Princeton University

Chemistry

Graduate Student Handbook

The 2023 – 2024 Edition

HANDBOOK FOR GRADUATE STUDENTS
DEPARTMENT OF CHEMISTRY – 2023 /2024 Edition

Contents

DEPARTMENT PROGRAM REQUIREMENTS & POLICIES

— Ph.D. Requirements

1	**Qualifying Exams**
2	**Course Requirements:** 6 graduate-level courses (at least 4 5xx-level courses, up to 2 4xx-level courses) with a minimum of 3.0 average
3	**Adviser Selection:** Active engagement in adviser selection through individual and group meetings, acceptance into a lab by the end of the first year of study
4	**General Examination:** Preliminary requirements: 1. overall GPA of 3.0 or better in six courses as described above 2. satisfactory research progress as evaluated by the research adviser Examination before the Generals Committee: 3. written proposal and oral defense for the chosen area of thesis research 4. written independent research proposal and its oral defense
5	**Teaching**: two semesters at half-time or one semester at full-time
6	**Third Year Seminar Presentation**
7	**Out of Field Proposal:** second original research proposal
8	**Thesis Completion:** progress overseen by thesis committee
9	**Final Public Oral (FPO):** thesis defense

— Breadth Requirement

Students are required to demonstrate a breadth of knowledge in the field of Chemistry in at least three of the following subfields: organic chemistry, inorganic chemistry, physical chemistry, biochemistry, and chemical physics. The student may fulfill the breadth requirement through their graduate-level coursework.

If preferred, the student may instead elect to take qualifying exams in one or more of the subfield areas.

Course Requirements

Students must complete 6 courses in their first year at a B (3.0) average. At least four of these courses must be at a 5xx-level, and two may be at a 4xx-level. 5xx and 4xx courses cannot be taken on the same course material.

Students may choose P/D/F enrollment for one of these six courses with their adviser's approval.
Courses will be chosen in consultation with the student's research adviser to best reflect the student's academic needs and research interests. Students may enroll in courses outside the department and may continue to take additional courses after the completion of the six required throughout their five years of regular enrollment.

Students are strongly encouraged to take one or both of the half-term Writing in Science & Engineering courses as supplementary classes. These courses are non-graded and do not contribute to the fulfillment of the six class requirement. These classes may be taken at any time during the five year program.

WRI 501 introduces students to writing about the scientific literature. It explores how scientific articles are constructed and interpreted, how research findings are presented, and how scientific arguments are developed. Students learn how to engage scientific literature critically, to read and analyze efficiently, to distinguish their own work from previous work, and to cite and report the work of others.

WRI 502 is open to graduate students who have completed sufficient research to begin writing an article for publication. Students develop expertise in scientific writing by drafting a research article based on their original research. Students learn how to recognize and use the persuasive aspects of conventional written structure, how to use analysis, feedback, and revision to develop a strong collaborative writing process, and how to craft clear, concise, and compelling arguments to establish new scientific knowledge.

More information on these classes offered by The Princeton Writing Center and the registration process can be found at www.princeton.edu/writing/wse. Through drop-in hours or scheduled appointments, The Writing Center and its Fellows offer resources to assist in all aspects of the writing process as relates to proposals, manuscripts, developing a thesis and strengthening oral presentation skills.

The completion of the academic course requirement is necessary for attaining the Ph.D. degree. Students are expected to meet these requirements by the end of the second year.

Choosing an Adviser

Incoming students who wish to participate in the optional summer research program must contact faculty directly to arrange an early arrival in their lab. That faculty member will serve as the student's temporary adviser in the fall unless otherwise noted by the Director of Graduate Studies (DGS). For students arriving in late August, the DGS will assign a temporary adviser for the first semester. This adviser will help select fall classes, provide a workspace for the fall semester, and oversee progress in choosing a research group. Incoming students will choose their research adviser after they have properly evaluated research opportunities that are available to them, as described in the following paragraph.

First-year students are required to engage in the adviser selection process which provides the chance to explore a range of research areas through informal discussions with faculty and their students. They may also meet with the DGS to discuss their research interests. All students must select at least three faculty members whom they will engage to discuss research opportunities over the course of the semester. Students are encouraged to participate in group meetings and

discussion with the group members of the faculty of interest, and then choose a research adviser before December 15. **It is strongly recommended that the student settle on a research adviser as soon as possible.**

With the permission of the DGS, students may choose an adviser from another department, provided their research project relates to chemistry, and that the adviser outside the department agrees to supervise the student.

The Advisory Committee

After the student has chosen a research adviser, an Advisory Committee will be assigned in consultation with the student and his/her research adviser. This committee, consisting of the adviser and two other faculty members, is designed to follow a student's progress throughout their Ph.D. work. Occasionally, a student might include a third "optional" faculty member to provide scientific insight; however, this optional member is not an official member of the committee. Official members of the committee must hold the rank of assistant professor or higher, and at least one member (other than the adviser) must be from the Department of Chemistry.

The Advisory Committee will meet with the student according to the following timeline, although the student or a member of the committee may initiate additional meetings as needed.

- At the end of the first academic year, the Advisory Committee will review the student's academic record, ensure that he or she has met the coursework requirements (and, if not, discuss a plan to satisfy them), and make sure the student is on course for the General Examination. The meeting may be held with the Committee as a group or on an individual basis if schedules do not permit.
- In the third year, the student will invite members of the Advisory Committee to their Third Year Seminar. The student will arrange a meeting with the Advisory Committee or its members individually soon after the third year seminar.
- At least one month before the FPO, the student will generate an original research proposal, not related to thesis research. They will defend this Out of Field Proposal before their Advisory Committee plus one additional faculty member selected by the student to serve as a member of the four-person Thesis Committee.
- The Thesis Committee will serve as the FPO Committee.

Teaching Requirement

(https://gradschool.princeton.edu/financial-support/assistantships)
(http://gradschool.princeton.edu/policies/ai-training)

The teaching requirement is two semesters at half time or one semester full time (20 hr/wk). Students typically satisfy this requirement during the second academic year. International students must demonstrate proficiency in spoken English before they may teach. All first-time teaching assistants are required by the Graduate School to attend a training and orientation course given by the McGraw Center for Teaching and Learning

The General Examination

(https://gradschool.princeton.edu/academics/degrees-requirements/general-exam)

The Chemistry Department offers the General Examination during October[1*], January, and April/May of the student's second year. The specific timing of each student's exam will be determined by the DGS in consultation with the student's adviser.

The examination consists of four parts, and a student must pass all four. The first part of the examination are the course requirements undertaken in the first year; specifically, overall GPA of 3.0 or better in six graduate-level courses. Part two is satisfactory research progress as evaluated by the research adviser.

Parts three and four consist of seminar-like presentations before the Generals committee. Part three is a written proposal based on the student's chosen area of thesis research, and the oral defense of that proposal. Part four consists of a written independent research proposal and the oral defense of the work. This proposal is in the student's general area of research, but not part of the student's thesis research.

The oral portion of the exam generally proceeds as follows: an oral seminar-like presentation to the Generals Committee of the proposed thesis research is followed by questions to test the candidate's preparation to do the thesis research. This part of the exam lasts for approximately one hour. The second section of the oral exam consists of a presentation to the committee, again in a seminar-like manner, of the independent research proposal. Oral examination of this independent proposal will follow. This part of the exam typically takes about 45 minutes.

Immediately following the two oral defenses, the committee will discuss the performance and assign a grade for parts 3 and 4 without a vote from the adviser. The committee then assigns an overall grade of pass, fail, or pass with distinction, for all four parts. Students who successfully pass the General Examination may advance to Ph.D. candidacy.

It is possible, however, that the candidate will pass the first two components but fail to successfully meet the criteria for a pass in one or both the proposals. In such instances, the exam results will be reported to the Graduate School as a failed exam. The committee will report to the Graduate School an assessment of the student's performance and selection of one of the following conditions: a Fail with the recommendation to retake the exam within one year, or a Fail with the decision to terminate the student's enrollment.

[1*] The October exam period is reserved by the department for exams with special circumstances.

