Degree-only or Exam-only	Third week of June, with defense at least one week prior (for exam-only)	Second to last day before the end of classes in fall semester (early December)	Second to last day before the end of classes in spring semester (early May)

Students completing degrees between semesters or students who plan to defend their thesis (either PhD or MS) early in a semester may be eligible for a privileged registration at a reduced fee through “exam only” or “degree only” registrations. Students must be registered for at least one credit in the previous semester to be eligible. Contact the Main Office for details.

The Major Advisor and the Advisory Committee

Selection of the Major Advisor

POLICY: Selection of the Major Advisor

During the second week of the fall semester, the Head of Chemistry will meet with new graduate students to outline the procedure for selecting a thesis advisor and formally joining a research group, as follows:

- Student meetings with faculty (thesis interviews) begin in the third week of the fall semester.
- Students will be given a list of all faculty who are accepting graduate students during this interview session. The faculty will be listed alphabetically by name; their divisional affiliations will be given for purposes of information. Faculty will not be grouped by division.
- A departmental list of the schedule of research presentations to groups of students, including title of research presentation and number of openings that each faculty member expects to have available, will be prepared and distributed to the students prior to the interview period. Research presentations will occur during weeks three through six of the fall semester. Students are strongly encouraged to visit individually with faculty and lab members at any time up until they submit their final choice.
- Students must interview at least eight faculty members, and acquire their signatures or initials on the selection form. Students must have a more in-depth interaction with at least three groups, and must obtain signatures from three groups verifying these interactions.
- Graduate students will submit **two ranked choices for thesis advisor** on the thesis interview form to the Main Office (BRWN 2100). These forms can be submitted starting in the eighth week of the fall semester, and must be in by 5:00 pm on November 1. The forms will be tallied and distributed to the faculty for consideration. The students whose choices have been accepted by their preferred professor will be notified by the Department, usually by early November. Students who do not get their choice during the first round should meet with the division head or his/her designee to discuss options and procedures for the student for selecting a new advisor. This may include the students conducting additional interviews with prospective advisors. The departmental office will coordinate a list of faculty members with openings that will be made available for these students to continue the interviewing process. Their revised choice should be submitted to the Main Office within one week of meeting with the Division Head. Students may discuss their concerns with the Assistant Head, the Department Head, or his/her designee.

- Students selecting assistant professors as their first choice may complete the interview process and turn in their form as soon as eight initials/signatures have been obtained. When their choice has been accepted by the faculty, the students will be notified by the Department.
- In no instance shall a faculty member be forced to accept a student whom he/she regards as inappropriate for their group, nor shall any student be assigned to a faculty member without consultation and agreement. To this end, if an assignment cannot be made on the basis of a student's preferences then that student will be requested to consult a person designated by the Department Head.
- Situations not covered by these rules will be resolved by the Department Head.

Approved by the Faculty on May 10, 2011, with amendments on May 3, 2018

The boxes above describe the formal process for selecting a major advisor.

The major advisor will serve as the Chairperson of a student's Advisory Committee, and must be a Faculty member in the Department of Chemistry, and employed by Purdue University. Consult with the Main Office for details about Courtesy Faculty in Chemistry serving as a Major Advisor. Other individuals (e.g., faculty in other departments or faculty at other institutions) may serve on the Advisory Committee, if approved (see below).

Until such time as a major advisor is selected and finalized, the Assistant Head of the Department serves as an advisor and source of an official signature when required for any University purpose.

Selection of Advisory Committee:

New graduate students select a major advisor during their first semester, as described previously. In consultation with the major advisor, students should begin to recruit members of the Advisory Committee during the second semester of graduate study, following the policy guidelines below. A committee of at least three approved members will be necessary to submit the coursework Plan of Study in the third semester, and to complete the oral preliminary exam (the OP) during the fifth semester.

Your major advisor may make suggestions about other faculty willing to serve as committee members, but it is the responsibility of the student to approach and invite faculty to serve on the committee. Students are advised to remember that Advisory Committee membership is a significant time commitment for faculty, and that it may be helpful to have a formal meeting with prospective Committee members so that students may introduce themselves and their research interests.

Faculty will have access to the department's GradDB, the database which informs them about your progress and records at Purdue.

Three Advisory Committee members (including the Major Advisor) are required for the Plan of Study and the OP. Four members are required for the final defense of the PhD, and for the Dissertation Proposal in the Division of Chemical Education.

It is possible to select Advisory Committee members from other institutions (including faculty who were at

POLICY: Selection of Advisory Committee

Most students will select a thesis advisor during their first semester of graduate study. Each student's thesis advisor will guide him/her to select additional faculty to complete the Advisory Committee. The ultimate decision will be made by the student. All committee members must be approved by the graduate school. The student is encouraged to include committee membership spanning areas outside those directly aligned with the major thesis work. Two members of the committee must be from the Department of Chemistry. The makeup of the committee must avoid any potential conflict-of-interest that could bias the process that leads to candidacy or completion of the degree. This would include having two closely related committee members on the OP committee, such as a spouse, domestic partner, etc. The committee and student will develop a plan of study for the remaining courses needed to satisfy the student's departmental requirements.

Approved by the Faculty, November 3, 2015

Purdue, but move to a different institution). However, these individuals must be approved by the Graduate School to serve as a member of a PhD committee. This requires that the individual provide background information on their education, prior experience with graduate students, publications and a current CV. The Assistant Head of Chemistry can apply to the Graduate School for classification of this outside member as a “special” member (code S1), but this is not a rapid process. It may take several months or more, and there is no guarantee of final approval.

Students may also select professors from other departments at Purdue, as long as they are categorized by the graduate school as regular (code R1) members of the faculty, and as long as the student meets the Departmental requirement for two members from the Department of Chemistry.

Changing the Major Advisor

On occasion, students will change major advisors. This change may be student-initiated, advisor-initiated, or may result from the advisor leaving the department. Processes and options differ for the three situations.

POLICY: Student Initiated Major Advisor Change

Students should be aware that a change in advisor may result in:

- Limited choice of a new advisor, as fewer faculty may be available to accept students.
- Teaching assistantships may become the sole source of financial support.
- Graduation may be delayed, and extensions of financial support for more than five years are not guaranteed.

Students are strongly encouraged to discuss their situation with the members of their thesis advisory committee, the Graduate Studies Committee, their division head, or another trusted faculty member, depending upon how far they have progressed in the program. If there is concern about the discussion record, the student should clearly ask about confidentiality prior to the conversation. These advisors may wish to contact the student's advisor, or schedule a meeting together with the student and their current thesis advisor.

If the student determines, after consultation, that they desire to find another research group, potential advisors should then be sought. The student should inform the potential advisor of all other faculty involved in the discussions, including their current thesis advisor, so that the new advisor can discuss the situation with them. The student should recognize that the potential advisor may wish to discuss the situation with the current thesis advisor and other faculty. The potential new advisor should ask for consent prior to contacting the current thesis advisor.

[Student Initiated Major Advisor Change continued]

The student should then write a formal letter to the Head of the Department of Chemistry, requesting a change in advisors and justifying the change. After consultation with the faculty involved, the Head (or designated proxy) will issue a letter to the student, formally sanctioning the transfer. This letter will become part of the student's formal records and the graduate database will be modified accordingly. If the Plan of Study has already been approved, it is the responsibility of the student to initiate the formal Advisory Committee change with the Graduate School by submitting a revised Plan of Study.

