

Physics Graduate Student Handbook

Entering Class of 2021

Revised August 2021

Physics Graduate Student Handbook

PHYSICS GRADUATE STUDENT HANDBOOK	1
TABLE OF CONTENTS	1
INTRODUCTION	3
STATEMENT OF PRINCIPLES AND LEARNING OBJECTIVE	3
WHO'S WHO IN THE PHYSICS DEPARTMENT	4
ACADEMIC REQUIREMENTS	5
COURSE REQUIREMENTS.....	5
<i>Special Investigations - PHYS 990</i>	6
<i>Pass-Out Exams</i>	6
<i>Course Waivers</i>	7
<i>Taking Courses Outside the Department</i>	7
<i>Registration Information</i>	7
GRADE REQUIREMENTS	7
<i>Incomplete Grades</i>	8
QUALIFYING EVENTS	8
<i>Qualifying Event in Research</i>	8
<i>Written Qualifying Event</i>	9
MASTER'S DEGREE REQUIREMENTS	9
<i>Petitioning for Masters' Degree</i>	10
TEACHING.....	10
<i>Teaching Requirements</i>	10
<i>Training for Teaching</i>	11
<i>Language Requirements for Teaching</i>	11
<i>Non-Required Teaching</i>	11
RESEARCH AND ADVISING	12
FIRST AND SECOND YEAR	12
<i>Finding a Research Group</i>	12
<i>Summer Research Between Years 1 and 2</i>	12
<i>Choosing an Adviser</i>	12
<i>Mentoring and Advising</i>	13
THIRD YEAR AND BEYOND	14
<i>Advancement to Candidacy</i>	14
<i>Core Thesis Committee</i>	14
<i>Prospectus Requirement</i>	15
<i>Public Presentation</i>	16
<i>Annual Dissertation Progress Report</i>	17
DISSERTATION AND COMPLETION	18
<i>Forming a Dissertation Committee</i>	18
<i>Dissertation Defense</i>	18
<i>Dissertation Requirements</i>	19
<i>Reader Duties</i>	20
<i>Graduation Checklist</i>	21
<i>IT Access after Graduation</i>	22
OTHER MATTERS	23
INTERNATIONAL STUDENT SPECIFIC.....	23
<i>English as a Second Language</i>	23
<i>Int'l Student Status Changes</i>	23

<i>Graduating Int'l Students</i>	24
REGISTRATION CHANGES	24
<i>Registration Deferrals</i>	24
<i>Leave of Absence (Personal, Medical or Parental)</i>	24
<i>Registration Extension</i>	25
<i>Registration Withdrawals</i>	25
BEREAVEMENT POLICY	25
VACATION POLICY	26
EXTERNAL SUMMER INTERNSHIPS.....	26
FINANCIAL MATTERS.....	26
<i>Paychecks</i>	26
<i>Taxes</i>	27
<i>Fellowship Opportunities</i>	27
<i>Dean's Emergency Fund</i>	27
<i>Parental Support and Relief</i>	27
<i>Vacation Funding</i>	27
<i>Summer Funding</i>	28
<i>Loans</i>	28
YALE HEALTH PLAN	28
<i>Yale Student Health</i>	28
<i>Payne Whitney Gym</i>	29
WELL-BEING RESOURCES.....	29
OTHER RESOURCES.....	30
ACADEMIC RESOURCES.....	30
<i>Forms</i>	30
<i>Links</i>	30
PHYSICS STUDENT RESOURCES.....	32
<i>Departmental Colloquia and Seminars</i>	32
<i>Graduate School Advising & Mentoring</i>	32
<i>Graduate Student Advisory Committee (GSAC)</i>	32
<i>Graduate Student Assembly (GSA)</i>	32
<i>McDougal Graduate Student Center</i>	33
<i>Office of Career Strategy (OCS)</i>	33
<i>Office for Graduate Student Development and Diversity (OSGDD)</i>	34
<i>Office of International Students & Scholars (OISS)</i>	34
<i>Student Accessibility Services (SAS)</i>	34
UNIVERSITY RESEARCH RESOURCES.....	34
<i>Library Resources for Physics</i>	34
<i>Electronic Library Resources</i>	34
<i>Physical Library Resources</i>	34
<i>Research Assistance</i>	35
<i>Professional Resources</i>	35
<i>Software Library</i>	35
DEPARTMENTAL RESOURCES	35
<i>Computers and Printers</i>	35
<i>Copy Machine</i>	36
<i>Facilities</i>	36
<i>Keys</i>	36
<i>Kitchen Facilities</i>	36
<i>Mail</i>	37
<i>Parking</i>	37
<i>Room and Laboratory Assignments</i>	37
<i>Security</i>	37

Introduction

Welcome to the Yale University Department of Physics Graduate Program. The purpose of this handbook is to provide you with a summary of the important information you will need as you make your way through the graduate curriculum, carry out your research, complete your thesis, and thrive during your time with us.

In the initial years, when you are learning to teach and carrying a heavy load of classes, Graduate school can feel overwhelming. The faculty, program coordinator, and Director of Graduate Studies (DGS) encourage you to communicate frequently and freely with them and collaborate with your fellow students to learn the vast amount of material you need to acquire in reaching the forefront of research. You will do much of your learning outside of the classroom in conversations and problem-solving sessions with your colleagues. Physics study and research is a collaborative experience that should be both challenging and exciting.

This handbook summarizes some of the administrative requirements you will have to fulfill traversing the program. If you encounter any errors or have any questions, please do not hesitate to contact the Physics Registrar and/or the DGS. Please refer to the Graduate School of Arts and Sciences Annual [Programs and Policies Bulletin](#) for more detailed official information.

Students are reminded that the Graduate School's policies must be followed and supersede those of the department.

Statement of Principles and Learning Objective

The Department of Physics is committed to fostering an environment of diversity, equity, and inclusion for every member of our department community, as we strive for excellence in research, teaching, and mentoring. We are led by our department's [Statement of Principles](#) and our following learning objectives.

Learning Objectives -

- Students will acquire a general foundational knowledge of physics at the graduate level and the necessary accompanying methodological aspects of mathematics, computing, and instrumentation.
- Students will learn to identify and solve problems at the frontier of physics knowledge, uphold standards of scientific integrity, and disseminate their research.
- Students will become educators and communicators with the ability to promote an understanding and appreciation of physics across the university and in society.

Department members and students will work together to develop and realize, in the department and the community, progress, and success in diversity, equity, and inclusion in all aspects of the scientific enterprise.

Who's Who in the Physics Department

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*Please note that administrative office locations may change due to office reorganizations in 2021.

Academic Requirements

Course Requirements

Over the course of the first and second years, students are required to complete:

- Six foundational courses
- One advanced elective
- Two research seminars
- One PHYS 990: Special Investigations (SI)

The purpose of the foundational courses is to complete the student's undergraduate training in classical and quantum physics. Students who have already taken comparable core courses can elect to take the Pass-Out exam to be excused from taking that foundational course. Students who pass out of a course exam will be required to take an additional advanced elective to fulfill the required number of credits. Further information on the Pass-Out exams can be found below, and detailed course information can be found on the [Yale Online Course Search page](#).

Advanced electives should be selected from the list of graduate elective courses offered by the Physics or Applied Physics departments. Courses offered by other departments may also serve as advanced electives with the approval of the DGS. A sample of standard advanced electives provided is below.

In addition to taking classes, all students must engage in a research project by taking PHYS 990 Special Investigations, usually in their first year. A presentation of your Phys 990 research will serve as one part of a two-part qualifying event explained.