If provided the opportunity to retake the exam, the student must do so during the next scheduled examination period unless otherwise recommended by the committee. The retake must be completed by the end of the third year. If he or she fails to successfully pass after one additional opportunity, the student will be terminated from the Ph.D. program, but may still be granted a terminal Master of Arts in Chemistry degree from the Department**.**

Guidelines for the written proposals and oral defense are given in the Appendix to this Handbook.

- **Academic Evaluation**

Students are evaluated on an on-going basis by their research adviser, their Advisory Committee, and the Director of Graduate Studies. Reenrollment to a subsequent academic year is based on progress and conduct during the previous year.

Withdrawal from the graduate program may be required in the following instances:

1. Student has failed to satisfy all four components of the General Examination by the end of the third year.
2. Student has failed the General Exam twice.
3. Student fails to improve research and/or academic performance despite repeated warnings.
4. Disciplinary action imposed by the Graduate School or the Department of Chemistry.

- **Third Year Seminars**

In the third year of study, students present a thirty-minute seminar on their research progress. The focus of the seminar should be on actual research results in the laboratory and not a history of the project. The seminar should be treated as a formal exercise to enhance presentation skills and public speaking abilities, through the preparation of a PowerPoint presentation and the organization of the seminar.

To foster understanding of the different chemical disciplines, third year students are required to attend all seminars. The two best seminar presentations (as judged by a committee of 4th year students) are granted the Third Year Seminar Prize & Hubbell *47 Fund Travel Award, consisting of a cash prize plus an allowance for travel to scientific meetings.

- **Original Research Proposal**

At least one month prior to the FPO, the student will generate a second original research proposal, not directly related to the thesis research, and defend it before the Thesis Advisory Committee.

The proposal must be written and circulated among the Thesis Advisory Committee **at least two weeks before the oral presentation date**. The student is responsible for organizing the committee members to meet for this oral exam and informing the Graduate

Administrator prior to the date agreed upon. The committee records a grade for the written proposal and its oral defense. Grading is on a scale from Excellent to Fail. All members of the Thesis Advisory Committee must participate in the OFP, attendance via Skype for up to one committee member is acceptable.

See the Appendix of this Handbook for preparation guidelines for the original proposal.

- **Dissertation**
  (https://gradschool.princeton.edu/academics/degrees-requirements/dissertation-fpo)

Students satisfy the bulk of the formal course and examination requirements for the Ph.D. by the end of the second year of graduate study. The remainder of the program is devoted to independent research work leading to the writing of a dissertation.

The dissertation must show that the candidate has technical mastery of the field and is capable of doing independent research. This study must enlarge or modify current knowledge in a field or present a significant new interpretation of known materials.

The dissertation is reviewed and approved by at least two principal readers before being submitted for acceptance to the Graduate School. The thesis adviser and a second committee member will serve as readers. The dissertation should first be given to the adviser and, once it has been approved by the adviser, it should be given to the second reader. At least two weeks are to be allowed for each reader. Time must also be set aside to respond to the readers suggested changes. At least one of the thesis readers must be from the Department of Chemistry.

The Graduate School requires all reader's reports and other documentation be received in their office at least two weeks before the Final Public Oral examination. Therefore, students should allow five weeks from the date of giving the thesis to the second reader to the date of the FPO. **A Thesis and FPO checklist can be found in the Appendix of this Handbook.**

If the candidate and/or the adviser want the dissertation to be reviewed for possible patentable results and subsequent patent application either by the University or by a non-University agent, or have the dissertation reviewed by an outside sponsor for the proprietary information or results, these processes must be completed before the department requests to hold the Final Public Oral examination (for more information, contact the Office of Technology and Intellectual Property Licensing, New South Building.)

In order that certain minimum standards of uniformity are observed in the publishing process, the University archivist has established a format for the thesis and procedures for its deposition with the University archives. See the Mudd Library website for specific details: (*https://library.princeton.edu/special-collections/policies/masters-theses-and-phd-dissertations-submission-guidelines)*.

- **Embargo of Dissertation**

It is recognized by the Graduate School that under certain circumstances, the student may wish to withhold the publication of the dissertation. This can be achieved during the dissertation process. The duration of the embargo period is two years and is renewable. Students who wish to embargo their dissertation must have the approval of their advisor or

Thesis Committee in writing, as well as the approval of the Graduate School. For further details, see *http://gradschool.princeton.edu/policies/embargo.*

– **Final Public Oral Examination**
(https://gradschool.princeton.edu/academics/degrees-requirements/dissertation-fpo)

The Advisory Committee (plus one additional faculty member, selected by the student and his/her adviser) serves as the Thesis Committee and conducts the Final Public Oral (FPO) examination, the last formal requirement for the Ph.D.

The FPO consists of a public lecture on the thesis research, usually of about one hour in length. During this presentation, the public and the Thesis Committee may question the student about the research. Following the thesis presentation, the committee meets to evaluate the student's performance. Grading is on a scale from Excellent to Fail. Marks for the written proposal and its oral defense are combined for an overall Final Public Oral Examination grade. If the assigned grade is Passing or better, the requirements for the Ph.D. have been completed and the degree is awarded.

Students who successfully defend the FPO by the date set each year by the Graduate School in May are invited to participate in Commencement. Students who defend later may participate in Commencement the following year. See the degree deadline dates here: *https://gradschool.princeton.edu/academics/degrees-requirements/advanced-degree-application-process/degree-deadlines*

If the student does not pass the FPO examination, he or she may request to retake the examination within one year. If unsuccessful a second time, the candidate is not permitted another opportunity to retake the examination and Ph.D. candidacy is terminated.

Additional information about the degree application and completion process may be found in the Appendix of this Handbook and on the Graduate School website.
https://gradschool.princeton.edu/academics/degrees-requirements

– Chemistry Program Timeline

<table>
<tr><th colspan="2">Year 1</th><th colspan="2">Year 2</th><th colspan="2">Year 3</th><th colspan="2">Year 4</th><th colspan="2">Year 5</th></tr>
<tr><td>Fall</td><td>Spring</td><td>Fall</td><td>Spring</td><td>Fall</td><td>Spring</td><td>Fall</td><td>Spring</td><td>Fall</td><td>Spring</td></tr>
<tr><td colspan="2">University and Departmental Support</td><td>Teaching (TA support)</td><td>Teaching (TA support) or Research Grant Support</td><td colspan="2">Taylor Fellowship</td><td colspan="4">Research Grant Support</td></tr>
<tr><td colspan="2">Advisory Committee Meeting</td><td colspan="2">Advisory Committee Meeting</td><td colspan="2">Advisory Committee Meeting</td><td colspan="2">Advisory Committee Meeting</td><td colspan="2">Advisory Committee Meeting</td></tr>
<tr><td>3 Graduate Courses</td><td>3 Graduate Courses</td><td colspan="3">Generals Exam
Oct. | Jan. | May</td><td colspan="2">Third-Year Seminars</td><td colspan="4">Second Independent Proposal, Dissertation, and Final Public Oral Defense</td></tr>
<tr><td>1st Year Adviser Selection</td><td colspan="9">Laboratory Research</td></tr>
<tr><td colspan="10">Weekly Departmental Seminars</td></tr>
</table>

Note: Except for the relatively well-structured Year 1, Year 2, and Year 3, this Program Timeline is intended only to provide an overview; the actual duration over which a student earns his or her Ph.D. degree is expected to vary

– Vacation Policy

(https://gradschool.princeton.edu/policies/student-vacation-time)

Graduate study is understood to be a full-time commitment on the part of students. During an academic year, which includes the summer, graduate student degree candidates may take up to (but no more than) four weeks of vacation, including any days taken during regular University holidays and scheduled recesses (e.g., the fall- and spring- term breaks and inter-term break). The specific periods taken as vacation must not conflict with the student's academic responsibilities, coursework, research, or teaching, and **should be discussed in advance with one's director of graduate studies, adviser, or dissertation committee**.

If a student is an Assistant in Instruction, they must also secure leave approval from their teaching supervisor(s). As a general rule, AI's will NOT be allowed to take vacation during weeks that classes are in session or during reading period and exam time. AI's who take vacation without receiving leave approval from their teaching supervisor(s), may be considered no longer in good academic standing.