Normal checkout procedures will apply to all transfers, including the required cleanup and verification with the departmental safety officer and return of keys. Research materials including lab notebooks and electronic data must remain with the original thesis advisor, and students may arrange for access or obtain copies of these materials if sanctioned by the original thesis advisor. It is the choice of the original advisor if they will allow the student to include work from their laboratory in the student's thesis or in any public presentation or publication.

Approved by the Faculty, September 2017

POLICY: Advisor Initiated Major Advisor Change

As per the Graduate School handbook, advisors may terminate students unilaterally. In chemistry, when a thesis advisor requires a student to leave their research group, the thesis advisor must clearly document and communicate to the student the reasons for the change. Such a change will typically also result in a "U" grade for research credits. If the issues leading to the change are long-standing, it is expected that the faculty member would have expressed the issues of concern in writing previously, and warned the student that removal from the group is a possibility.

Faculty members must notify the Department Head in writing when a student is removed from a research group. No student may continue in the graduate program in chemistry without a thesis advisor. Unless further action is taken by the Dean of Students or the Graduate School, the student has the right to seek a new major advisor. However, the student also has the responsibility to take an active role in seeking a new advisor, with consultation from the Assistant Head, committee members or other faculty (including the division head). No individual faculty member will be obligated to accept a student who has been removed from a different

[Advisor Initiated Major Advisor Change continued]

faculty member's group. A new advisor must be identified by the start of the following semester or an extension may be granted by the Department Head.

If a new advisor has been identified, the Head (or designated proxy) will issue a letter to the student, formally sanctioning the transfer, and stating all conditions of the transfer. This letter will become part of the student's formal records and the graduate database will be modified accordingly.

Normal checkout procedures will apply to all transfers, including the required cleanup and verification with the departmental safety officer and return of keys. Research materials including lab notebooks and electronic data must remain with the original thesis advisor, and students may arrange for access or obtain copies of these materials if sanctioned by the original thesis advisor. It is the sole choice of the original advisor if they will allow the student to include work from their laboratory in the student's thesis or in any public presentation or publication.

Approved by the Faculty May 5, 2018

There is no formal faculty policy regarding student options when a Major Advisor leaves Purdue, but the following offers some guidance:

There are several different options depending on the exact circumstances. Students are encouraged to consult with the Division Head or the Department Assistant Head to consider options.

If the student has not yet completed the OP, he or she may choose to remain at Purdue and switch to a new advisor, or may explore transfer to the new university with the Major Advisor. In the case of transfer, the Main Office can assist in transferring records.

If the student has completed the OP, the Graduate School considers them a PhD Candidate, and there are three options:

- OPTION 1: Stay at Purdue, find a new lab with a co-advisor: The professor who is leaving can't be your only committee chair, but he or she can be a co-advisor with another chemistry faculty member if there will be funding from your previous advisor and an ongoing collaboration with your new advisor.

- OPTION 2: Stay at Purdue, find a new lab and a new advisor: If there is no ongoing research or financial support from your previous advisor and you won't have any chapters in your dissertation related to that advisor, students should consider a shift to a new group. Students should be aware that this often requires the graduate support to be in the form of Teaching Assistantships; the support guarantee for five years from the date of initial enrollment continues to apply.
- OPTION 3: Move with the Advisor, but graduate with a Purdue PhD: The Graduate School allows PhD candidates to remain as Purdue students while they complete the thesis research at another institution through the "Research-in-Absentia" process. Students following this pathway must file a Research-in-Absentia request (Form GS-12) with the Graduate School, register for CHM 69900 every semester (including summer) and pay fees every semester (~\$3,000/y) until graduation. Students will need to add a co-advisor from the chemistry faculty. Teaching assistantship funding guarantees end, and financial support in-absentia comes solely from the advisor or, in some cases, external fellowships. Failure to pay the fees and register each semester will cause a revocation of research-in-absentia status. Students must physically return to Purdue to defend and deposit the dissertation. Students are advised to negotiate carefully with the advisor to see if there will be any assistance with moving costs, changes in the cost-of-living in the new city, support for the fees that must be paid to Purdue each semester, or travel costs for return to West Lafayette for the defense.

Reports and Evaluation

Success in graduate school requires regular feedback and evaluation, and the Department is committed to providing this feedback and assisting students in their professional development. The feedback provides the student an opportunity to assess his or her performance against the expectations of the Major Advisor and the Advisory Committee.

All graduate students will receive regular feedback on the various aspects of their work, and all graduate students are required to produce annual reports of progress, and to create annual Individual Development Plans (IDPs). These documents should be created in consultation with the major advisor, to ensure that everyone agrees about plans, goals, and progress.

It is important to note that continuation in the graduate program, as well as the five-year support guarantee is contingent upon satisfactory performance and progress.

Annual Report and Individual Development Plan

Annual evaluations and Individual Development Plans (IDPs) should be completed and submitted to the Main Office by the **final day of the summer semester**. The steps of the process are outlined below. This may take significant time, so students should plan to be working on the process at various points throughout the summer.

1. The student should create the following documents:
 - a. CV (written in a style consistent with the type of position that the student plans to seek following completion of the degree).
 - b. Research report (in the appropriate style for the year; see instructions below)
 - c. IDP (for the appropriate year; templates are available on the College of Science website at www.science.purdue.edu/graduate/idp.html)
 - d. Top portion of the Research Evaluation form, Advisor version; forms are available at www.chem.purdue.edu/academic_programs/graduate/annualreview.php
 - e. For 2nd year only, top portion of the Research Evaluation form, Committee version
2. The student should deliver these forms:
 - a. to the Advisor, by the deadline set by the advisor (this may be several weeks before the final departmental deadline, to allow time for review and discussion).

- b. to the Main Office. Students should submit electronically as a PDF document(s), to the receptionist at their email address using the following file naming convention: LastName_FirstInitial_YearX_description.pdf (for example, Einstein_A_Year4_CV.pdf or Faraday_M_Year2_Alldocs.pdf)
 - c. For 2nd year only, to the members of the Committee (substituting the Committee version of the Research Evaluation Form for the Advisor version).
3. The advisor will then complete the Research Evaluation form.
 4. The student and the advisor should meet to review all documents, and to discuss the completed Research Evaluation form. Both should then sign the form, acknowledging receipt and review of the evaluation.
 5. The student should deliver a copy of the signed evaluation form to the Main Office (along with updated copies of any other documents if there are significant edits following the review meeting). This is due on the final day of the summer semester.
 6. For the 2nd year only, Committee members deliver Committee version of the Research Evaluation form directly to the Main Office. The Main Office will notify the Advisor and the Student if any committee review is “unacceptable”.

The Advisor’s Research Evaluation form will be filed electronically in the GradDB and on paper in the permanent file in the Main Office. Students and advisors may request to review filed documents at any time. All other documents will be filed electronically in the GradDB only. Students may ask for copies of documents in the Main Office. Advisors have direct access to the GradDB.

Research Report: All research reports should summarize research questions and accomplishments, and should set goals for research in the following year. Year-specific requirements include:

- First year: Two pages maximum
- Second year: The second-year report should be modeled on the format of a three-page JACS Communication with appropriate listing of citations using ACS style. The report should conclude with a brief section on future research plans.
- Third year: Five pages maximum
- Fourth year and beyond: Five pages maximum. The report should include a timeline for completion of the degree, and an outline of the planned dissertation. Note that the Chemistry department typically limits the total time in the PhD program to seven years (see policy on the next page).