Below is the list of foundational courses and regularly offered Advanced Electives. [Course sample schedules](#) should be used to help students decide what course load is right for them. DGS advising is also provided at the beginning of the academic year to help guide students successfully. The minimum course load is four foundational courses plus 515 and 590 in the first academic year. Courses taken above the minimum course load will help students complete their MS en-route more quickly and better prepare students for the Research and Written Qualifying Events.

6 Foundational Courses:

- Phys 500 Advanced Classical Mechanics
- Phys 502 Electromagnetic Theory
- Phys 506 Mathematical Methods
- Phys 508 Quantum Mechanics I
- Phys 510 Quantum Mechanics II
- Phys 512 Statistical Physics I

One or more Advanced Courses:

- Phys 538 Intro to Relativistic Astrophysics & General Relativity
- Phys 609 Relativistic Field Theory I
- Phys 610 Quantum Many Body Theory
- Phys 628 Statistical Physics II
- Phys 630 Relativistic Field Theory II
- Phys 681 Advanced Instrumentation

Two Research Seminars:

- Phys 515 Physics Research Options
- Phys 590 Responsible Conduct of Research

One Special Investigation: Phys 990

Special Investigations - PHYS 990

The PHYS 990 Special Investigations (SI) course is a course-based research experience intended to help students identify promising thesis research areas. To pursue an SI, a student first identifies a faculty advisor for the project, who must have a primary or secondary appointment in the Physics Department. After registering for Phys 990, your SI advisor must be added as an instructor using the [Individual Study Course Information](#) form.

Within the first two weeks of class, students are required to submit an advisor-approved [cover page](#) and a brief ½ to 1-page long written proposal specifying the plan of action for the SI project to the graduate registrar. The proposal should include short motivation for and description of the proposed research and the outcome of the work. The proposed research description can be as short as “addressing this theoretical problem” or for experimentalists, description of setup, measurement, and analyses of a problem. Outcomes of work include a presentation that will count as your qualifying event in research. Your advisor should specify at the beginning of the term if your presentation will also count towards your Phys 990 course grade or if some other mechanism, a writeup as technical note or potential paper, will conclude your research experience. Your SI advisor will assign you an SI grade and the DGS or other assigned faculty will provide you with your qualifying event feedback.

Students may want to pursue SIs in different subfields to explore their research options before committing to a Ph.D. thesis topic. The DGS will not approve an SI for audit. Only your first SI presentation will count as your research qualifying event.

Pass-Out Exams

The Physics Department offers “pass-out” examinations for the six core courses, to be given at the start of each term to determine whether a student has sufficient mastery of basic material to be excused from that particular core course. To be eligible to take this exam, a student must be in their first year of studies and have had a more-or-less equivalent-level course elsewhere. The exam will be administered by the

DGS and a previous year's lecturer of the course. A student excused from a core course must replace it with an advanced elective to reach the same total number of required courses.

Course Waivers

Equivalent coursework completed elsewhere and taken while registered as a graduate student may enable a student to be excused from one of the required courses. [Course waiver petitions](#) are approved at the discretion of the DGS and with the approval of the Graduate School Associate Dean. No more than three courses can be waived, and any core courses excused must be replaced with an advanced elective to reach the same total number of required courses.

Taking Courses Outside the Department

The DGS and your research advisor must approve courses outside of the Physics or Applied Physics department before registering for the course.

Registration Information

All students must register for their courses online through the [Yale University Student Information Systems](#). Students who have completed all of their course work and are not taking any other course for credit must either register for Admission to Candidacy (CAND 999) (for students in years 2-3) or Dissertation Research (DISR 999) (for students in years 4+). A student not registered for any classes in the term will be considered withdrawn from the program. More registration information can be found under the Registration Changes section below.

Grade Requirements

The grades assigned in the Graduate School are:

H = Honors

HP = High Pass

P = Pass

F = Fail

The Physics Department requires a grade point average of HP for a student to remain in good standing. In addition, the Graduate School requires that a student must attain at least two grades of Honors within the first two years of study. A grade of P is generally considered an unsatisfactory grade, its name notwithstanding.

Incomplete Grades

In rare circumstances, a student may need additional time to complete coursework. An arrangement for a completion date must be worked out with the instructor. Together, the student and instructor will submit a [Request for Temporary Incomplete form](#) to the DGS for approval. Students requesting more than one Temporary Incomplete (TI) must also receive the Dean's approval.

Incomplete grades must be converted to a final grade no later than October 1 of the following academic year. Otherwise, the TI will be converted to a permanent Incomplete (I). Faculty should email registrar.gsas@yale.edu directly to request an update on a student's grade.

See [Graduate School Program & Policies Bulletin](#) for more details.

Qualifying Events

The qualifying events consist of two parts, a qualifying event in research and a written qualifying event. Students will receive feedback on each part of the qualifier, but no part of the qualifiers will be graded. The qualifying events serve as learning milestones for the students. They will also help the department assess the students' level of physics knowledge to align our program to our updated learning objectives.

The qualifying events will also fulfill the Graduate School requirement for students wishing to advance to candidacy.

Qualifying Event in Research

Students will complete a qualifying event in research in conjunction with their first Phys 990 – Special Investigations. The Research Qualifying Event (RQE) for Phys 990 represents the culmination of work done during Phys 990. The presentation should be 25 minutes in total and formatted like that of a short seminar. Presentations will be organized over one/several days at the end of each term, during the final week of classes through reading week. Presentations should begin with an introduction and motivation for the work (approximately 10 minutes), followed by the details of the research performed (approximately 15 minutes).

The seminar will be open to your colleagues and the DGS. The DGS or instructor of record will provide feedback to students in writing, using the [Research Qualifying Event form](#), which covers the following areas.

- Organization of Presentation: Motivation, details of research, conclusions
- Content: Knowledge of details of research
- Visual: Composition of slides, quality of presentation of materials
- Presentation: Verbal presentation of material on slides

Students will not be graded on their research presentation for the qualifying event. Students may be graded on their presentation by their 990 advisors as part of their Phys 990 grade evaluation if previously discussed at the beginning of the term. The RQE will be treated as a non-pass/fail learning milestone. The feedback students receive is designed to help in future presentations and communications; it will not be retained as part of your academic records.

Written Qualifying Event

The Written Qualifying Event (WQE) is taken by all students at the beginning of their third term, usually the fall of a student's second year, unless a leave of absence was taken. The WQE consists of four separate written components based on Classical Mechanics (Phys 500), Electromagnetic Theory (Phys 502), Statistical Mechanics (Phys 512), and Quantum Mechanics I (Phys 510), given over four sessions within two days.

Classical mechanics and Electromagnetic theory will be given on the first day; Quantum mechanics and Statistical mechanics on the second day. Typically, evaluations are given 10 am - 12:30 pm and 2 - 4:30 pm, Thursday and Friday of the first week of classes.

The WQEs will be collected, and the components will be marked up and returned to the student. The student will then have an opportunity to correct any errors and re-submit in a week.

Depending on a student's course load, some core courses may not have been taken yet by the start of their second year. For these students, the WQE serves as a pre-test going into your required courses.

Master's Degree Requirements

M.S. Students will qualify for their Masters of Science once they have successfully passed the six core courses (1. PHYS 500, Classical Mechanics; 2. PHYS 502, Electromagnetic Theory I; 3. Phys 506, Math Methods; 4. PHYS 508, Quantum Mechanics I; 5. Phys 510, Quantum Mechanics II; 6. PHYS 512, Statistical Physics I), plus one of the following: PHYS 990, Special Investigations; or an advanced elective. Successfully passing courses means receiving at least two honors within a student's first two years of study and maintaining a High Pass average.

Certain equivalent course work or successful completion of a pass-out examination may allow individual students to substitute required courses with advanced electives. Course information can be found on the [Search Yale Courses Page](#).