International students who plan to travel abroad must contact the University's Davis International Center to ensure that they comply with their visa regulations and do not experience any difficulty returning to the United States.

- **International Travel**
  (https://enrollmytrip.princeton.edu/login)

The Graduate School requires that all graduate students on University sponsored international travel register their trips in the University's Travel Registration database. This applies to all international travels that are funded, entirely or in part, by Princeton funds or funds processed through University accounts. Students will be asked to submit emergency contact, transportation and housing information, to complete a "Terms and Conditions" form, and to obtain an International SOS card.

- **Responsible Conduct of Research (RCR)**
(https://gradschool.princeton.edu/academics/courses-research-teaching/academic-research-integrity#:-:text=rcr)

All graduate students are required to complete a course in the responsible conduct of research as part of their graduate training and professional development. In Chemistry, this is conducted through CHM 500, a 6-week, 3-hour-per-week course. This mandatory course is offered three times in both the fall and spring semesters (CHM 500A, CHM 500B, and CHM 500C). In the first 6 weeks of the semester, two sessions will be held concurrently, and the third session for the final six weeks. The Chemistry Office of Graduate Studies will assign students to different sections; the occasional conflict of course schedule will be handled on a case-by-case basis.

- **Safety**
  (https://putrain.learn.com)

The **Frick Chemistry Lab Emergency Action Plan** can be found in the Appendix of this Handbook.

- **It is important that each student read the Frick Chemistry Laboratory manual thoroughly.**
- All students must take both Fire Safety Training and General Laboratory Safety Training offered by Princeton's Offices of Public Safety and Environmental Health and Safety (EHS) respectively. Students who do not take these courses will not be permitted to work in a lab or serve as teaching assistants. Visit *https://putrain.learn.com* and "EHS" to view the current fire and lab safety training schedules and pre-register for class.
- Appropriate clothing, footwear and eye protection must be worn in the experimental labs at all times.
- Two lab coats will be provided to each student working in a wet lab and these should be worn whenever the student is in the lab.
- The Department offers coverage for most out of pocket expenses related to the purchase of prescription safety glasses, reimbursing up to $200 for a single pair of

safety glasses at participating eyewear stores. Please contact Stellios Maroulis at sm9515@princeton.edu if you plan to participate in this program.

- Any student injured while working in a lab **must** file an injury report with Stellios Maroulis, the Department Facilities and Safety Manager.
- In the event of a lab emergency, costs incurred by graduate students for ambulance transport will be covered by the University. This policy is in place to ensure that medical assistance is provided as quickly as possible and to prevent any hesitation in calling for emergency services if needed.
- Students should go to the EHS website, *http://www.princeton.edu/ehs*, for further information on safety issues, hazardous materials, etc.

STUDENT STATUS

- **Enrollment**
  (https://gradschool.princeton.edu/academics/enrollment-status-progress/enrollment-statuses)

One's enrollment status defines their relationship to the Graduate School. By receiving a University identification card and/or completing semester sign-in, degree-seeking graduate students are registered as enrolled and will from that point forward hold an enrollment status with the Graduate School that may allow them to qualify for a degree in the program to which they were admitted. All former graduate students also hold a status that indicates either degree completion or a reason for the end of degree candidacy.

Enrolled statuses include regular enrollment, in absentia enrollment, and dissertation completion enrollment (DCE). Unenrolled statuses include a leave of absence, ET/DCC (enrollment terminated, degree candidacy continues, or suspension).

- **Readmission/Reenrollment**
  (https://gradschool.princeton.edu/academics/enrollment-status-progress/reenrollment)
  (https://gradschool.princeton.edu/policies/satisfactory-academic-progress)

Readmission or reenrollment is the annual academic review of current graduate students' academic progress and the department's recommendation as to whether students should or should not continue in their program. The purpose of reenrollment is to give students, their departments, and the Graduate School a clear picture of student progress toward degree objectives, to identify and correct problems, and to set or confirm academic goals for each student in the next year of study.

All students must apply for reenrollment in the spring of each year of the approved program of study in which they are enrolled. Reenrollment, which must be recommended by the student's department, entitles students to continue to consult faculty members and to use laboratories, libraries, computing resources, and other University facilities.

Satisfactory academic progress is measured by the department. For students who have not yet taken the General Examination, this includes completing high-quality work in courses

and seminars and performing effectively in their adviser's research group. For students who have passed the General Examination, significant progress toward the completion of the dissertation is the central criterion.

An additional professional development requirement is documented each year in reenrollment, the annual completion of an Individual Development Plan (IDP). The department requires completion of the AAAS myIDP (http://myidp.sciencecareers.org/) module and submission of the summary page each year in reenrollment.

– In Absentia Status

Students may be recommended for readmission with 'in absentia' status if they need to use educational resources that are not available in Princeton. In absentia status is granted for one year at a time, up to two years, to students who have successfully completed their general examination.

Students may be recommended for 'in absentia' status for either a term or a year if the following criteria are met:

- a need to use educational resources that cannot be obtained in Princeton;
- the work away from Princeton will contribute to the student's progress to the degree;
- the student will not physically live in Princeton or the immediate vicinity, i.e. will not be in residence.

Students in absentia are considered fully enrolled graduate students and enjoy the same health insurance benefits as students in residence.

In the Chemistry Department, 'in absentia' status is typically granted to students whose academic adviser leaves Princeton for another university. Such students continue to work with their adviser at the new institution but receive a Princeton degree. Students who wish to perform research at a national laboratory or other off-site research facility may also apply for in absentia status.

– Leave of Absence

At the recommendation of the Director of Graduate Studies, the Graduate School may grant a year's leave of absence at any one time to students in good standing. Leaves are granted for personal reasons, when the student will not be actively pursuing an academic course of study in fulfillment of Princeton's degree requirements.

Students on leave have withdrawn formally from the graduate program and are not considered enrolled or registered students. Accordingly, no University student benefits continue. An extension of up to one additional year may be granted if the student so requests, but no longer. At that point, if the student does not return to the graduate program, his or her degree candidacy is terminated; in order to return to graduate work at a later time, the student must formally reapply. Leaves should be timed, whenever possible, to come at the end of a term and preferably at the end of a full academic year. Readmission after leave is subject to confirmation of continued professional suitability and a written request for readmission. As the student's original adviser is not required to readmit the student to their research group,

additional terms set forth by a faculty committee within the student's subfield may be required for readmission.

Leaves are not granted to students who:

- have completed less than one full term of enrollment in residence, OR
- are scheduled to take their General Examination in the term for which the leave is being requested, OR
- will be working essentially full time on their Princeton degree requirements, although away from Princeton (for which in absentia status is normally recommended).

– Termination

The Graduate School may also terminate a student's degree candidacy when, upon the recommendation of the department, the student has not made satisfactory academic progress or when a student on leave has not requested reenrollment. In the case of Ph.D. students in particular, degree candidacy terminates automatically after a second failure of the General Examination or in cases where the student has not maintained regular contact with the department and dissertation adviser.

– Dissertation Completion Enrollment (DCE)

DCE status carries most of the benefits of enrolled student status and as DCE students must be working full time on completing their dissertation, they may not enroll in courses. Students may first choose DCE status in the last year of their regular academic program and it may then be held continuously for up to two years.

DCE status ends:

- when the student successfully completes and defends the dissertation OR
- when the student chooses not to apply for reenrollment OR
- when the department does not recommend the student for reenrollment OR
- when the two-year period of DCE eligibility expires. Non-graduating students leaving DCE status will be given ET/DCC status as defined below.

Once having left DCE status, the student cannot apply to return to DCE status; enrollment in DCE status must be continuous, beginning immediately after the department's regular program length has ended, up to the two-year limit.

– Enrollment Terminated/Degree Candidacy Continues (ET/DCC)

A student enters ET/DCC status if they are beyond the department's regular program length, are not in DCE status and have not graduated. ET/DCC is an unenrolled status in which students are ineligible for the student benefits that come with formal enrollment, including DCE status. For ET/DCC students, library access and student borrowing privileges (for those in Princeton or the vicinity), and e-mail and computer account access will continue for a period of one year after entering ET/DCC status.