POLICY: Time Limits to Graduation:

[For the PhD]

The Purdue Graduate School permits each academic unit to establish an upper limit of time spent in the pursuit of a PhD degree. The policy of the College of Science and the Department of Chemistry shall be that seven years from entry into the graduate program (i.e., 14 semesters plus the intervening summers plus one additional summer to finish if necessary) be the maximum time allowed to complete the PhD in the College of Science. An additional year may be allowed if formally requested by the student's Thesis Committee and approved by the Graduate Studies Committee. Any exceptions to this policy require approval by the Department Head.

Approved by the Faculty of the College of Science, Feb. 22, 2000

[For the MS]

Students pursuing the Master's Degree at the West Lafayette campus must complete their degree program within six semesters from the date of entrance in the graduate program. Requests for extensions are considered by the Graduate Studies Committee on a case-by-case basis.

Approved by the Faculty, Feb 16, 1989

Research Grade for CHM 69800 and CHM 69900

Students taking research credit (CHM 69800 for MS, CHM 69900 for PhD) will receive a grade from the advisor at the end of each academic period (summer included). These are typically listed as Satisfactory (S) or Unsatisfactory (U). Following a grade of "U," the student and the advisor should meet to convey the reasoning for the unsatisfactory performance, and to establish clear goals and expectations for research work and productivity for the following semester. The Assistant Head will also meet with all students who receive a "U" grade. By Graduate School policy, two consecutive "U" grades mandate that the department take formal action and inform the student, in writing, about discontinuation or conditions for continuation of the student's graduate study. Receipt of two "U" grades for research is sufficient for discontinuation of a graduate student from the program and the university.

POLICY: Evaluation in Research Coursework

Enrollment in Chemistry 698/699 entails an expectation of reasonable progress in scholarly research. These expectations include: i) conducting independent research on the background, motivation, and prior work related to the primary subject of the research project, ii) actively participating in laboratory research at a level consistent with a professional research position, iii) contributing to overall laboratory operations, iv) following all safety guidelines and expectations associated with the research environment, v) following ethical research practices, vi) contributing to the written and oral dissemination of research findings, and vii) meeting the documented expectations of the thesis advisor. By signing up for the research credit, the student acknowledges agreement with the expectations set forth by the faculty member. By allowing the student to sign up for the research credits, the faculty member agrees that if the student completes the outlined tasks and deliverables, the student can expect a satisfactory grade for the research credits. Appropriate documentation will be provided by the advisor outlining reasons for the unsatisfactory grade

Approved by the Faculty November 14, 2017

Teaching Performance and Progress

Your teaching performance will be evaluated in two ways, through student evaluation and through evaluation from the instructor of the course.

Student evaluation: The student evaluations happen through the Purdue CourseEval system, which is administered by the Center for Instructional Excellence (CIE). Students will receive an email directly from CIE asking them to complete the evaluation. The exact questions asked may vary depending on the teaching assignment, and some TAs may not receive a student evaluation if their assignment includes limited direct contact with students.

Following the semester and the posting of final grades, TAs will receive an email directly from CIE with instructions for how to log in and view student evaluations. The Assistant Head and other teaching faculty and staff will also review these evaluations. Low evaluations may lead to a conversation between the Assistant Head and the TA; the goal of the conversation will be to create a plan for improved performance in the future.

It is highly recommended that you download the evaluations from the CourseEval site and archive them for your career portfolio. Evidence of excellence in teaching may be very helpful for your job search and for applications for fellowship support.

Instructor evaluation: Your teaching supervisors (including one or more of the course professor, the course coordinator(s), and the TA Supervisors) will also provide written feedback and evaluation at the end of the semester. They will have an opportunity to document either exceptional or unsatisfactory work. The Department will follow up on any reports of unsatisfactory work with a goal of helping you become a better teacher.

Continued financial support as a teaching assistant requires satisfactory or better performance. Upon the first unsatisfactory rating from an instructor, the TA will receive written notice, and will have conversations with the Assistant Head and with the instructor who provided the evaluation. The goal of these meetings is to clarify expectations and create a plan for improved performance in the future. A second rating of Unsatisfactory will make a graduate student ineligible for TA support; they must either secure RA support or bear the full cost of tuition and fees.

Students may view their evaluations by request in the Main Office.

Support and Appointments

Graduate Assistantships are a formal category of employee at Purdue, with well-defined expectations, benefits, and policies. Graduate Assistants perform a valuable service to the Department and the University through teaching, research, and service activities. The Chemistry Department guarantees at least five years of Graduate Assistantship support, contingent on satisfactory performance and progress.

Graduate Assistants typically receive both a tuition remission and a stipend. Graduate Assistants are responsible for paying certain fees, and are responsible to maintain health insurance. Financial details of assistantships may differ from student to student, and are explained in formal offer letters.

Policies Governing Support and Appointments

The “Graduate Staff Employment Manual,” published by the Graduate School, is the definitive source of policies governing the employment of graduate students. The manual includes tuition remission, vacation policies, parental leave, spousal benefits, leaves of absence, parking, taxes and I-9 visa requirements, among other topics.

<https://www.purdue.edu/gradschool/documents/gpo/graduate-student-employment-manual.pdf>

Five years of support

The Chemistry department guarantees five calendar years of graduate support, from the date of entry, for PhD students who maintain satisfactory performance and progress toward the degree (see the section of this handbook on “Reports and Evaluation” for the mechanisms by which satisfactory performance is assessed). Students who convert to a MS program will have guaranteed support for three years from the initial date of entry into the program.

This support typically comes in one of three forms: a teaching assistantship (TA), research assistantship (RA) or Fellowship. Appointments that include more than one form are allowed. The appointment and the amount of the stipend may change every semester. The major advisor makes the decision about which form of support will be used each semester, unless the student has external Fellowship support.

Continuation of support beyond the five-year deadline (or three-year deadline for MS students) is not guaranteed. Late career students beyond the deadline may find support as an RA (at the discretion of their major advisor) or as a TA (at the discretion of the Assistant Head, if TA positions are open).

Types of support

- **Teaching Assistantships** are the most common type of support for early-career students. TA roles vary by assigned course: some are laboratory only, some include recitation and help sessions, some are primarily grading support, and some are senior supervisory positions over other TAs. The Assistant Head makes the exact assignment, in consultation with appropriate faculty and staff, typically in the week before the semester starts. All TA positions carry an expectation of approximately 20 hours of work per week for a standard 2Q appointment. There are a few “TA” assignments that assist the department with various initiatives and facilities (e.g., safety, NMR, X-ray). The TA appointment may, on occasion, require evening or weekend work, but department policy states that there will be no required TA activities outside of the hours of 6am to 10pm.
- **Research Assistantships** allow students to work on funded research projects at the discretion of their Major Advisor. Within the departmental guidelines, the stipend rate for an RA is determined by the Major Advisor, and is often slightly less than the departmental stipend for a TA position.
- **Fellowships** provide funding that is not tied directly to research or teaching work. Fellowships come from several sources, both internal and external (see section below). Most internal fellowships are administered by the business office as assistantships, to provide students with all benefits of assistantships and to make the process more uniform for all students. In many cases, students with Fellowships may add a 1Q supplemental TA assignment (with corresponding increase in stipend).

Fellowship Opportunities

There are a large number of Fellowships available to students in the Chemistry Department. Full details on any Fellowship are available from the Assistant Head. However, all fellowships take one of four forms: recruitment fellowships, departmental fellowships, university fellowships, and external fellowships.