M.Phil. Students who have successfully met their MS requirements and advanced to candidacy qualify for the M.Phil. degree. The M.Phil is also awarded en route but not necessarily at the same time as the M.S.

Petitioning for Masters' Degree

Students who want to physically receive their Master's degree(s) before their Ph.D. commencement can submit a [Degree Petition \(En Route and Terminal\)](#) form for their degree once they have met the requirements for that degree. Any student who hasn't petitioned for their Master's by the time they advance to candidacy will automatically be considered for such degrees at the next degree award date. Petitions should be completed by the student and returned to the Physics Registrar at the end of the term, in which requirements have been met.

Students departing from the program after satisfying their degree requirements but before advancing to candidacy must complete the same form seeking a terminal degree. Students leaving the program must also complete the [notification of leave/graduation form](#).

Teaching

Teaching experience is regarded as an integral part of the graduate training program. Students are asked to teach four terms, usually in their first two years, while being supported on university fellowships. Depending on the level of support available to individual laboratories, some students may teach for additional terms for no additional funds.

Teaching Requirements

Most physics students serve as Teaching Fellows (TF), teaching undergraduate physics lab or lecture courses in their first two years. Each TF assigned equates to a 10 hours per week (TF10 appointment) commitment each semester. Students can contact the graduate registrar or DGS if they have any questions or concerns with their assignments. Once a student has been assigned, they are responsible for reaching out to the course's faculty instructor to determine when course staff meetings will be scheduled. Such meetings are usually held a little before the undergraduate semester begins and mark the start of your semester's teaching responsibilities.

Throughout the semester, you must fulfill your teaching obligations conscientiously. If you find that you are routinely required to spend more than 10 hours per week on your teaching duties, you should contact the DGS. Teaching Fellow responsibilities may include teaching in a laboratory, study hall, discussion section, grading, and proctoring exams. Problem sets should be provided to TFs by the course instructor ahead of time. Teaching obligations only end when the course instructor releases you. TFs are commonly asked to help grade the final exam; therefore, students should be prepared to be at Yale from a few days before the first day of classes until after the final exam is graded.

Training for Teaching

The [Poorvu Center for Teaching and Learning](#) is a helpful resource for all teaching needs. Workshops and courses are held throughout the year, and incoming students must attend “Teaching at Yale Day” during their orientation period. New graduate students are also required to attend the 4-part seminar series “Fundamentals of Teaching Physics,” developed and run by McDougal Teaching Fellows in physics, where you will acquire specific training in teaching Physics lab or lecture courses.

Language Requirements for Teaching

Students whose native language is not English must pass the Oral Proficiency Assessment (OPA), within their first two years, prior to being assigned teaching. Once they have passed the OPA, they will begin their required teaching assignments. More information for international students can be found in the International Student section below.

Non-native English speakers are strongly encouraged to take advantage of the many course opportunities and English conversation groups available through the Graduate School and the [English Language Program](#). Students unable to speak and write English fluently will find it very difficult to carry out research, write publications, or find employment in the United States.

Non-Required Teaching

Students may choose to teach, after fulfilling their requirements, for additional funds. Students are paid \$4000 per TF assignment on top of their standard stipend if the teaching is not required. Teaching assignments are prioritized by those who need to meet their teaching requirements first. After all the required teaching students have been assigned, non-required teaching assignments will be given. These assignments are generally for higher-level courses and may require taking and successfully passing the course in past semesters to teach it. Upper-year students should always discuss teaching assignments with their advisor before agreeing to teach.

Research and Advising

First and Second Year

Finding a Research Group

Finding the right research group and graduate advisor in graduate school is critical to your success. In a student's first year of graduate school, Phys 515 will offer an overview of the research groups in the department through interactive seminars, given by the faculty. Students will also have the opportunity to work on research projects with potential advisors during the summer between their 1st and 2nd year of study. By the start of your 3rd year, you should be prepared to officially select your advisor/research group.

Essential factors to consider in finding an advisor and research group include the following: Are their good projects for graduate students? Do they match your interests? Is the advisor accepting new students? What do the past and current students and postdocs in the group do in later stages of their careers? What is the advisor's philosophy with respect to students and postdocs in the group? For example, do they tend to work more independently or in groups?

Besides communicating with the advisor, it can be very useful to talk to the current students and postdocs in their group. As always, discuss your options with the graduate program team.

Summer Research Between Years 1 and 2

In the summer between 1st and 2nd year, students are expected to work in a research group, gaining experience in a field of potential interest. Students are financially supported through the research group in which they work during the summer and not on university funds as they are during the academic year. This research experience may turn out to be the beginning of a research collaboration with a future adviser. There is no obligation to continue working in the same group and students are encouraged to use Phys 990 and summer research to check out multiple research groups.

Be sure to notify the graduate registrar once your summer research plans have been confirmed with your summer advisor prior to May 1st.

Choosing an Adviser

Formal association with a dissertation adviser normally begins in the third or fourth term after the qualifying events and required course work has been completed. It is critical to start exploring possible advisors in your first year at Yale. An adviser from a department other than Physics can be chosen in consultation with the DGS, provided the dissertation topic is deemed suitable for a physics PhD. If the faculty doesn't hold a primary or secondary appointment in Physics, a co-adviser in the department will also be needed.

Be sure to seek out faculty and talk to them early on to discuss your interest and possibilities of collaborating. Although the department does everything it can to help students who are having difficulties find an advisor, the Department does not “provide” an advisor for you. There is no guarantee that a particular mentor will have an opening and research funding available when you are ready to commit to a research group, hence it is imperative that you explore different advising opportunities within a subfield and perhaps even more than one subfield of physics.

Mentoring and Advising

Mentoring and advising are critical components of academic life. Mentorship can happen “up, down, and sideways”. Both advisors and mentors play critical roles in your path to success. Students are encouraged to talk with their advisors about all aspects of mentoring, including their academic success, path to dissertation, and post-graduation plans. Open discussion with your advisor about how you can best be mentored is strongly encouraged. Reach out to the graduate team with any issues you face with respect to mentorship and talking with your advisor.

Successful mentoring on the part of Teaching Fellows to students, and to other researchers in your research groups is also critical to success. Students should feel comfortable working with their peers and instructors in a healthy and productive manner. Reach out to the graduate team with any questions or issues you face in these roles as well.

Resources on mentoring and advising are listed below:

[Physics Program-Specific Advising Guidelines](#)

GSAS Guide to Advising for Faculty and students: [Advising & Mentoring](#)

Do you have all the mentoring roles you need for success? Try filling out this “[Mentoring Map](#)”

Third Year and Beyond

Advancement to Candidacy

The graduate school requires all students to be admitted to candidacy by the end of the third year. Students who have completed their course requirements with satisfactory grades (a High Pass average and the Graduate School requirement of two Honors (which can include PHYS 990 Special Investigation)), fulfilled the qualifying event requirement, and who have submitted an acceptable thesis prospectus to their core thesis committee are recommended for admission to candidacy.

Students must advance to candidacy by the end of the third year or they will not be permitted to register for the next term. At the time of advancement to candidacy, students who have not petitioned for or received en route degrees (e.g., M.S., M.Phil.) will automatically be considered for such degrees. If a student advances to candidacy after the deadline to submit a petition for the degree in that term, the student will be considered for a degree in the following term.

Core Thesis Committee

A core thesis committee, consisting of thesis advisor and 2 additional faculty members must be selected by each student at the earliest opportunity, either in the second semester of the second year or in the first semester of the third year but no later than the end of the third year when the student's thesis prospectus will be evaluated. The committee composition can be changed later.

Each student must meet periodically with their core thesis committee in closed session to discuss progress. These meetings will occur at least once per year but could be more frequent. It is the student's responsibility to arrange these closed session meetings as often as deemed necessary by the student or the committee.