If a student presents a doctoral dissertation more than five years after he or she has passed the General Examination, the department is not automatically obliged to receive it for consideration.

FUNDING INFORMATION

Students in the Chemistry department are provided funding for their period of enrollment, usually 5 years. For the first-year of study, the Graduate School provides fellowship and tuition payment; in subsequent years, students are funded through department funds, assistantships in instruction (teaching positions), the third year Taylor Fellowship, research grants, or a combination thereof.

Students who work as Assistants in Instruction (AI's) earn slightly more than students who work in the laboratory as Assistants in Research (AR's).

- **Outside Funding**
  (https://gradschool.princeton.edu/financial-support/fellowships/external-fellowships)

Students are encouraged to apply for outside sources of funding. (The University gives students who receive outside funding an additional $4,000 above the standard stipend for each year that they hold the outside funding. If the student already receives additional funds above the standard stipend through a University or Departmental Award such as a Centennial Fellowship or a Hugh Stott Taylor Award (HST), no further additional funds will be provided unless the amount is less than $4,000 in which case it will be supplemented to reach a total of $4,000.

External funding can be explored in Pivot (https://pivot.proquest.com/dashboard). Outside opportunities include:

- ***NSF Graduate Research Fellowship*:** National Science Foundation fellowships for US citizens & permanent residents in their first or second year of graduate study. Apply in summer/early fall, deadline first week of November.
- ***NDSEG Fellowship***: National Defense Science and Engineering Graduate Fellowships for US citizens/permanent residents; January application deadline.
- ***DOE Computational Science Fellowship*:** Four-year fellowship for computational scientists in their first or second year of graduate study. The fellowship includes research opportunity at a DOE laboratory; US citizens/permanent residents whose research includes high-performance computing. Application deadline is mid-January.
- ***HHMI International Student Research Fellowship:*** International students in their third to fifth year of study are eligible for nomination by faculty and reviewed for candidacy by the Graduate School to be considered for the Howard Hughes International Student Research Fellowship.
- ***Hertz Foundation Graduate Fellowship*:** For US citizens/permanent residents who are willing to morally commit to make their skills available to the United States in time of national emergency. Evidence of exceptional creativity, broad understanding of physical principles and outstanding potential for innovative research is expected. Application deadline is the end of October.

- ***Ford Foundation Fellowships*:** Predoctoral, dissertation and post-doctoral fellowships for US citizens/permanent residents who are planning careers in university teaching/research. Deadline is November/December.
- ***Dept. of Homeland Security Fellowship*:** U.S. citizens may apply in spring of first year of graduate study. Annual award includes summer internship and probable employment after degree completion.

- **Departmental Awards**

The Chemistry Department offers numerous fellowships and awards to recognize outstanding students. These include:

Teaching Awards:

- **Pickering Teaching Awards** – Cash prizes granted each year to superb Assistants in Instruction, typically those teaching for the first time.
- **Hubert Alyea '24 Teaching Award** – Recognizes upper-class students who have excelled at undergraduate teaching throughout their graduate career.
- **Sokol Fellowship** – Recognizes superb Assistants in Instruction who are interested in teaching after degree completion.

***Merit Awards*:**

- **Badin *45 Graduate Student Prize**: Cash award granted every other year to the department's top second-year graduate student.
- **Bristol-Myers Squibb Fellowship in Organic Synthesis:** Includes fellowship support, travel expenses to scientific meetings, a mentor at BMS, and the opportunity to speak at research symposia at both Princeton and BMS.
- **Eli-Lilly Edward C. Taylor Fellowship in Chemistry:** For outstanding post-generals graduate students interested in the fields of biochemistry and organic chemistry.
- **First Year Fellowships**: Awarded to the top first-year students, these fellowships provide support replacing the First Year Science and Engineering Fellowship.
- **Patchett Summer Fellowship**: Acknowledges outstanding senior graduate students in organic chemistry.
- **Third Year Seminar Award & Hubbell '47 Fund Travel Prize**: Granted to the two highest rated Third Year Seminar speakers each year, includes educational/travel expense account and cash prize.

Department Travel Grant

The department provides each post-generals graduate student a travel grant of up to $1,000 to support domestic or international travel to a scientific conference. Funds can be used for conference registration, travel and lodging with the approval of the student's adviser prior to June 30th of the student's fifth year of study.

- **University Awards**

The Chemistry Department may nominate an outstanding student for a University-wide award. These honors include:

- **APGA Teaching Prize** – Cash award for outstanding AI's across all disciplines, relies heavily on recommendations from undergraduate students
- **Grimm Memorial Prize** – For outstanding graduate students in computational physics
- **Honorific Fellowships** – The highest honor bestowed by the Graduate School, these one-year fellowships are awarded to top graduate students across all disciplines in the final year of enrollment.

University Funds

The University also has limited funds available to assist graduate students with some travel and medical expenses. These funds include:

- **The Dean's Fund for Scholarly Travel**

The Graduate School offers grants of up to $800 to cover travel costs for students invited to present a paper at conferences and professional meetings. Students are encouraged to apply for assistance as soon as they receive an invitation to present a paper. There are three application deadlines per year, September 1, December 1 and March 1.

Applicants must have been invited to deliver a paper that represents their own work and must show proof of a paper's acceptance at the conference. Giving a poster presentation, serving as a discussant or respondent on a panel, giving a job talk, etc., do not qualify for support. Eligibility is restricted to Ph.D. students who are third year through the first DCE year. Among science and engineering students, preference is given in higher years of study (e.g., 4th, 5th, and DCE). There is a short application form requiring the student's adviser's review and approval.

A full description of the Dean's Fund process, and the application form, may be found on the Graduate School website:

https://gradschool.princeton.edu/financial-support/additional-funding-support/student-activity-funding

- **Assistance with Medical Expenses**

The Graduate School offers financial assistance for those facing unanticipated and/or prohibitive medical expenses, and for cases where out-of-network care is required. Special funds exist to assist enrolled graduate students with some portion of the unreimbursed medical expenses that create a financial hardship. Assistance takes the form of a grant to reimburse some portion of the expenses not covered by insurance; therefore, you must first submit insurance claims and determine your out-of-pocket expenses before you can apply for reimbursement through these funds.

More information may be found on the Graduate Student Life website: *https://gradschool.princeton.edu/student-experience/support-resources/healthwellness/medical-expense-assistance*

RELATED PROGRAMS AND INSTITUTES

– **Program in Neuroscience**
(https://gradschool.princeton.edu/academics/degrees-requirements/fields-study/neuroscience)

Students may earn a degree of Doctor of Philosophy in Chemistry and Neuroscience through the interdisciplinary Program in Neuroscience. The program encourages the serious study of molecular, cellular, developmental and systems neuroscience as it interfaces with cognitive and behavioral research. Current examples at Princeton include: molecular, genetic and pharmacologic analysis of learning and memory, the role of neural stem cells in the adult brain, viral infections of the nervous system, optical and electrical recordings of neuronal function, brain imaging studies of cognitive functions such as attention and memory in humans, and mathematical and computational analysis of neural network function.

Upon entering the program, students select an adviser who is normally a member of the student's home department and also an affiliate of the Princeton Neuroscience Institute. Students must satisfy the normal pre-general examination requirements and pass the general examination of their respective home departments. In addition to meeting their home department's Ph.D. requirements, students in the Joint Graduate Degree Program in Neuroscience must meet all of the following requirements: at least one member of the student's thesis committee must be a core faculty member of the Princeton Neuroscience Institute; the student's Ph.D. thesis research should have a significant neuroscience component; and the student must take one of the following four courses: NEU 501a, NEU 501b, NEU 502a, or NEU 502b. Additionally, all students in the joint program are expected to participate in the neuroscience seminar (NEU 511), which meets several times per semester.