Recruitment Fellowships are designed to recruit students to come to Purdue, and are therefore typically awarded for the first one or two years of study. These Fellowships are awarded by the Graduate Admissions Committee prior to entering the program, based primarily on material in the graduate application form.

Common recruitment fellowships for chemistry students include the *Ross Fellowship*, the *Frederick N. Andrews Fellowship*, the *Purdue Doctoral Fellowship* (PDF), and *Lynn Fellowship*. The Ross and Lynn provide support for one year (summer included); the Andrews and PDF provide support for

two years (summers included), presuming satisfactory performance and progress. The Ross and Andrews Fellowships are awarded based on application materials. The PDF is awarded based on application materials and the student's diversity essay included in the application. The Lynn is awarded by the Graduate School Office of Interdisciplinary Graduate Programs, and is intended for students studying interdisciplinary computational chemistry.

Students with recruitment fellowships typically receive a 1Q TA appointment to supplement the Fellowship. Overall stipend, therefore, is typically higher in the first year or two than in the remainder of the graduate career.

Departmental Fellowships provide one or two semesters of support, drawn primarily from endowments funding. Approximately 10-15 students per year will receive at least one semester of departmental fellowship support. The selection of recipients happens in the spring semester, for awarding for the following summer, fall, and/or spring. The main office will issue an annual call for applications for departmental fellowships; applications typically include a CV, a research statement, and one or more letters of recommendation from faculty.

The Department of Chemistry currently has seven endowment accounts that support departmental fellowships (though some may not be awarded in every year): the *W. Brooks Fortune* Fellowship, the *Henry B. Haas* Fellowship, the *Emerson Kampen* Fellowship, the *Dr. Ching Siang Yeh* Fellowship, the *Charles Viol* Fellowship, and the *Li Cheng Han* Fellowship. Most of these Fellowships have eligibility restrictions, typically based on year in school, division, or nationality.

University Fellowships include those managed by the Graduate School (or one of its offices) or the College of Science.

The *Bilsland Fellowship* is administered by the Graduate School, but awardees are selected by the Department Graduate Studies Committee (applications are typically done at the same time as departmental fellowships). The Bilsland Fellowship may be either 6 or 12 months in length, and is intended as a terminal dissertation fellowship. It should only be used in the final months before graduation.

The *Cagiantas Fellowship* is awarded in spring by the College of Science. It is a 12-month fellowship for senior graduate students, recognizing a student who has high level of accomplishment in their research, and who has participated in activities that have had a positive impact on the climate of their department, University or community. The awardee of the

Cagiantas Fellowship is chosen by the College, on the recommendation of the Graduate Studies Committee.

The *Purdue Research Foundation* offers 12-month Fellowships for graduate students. These are awarded by the College of Science directly to a faculty member, in order to support a student in his or her group. Students do not apply directly for a PRF Fellowship. PRF Fellowships are intended to stimulate exploratory research that may lead to later funding by external agencies.

The Graduate School awards a large number of *Summer Research Grants* to students who have TA appointments in both fall and spring semesters preceding a summer term. These grants are awarded by the Department Head to a number of faculty members, who may then decide which student will be supported by the grant.

Other information about support

- **Fiscal Year Appointments:** Most chemistry Graduate Appointments are Fiscal Year (or “FY”) appointments, rather than Academic Year appointments. The exact appointment may change every semester (for example, from TA to RA). Typically, the summer appointment will coincide with the twelve-week summer session. For new incoming students, the appointment will begin on the Monday preceding the first day of classes of the fall semester.
- **Paydates:** Graduate appointments are paid bi-weekly on alternating Wednesdays, for the pay period 10-23 days prior to the paydate. The gross salary in each pay period is the annual rate divided by 26.
- **Vacation:** FY appointments are not tied to the academic calendar, or to the dates when classes are in session. Students on FY appointments are expected to report for work on all days except University Holidays, and must formally request vacation time and sick leave. Students are eligible for 22 days of vacation per year (see the Graduate Staff Employment Manual for details on how vacation days are accrued). Dates of vacation must be approved by the supervisor (major professor for RA or Fellowships administered as an assistantship, the Assistant Head for TA). Academic breaks (e.g., Fall Break, Spring Break, time between semesters) are not automatic vacation periods; these must be requested as part of the 22 days per year. Graduate students may not carry over more than 22 days of vacation, and will not receive a pay-out for unused vacation days at the end of the appointment.
- **Allowable appointment level:** The graduate school encourages a standard appointment of 50% time (2Q); the chemistry department guarantee includes at least a 2Q appointment or comparable salary (for fellowships). Graduate students may hold a total appointment greater than 2Q, though most international students are restricted by their visa and work permit to a 2Q total appointment (including Purdue and *all other employers*). Graduate School policy does not allow a student with a TA or RA appointment to have other employment at the University that is not part of a graduate appointment. See the Graduate Staff Employment Manual for details. Graduate appointees may not engage in outside employment or other outside activities that would present a conflict of interest with their University duties. External paid tutoring for a course where a student is a TA is considered a conflict, and is therefore expressly not permitted.
- **Pay scale:** The department’s stipends for the 2019-20 Fiscal Year (July 1, 2019 – June 30, 2020) for a 2Q appointment are (the stipend scales proportionally to appointments that are not 2Q):

- Teaching Assistant: \$24,500 annually (\$942.31 biweekly)
 - Post-OP Research Assistant: \$23,500 - \$24,500 annually (\$903.85 - \$942.31 biweekly). The exact rate will be determined by the major advisor; students become eligible for the Post-OP rate at the start of the semester appointment period following the completion of the OP, not immediately on completion of the OP.
 - Pre-OP Research Assistant: \$22,500 - \$23,500 annually (\$865.38 - \$903.85 biweekly). The exact rate will be determined by the major advisor
 - Fellowships: Exact rate varies and will be included in the offer letter.
- **Health Insurance:** Graduate students are required by law to maintain adequate health insurance, and there are two primary options offered by Purdue. Graduate staff employed 2Q or more in a TA or RA position, and students on fellowships that are being administered as an assistantship, may enroll in the **Graduate Staff Health Plan** or the **PUSH (Purdue University Student Health) Medical Plan**. Students with a Fellowship that are being administered as a fellowship are eligible only for the PUSH plan. For most students, the Graduate Staff Health Plan is a more economical option – for the 2017-18 academic year, this plan cost \$529 for coverage of the student only, auto-withdrawn from paychecks (exact rate not yet released for 2018-19). The PUSH medical plan premium in 2017-18 was \$1229 (annual) for student-only coverage, due all in one payment. Additional coverage for spouse and other dependents is available in both plans, at an additional cost. In some circumstances with dependents, the PUSH plan may be more economical than the Graduate Staff Health Plan. Students should consult the Graduate School’s *Graduate Staff Employment Handbook* for more information.
 - **Accident Insurance:** Purdue University provides a limited accident insurance plan for all graduate students and post-doctoral fellows on appointment. The hazards covered include all those to which an insured may be exposed while engaged in class work, research, course-related activities, or in approved field work or travel for University activities related to research or course work. Coverage is not provided in your place of residence nor while commuting to and from your normal on-campus instructional or research location. To be covered by accidental insurance while attending scientific meetings or conferences, it is imperative that the appropriate travel form is completed several weeks before leaving the University. For more complete information, contact the Chemistry Department Business Office.