The purpose of these closed-session meetings can be, but is not limited to, the student providing a formal scientific presentation to the committee. An update on the student's research progress is appropriate and is often done in conjunction with the public presentation requirement mentioned below but should not be the sole focus. Rather, the goal of these meetings is for the committee to assess the student's overall progress as a physicist. For example, one important role of the core thesis committee is to ensure that the student has a sufficiently broad knowledge of their subfield. The committee may choose to do this via a variety of procedures at their discretion. Questions on, and related to, the field and on physics in general will be a typical part of these sessions. In addition, the committee should assess the student's professional progress, i.e., exposure to the literature and the work of other groups e.g., via conferences; opportunities to write and present their work orally; attendance at relevant seminars and/or classes; etc.

The ongoing monitoring of a student's research progress through these meetings should diminish the chances of surprises at the thesis defense. Such monitoring can also provide a protection to both the student and advisor: First, if a student has sufficient material for a PhD, then the committee can push a reluctant advisor to agree to a thesis defense. Alternatively, if a student's research performance is inadequate, the committee can support academic sanctions on the student, i.e., that the student is not in good academic standing.

After the closed-session meeting, the core thesis committee chair will prepare a brief report of the committee's assessment of the student's progress towards the thesis and present this to the student and Departmental Registrar: It is the student's responsibility to print and complete the top portion of the Thesis Progress Report form prior to their meeting. The completed form should then be given to the graduate registrar along with an electronic copy of any written reports.

Prospectus Requirement

Students are required to have their approved thesis prospectus submitted to the graduate school, before the end of their third year, in order to advance to candidacy. Students who have not advanced to candidacy by the start of their fourth year will not be allowed to register for the term without special approval by the Dean.

The thesis prospectus includes a written report and presentation to your primary advisor and two core committee members. Students should plan to have their prospectus approved by their committee and submitted, along with their [thesis progress report form](#), no later than August 15th at the end of their third year. Once the registrar has received your approved prospectus, the registrar will send your prospectus along with advancement to candidacy approval form to the University Registrar. Prospectus presentations are due by the end of the following semester.

Written Prospectus

The first page of the written prospectus must contain the following information: title, student's name, adviser's name, Yale University Physics Department, and date. Prospectus should also include an abstract. The following is an excerpt from the [Graduate School Programs and Policy Bulletin](#) describing the prospectus:

The prospectus should be viewed as a preliminary statement of what the student proposes to do in his or her dissertation and not as an unalterable commitment. The appropriate form and typical content of a prospectus inevitably vary from field to field. In most cases, however, a prospectus should contain the following information:

1. A statement of the topic of the dissertation and an explanation of its importance. What in general might one expect to learn from the dissertation that is not now known, understood, or appreciated?
2. A concise review of what has been done on the topic in the past. Specifically, how will the proposed dissertation differ from or expand upon previous work? A basic bibliography should normally be appended to this section.
3. A statement of where most of the work will be carried out - for example, in the Yale library or another library or archive, in the laboratory of a particular faculty member, or as part of a program of field work at specific sites in the United States or abroad.
4. If the subject matter permits, a tentative proposal for the internal organization of the dissertation - for example, major sections, subsections, sequence of chapters.

5. A provisional timetable for completion of the dissertation.

Although it is difficult to prescribe a standard length for the prospectus, it should be long enough to include essential information for the proposed topics but not overly long. Seven to ten pages, excluding figures and bibliography, should be appropriate in most cases. The prospectus should be written in a manner comprehensible to people who are not experts in your particular subfield. A concise introduction to the subject is therefore essential.

Prospectus Presentation

Students are also required to present their prospectus in the form of a talk given to their committee or at a venue where their committee can attend. This presentation should be done either before the prospectus is submitted or in the semester following the submission of the prospectus.

Faculty schedules may be limited and finding a day/time when all three are available may be difficult, especially in the summer. It is advised to schedule your presentation with your committee as soon as possible. At minimum, the primary advisor and one additional committee member must be present and approved of your presentation.

Public Presentation

In addition to the private committee meetings, students can choose to present part of their annual research progress to their thesis committee in a public presentation which the core thesis committee members are expected to attend. Possible forums for such presentations include the Weak Interaction Discussion Group, The Monday Evening Seminar, the Sackler Discussion Group, collaboration presentations, group meeting presentations, etc. The format of the presentation should be a talk that lasts 30 minutes or more. The allowable format and content for the “public presentations” should be viewed broadly, subject only to the participation of the core thesis committee. Especially early on in their research career, to satisfy this requirement, it may be that it makes most sense for a student to make a journal club-type presentation in the context of a group meeting, later progressing to a research-based presentation in one of the regularly scheduled series. It is also the student’s responsibility to arrange for this public presentation.

This public presentation is NOT meant to be merely a progress report for the core thesis committee, or an opportunity for the committee to ask physics questions about the work. Rather, the goal is primarily for the student to practice communicating in a public setting, and to receive feedback about how to improve their presentation abilities.

After the public presentation, the student will provide their primary advisor with the [Thesis Progress Report](#) form so that they may enter comments regarding the student’s presentation. The completed form should then be given to the graduate registrar, along with an electronic copy of any written reports. Once again, the focus of this report should be on presentation style rather than a comment on scientific progress.

Annual Dissertation Progress Report

The Dissertation Progress Report (DPR) is due each April 1st, covering the work done in the academic year just completed. Filling in the form is now an on-line process, please see Yale's [Dissertation Progress Report page](#). For students who advance to candidacy early in their 3rd year, they will also be required to submit a DPR by April 1st. These students should resubmit their thesis prospectus to satisfy the University requirement for DPRs. It is then the Primary Advisor's responsibility to complete their section of the DPR by May 1st for all of their students.

Dissertation and Completion

Forming a Dissertation Committee

The Physics Department requires a 4-member Yale faculty committee plus an outside reader to approve a dissertation and defense for graduation. The core committee and DGS must approve the additional members prior to the student inviting the final faculty and outside reader to join their dissertation committee.

Typically, the Committee would include the members of the core thesis committee and one more faculty member. Two of the faculty members on the committee must have a primary or secondary appointment in physics, two must be from Yale, and two must be tenured. These requirements need not be satisfied by the same two people. A full list of faculty members can be found [here](#).

Usually, the make-up of the committee is as follows:

For students in an experimental field:

(1) Adviser and (2) another in the same experimental field; (3) another in the same field but theoretical; (4) another experimentalist (any field) and (5) approved outside reader

For students in a theoretical field:

(1) Adviser and (2) another in the same theoretical field; (3) another in the same field but experimental; (4) another theorist (any field) and (5) approved outside reader

Outside Reader

The outside reader must be someone outside of Yale who has had no direct involvement with the student's dissertation analysis, but who may be familiar with the student work and be someone who can be objective in their evaluation of the dissertation. The outside reader is usually selected by the student and their dissertation adviser and must be approved by the DGS.

Students should send the dissertation to their outside reader when they submit it to their committee, just prior to the defense, to provide ample time for the outside reader to provide comments in a timely manner.

Dissertation Defense

Once the Dissertation Committee is chosen and approved by the DGS, it is the student's responsibility to set the date, time, and place (online or in person) for the defense, at a time convenient to all members of the Committee. This information should be relayed to the graduate registrar and senior administrator via the Notification of Leave/Graduation form or directly through email. Copies of the dissertation should be given to the committee members at least two weeks in advance of the scheduled defense.

The dissertation defense shall consist of two consecutive parts. The first part, which shall be open to

anyone interested, will consist of an oral presentation of approximately one-hour in length, in the style of a research seminar. An announcement will appear in the weekly Seminar Notices. The second part will consist of detailed questioning of the candidate by the dissertation committee, at which attendance will be restricted to members of the committee.