Interested students should register as members of the Joint Graduate Degree Program in Neuroscience after their general exam. This is done by obtaining approval from (a) their adviser; (b) the director of graduate studies (DGS) of their home department; (c) the DGS of the Princeton Neuroscience Institute; and then sending these approvals to the Student Services Manager for the Princeton Neuroscience Institute.

– **High Meadows Environmental Institute**
(https://environment.princeton.edu/education/graduate-certificate-in-environmental-studies/hmei-step-program/)

The High Meadows Environmental Institute (HMEI) at Princeton University advances understanding of the Earth as a complex system influenced by human activities, and informs solutions to local and global challenges by conducting groundbreaking research across disciplines and by preparing future leaders in diverse fields to impact a world increasingly shaped by climate change. Founded in 1994 as the Princeton Environmental Institute, HMEI was renamed in 2020 in recognition of a transformative gift from the High Meadows Foundation, a philanthropic organization co-founded by Judy and Carl Ferenbach III, a

member of the Class of 1964, in support of environmental research and educational initiatives through HMEI.

The HMEI-STEP Graduate Fellowship Program enables Ph.D. candidates in science, engineering and other academic disciplines to explore the environmental policy dimension of their doctoral research. Admission to the program is by competitive application taken annually in the spring semester.

Awarded students receive half support (tuition and stipend) from the High Meadows Environmental Institute (HMEI) for two years and participate in the Science, Technology, and Environmental Policy (STEP) program at the Princeton School of Public and International Affairs (SPI). HMEI-STEP Fellows also receive up to a $3,500 award to support their graduate research. HMEI-STEP students may apply for teaching assistantships with the Program in Environmental Studies.

– **Princeton Materials Institute**
https://materials.princeton.edu/education/graduate

Several faculty in the Department of Chemistry are affiliated with the Princeton Materials Institute (PMI), a multidisciplinary center in the general field of materials science. Research at the Institute pushes the boundaries of not only the performance of new materials but the fundamental knowledge that underlies future advances. We integrate academia and industry and educate the next generation of leaders in the field. We facilitate this work with world-class facilities for imaging and fabrication and deep expertise in characterizing and manipulating materials at molecular and atomic scales.

The Princeton Materials Institute offers joint PhD degree programs with participating academic departments. Through our courses and research opportunities, the Princeton Institute of Materials strives to give students a deep understanding of fundamental science and a great appreciation for technology development. Both undergraduate and graduate students alike are well-prepared for a wide variety of future career opportunities.

Students must apply to and be admitted to a specific academic department and must fulfill all departmental and joint degree requirements, including a doctoral thesis related to materials. They may apply to the program at any time after matriculating in their home department, but are encouraged to do so in their first year; those wishing to pursue the joint degree should speak to their graduate administrator.

– **Graduate Program in Materials**
(https://materials.princeton.edu/education/graduate)

The Graduate Program in Materials, an interdisciplinary Ph.D. program, allows students to pursue materials-related research and education in coordination with engineering and science departments affiliated with PMI and to receive a Ph.D. in Chemistry and Materials. The program draws upon the resources of industrial affiliates as well as other materials-oriented research centers within the University. The breadth and flexibility of the program accommodate a wide range of interests and give students both the theoretical

foundation and practical knowledge they need to function in the rapidly developing field of modern materials. The following is from the PMI website as it pertains to Chemistry:

Materials in Chemistry

Chemistry and materials go hand-in-hand in many ways, and materials chemistry is presently one of the most vital and expanding areas in research and education. Truly interdisciplinary research is essential for progress in this area, with the resulting discoveries and insights that such an interdisciplinary approach in science often yields. Research in academic, industrial, and government institutions is directed towards answering fundamental questions in chemistry that may lead to new materials, the application of chemical and materials knowledge for improving the performance of devices and systems, and making possible the technologies and processes of the future. Materials-related research in chemistry at Princeton encompasses many of the diverse new paths this type of research presently embodies.

Our program ranges from theoretical, through basic science, to more applied areas. Research in theoretical materials chemistry includes, for example, the molecular dynamics simulation of materials properties and the electronic structure theory of surfaces, molecular crystals, and conjugated polymers. There are a wide variety of opportunities to conduct research on materials surfaces, including the study of the adsorption and spectroscopy of molecules and chemical reactions on transition-metal surfaces, and the synthesis and characterization of oxide-supported organometallic complexes. There are also research efforts in the assembly of biogenic hard materials, photochemical energy conversion, solar energy conversion and electrochemistry, the synthesis and characterization of solids with exotic electronic and magnetic properties, optoelectronic properties of organic thin films.

The materials chemistry program provides a unique interdisciplinary opportunity for students to pursue their interests in this rapidly advancing field. Students may tailor their program by combining different aspects of education and research in materials and chemistry, and other areas such as electronics, physics, or biology to create their own interdisciplinary specialty. Requirements for a Ph.D. in Chemistry & Materials are:

- 2 or 3 courses in Materials Science & Engineering at the 500 level.
- Ph.D. thesis in the area of Chemistry of Materials
- A materials science professor from outside the Department of Chemistry must be on the Thesis Committee.

CHEMISTRY DEPARTMENT ORGANIZATIONS AND ACTIVITIES

- **Corporate Recruiting**

Pharmaceutical, chemical and energy companies conduct on-site interviews and information sessions for interested graduate and postdoctoral students.

– **Women Researchers in Chemistry (WIC)**

Open to all women in the chemistry department (graduate students, post-docs, faculty and staff), FRIC organizes a variety of events to foster a vibrant and strong community and raise awareness of the historic and future states of gender relations and work-life balance in the global chemistry community.

Queer in Chemistry (QuIC)

QuiC is a departmental organization supporting the LGBTQIA+ and allied communities within Princeton Chemistry. The group offers social events, professional development events and networking opportunities. Everyone is welcomed to join regardless of identity.

Graduate Student Organization (GSO)

The Chemistry GSO comprises graduate students from all years of study. The GSO serves as a communication channel between the graduate students and the faculty through regular meetings with the Graduate Work Committee to discuss graduate student academic policies and other concerns. The GSO organizes social and outreach activities, and assists with recruitment and orientation. It sponsors the Student Invited Lecture Series, the Career Seminar Series, a fall Fellowship Workshop and General Exam Information Session.

– **Social Hour**

Graduate students and postdocs mingle on Friday afternoons in the Atrium or, in nice weather, in the Frick South Courtyard. Cold drinks, beer, soda and snacks are provided.

– **Sports Teams**

Chemistry graduate students regularly compete against other departments in such sports as softball, basketball, and soccer. Students play on many University athletic club teams during intramural season and in informal pick-up games during the summer.

– **Frickmas**

Each December, the third-year graduate students host a holiday party for graduate students, faculty and staff. The event's high point is a skit that manages to roast every faculty member in one light-hearted way or another!

– **Fricknic**

Organized by first-year graduate students, Fricknic is a June picnic for graduate students, post-docs, faculty and staff which includes a barbecue and a variety of games and activities.

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APPENDIX

– Useful Abbreviations

ACS	American Chemical Society
AI	Assistant in Instruction (Teaching Assistant)
AR	Assistant in Research (Research Assistant
DCE	Dissertation Completion Enrollment
DGS	Director of Graduate Studies
ET/DCC	Enrollment Terminated Degree Candidacy Continues
FPO	Final Public Oral (oral defense of the thesis)
GSO	Graduate Student Organization
MRSEC	Materials Research Science and Engineering Center

OFP	Out of Field Proposal (original research proposal)
PACM	Program in Applied and Computational Mathematics
PCCM	Princeton Center for Complex Materials
PMI	Princeton Materials Institute
VRSC	Visiting Student Research Collaborator

– Guidelines for the General Examination

The General Examination Committee will be comprised of a student's adviser and two in-field committee members; one of whom interfaces with another subfield. The General Exam committee is assigned for the purpose of the exam only, and they do not become the Advisory Committee or Thesis Committee. At the start of the exam, the student will be asked to leave the room for a few minutes so that the committee can discuss the written proposal and the adviser's evaluation letter. Once the student returns to the room they will present an approximately 20-minute seminar-type talk on their proposed thesis research using PowerPoint or Keynote. The committee may interrupt the presentation to ask questions. The student should also be prepared to use the blackboard as necessary. After the presentation, the exam committee will question the student to get a sense of how prepared they are to continue doing thesis research at Princeton. The committee might also ask some general chemistry questions. This part of the exam will take about 30 minutes.