- **Absences:** All persons who have staff appointments are required to complete appropriate paperwork or online forms when off campus or away from duty. This includes both personal absences (e.g., sick leave, vacation, jury duty, etc.) and travel off campus for university business (e.g., travel to a conference). See the *Graduate Staff Employment Handbook* for details.

The MS Program

With the exception of students who are active-duty military, veterans, or military-reserve and are funded by a military scholarship, the Department of Chemistry does not recruit or admit students for a Master's Degree. Students accepted into the PhD program may change their degree objective to an MS degree if their circumstances change after they have joined the program.

In some cases, the transition to MS may be at the student's request. In some cases, students may be compelled to switch from the PhD to the MS program because of unsatisfactory performance or progress, including (but not limited to):

- failure to pass five cumulative exams within four semesters since entry into the program.
- failure to pass the Original Proposition exam
- two reports of unsatisfactory performance in research (CHM 69900) by the thesis/research advisor

There are two primary requirements for the MS degree in Chemistry: coursework and thesis.

MS Coursework Requirements: The minimum course requirement is 18 credits in a Plan of Study approved by the student's advisor and committee. At least 12 credits of research (CHM 69800 or 69900) are also required, to bring the total to at least 30 credits. The Graduate School requires that the POS must be submitted and approved prior to the start of the final semester. The student should register for CHM 69800 in the final semester. The rules for establishing the Plan of Study are similar to the PhD (see page 4), with four exceptions:

1. the minimum GPA is 2.5.
2. at least 12 hours of 600 level courses are required in the POS.
3. for students in the Chemical Education division, at least 12 credits must be CHM courses.
4. credit used to earn a MS degree at a previous university may not be used as part of a Purdue MS Plan of Study.

MS Thesis Requirements: The Chemistry Department does not offer "non-thesis" Masters degrees. MS students must submit an approved research thesis, following the typical guidelines and schedule of the Graduate School. Students should consult with their major advisor about the scope and length of the MS thesis. The requirement of a formal oral presentation and defense of the MS thesis is left to the discretion of the major advisor.

Facilities

Conference Rooms in WTHR and BRWN

Students may reserve conference room space through the main office in BRWN 2100. The following conference rooms are available for student exams and activities such as grading, group meetings, etc. Those reserving a space are required to leave it clean and functional. If you are planning to bring in pizza or other food, wipe down all surfaces and remove trash to the hallway afterwards. Trash bags are available in the Chem Shop. Keys are checked out on paddles which must be returned to the Main Office, or placed in the Campus/US Mail receptacle outside the copy center (after hours).

Available conference rooms include:

Room	Seats	Comments
BRWN B106	12-15	projector, pull down screen, chalkboards
BRWN 1152	16	Opening in Fall 2019 semester
BRWN 2106	20	Projector, but no computer
BRWN 3106	19	No projector, chalkboard
BRWN 4102	60	Largest room, can be split in two with sliding partition. Seminars, faculty meetings, large-scale departmental events have priority. Projector, flat-screen display, computer, whiteboards, phone, kitchenette with refrigerator
BRWN 4106	10	No projector, chalkboard
BRWN 5130B	10	Available only during business hours, projector, no computer, noise must be kept at normal conversational level
BRWN 5182	5	No projector or screen, chalkboards
WTHR 277	16	H.C. Brown Archives, primarily for faculty use, but may be available for student exams, no food allowed, computer and flat-screen display, camera, phone

Catalyst Café and Leighty Commons

The Catalyst Café is located on the 2nd floor of WTHR, across from the entrance to WTHR 200. It is open throughout the academic year, closed during the summer and university holidays. The cafe offers Starbucks coffee and espresso-based drinks, as well as hot soup, Asian rice plates, Chick-Fil-A and burgers, bottled beverages, pastries and packaged sandwiches and salads. The adjacent Leighty Commons is usually an informal gathering and study space for all students, but may be reserved for departmental events through the Main Office

Chemistry Shop and Building Deputy

The Chem Shop is located in WTHR 141. The Chem Shop is led by the Building Deputy, Ned Gangwer, who can assist with any questions or issues related to the physical building. Room and building keys are issued by the shop, and it is the primary location for Lost and Found. The Chem Shop is open daily 7:00-4:00.

Chemistry Copy Center

The Copy Center is located in BRWN 2105. Printing services, including large format printing and printing of handouts for labs and recitations is available in the copy center. Contact Rob Reason (chemcopycenter@purdue.edu), Copy Center manager, with any questions. Please allow sufficient time for printing, especially large format. The copy center also has coffee for 50c a cup (honor system), and frequently has leftover snacks from events. The Copy Center also has a scanner/fax.

Jonathan Amy Facility for Chemical Instrumentation (JAFCI)

JAFCI is responsible for multiple services and shops located within BRWN and WTHR, as well as satellite operations in the basement of DRUG. These include:

- Scientific Glass Shop (WTHR 427)
- Machine Shop (WTHR basement: WTHR 081)
- Mass Spectrometry Labs (WTHR 144-145-151-157 and DRUG B059)
- NMR Labs (WTHR 365-369 and BRWN B124)
- Shared Research Instrumentation Center (BRWN 3154)
- X-Ray Crystallography Lab (WTHR 101)
- Cell Culture – Flow Cytometry Lab (BRWN 3125)

Please visit these locations to learn more about these facilities, or go to the JAFCI main office in BRWN 4151, or the website shown below. Request forms are available online to describe the nature of your project. JAFCI holds an open house each year to introduce these services to new graduate students.

<https://www.chem.purdue.edu/jafci/>

Library

The Department of Chemistry has access to a librarian specializing in chemical literature. Dr. David Zwicky is located in the Wilmeth Active Learning Center **WALC 3053N** and can be contacted at dzwicky@purdue.edu or phone 496-7279. Each spring, Prof. Zwicky teaches a comprehensive, graduate-level course in chemical literature (CHM 51300, 1 credit) which provides a significant boost to graduate students as they seek information for their OP, publications and final dissertation.

Mail

Each graduate student is provided with a postal mailbox address and a combination to a lockbox on the 1st floor of BRWN, adjacent to the General Chemistry office. If you lose your combination, check with the main office in BRWN 2100. Postal mail, departmental letters and other correspondence (e.g. notification of awards, fellowships) are deposited in your mailbox throughout the year. The outgoing MAIL slots on the walls of the 1st to 4th floors of BRWN are active. Stamped mail dropped in these slots will be retrieved by the Copy Center staff and will be delivered to the post office.