Ideally, Dissertation Defenses should be scheduled before the University's dissertation submission deadline to give committee readers time to review the dissertation, attend your defense and provide feedback before your official dissertation is submitted to the University. Students can, if necessary, hold their defense after the submission deadline but before the DGS must sign off on degree completion students. Please see the Graduation Checklist for deadlines and more detailed information below.

Dissertation Requirements

The Graduate School has specific rules about formatting, etc. When you are preparing your final draft, you should consult their [Dissertations](#) page and [Formatting Guide](#). Review the [Dissertation](#) section of *Programs and Policies* for the fine print about the dissertation process, reader committees, language requirements, and more. Sample LaTeX templates can be found under the Departmental Forms section below.

Dissertation First Chapter

The Physics Department recommends that the first chapter of the thesis be a succinct summary of the entire thesis, including in particular:

- a brief review of the field prior to the thesis research to provide context
- a presentation of the goals and motivations of the thesis research
- a clear description of what the student has achieved in the thesis research (primarily written in the first person singular, but with due credit to others as appropriate). This description should refer back to (1) and clearly indicate the relation to prior work.

It may also make sense to add:

- suggestions for how to best build upon the thesis research in future work.

Otherwise, these suggestions should appear in the conclusion of the thesis.

Submitting Your Dissertation

After the defense, the committee may ask the student to make some changes in the dissertation. These changes must be made before submission to the Graduate School. Alternatively, if you have already submitted your dissertation to the Dissertation office, you may replace single pages or chapters with minor edits.

If major edits are required, the student will have two weeks to make the necessary revisions and have

edits reviewed by their advisor before resubmission to the Graduate School. Your advisor will then have to send the dissertation office their approval of your revised dissertation.

[Submission guidelines](#) are posted on-line at the Graduate School's website: Dissertation Guidelines, Dissertation formatting, and Notification of Readers form. Remember to list your advisor as one of the 5 readers. Dissertations must be submitted to the Dissertation office by October 1st for December graduation or March 15th for May graduation.

Note: Students must be registered through the term of dissertation submission (unless they have already completed their sixth year).

Reader Duties

Once a student is ready to submit their dissertation, they will enter their reader information into the [NOR](#) system. All five committee members' information must be entered for DGS/ Registrar approval. The readers listed will receive a link from the [Dissertation office](#) giving them access to your submitted dissertation and asking them to complete the questions listed below within one month's time but no later than the reader report deadline. The reader report deadline per graduation cycle is one month after the dissertation submission deadline.

These are the questions on the official Reader's Report for the Graduate School of Yale University -

- 1) Do you consider the substance of the dissertation acceptable for the degree of Doctor of Philosophy? If you found the dissertation acceptable, what is your estimate of the work as a whole?
- 2) Are there editorial errors (for example, problems with spelling, grammar, or references of such consequence or in insufficient number that they affect the substance of the dissertation and must be corrected before the faculty votes on this dissertation? If you answered yes, please list below the required changes (there is no limit to the length of your comments, text created in another document can also be copy/pasted below)
- 3) Please evaluate each of the following as Distinguished, Very Good, Good or Fair:
 - a. Command of the literature of the subject
 - b. Originality
 - c. Insight and judgment
 - d. Clearness
 - e. Style
 - f. Mastery of the method used in research
- 4) Without summarizing the dissertation, please state in detail the reason for your evaluation, indicating the strengths and weaknesses of the work and the way in which it makes an original contribution to its field (there is no limit to the length of your comments, text created in another document can also be copy/pasted below)
- 5) Dissertation Reader's advice to the candidate (optional)
 - a. Do you recommend eventual publication in print of part or all of this dissertation?
 - b. If so, in what form?

Articles:

- a. Which parts?
- b. What revision is needed?

Book:

What general suggestions for revision would you make?

If a reader requests edits to be made to your dissertation, the student must make the appropriate edits and receive their advisor's approval of the edits before submitting an updated dissertation to the university.

Graduation Checklist

Once a student is ready to graduate, there are departmental steps and university requirements to be followed by the dates listed below.

Due by February 15th for May Graduation or September 1st for December Graduation

- Complete the [Notification of Leave/Graduation](#) online form to notify the office of your defense date, your last day in the lab and your future contact information. Do not enter your current campus contact information unless you do not plan on moving for several months after graduation.
- Students are responsible for scheduling a date, time and physical or virtual room location for their thesis defense. Please give your committee members adequate notice when trying to schedule your defense. Defense information can now be included in your Notification of Leave/Graduation form and will be announced in the weekly newsletter.
- With the assistance of your advisor, find an appropriate outside reader and submit their name and position to the DGS for approval.

Due by March 15th or October 1st

- Provide the [Thesis Progress Report Form](#) to your dissertation committee members for signature during your defense. Forward your signed form(s) and a PDF copy of your Dissertation to the graduate registrar. See below for further Defense details.
- Review and complete the Yale GSAS [Dissertation Submission Checklist](#).
- Enter your reader information into the [Notification of Readers \(NOR\) portal](#), and notify the graduate registrar when done.
- Submit your final dissertation to the Registrar's Office. See above for further submission guidance.

Prior to leaving

- Schedule a 30-minute Exit Interview with the [Chair](#) or [DGS](#) to talk about your experience in the program. Sample Exit Interview Questions can be found [here](#).

- Update Notification of Leave/Graduation form with any new future employment or address changes.
- Confirm last day of pay with the graduate registrar.
- Notify the graduate registrar when you have returned your keys, coats, or other university provided equipment.

These deadlines have been established to allow sufficient time for readers to make careful evaluations and for the department to review those evaluations before making our recommendation to the Graduate School on degrees earned. No extensions of the deadlines will be granted. Dissertations submitted after the deadlines will be considered during the following term.

IT Access after Graduation

After you graduate, your access to Yale accounts and information will change. Your Yale email account will stay active for a year, while other things, like VPN access will be removed six months after graduation. For a complete timeline of access changes, please see [IT's Graduating Students webpage](#).

Other Matters

International Student Specific

Approximately 40% of our Physics graduate students and 50% of the total Graduate student body are international students. We recognize that these students may have different needs from the rest of the student body, including visa issues, language barriers, or trouble adjusting to their new community. Students should feel free to contact the DGS or registrar regarding any issues they may have. The Graduate school also offers many [resources and programs](#) geared towards international students and their [partners](#).

For matters related to their Visa status, International Taxes, or preparing for travel, inquiries should be addressed to the Office of International Students & Scholars (OISS) as they are your best resource for up-to-date information regarding all international-related issues.

English as a Second Language

Non-native English-speaking students who have not passed the TOEFL with a score of 26 or higher must attend a 3-week [ELP Summer Academic Language Program](#) prior to their first year orientation.

Depending on a student's language proficiency, they may be invited to take the [Oral Proficiency Assessment \(OPA\)](#) after completing the ELP in August, January or May. English Language Program courses are offered by the Center for Language Study. Students have two years to pass the OPA and not be allowed to teach until they have passed.

Int'l Student Status Changes

In addition to completing the appropriate GSAS forms and procedures, as described in the Registration Changes section below, international students planning to take a leave of absence or withdrawing from the program should consult with OISS in advance. In these circumstances, the immigration record will be terminated on the effective start date of the leave or withdrawal. The student will need to leave the U.S. within 15 days of the approved leave of absence or withdrawal. Students leaving Yale to join a different U.S. university, should initiate a [request for the SEVIS transfer](#) of their immigration record in OISS Connect.