The student will then make a second seminar type presentation of their independent research proposal. This should take about 10 minutes and will be followed by questions from the committee, following a format similar to the thesis proposal examination.

When the committee has finished asking questions, the student will leave the room while the Generals Committee discusses the presentations and responses to questions. When the committee has decided upon a final Generals Exam grade (Pass, Fail, or Pass with Distinction), they call the student back into the room to share feedback about their presentation, progress and the examination results.

–Thesis Research Proposal Guidelines

The Thesis Research Proposal is a brief document (approximately 15 pages of text and figures plus reference pages) that provides a basis for the oral portion of the General Examination. It is recommended that it be organized as suggested below, somewhat on the model of a standard NSF proposal.

1. **Background and significance -** This section should answer the question, "why is the proposed work important?" Briefly sketch the background to the present proposal, critically evaluate existing knowledge, and identify gaps in our present understanding. This exposition is intended to place the proposed work into a broader scientific context, and to provide clear and logical motivation for both the general approach and the specific aims (point 2 below) of the present proposal.
2. **Specific aims -** This section is intended to answer, in very specific terms, the question, "what do you propose to do?" No background or other narrative material belongs in this section; it is not meant to stand alone, nor to provide details about the experimental system, but rather to

provide a succinct and specific summary of the planned research. This section could, for example, consist of little more than a well-organized outline describing questions to be answered, hypotheses to be tested, and experiments to be conducted. It is probably most helpful to write this section only after writing the rest of the proposal.

3. **Progress report** - Describe your thesis project briefly. Provide a progress report on your work to date, making very clear which contributions are yours and which are not. If you have made any observations or developments that are new, describe in detail what you did, and how. Discuss the relationship of your thesis work to the broad, long-term interests and objectives of your research group and, in turn, relate your thesis topic and your group's interests to your proposal. It is understood that these relationships vary in different research groups, and that the thesis work may yet evolve in directions different from those you envision now. It is understood that individual progress will vary.
4. Planned studies - Describe the overall strategy, methodology and analyses to be used to accomplish the remaining specific aims of your proposal. Provide appropriate calculations or cite literature data to support the feasibility of the experiments you propose. Discuss potential pitfalls of any proposed experiments that lack clear precedent and propose alternative approaches to achieve the aims.
5. **Complete citations** - All authors and the titles of research articles or book chapters must be included in the list of references.

–Independent Research Proposal Guidelines

The independent research proposal should be modeled after a standard NSF proposal and should be no more than 15 pages in length, including figures, with references in addition. However, before undertaking the writing of the actual proposal, you should prepare a one page summary of your idea and send it to your Advisory Committee for review. The Advisory Committee will determine whether this second proposal is sufficiently independent from the thesis research. You should only proceed with the actual proposal once your committee agrees that your idea is sufficiently independent and gives you their approval.

The proposal should be organized as suggested below:

1. **Background and significance** - This section should answer the question: *Why is the proposed work important?* Briefly sketch the background to the present proposal, critically evaluate existing knowledge, and identify gaps in our present understanding. This exposition is intended to place the proposed work into a broader scientific context and to provide clear and logical motivation for both the general approach and the specific aims (see below) of the present proposal. This section may need to occupy as many as 3-4 pages.
2. **Specific aims** - This section is intended to answer, in very specific terms, the question: *What do you propose to do?* No background or other narrative material belongs in this section; it is not meant to stand alone, nor to provide details about the experimental system, but rather to provide a succinct and specific summary of the planned research. This section could, for example, consist of little more than a well-organized outline describing questions to be answered, hypotheses to be tested, and experiments to be conducted. It is probably most helpful to write this section after writing the rest of the proposal. It should occupy no more than one page.
3. **Experimental design and feasibility** - This section should parallel Specific Aims and should answer the question: *How will you do the proposed work?* Describe each experiment you propose to conduct and how you will analyze the data and interpret the results. Provide

appropriate calculations or cite literature data to support the feasibility of the experiments you propose. Supporting evidence that comes from unpublished work must be clearly identified as such and specifically attributed. Discuss potential pitfalls of any proposed experiments that lack clear precedent, and propose alternative approaches to achieve the aims. Indicate how each of your proposed experiments will address the gaps in present knowledge and, for any gaps that will not be addressed, discuss why they are not being addressed. This section may need to occupy as many as 3-4 pages.

4. **References** - The list of references must include complete citations, including all authors and the titles of research articles or book chapters.

Prior to the defense of their thesis at the Final Public Oral, the student will generate an original research proposal, not related to the thesis research, and defend it before the advisory committee. It is strongly recommended that this be done well before the FPO so that it does not conflict with thesis work, preferably during the 4th year so that it does not conflict with thesis work.

– Guidelines for Preparing the Pre-FPO Original Research Proposal

At least one month prior to the FPO, the student will generate an original research proposal, not related to the thesis research, and defend it before the advisory committee.

The "Out of Field" research proposal (OFP) must be written and circulated among the Advisory Committee for review at least two weeks before the oral presentation date. The student is responsible for organizing the committee members to meet for this oral exam and informing the Graduate Administrator prior to the date agreed upon. The committee records a grade for the written proposal and its oral defense. Grading is on a scale from Excellent to Fail. Again, this written proposal is a brief document, modeled after a standard NSF proposal. **It should be no more than 15 pages in length including figures, with references in addition**.

It should be organized as suggested below:

1. **Background and significance -** This section should answer the question: *Why is the proposed work important?* Briefly sketch the background to the present proposal, critically evaluate existing knowledge, and identify gaps in our present understanding. This exposition is intended to place the proposed work into a broader scientific context and to provide clear and logical motivation for both the general approach and the specific aims (see below) of the present proposal. This section may need to occupy as many as 3-4 pages.
2. **Specific aims -** This section is intended to answer, in very specific terms, the question: *What do you propose to do?* No background or other narrative material belongs in this section; it is not meant to stand alone, nor to provide details about the experimental system, but rather to provide a succinct and specific summary of the planned research. This section could, for example, consist of little more than a well-organized outline describing questions to be answered, hypotheses to be tested, and experiments to be conducted. It is probably most helpful to write this section after writing the rest of the proposal. It should occupy no more than one page.
3. **Experimental design and feasibility -** This section should parallel Specific Aims and should answer the question: *How will you do the proposed work?* Describe each experiment you propose to conduct and how you will analyze the data and interpret the results. Provide appropriate calculations or cite literature data to support the feasibility of the experiments you propose. Supporting evidence that comes from unpublished work must be clearly identified

as such and specifically attributed. Discuss potential pitfalls of any proposed experiments that lack clear precedent, and propose alternative approaches to achieve the aims. Indicate how each of your proposed experiments will address the gaps in present knowledge and, for any gaps that will not be addressed, discuss why they are not being addressed. This section may need to occupy as many as 3-4 pages.

4. **References -** The list of references must include complete citations, including all authors and the titles of research articles or book chapters.

– Dissertation & Final Public Oral Examination

(https://gradschool.princeton.edu/academics/degrees-requirements/dissertation-fpo)

Before Writing

- Consult the Mudd Library website. This will provide you with all needed information about formatting and binding your thesis. You MUST follow the format required by Mudd. Please make special note of how to format the title page, which much list your adviser's name. This site also provides information on publishing your thesis. *https://library.princeton.edu/special-collections/policies/masters-theses-and-phd-dissertations-submission-guidelines*
- For citation styles, follow the standard ACS style, details of which can be found at *www.acs.org*

At Least Six Weeks Before FPO Exam

- Choose one member of thesis committee to serve as second reader of thesis.
- Submit thesis draft to adviser.
- Find a fourth member to serve on your Thesis Committee. This person must attend both your Out-of-Field Proposal and your FPO.
- Finalize dates, times when committee is available for the FPO and book a room for the exam.