People

Department and Division Heads

Head	Christine Hrycyna	BRWN 2100	hrycyna@purdue.edu
Assoc. Head, Grad	Suzanne Bart	BRWN 4170D	sbart@purdue.edu
Assoc. Head, Undergrad	Paul Wenthold	BRWN B171B	pgw@purdue.edu
Assoc. Head, Facilities	Alex Laskin	BRWN 4170C	alaskin@purdue.edu
Assistant Head	Stephen Hoffmann	BRWN 2100C	srh@purdue.edu
Analytical Div. Head	Julia Laskin	BRWN 4171C	jlaskin@purdue.edu
Biochemistry Div. Head	Kavita Shah	BRWN 5170B	shah23@purdue.edu
Chem. Ed. Div. Head	George Bodner	WTHR 210B	bodner@purdue.edu
Inorganic Div. Head	Jon Wilker	BRWN 4131C	wilker@purdue.edu
Organic Div. Head	Arun Ghosh	WTHR 273A	akghosh@purdue.edu
Physical Div. Head	Dor Ben-Amotz	BRWN B135A	dor@purdue.edu

Unit Directors

Business Office	Leslie Martin	WTHR 225	lmartin@purdue.edu
Chemistry Resource Room	Beatriz Cisneros	WTHR 116K	cisneros@purdue.edu
Chem Shop/ Building Deputy	Ned Gangwer	WTHR 140	gangwern@purdue.edu
Communications	Steve Scherer	BRWN 2100B	scherer@purdue.edu
Copy Center	Rob Reason	BRWN 2105	rareason@purdue.edu
Demonstration Lab	Paul Smith	WTHR 121	psmith4@purdue.edu
General Chemistry Office	Marybeth Miller	BRWN 1144D	mille201@purdue.edu
JAFCl	Mike Everly	BRWN 4151B	meverly@purdue.edu
Instrumentation Center	Pat Bishop	BRWN 3154B	pbishop@purdue.edu

Mass Spectrometry Facility	Ryan Hilger	WTHR 157	rhilger1@purdue.edu
NMR Facility	John Harwood	WTHR 365B	jharwood@purdue.edu
Outreach Coordinator	Sarah Nern	WTHR 221	snern@purdue.edu
Procurement	Suzy Gustafson	BRWN 2107	sgustaf@purdue.edu
Prep Lab	Jeanne Meyer	BRWN 2165C	jameyer@purdue.edu
X-ray Facility	Matthias Zeller	WTHR 101B	zeller4@purdue.edu

Opportunities and Awards

The following is an incomplete list of awards and opportunities available to Chemistry graduate students. See the section on Funding and Support for descriptions of Fellowships.

Research Awards

The **Alice Watson Kramer Research Scholar Award in Chemical Biology** is presented annually in the spring to a worthy graduate student who is close to completing his/her studies at Purdue in chemical biology or a related line of research. Nominations are solicited in about February.

The **H. C. Brown Organic Graduate Research Award** is given annually recognizing excellence in research as evidenced by research productivity, quality of publications and the quality of the research presentation. Award winners give a 15-minute presentation as part of the H.C. Brown Symposium. Nominations are solicited in about March.

The **Robert R. Squires Scholarship** recognizes outstanding scholarship in basic research by a graduate student in the Chemistry Department. The scholarship will provide a cash award to a graduate student who has demonstrated excellence in basic research in mechanistic, physical organic, physical inorganic, or physical chemistry. Nominees for this award will be selected based on the research accomplishments at the time of the oral preliminary examination. Before graduation, the award recipient is expected to give the Robert R. Squires Scholarship Seminar on his/her research achievements.

The **Thomas W. Keough Graduate Scholarship** annually honors an outstanding student pursuing graduate studies in the field of mass spectrometry. The recipient is chosen by the faculty of the Analytical Chemistry Division every spring.

Travel Grants

The **Purdue Graduate Student Government** (PGSG) offers grants for travel to present at a national conference. See <https://www.purduegradstudents.com/grants>.

The College of Engineering Women-In-Science Program offers travel grants for travel reimbursement up to \$500. See <https://www.science.purdue.edu/wisp/graduate/travel-grants.html>). WISP Travel awards are typically made twice per year (in fall and spring semesters). Applications are solicited early in each semester.

Professional Development Awards

The Department and the College provide support for a small number of students to take the **Applied Management Principles** short course with the Krannert School of Management. The course is one week in summer, and applications are solicited in early spring. The Department and the College support approximately 90% of the tuition for this course, and the student is expected to pay for the remaining 10%.

Seminar Awards

The **Guy Mellon Award in Analytical Chemistry** is awarded annually in April. Nominations are solicited in March, and the selection is made by the faculty of the Analytical Division.

The **Ian P. Rothwell Inorganic Chemistry Seminar Award** is awarded to two individuals annually, one for the year's best literature seminar, and one for the best research seminar. Selection is made by the faculty of the Inorganic Division.

The **H. C. Brown Organic Graduate Seminar Award** is presented to the best Organic Graduate Student seminar each semester as judged by the Organic Faculty.

The **Physical Chemistry Seminar Award** is awarded annually in April. Selection is made by an award committee appointed by the Head of the Physical Division.

Teaching Awards

The Department awards the **Arthur E. Kelly Teaching Award** and the **William F. Epple Teaching Award** to two individuals each in April. One set of awards is made for excellence in teaching in the previous year spring semester, and one set for excellence in the preceding fall semester. Selection is made by an ad hoc committee appointed by the Head, based on feedback from students in their written TA evaluations.

The **John J. Nash Instructional Development Award** recognizes teaching excellence by a graduate student during his or her first year of graduate school. It is selected by an ad hoc committee, and awarded in April.

Conflict Resolution Resources

Graduate students have a number of resources that they may use for advice and consultation regarding conflicts or issues in their relationship with their major advisor:

1. Equity Advisors
2. Graduate Ombudsperson (Office of Graduate Assistance and Conflict Resolution)
3. Advisory Committee
4. Department Head and/or Associate Head for Graduate Studies
5. Human Resources Consultant

All of the people listed above are available for informal and neutral advice. In most circumstances, confidentiality can be maintained, though further reporting and potential escalation is mandatory in certain situations (see list below). The Department Head and the HR Consultant can assist in escalation of issues to appropriate offices if action is required. Students may choose to initiate a conversation with anyone on the above list; there is no requirement to start at the top and “move down” the list.

Equity Advisors are internal to the Department of Chemistry, and are trained to assist with any workplace issues in an informal setting. They can serve as a first contact, and can help graduate students decide on the best course of action. In 2018-19, the four Equity Advisors are Jean Chmielewski, Beatriz Cisneros, Scott McLuckey, and Rob Reason. Students may contact any of the Equity Advisors directly.

The **Graduate Ombudsperson** office provides similar services; they can act as informal, neutral advisors, and can help students decide if further action is needed. The Ombuds office staff can assist in using any of the mediation or conflict resolution processes managed by the Graduate School’s Office of Graduate Assistance and Conflict Resolution. Students may contact the office by calling the Graduate School at 494-2600, or filling out the form at www.purdue.edu/gradschool/student/ogacr/request.html

The student’s **Advisory Committee** is always available to offer advice to students for workplace issues, as well as for scientific questions. Students are welcome to contact members of their committee directly, and do not need permission of the major advisor to consult with committee members.

The **Department Head** and **Associate Head** can assist in situations where action may need to be taken. They should be involved if the situation rises to the level where the student is considering switching major advisors.

The **Human Resources Consultant** for the College of Science is Laurie Brose. She is available for consultation on any matter, and can offer advice or referral if an issue needs to be escalated into a formal process. She can be reached at 496-7260 or brose0@purdue.edu. The HR Consultant should only be used for situations involving interactions between students and faculty/staff, not for interactions between two or more students.

Confidentiality and Mandatory Reporting:

In many cases, information that students share with those listed above will remain confidential. However, it is important to note that “confidential” does not mean “secret,” and information may be shared confidentially with individuals who need to know for the purposes of issue resolution, or because of mandatory reporting guidelines. There are several categories of mandatory reporting. Confidentiality will be maintained, as allowed by policy and law, by the offices that the issues or concerns are reported to. The following are the categories of mandatory reporting, either by law or by university policy:

Title IX: Any complaints related to the purview of Title IX (including discrimination on the basis of sex, sexual harassment, sexual violence/assault, relationship violence, sexual exploitation, unwelcome sexual contact, and stalking) must be reported to the campus Title IX Coordinator: Erin Oliver, 765-494-7255, oliver25@purdue.edu or titleIX@purdue.edu. All faculty members, all staff in supervisory or management roles, and all student services professionals are mandatory reporters, and must, by law, report any Title IX violations that are observed or reported to them.