Graduating Int'l Students

International students preparing for graduation should keep in mind that they are not authorized to work past their program end date, as listed on their I-20 or DS-2019 immigration document. Once a student submits their dissertation through the NOR system, their program end date will automatically be shortened to the date of graduation.

- Students submitting their dissertation by the March deadline will have their program end date automatically shortened to the May graduation date.
- Students submitting their dissertation by the October deadline will have their program end date automatically shortened to the December graduation date.
- Students missing these deadlines will have their program end date shortened to their last semester's session end date.

Students wishing to continue working in the United States after graduation will need to obtain approval for Optional Practical Training (OPT) work authorization. Your OISS advisor, [Luca Lipparini](#), can help you through this process. Planning well in advance is highly recommended as this work authorization will take about three months to be processed.

Registration Changes

Registration Deferrals

Students who wish to defer their first year of admissions should first have the approval of the DGS. Once the student has conferred with the DGS, they must email the registrar requesting their deferral of admissions and length of deferral. Incoming students typically defer for one academic year. Confirmation of attendance will be needed by the following March to ensure the admissions slot is still available. Deferred students may choose to begin their research the following summer as an Early Start applicant prior to the Fall start.

Leave of Absence (Personal, Medical or Parental)

Students who wish or need to interrupt their study temporarily may request a leave of absence. There are three types of leave, personal, medical, and parental. There are very important considerations about deadlines and about continuation of medical insurance for each type of leave, the details of which are described in the [Graduate School Programs and Policies Bulletin](#). Students facing any type of personal, or health difficulties are strongly encouraged to consult with the DGS and/or Dean.

Students must submit a completed [Change of Status form](#) to the graduate registrar for Graduate School approval. Students who intend to [petition for their Master's](#) at the same time, may do so, if they have not already advanced to candidacy. Students are also required to complete the [Notification of Leave/Graduation](#) for departmental records and return any keys or other Yale equipment before departing.

Registration Extension

A student wishing to extend registration beyond their original six-year terminal date, must file a Petition for 7th Year or 8th Year [Extension](#). A [Dissertation Progress Report](#) must also be completed along with a letter to the DGS stating the reasons for needing an extension prior to the approval of your extension request. An extension can be requested for one or two terms. Extensions beyond the seventh year are not normally allowed.

Please note, it is not necessary to be a registered student beyond your sixth year in order to complete your dissertation and defend. However, students are not allowed to receive AR salary, nor will you have health insurance if they are not registered.

Registration Withdrawals

Students who wish to leave the program may do so at any time. Prior to making the decision to leave, we strongly recommend that you speak to the DGS or Chair to evaluate all options. Students must submit a completed [Change of Status form](#) to the graduate registrar for Graduate School approval. Students who intend to [petition for their Master's](#) at the same time may do so if they have not already advanced to candidacy. Students are also required to complete the [Notification of Leave/Graduation](#) for departmental records and turn in all keys or University property.

Bereavement Policy

In the unfortunate event of a death of a loved one or other significant life event, we encourage and expect graduate students in the Physics Department to prioritize their well-being and take time off from research activities and teaching duties to allow themselves to grieve and heal.

By default, graduate students are given one week off from their research, teaching, and classes. If a student needs more time, they are encouraged to speak with their advisor or the DGS to arrange for additional time off. Faculty advisors and course instructors are expected to provide students the time off that they need. The DGS will assist the student with the necessary academic arrangements, including approval of temporary incomplete forms and working with the course instructor to cover any teaching obligations during this time.

Vacation Policy

The Department expects that Physics students will take an average of two weeks' vacation per year, in addition to the stated University holidays and the Christmas Eve to New Year's Day break. This amounts to a total of about 4 weeks' vacation, annually.

In this context, students are reminded that the first year of graduate school is when you are expected to transition from a "school" schedule to a full-time, self-motivated, research schedule. Thus, for example, the period between the fall and spring semesters and Spring Break are each considered to be an active time of scholarship and research, and there may be specific teaching duties for those with teaching fellowships during these times. Student vacations should not conflict with academic or teaching obligations.

Students supported by external funding sources must, in all cases, comply with the vacation policies associated with their funding sources. Beyond this, for students already in research groups, the total vacation time that a student may take is at the discretion of, and may be negotiated with, the thesis adviser. Students and faculty may consult the DGS with questions about vacation policy.

External Summer Internships

Normally, students who take time off from their studies to work full-time must take a leave of absence for the term or terms in which they are employed. However, certain summer internship opportunities may be beneficial to a student's academic development and career prospects. Therefore, under certain circumstances students may be permitted to remain registered at Yale while engaged in summer internships. To be eligible, the internship must meet several requirements listed on the [Graduate School Academic Regulations](#) page.

Complete the [Request for Summer Internship form](#) and submit it and the other required documents to the departmental registrar for DGS approval. A one-page write-up is required prior to the internship being approved and another upon the student's return from their summer internship.

Financial Matters

Paychecks

First paycheck of academic year: August 31st

Paydays: Semi-monthly on the 15th and last day of the month.

When either of these days falls on the weekend, payday will be the last working day before either of those days (i.e., usually Friday but occasionally earlier on holiday weekends).

We strongly encourage the use of Direct Deposit. Direct Deposit gives you access to your funds immediately on payday. Please see the [Workday FAQ](#) for assistance setting up your direct deposit. Direct deposit should be sent up by the 10th of August for first year students to receive their first check via direct deposit. Students without direct deposit will have physical checks mailed to their home address listed on [Workday](#). If you have any trouble accessing Workday, please notify the graduate registrar for assistance.

Taxes

Taxes are very complicated, especially for graduate students. Since individual circumstances vary based on citizenship, tax treaty, year of study, and more, we recommend that you consult with a tax professional regarding your specific circumstances.

The University [Tax Information page](#) holds valuable information for U.S and International student tax issues. General tax questions can be referred to [Employee Services](#).

Fellowship Opportunities

Fellowship opportunities are available to students through various outside organizations. The most common ones can be found on the Physics [Fellowship Opportunities webpage](#). Students who receive outside funding from a fellowship or award are also guaranteed a \$4000 annual salary bonus on top of their standard yearly graduate stipend. Required teaching may be postponed to a later date depending on the fellowship guidelines.

Dean's Emergency Fund

To help terminal master's and Ph.D. students with unexpected one-time expenses such as travel related to a death in the immediate family, temporary housing after a fire, or emergency dental surgery, the Dean's Office has set aside special funds. Eligibility and applications can be found [here](#).

Parental Support and Relief

Registered Ph.D. students who wish to modify their academic responsibilities because of the birth or adoption of a child may request parental support and relief during or following the term in which the birth or adoption occurs. For more information, please see the [GSAS Parental Leave Policies](#).

Vacation Funding

The Physics department expects that students will receive a stipend for vacation time up to an average of two weeks per year, in addition to stated University holidays and the Christmas-to-New Year's break.

First-year and second-year students, especially those starting research in a new research group, who wish to take vacation, are recommended to schedule their vacation for the last two weeks of May, after the student's academic commitments are finished and while the student is still supported on a University fellowship (which runs through May 31) and before the students' research commitments and funding begin on June 1.

Students, who nevertheless wish to take long vacations and obtain the permission of their research advisor to do so, will not receive a stipend during such vacations. However, especially in the case of international students, some of whom may wish to return home for less-frequent-but-longer visits, the department notes that a one-size-fits-all policy is not sensible and encourages faculty to be flexible in accommodating such requests as fairly as possible.

Summer Funding

Ordinarily, the Physics department expects students to carry out research and receive a stipend full-time during the three summer months. Stipends are paid by the research advisor. Students who have not yet found a summer research position by mid-March should consult with the DGS immediately to discuss research and funding options.