At Least Four Weeks Before FPO Exam

- Submit final thesis draft to adviser and second reader.
- Incorporate reader comments and proofread!

At Least Two Weeks Before FPO Exam – Advanced Degree Application

(https://gradschool.princeton.edu/academics/degrees-requirements/advanced-degree-application-process)

- A completed electronic ADVANCED DEGREE APPLICATION must be submitted to the Office of Academic Affairs. This on-line application is available via SCORE. The following are to be uploaded by the student when submitting the degree application:
- **TITLE PAGE OF THE DISSERTATION.** The correct degree award date must appear at the bottom of the title page. See below for dates.
- **DISSERTATION ABSTRACT** *(Must not exceed 350 words.)*
- **EMBARGO REQUEST AND APPROVAL FORM** *(if applicable)*

The following should be given to the Graduate Administrator:

- ***PRIOR PRESENTATION AND PUBLICATION FORM:*** Signed by your adviser
- ***TWO (2) READERS' REPORTS:*** One from your adviser and one from a second member of your committee. At least one reader must be a member of the Chemistry Department. (Both of the above forms are available at *http://gradschool.princeton.edu/forms/academic*)
- ***ONE ELECTRONIC COPY OF DISSERTATION***

Day of FPO Exam

- Arrive 15 minutes early to set up

- Defend!

After FPO Exam

- Submit dissertation PDF to Princeton's to ProQuest ETD site
- Complete the Survey of Earned Doctorates: Save an electronic copy of the "Certificate of Completion" page of the SED to attach to your final paperwork.
- Complete the Exit Survey: the electronic copy of the "Confirmation of Completion" page must be attached to your final paperwork.
- Complete the checkout process in TigerHub

Once all actions are complete, graduate students must log in to TigerHub to complete the submission of the final paperwork process. All final paperwork is normally submitted immediately following the successful completion of the FPO examination, but in no case later than two weeks after the defense or by the degree deadline, whichever comes first.

Degree Deadlines and Conferral Dates

(https://gradschool.princeton.edu/academics/degrees-requirements/advanced-degree-application-process/degree-deadlines)

Graduate School Alcohol Beverage Policy

(From "Rights, Rules, Responsibilities," ***https://rrr.princeton.edu/*** Section 2.6)

Graduate students at Princeton University are expected to be acquainted with and to abide by both State and University regulations regarding the consumption of alcohol. They are also expected to be aware of the social, physiological, and psychological consequences of excessive drinking in order to make responsible and informed decisions about the serving and consumption of alcohol. The University provides regular educational programs on alcohol and drug abuse, as well as counseling services.

The University alcoholic beverage policy is designed to be consistent with the laws of the State of New Jersey that, in general, prohibit the consumption and serving of alcoholic beverages by and to persons under 21 years of age. The policy also reflects the need for mutual respect and personal responsibility within a diverse community. Students are responsible for their behavior – whether or not they are under the influence of alcohol. Under no circumstances will the consumption of alcohol constitute a mitigating circumstance when it contributes to the violation of University regulations.

The University respects the right to privacy: its representatives will not enter dormitory rooms without substantive cause (i.e., without reasonable suspicion that University policies or regulations have been violated.) However, those individuals whose behavior infringes on the rights of others have, in essence, forfeited that privacy.

Alcoholic beverages will not normally be provided at University events where persons under the legal drinking age for consumption of alcoholic beverages are present. Those who are of legal drinking age and who wish to sponsor campus events with alcohol must comply with the guidelines established by the Office of the Dean of the Graduate School.

If given approval to serve alcoholic beverages, those organizing the event are responsible for ensuring that only those of legal drinking age are served. Availability of alcoholic beverages shall not be the primary focus of advertising for campus social events.

It is the primary responsibility of those in the presence of a severely intoxicated person to contact appropriate University or local medical or safety personnel (proctors, deans, McCosh Health Center

Staff, Princeton Medical Center Staff, or local police or members of the rescue squad.) Intoxication will not be grounds for disciplinary action. Contacting the Department of Public Safety for assistance in transporting a student in need of medical attention will not, in itself, lead to disciplinary action. Disciplinary action will occur only if other circumstances indicating a violation of University policy are observed. In such an instance, the fact that students initiated a call for assistance will be considered a mitigating circumstance.

– Event Planning

Graduate student organizations wishing to hold an event on campus, must observe the guidelines for planning and conducting the event contained in the Events Planning Handbook**.**
(https://gradschool.princeton.edu/student-experience/get-involved/plan-event)

Frick Chemistry Lab Emergency Action Plan

PRINCETON UNIVERSITY

Frick Chemistry Laboratory Emergency Action Plan

Revised July 27, 2023

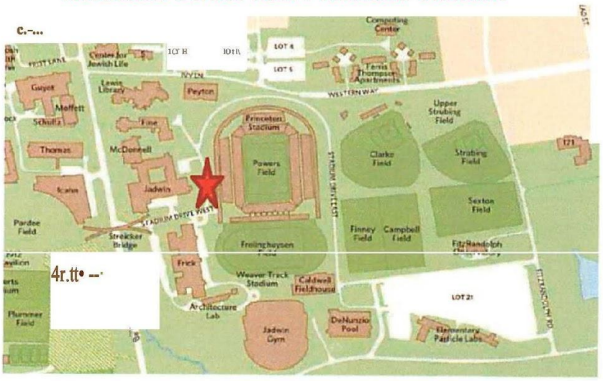
Emergencies	**911** or **609-258-3333** (from campus or cell)	**Designated Assembly Area** Northeast corner near Princeton Stadium
Fire Protection Systems: All of the buildings are equipped with an alarm system consisting of audible and visible alarms activated by manual pull stations or smoke detection as well as sprinkler systems.		**Emergency Coordinators:** **Stellios Maroulis** Office: 609-258-7048 Cell: 609-532-9061 **Kevin Wilkes** Office: 609-258-3920 Cell: 267-249-6100

Fires

If you discover a fire:

- **Alert** people in the area of the need to evacuate
- **Activate** the nearest fire alarm
- **Call** Public Safety at 609 -258-3333 or 911 from any phone when you reach a safe area. **If a building fire alarm is sounding or you receive notification of a fire emergency:**
  - **Feel the door** or doorknob to the hallway with the back of your hand. If it feels hot, do not open it the fire may be on the other side of the door. If you are trapped, put a cloth, towel or coat under the door to help prevent the entry of smoke. Dial 911 or 609-258-3333 and tell the Public Safety dispatcher your location and telephone number and that you are trapped in the room and need rescue. Stay on the phone until instructed otherwise.
  - **If the door is not hot,** open it slowly. If the hallway is clear of smoke, walk to the nearest exit and evacuate via the **nearest exterior stairwell on the lab side of the building to the street grade level exit.**
  - **Close doors behind you.**
  - **Do not attempt to use elevators.** Elevators are tied to the fire detection system and are not available to occupants once the alarm sounds.
  - **Assemble** at the area below. Remain there until instructed by Public Safety or the fire department that it is safe to re-enter the building.

Northeast corner near Princeton Stadium



Evacuation Procedures

Evacuate immediately. Personnel on levels B,1,2 and 3 should **use the exterior fire stairwells on the east side of the building,** unless you have specific emergency responsibilities designated in the **Additional Duties** section of this plan. **Do not use the Atrium stairs to exit the building. Personnel on the atrium level should use their available nearest exit, posted on the evacuation plan in your area.** After you have left the building, go to the designated assembly area and remain there. At the assembly point, supervisors will account for personnel and notify the Emergency Coordinator or Public Safety if any personnel are missing.