Imminent risk/danger, including potential danger to self: Imminent risks should be reported to the appropriate office:

- 911 if an emergency situation
- Office of the Dean of Students Student of Concern report (on main ODOS web page at www.purdue.edu/odos). This form can be used whenever someone is concerned about the health or well-being of a student, and ODOS staff will reach out confidentially to the student.
- REM (Radiological and Environmental Management), if risk/danger is related to workplace safety (and not an emergency), at 494-6371, or ehps@purdue.edu.
- Reporting may also be done anonymously to the University-wide Hotline, 866-818-2620 (if not an emergency)

Alleged research misconduct: Allegations of research misconduct should be reported to the Research Integrity Office for assessment of the need for an inquiry. Contact Deborah Rupp, 496-6670 or ruppd@purdue.edu.

Harassment Policy

The following is the text of the annual letter sent from the Department Head outlining departmental policies and resources related to harassment.

To Faculty, Staff and Students of the Department of Chemistry:

This document outlines the Department's support of the University's policies and procedures regarding all types of supervisory and coworker harassment. This is a very important issue that goes to the establishment of a healthy, vital, dignified and comfortable workplace for all; one where you and your colleagues can have maximum productivity, as well as a positive experience at Purdue. From the University's policy on anti-harassment: "Freedom of thought and expression are the lifeblood of our academic community, and require an atmosphere of mutual respect among diverse persons, groups, and ideas". This Department further defines diverse persons by considering their ethnicity, gender, national origin, race, religion, sexual orientation, age, disability, veteran status, or position of power. Harassment based on any of these characteristics is covered by this policy. This Department has a zero tolerance policy for harassment and aims to do everything it can to ensure that the effects of such cases are minimized, and dealt with fairly and promptly. This begins with an understanding of what harassment is, how to avoid it, and what to do if you are a victim of harassment.

What constitutes harassment?

The following are definitions from Purdue University's Anti-Harassment Policy:

Harassment is conduct towards another person or identifiable group of persons that has the purpose *or effect* of:

- creating an intimidating or hostile educational environment, work environment, or environment for participation in a University activity;
- unreasonably interfering with a person's educational environment, work environment, or environment for participation in a University activity; or
- unreasonably affecting a person's educational or work opportunities or participation in a University activity.

Racial Harassment

Racial harassment is conduct that demonstrates hostility toward another person (or identifiable group of persons) on the basis of race, color, national origin, or ancestry, and that has the purpose *or effect* of:

- creating an intimidating or hostile educational environment, work environment, or environment for participation in a University activity;
- unreasonably interfering with a person's educational environment, work environment, or environment for participation in a University activity; or
- unreasonably affecting a person's educational or work opportunities or participation in a University activity.

Sexual Harassment

Sexual harassment is any unwelcome sexual advance; requesting of sexual favors; or other written, verbal, or physical conduct of a sexual nature when:

- submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, education, or participation in a University activity;
- submission to, or rejection of, such conduct by an individual is used as the basis for, or a factor in, decisions affecting that individual's employment, education, or participation in a University activity; or
- such conduct has the purpose *or effect* of unreasonably interfering with an individual's employment or academic performance or creating an intimidating, offensive, or hostile environment for that individual's employment, education, or participation in a University activity.

While it is our intention that acts of harassment do not occur, if such an event does occur, it is essential that there are clear procedures for its resolution. Those who may become victims of harassment must have a clear, comfortable and confidential means to discuss, report, and seek appropriate and fair resolution of such conflict, and are encouraged to do so. Inquiries and complaints about discrimination and/or harassment may be brought to your supervisor and/or myself, as the Head of the Chemistry Department. We realize, however, that there may be circumstances in which advice from some other appropriately trained person would facilitate the process. Thus we have identified four "equity advisors", any one of which would also be appropriate contact persons with whom to raise and discuss the issue, and identify the most appropriate course of action. They are: Jean Chmielewski, Beatriz Cisneros, Scott McLuckey, and

Rob Reason. The chosen contact person will then discuss the matter with the complainant, to arrive at an appropriate course of action aimed at acceptable resolution, under the Informal Complaint process. The identified contact persons will take steps to ensure confidentiality of the Complainant and Respondent to the extent that maintenance of confidentiality does not interfere with the University's obligation to address allegations of discrimination and/or harassment.

In cases of suspected harassment, the University will conduct a prompt, fair, and discreet investigation in accord with University Procedures, administered by the Director of Affirmative Action. In the event that it has been determined that an individual or group of individuals have violated the University's Anti-harassment Policies, such individual(s) "will be subject to disciplinary or remedial action, up to and including termination of employment or expulsion from the University", as laid out in Executive Memorandum C-33, the Anti-harassment Policy. Faculty/employees/students should also be aware that, according to the University policy, "Disciplinary action will be taken against any person or group found to have brought a charge of harassment in bad faith, or any person who, in bad faith, is found to have encouraged another person or group to bring such a charge."

For complete details of Purdue University's Anti-harassment Policy, see:

http://www.purdue.edu/humanrel/vp/revised_procedure.shtml

For details of the Universities policies on the conduct of the Informal and the Formal Resolution Processes, see:

http://www.purdue.edu/humanrel/vp/revised_procedure.shtml

If you have questions about this policy, please contact Prof. Christine Hrycyna, Head, Department of Chemistry at hrycyna@purdue.edu .

Integrity in Research

[This section is taken directly from the *Programs and Procedures for Administering Graduate Student Programs*, published by the Graduate School]

Integrity in research is an essential part of Purdue University's intellectual and social structure, and adherence to its spirit and principles must be maintained. These principles include commitment to truth, objectivity, fairness, honesty, and free inquiry.

Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty. The commitment of the acts of cheating, lying, and deceit in any of their diverse forms (such as the use of ghost-written papers, the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during an examination) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly other parties in committing dishonest acts is in itself dishonest. Plagiarism consists in using another's words or ideas without clear and explicit acknowledgment. Self-plagiarism consists in using one's own previous work in a new context without clear and explicit acknowledgment of previous use.

Serious violations of integrity in research are rare. However, those that do occur strike at the very heart of scholarship and the concept of the University. The integrity of the research process must depend largely on self-regulation; it is the responsibility of all who engage in the search for knowledge. Procedures to be followed in any situation related to research misconduct are presented in Purdue University Policy VIII.3.1.

Questions regarding the new policy on research misconduct should be directed to the Office of the Executive Vice President for Research and Partnerships.

Safety

Responsible People

The Chair of the Safety Committee for 2018-19 is Professor Alex Wei. The Committee includes representatives from all departmental units, and graduate students. Each research group is responsible for appointing a Lab Safety Representative, who interacts with the Safety Committee, serves as a safety resource within the group, and serves as a liaison between the group and the department on safety matters.

The lab safety representative will be responsible for communicating the chemical hygiene plans of the research lab you have just joined. Your lab safety rep will communicate updates, notices, changes and other information from the faculty safety committee, safety TA and REM.