The Graduate School Programs and Policies bulletin states that "Continuing students who were registered during the preceding spring term and are engaged in degree-related activities at least half-time remain registered through August 31." It follows that, if a student does not find a summer research advisor or wishes to take a summer vacation that is longer than six weeks, the registration criteria is unmet and, therefore, must apply for a formal leave of absence using the [Change of Status](#) form.

According to Graduate School rule, in no case is it permissible for an advisor to insist that a student must take unpaid summer vacation.

Loans

Under certain circumstances, loans are available to students. Requests for loans should be made to the Graduate School Financial Aid Office for determination of eligibility. Visit their office at 246 Church St. 2nd Fl. or call (203) 432-2739 for more information.

Yale Health Plan

Yale Student Health

All Ph.D. students are given a university fellowship for single coverage health and hospitalization insurance. Two-person and family health coverage are also available at a subsidized rate for

students with spouses or children. [Dental and eye care insurance](#) can also be purchased through the University for an additional cost.

Student Health coverage begins on August 1st and ends January 31st for students registered for the Fall term, this includes newly admitted students. Students registered for the Spring term are covered February 1 to July 31st. For students who graduate or leave the program, their coverage will continue to the end of their last registered term.

Health services are provided through the Yale Health Plan, 55 Locke Street. Please contact Member Services for more detailed information about coverage and services at 432-0246 or visit the [University Health Services](#) website.

Payne Whitney Gym

[Payne Whitney Gymnasium](#), the largest building at Yale, is located at the north end of campus on Tower Parkway. Anyone affiliated with the University is eligible for membership. Yale students with valid I.D. cards are permitted open access to the building while other members of the Yale community are required to register and pay a membership fee.

For specific schedule information on activities etc., please call the Information Desk at 432-1444. Membership information can be obtained by calling 432-2474.

Well-Being Resources

Good mental health and wellness are essential for students to thrive in the program. Over the course of time in graduate school, students may experience difficulties such as stress, loss, and anxiety, in their work or personal life. Yale has many resources to help support and maintain student health and wellbeing during these trying times, including [Mental Health & Counseling](#), as well as programs that help you establish healthy self-care habits.

For more information on good mental health practices and programs, see [Yale Well](#) and [The Good Life Center](#), and the extensive list of resources on the [GSAS Health & Wellness website](#). The DGS, DPC and GR can also help if students have academic or personal concerns that affect their ability to fully engage in the program, research group or the department community. The graduate program team has an open-door policy and encourages students to speak to any of us regarding any concerns students may have.

If there is an urgent need to address concerns of personal safety, workplace harassment or discrimination, or mental health crisis please seek help and support immediately. [Yale Police](#), [SHARE](#), and [Mental Health & Counseling](#) services are available to all students 24/7. Additional resources to [address Discrimination, Harassment, and Mental Health Concerns](#) are also available to all students through Yale and held to strict rules of confidentiality.

Resources

Academic Resources

Forms

Departmental Forms

- [Notification of Leave/Graduation](#)
- [Research Qualifying Event Form](#)
- [Special Investigation Proposal Form](#)
- [Special Investigation Evaluation Form](#)
- [Thesis Progress Report Form](#)
- [LaTeX template for Dissertation](#) (please save as a .tex file by removing the .txt extension)
- [LaTeX class file for Dissertation](#) (please save as a .cls file by removing the .txt extension)

Graduate School Forms

- All Graduate School forms can be found on the University Registrar's [Forms & Petitions](#) webpage

Links

Academic

- [Academic Calendar](#)
- [Dissertation Information](#)
- [Enrollment Verification](#)
- [Graduate School](#)
- [Notification of Readers](#)
- [Office of International Students & Scholars](#)
- [Online Course Information](#)
- [Physics Graduate Course List](#)
- [Programs and Policies](#)
- [Register On-Line](#)
- [Teaching Evaluations](#)
- [Transcripts](#)
- [Yale University Student Systems](#) (change address, etc.)

Research

- [Applied Physics](#)
- [Earth and Planetary Sciences](#)
- [Molecular, Cellular and Developmental Biology](#)
- [Molecular Biophysics and Biochemistry](#)
- [Physical Engineering Biology \(PEB\) Program](#)
- [Physics Department Fields of Research](#)
- [School of Engineering](#)

Living

- Direct Deposit of Paychecks (done through [Workday](#))
- [Graduate Housing Office](#)
- [Health Plan](#)
- [ID Center](#)
- [Information and Technology Services](#)
- [International Tax Office](#)
- [McDougal Center Office of Student Life](#)
- [Parking and Transit](#)
- [Social Security Number Application Information](#)
- [Student Financial Services](#)
- [Tax Help for International Students](#)
- [Visitor Center](#)
- [USPS Yale Station](#) (for parcel pickup)

Post-Graduation

- [Association of Yale Alumni](#)
- [Office of Career Strategy](#)
- [Career Services Alumni Network](#)

Calendars and Directories

- [Physics Department Calendar](#)
- [Physics Department Directory](#)
- [Physics Outreach Events Page](#)
- [Yale Directory](#)
- [Yale Graduate School Academic Calendar](#)
- [Yale Events Calendar](#)
- [New Haven Events Calendar](#)

Physics Student Resources

Departmental Colloquia and Seminars

You will receive an e-mail notice each week with the next week's [Seminar Schedule](#) which is also available online.

- Physics Club Colloquia are held on Mondays at 3:30 pm in 57 SPL with tea and cookies after the talk. This is an important weekly event that will help you decide what subfield you are interested in and keep you informed concerning what is happening in other subfields of Physics. All Students are expected to attend.

Other activities

- Department teas will be held from 3:30-4:00 p.m. on Mondays (before the Physics Club Talk)
- Graduate Student Happy Hour held monthly during the academic year
- Town Halls are held once a semester or as needed

Graduate School Advising & Mentoring

Resources for finding formal and informal advisors. [Advising & Mentoring](#)

Graduate Student Advisory Committee (GSAC)

The Graduate Student Advisory Committee serves as a point of communication between the graduate students and the administration of the department. The committee advises the Chair, the DGS, and other faculty on matters related to graduate students and the graduate program, including (but not limited to) helping plan and organize annually scheduled departmental events. The committee members also advocate on behalf of graduate students with the Chair and DGS. Committee members are appointed for one calendar year. The composition of the committee includes at least one representative from each cohort, with a primary goal of representing inclusive and diverse sets of interests. Committee members meet with the Chair and DGS once a month. The committee also meets internally once a month while regularly soliciting feedback from other students in their cohorts.

Graduate Student Assembly (GSA)

The Graduate Student Assembly (GSA) is an elected body of students in the Graduate School of Arts and Sciences that participates in Graduate School policy making relevant to matters of their education and their lives as students.

The Assembly's goals are to:

- Identify the needs and concerns of graduate students, consider possible solutions, and present these to the Dean and other administrators.
- Discuss and advise on changes to Graduate School policy proposed by the administration.

- Provide a means for communication and deliberation both among and between graduate students and other members of the university community.

Recent accomplishments of the GSA include:

- Implementation of a Conference Travel Fund (CTF) that provides awards to students allowing them to present their research at conferences.
- Improvements to the Yale transit system (Central Science Loop, nighttime shuttle changes).
- Elimination of the summer gym fee for all graduate and professional students.

Current issues being adopted by the GSA include:

- Accessibility of childcare at Yale.
- Lobbying Congress for the reduction of federal income tax on graduate students.

The GSA welcomes new ideas, issues and concerns raised by students. If you have suggestions for changes or improvements to policies and services, please bring it to our attention by attending a meeting or contacting a representative. Information about meetings can be found on the [GSA website](#). Meetings are open to ALL graduate students. You may contact the assembly directly at graduate.student.assembly@yale.edu.