Shelter in Place

During certain emergency situations, particularly **chemical releases, radioactive material releases and some weather emergencies,** you may be advised to "Shelter in Place" (e.g., remain in side} rather than evacuate the building. **Instructions will be provided to you on this matter.** Some may include the following:

- Stay inside the building.
- If possible, go to a room or corridor where there are no windows, i.e., Taylor Auditorium / basement level room
- In the event of a chemical release, go to an above-ground level of the building, since some chemicals are heavier than air and may seep into basements, even if windows are closed. Atrium level or above level rooms are advised for this situation.
- Do not use elevators.
- Shut and lock all windows and doors. Locking can provide a tighter seal.
- Contact Special Facilities at 2588000 to turn off the heat, air conditioning or ventilation system.
- Quickly locate supplies you may need, e.g., food, water, radio, etc.
- If possible, monitor for additional information via the Princeton Tiger Alert Notification system. To sign up for Tiger Alert and set up notifications visit the website at https://emergency.princeton.edu/stay-connected/ptens
- You can also check the local media outlets; radio (88.1, 97.5, 101.5, 103.3, 1350, 1450, and 1490) or television for further instructions.
- **Do not call 911 unless you are reporting a life-threatening situation.**

Additional steps to be taken if materials are available:

- In the event of a chemical, biological or radioactive material release requiring shelter-in-

place, seal doors and windows with duct tape and/or plastic sheeting, wet paper towel s, etc.
- Cover cracks under doors with damp towels.

When the "all clear" is announced
- Open windows and doors.
- Facilities to turn on heating, air conditioning or ventilation system.
- Await further instructions.

Persons with Disabilities

Planning for Assistance in an Evacuation

If you need specialized assistance during an evacuation (e.g. a visual alarm device, identification of fire-exit stairwells, specialized evacuation equipment or alternative egress route planning) due to a medical condition or disability, please contact the Frick Chemistry Facilities & Safety Manager or the Office of Disability Services to arrange for a need's assessment. Self-identification is voluntary and confidential. All such requests and any special arrangements made will only be disclosed to Public Safety and individuals who have a responsibility to assist under the plan. Remember that elevators are connected to the fire detection system and are not available to occupants once a fire alarm sound.

Evacuation Procedures

If you are alone at the time of a fire or emergency evacuation, notify Public Safety of your location by calling **911 or 609-258-3333 from any campus or cellular phone.** Proceed to the nearest fire-exit stair well and wait on the landing for assistance. To ensure that your location is known, tell an individual who is evacuating, to notify Public Safety at the designated assembly point of your location. Members of Public Safety, the Princeton Fire Department or the Princeton First Aid and Rescue Squad will assist you from the building.

University Fire Emergency Policy and Procedure

In case of a fire emergency notify Public Safety immediately at **911 or 609-258-3333 from any campus or cellular phone.** Public Safety has primary responsibility for managing fire emergencies and summoning outside assistance when necessary. Unauthorized re-entry into a building during a fire emergency is not permitted. Violators of this policy are subject to University and state fire code sanctions. Building occupants are not required to fight fires. Individuals who have been trained in the proper use of a fire extinguisher and are confident in their ability to cope with the hazards of a fire may use a portable fire extinguisher to fight small, incipient stage fires (no larger than a waste paper basket). Firefighting efforts must be terminated when it becomes obvious that there is risk of personal harm.

Training

The Emergency Coordinator is responsible for providing all new employees or other regular building occupants with initial Emergency Action Plan training. All building occupants must be familiar with the contents of this plan and retrained annually. The Emergency Coordinator is responsible for full dissemination of any changes to the plan following the annual review.

TigerAlert (formerly PTENS)

In an emergency, the University may use TigerAlert to communicate information and instructions to the campus community through landline phones, cellular phones, text messaging and email.
Be sure your contact information is accurate in order to receive emergency messages:

Faculty & Staff: HR Self-Service website https://www.princeton.edu/selfservice

Graduate & Undergraduate Students: TigerHub website: https://registrar.princeton.edu/tigerhub

Special Assignments and Duties

Emergency Coordinators for Frick Chemistry: Stellios Maroulis, sm9515@princeton.edu. 609-532-9061

Kevin Wilkes, kwilkes@princeton.edu, 267-249-6100

Lab Safety Leaders

Lab#	Lab Monitor	PI
A01-08	V. Sari/ P. Andrae	L' Esperance / S. Knowles
A09	Kurt Lindquist	Cava
101	Sam He	Sorensen
103	Ben Hejna	Knowles
104	William Lyon	MacMillan
105	Iona McWhinnie	MacMillan
105	Iona McWhinnie	MacMillan
201	Chih-Chung Chen	Groves
201	Catherine Bilodeau	Hyster
202	Cristina Preston	Stache
203	Sarah Gernhart	Yang
204	Daniel Oblinsky	Scholes
205	Wenyun Lu	Rabinowitz
206	Cherish Nie	Chirik
301	Nir Hananya	Muir
302	Nir Hananya	Muir
303	Nir Hanaya	Muir
305	Yueyu Yao	Hecht
305	Ryan Roo	Seyedsayamdost
306	Ryan Roo	Seyedsayamdost
307	Tanner Eggert	Kleiner
308	Tanner Eggert	Kleiner
309	Scott Lee	Schoop
310	Kailyn Cohen	Bocarsly
309	Josef Lawrence	Bocarsly
310	Scott Lee	Schoop

B Level

B03/B07	Daniel Oblinsky	Scholes Laser
BO6	I. Pelczer/ K. Conover	NMR Lab
BO6A	Hahn Kim	Small Molecule Center
B08	John Eng	Spectroscopy Lab
B14	John Eng	Mass Spec Lab
B16A	John Eng	Mass Spec Lab
B16	Alexander Mckillop	Weichman
B17	Joseph Stiles	Schoop
B18	Neal Byrne	Lotus Separations
B24	Aleksei Goun	Rabitz Laser Lab
B25	Venu Vandavasi	Biophysics Lab
B26	Phil Jeffrey	X-Ray Lab

Procedures for Lab Safety Monitors

Direct all lab personnel to leave the lab at once through the nearest exterior fire stairwell exit. Check lab support rooms, instrument labs, cold rooms, etc. Assess the situation and the lab work at hand on the way out. If anyone is working on a potentially dangerous experiment or if questionable chemicals are left out during an evacuation, and cannot be left unattended for 15 minutes, report that to the first responders. Check restrooms on your way out. Do not stay behind if personnel do not adhere to your directions. Take their name and report it to the Command Center outside the building. Once outside the building, help direct your lab associates to the designated assembly area, i.e., the northeast corner near Princeton Stadium.

Administrative Floor Monitors:

Level B: Ken Conover/ Mike Kervan / Jim Magee/ Marco Rodriguez
Level A: Vicky Lloyd/ Meredith LaSalle-Tarantin/ Frank Scalice
Level 1: Stellios Maroulis / Tiffiny Davis / Patti Wallack
Level 2: Jon Darmon/ Pattie Faranetta/ Kattie Finneran
Level 3: Kim Dugo/ Kevin Wilkes/ Jodi Venables

Procedures for Floor Monitors

Walk your designated floor quickly, direct all personnel to leave the building immediately through the nearest fire exit and check for people in the:

Floor B - Auditorium, Kitchenette, Stock Room, Offices, NMR, Small Molecule Center, Mass Spec Lab, Biophysics Lab, Lotus Separations, Maintenance, Laser Labs, X-ray Lab, Restrooms and any other enclosed or secluded areas.

Floor A - Offices, Mail Room, Restrooms, Faculty Lounge, Center Office/Cubical Areas, Vending Area, Cove Areas, Cafe, A81, MPR A57, Cava Office locations, Group Room, and any other enclosed or secluded areas.

Floors 1, 2, 3 Offices, Group Rooms, Theory Labs, Kitchenettes, Restrooms, Conference Rooms, Lounge Areas and any other enclosed or secluded areas.

If doors are locked, knock loud enough to be heard. Instruct all people to leave the building at once. If anyone does not adhere to your direction, ask them their name and report them to the Command Center, outside the building. Do not stay behind for anyone not following directions!

Wranglers:

Interior Main Entrance: Tamara Thatcher
Interior South Entrance: Doug Rosso
Procedures for Interior Wranglers: Direct people to the nearest exit and keep the foot pace as quick as possible.

Exterior Designated Assembly Area/NE corner by Princeton Stadium: Clarice Gethers-Mubarak, Phil Fairall

Procedures for Exterior Wranglers: Direct people to the designated assembly area, i.e., the Northeast corner near Princeton Stadium. Keep everyone away from the Command Center at the front of the building.