Initial Training

During **orientation week**, each new graduate student receives an initial safety briefing that is relevant to their TA assignment during the first semester. Safety training continues in the **CHM 60500** course offered during the last 8 weeks of the first semester. The course is intended to prepare students for entry into a research lab by providing practical instruction and assignments.

Ongoing Training

Laboratory safety must be considered throughout your career, starting with your graduate program and continuing into employment assignments. Those students who become actively involved with laboratory safety may find that this enhances their career opportunities substantially. Record your safety activities on your CV. Several of the corporations that recruit in the chemistry department have emphasized their need for chemists who have been seriously engaged with safe lab operations. It is common to expect that a starting chemist at a chemical manufacturer will face at least six months of training involving safe operations and it is highly desirable to hire chemists who have a positive and constructive attitude towards safe practices.

As you join a new lab, your research advisor will be responsible for ensuring that you receive:

- An orientation to the standard procedures and safety rules of that lab
- Specific training on the safe operation of instruments and devices used in your research
- Directives on the type and source of personal protective required
- Oversight on adherence to lab safety rules and safe operation

- Instruction on correct disposal of reagents and materials in accordance with rules issued by Purdue REM (Radiological and Environmental Management)
- Reminders to complete annual safety surveys

Potential Hazards Present in the Department of Chemistry

- Biological Hazards
- Radiation Hazards
- Optical Hazards (Lasers)
- Solvent and Reagent Hazards
- Electrical Hazards
- Fire Hazards

Contact REM (<https://www.purdue.edu/ehps/rem/>) for assistance with your questions about any of the potential hazards listed above. You will require additional training and certification from REM if your research involves the first three hazards listed.

Reporting

Anyone who observes any accident, injury, or incident (including near-misses), regardless of where the incident occurs (teaching lab or the research lab) should report what happened using the online **Accident, Injury or Incident** form at <https://www.chem.purdue.edu/chemsafety/IncidentReport.php>.

Additionally, If there was an injury requiring immediate –or subsequent – attention by a doctor or emergency medical personnel, you must also complete the REM form known as FROI: First Report of Injury. This is very important. Any claims against your medical insurance require that you have already filed a FROI. A link to this form is found at <https://www.purdue.edu/ehps/rem/home/forms/froi.pdf>

If you feel that there is potential for an accident in your laboratory, a teaching lab, or another research or teaching situation that needs attention, you can file an anonymous report at <https://www.chem.purdue.edu/chemsafety/confidentialreport.php>. This approach is offered for students who do not want to be identified, or those who feel that their concern may not be getting full consideration by their safety rep or research advisor. Key safety personnel in the Department of Chemistry will be able to read the report, but will NOT be able to identify the sender. Notification is sent instantly to the Chair of the Safety Committee, the Safety TA, the Assistant Head of Chemistry, the Safety Coordinator, and the Director of the Teaching Prep Lab.

Inspections

The Department of Chemistry is inspected throughout each semester by REM, OSHA, the EPA and other agencies of the university, State of Indiana or federal government. There may be no warning about such visits, but you are entitled to ask the identity of anyone entering your lab and you should require such visitors to wear appropriate personal protective equipment during such visits.

Pay special attention to the following situations as examples of good practice and in anticipation of unannounced inspections:

- Every research supervisor is to have prominently posted a "Hazard Assessment Certification" which provides the rules for wearing of personal protective equipment (PPE) in the work areas. That document provides the rules for PPE wear. Compliance with its terms is mandatory.
- Do not work alone with hazardous materials. Those who work after normal working hours must make sure that there is someone nearby who will become aware of any need for assistance that may arise.
- Research and instructional laboratories should be maintained in a clean condition at all times.
- Keep refrigerators and freezers clean, inventoried, and defrosted.
- Do not store anything in the walking and working parts of the floor or aisles.
- Keep approaches to all doors and electrical panels absolutely unobstructed.
- Chemical reactions should not be left unattended if there exists the slightest possibility of their getting out of control.
- Reactions which involve continuous introduction of a gas should not be left without supervision. The reaction vessel must be separated from the gas source by an empty trap, and a flash arrestor incorporated in reactions using flammable gas.
- Toxic and corrosive compounds such as HCN, HF, HCl, H₂S, phosgene, NH₃, mercaptans, etc., which might form in a reaction must be trapped rather than allowed to escape into a room or into the outside environment via the hood.
- Careful consideration must be given to the location of a reaction. Reactions which require large amounts of flammable solvents, active metals, or metal hydrides should be carried out in the hood behind a safety shield. The heating of such reactions should be done electrically or by a steam bath; open flames must be avoided.
- Familiarize yourself with the location of safety showers, fire extinguishers, fire hoses, and first aid cabinets. Room No. 2150 in the Brown building has been designated as FIRST AID ROOM.

- Make sure that all fire extinguishers in your laboratory are properly sealed and placed in their holders. If seal is broken have the fire extinguisher exchanged in the Chemistry Shop (WTHR 140).
- Not more than 10 gallons of Class I plus Class II flammable and combustible liquids may be stored outside of approved flammable storage (flam cabs and safety cans). See the guidance provided by the Purdue Chemical Hygiene Plan and the REM web site.
- The storage in the laboratory of chemicals such as metallic hydrides, active metals, peroxides, and explosives must be kept to a minimum quantity which shall represent the smallest package available from the vendor.
- Condenser tubing must be in good condition and properly wired. Condenser tubing should be periodically inspected and replaced if in poor conditions.
- Aspirators should not be allowed to run overnight.
- No chemicals (any type) may be placed in waste baskets. Instead, they should be placed in suitable and properly labeled containers. A disposal form, available at the Chemistry Storerooms, should be completed and sent to REM. REM will pick-up your samples and dispose of them properly.
- Glass containers, after being thoroughly rinsed with water and labels removed or defaced may be placed in waste baskets.
- Do not take unnecessary chances when working with hazardous chemicals. Work in the hood behind a safety shield. There are experiments which may be too dangerous to perform anywhere in BRWN or WTHR and for which special arrangements must be made. In all cases of known dangerous procedures there must exist clearly written standard operating procedures which address all necessary safety precautions, equipment requirements, emergency procedures, and spill response contingencies.
- In the event of an accident or fire, telephone 911. Indicate the problem and its exact location to the operator. The operator will ensure that Police, Fire Department or Ambulance are dispatched to the scene of the accident.

Index of Departmental Policies

In this handbook, the gray text boxes represent formal departmental policies, approved by vote of the full faculty.

These policies include:

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Coursework requirements/plan of study	4
Evaluation of Research Progress	29
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Other Documents and Resources

Source material for this Handbook was drawn from previous handbooks and the following Graduate School Publications:

Policies and Procedures for Administering Graduate Student Programs:

<http://catalog.purdue.edu/content.php?catoid=8&navoid=8285>

Graduate School Forms:

<https://www.purdue.edu/gradschool/faculty/forms.html>

A Manual for the Preparation of Graduate Theses, 8th Edition (Revised May 5th, 2017): <https://www.purdue.edu/gradschool/documents/thesis/graduate-thesis-manual.pdf>

Thesis and Dissertation Office Information:

<https://www.purdue.edu/gradschool/research/thesis/index.html>

Graduate Staff Employment Manual:

<https://www.purdue.edu/gradschool/documents/gpo/graduate-student-employment-manual.pdf>

The Graduate School Fellowship Manual:

<https://www.purdue.edu/gradschool/documents/gpo/fellows-manual.pdf>