McDougal Graduate Student Center

The McDougal Center, located at 135 Prospect Street, has services and facilities designed specifically for graduate students and postdocs. Created in 1997 through a generous gift from Alfred McDougal '53 and his wife Nancy Lauter.

The Center is a great physical space with a Common Room and Coffee Lounge equipped with free coffee, tea, and water (bring your own mug), a lounge space, widescreen TVs, and magazines. Just outside, you'll find the Caulkins Courtyard and the Swenson Terrace. The offices for staff and fellows of McDougal Graduate Student Life are in the McDougal Center, along with satellite offices of the Office of Career Strategy (OCS), and the Office for Graduate Student Development and Diversity (OGSDD).

Visit the [McDougal Graduate Student Center](#) website for information on events and activities or call 432-BLUE (432-2583)

Office of Career Strategy (OCS)

The Office of Career Strategy (OCS) is a comprehensive career center for students and alumni of Yale University's Graduate School of Arts and Sciences and for postdoctoral fellows. Through individual counseling, programs and a library of online resources, the office assists graduate students and alumni/ae with non-academic career planning and decision-making. OCS encourages students to begin using the services of the office early in their graduate careers to expand the choices they will have upon completion of their degrees. For more information visit <http://ocs.yale.edu>.

Office for Graduate Student Development and Diversity (OSGDD)

The [Office for Graduate Student Development & Diversity](#) coordinates efforts to recruit and retain students from diverse backgrounds, including minorities, women, and other underrepresented groups at the Graduate School. The office supports the needs of these students as they pursue graduate study and implements a wide array of academic and social programs. These services are available to all graduate students in an attempt to foster a sense of understanding and respect among all students, while simultaneously creating a more inclusive campus community. In addition, OGSDD administers the Summer Undergraduate Research Fellowship (SURF) Program.

Office of International Students & Scholars (OISS)

The [Office of International Students & Scholars](#) aids all non-U. S citizens on issues related to Immigration, Travel, Taxes and more.

Student Accessibility Services (SAS)

[Student Accessibility Services'](#) facilitates individualized student accommodations to remove barriers that restrict a student's ability to fully participate in the University.

University Research Resources

Library Resources for Physics

The Yale University Library contains a wealth of resources, from electronic journals to historical manuscripts from scientists such as Newton and Copernicus. You may access materials from any library collection through the library's main website, <http://library.yale.edu>.

Electronic Library Resources

Your subject librarian, Kayleigh Bohémier, curates a guide to databases, eBooks, and other electronic materials most useful to your Physics research. Please visit <http://guides.library.yale.edu/physics>, which is grouped into tabs for easy resource navigation.

Physical Library Resources

Your closest library location, the Marx Science and Social Science Library, provides access to many resources. All rooms are available for booking via the library's main page, <https://marx.library.yale.edu/>.

- Presentation practice rooms with video recording equipment and video conferencing abilities.
- Small rooms seating 4-6 individuals with MediaScape technology, allowing you to connect multiple computers to the same screen for group discussion.

- Computers with scientific and statistical software.
- Access to StatLab consultants, many of whom have training in MATLAB and L^ATEX: <http://statlab.stat.yale.edu>;
- Access to the 180,000 volume on-campus collection of science and social science books. Please note that the Math, Chemistry, and Geology collections are primarily housed in departmental libraries elsewhere on campus.

Research Assistance

Kayleigh Bohémier, Science Research Support Librarian, is your subject librarian. Feel free to talk to her about citation management, accessing library resources, or best practices for finding information on your research topic. Her skills include search strategies in ADS, Google Scholar, and INSPIRE, but also bibliography and citation management tools such as BibTEX, Mendeley, and Zotero.

She can be reached at kayleigh.bohemier@yale.edu or 203-432-9519. Feel free to stop by her office in the Marx Library, room C41 or drop in during the open hours listed on her [LibGuide profile](#).

Professional Resources

Students who are not already members of the American Physical Society are encouraged to join. In addition to giving you the privilege of submitting talk abstracts to meetings, you will receive a subscription to [Physics Today](#), a useful magazine for acquainting yourself with forefront research areas.

Software Library

The [university software library](#) is available online for downloading software for which the university has a license.

Departmental Resources

Computers and Printers

Wireless access is available throughout the Department.

There is a printer for your use in SPL 58/76. This is an HP Laserjet Pro M402dn laser printer with IP address 172.16.182.232. Paper supplies are kept in the SPL Mail Room.

Local department IT support is provided by Andrew Currie in room SPL 68D on the second floor. Please contact Andrew with any inquiries you may have regarding departmental computing. Andrew can be reached at andrew.currie@yale.edu.

Copy Machine

The copy machine located in 37 SPL, is for your use to copy teaching materials if you are assigned a T.A. position. You will be given a code number at the beginning of the term. In general, this copier is not for personal use. However, we can accommodate your personal copies on an infrequent basis for small jobs (see graduate registrar for code number). It is also possible to print directly to the copier from a computer, using the same access code as for copying. Contact Andrew Currie for how-to instructions.

For larger personal jobs, we can make arrangements for copy charges. A copier is available at the Marx Library in YSB; a prepaid copy card can be purchased there as well.

Facilities

All problems and concerns regarding the Physics buildings, such as doors or locks, should be reported to the Department Manager, [Hannah Carroll](#). Please do not hesitate to bring a problem to their attention. A small problem left unresolved can become a big problem if not taken care of in a timely manner.

Keys

First and second year students are issued keys to the Graduate Students Offices at the beginning of the academic year and are responsible for returning those keys when they move offices at the end of the year. All other keys are issued as necessary, by request.

Please see the graduate registrar to request additional keys or to drop off keys when you are leaving the department. Academic buildings are open 8am to 5pm Monday through Friday while classes are in session. After hours, students are required to use their Yale ID to enter the building. If your ID doesn't give you access to the proper buildings, please reach out to the graduate registrar for assistance.

Kitchen Facilities

Students may use the refrigerator and microwave located in the kitchen on the third floor (adjacent to the Lounge). The air pot coffee machines are not available for your use other than for getting hot water. This is a community kitchen (and used for department events as well) so mark your refrigerated items with your name.

For a small fee, coffee and espresso are available to students during normal business hours in 33 SPL.

Mail

You will be assigned a mailbox in 37 SPL. This box will be for Campus Mail and department notices only. These boxes should not be used for personal mail. Your postal address should be where you reside; if you reside in the graduate dorms, you will need to obtain a Yale Station U.S. postal mailbox.

Parking

Several parking lots are located near the Department of Physics. Follow the link for [information on rates, lot locations, regulations and forms](#). There is a fee for parking during standard business hours; parking is free for students in the evening and on weekends and holidays.

Room and Laboratory Assignments

Entering students are assigned a desk usually in room SPL 76 or 77 for use during their first year. Each desk has a lock so you may store personal belongings. Please do not leave belongings unattended on top of your desk.

Second year students are asked to return keys at the end of their first year and are assigned seats in SPL 75. Students without space in their research group or work in both West Campus and Main Campus may request desk space in SPL as well and should talk to the graduate registrar to make arrangements.

For safety reasons, small appliances, such as hot pots or coffee pots, may not be used in any of these office areas.

Once you begin working with an adviser, your work and laboratory space will be assigned by your adviser.

Security

As a general precaution, use good judgment when placing your belongings in the classrooms and labs or your desk space/office.

Please keep your desk locked if you are storing anything of value, i.e. textbooks, laptop computer etc. Also, wallets, purses and cell phones should not be made visible to others who may enter an office or lab area when no one is present.

For security reasons, if you encounter a problem with any lock or entry/exit door to the Physics buildings, please notify our Department Manager so that the problem can be fixed.