

Graduate Student Handbook



Yale University

Department of Genetics

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Contents

1 Mission Statement	3
2 Overview of the PhD in Genetics	3
3 Progression to the Ph.D	4
3.1 Course Work	4
3.2 Research-in-Progress	4
3.3 Rotations.....	5
3.4 Qualifying Examination.....	5
3.5 Thesis Research.....	8
3.6 Thesis Committee Meetings	8
3.7 Dissertation Prospectus.....	10
3.8 Admission to Candidacy.....	10
3.9 Master’s Degrees.....	11
3.10 Evaluation of Progress	11

3.11 Teaching.....	11
3.12 Graduate School Policies	12
4 The M.D. Ph.D. Program	12
4.1 Overview	12
4.2 Laboratory Rotations	12
4.3 Coursework.....	12
4.4 Teaching.....	12
4.5 Qualifying Exam	13
4.6 Prospectus	13
4.7 Candidacy.....	13
4.8 Thesis Committee Meetings	13
4.9 Clinical Re-entry.....	13
5 Requirements for Graduation.....	13
5.1 First Author Manuscript Requirement	13
5.2 Approval to Write Thesis	14
5.3 PhD Dissertation	14
5.4 Starting Postdoctoral Positions.....	15
5.5 Information Required by Genetics Registrar	15
6 Other Information of Interest.....	16
6.1 Grievance Procedures.....	16
6.2 Vacation Policy.....	16
6.3 Yale Health Plan (YHP)	16
6.4 Dean’s Emergency Fund	17
6.5 Parental Support and Relief.....	17
6.6 Tuition and Stipend.....	17

1 Mission Statement

The Department of Genetics PhD Program is committed to creating a supportive and inclusive community that performs cutting edge research and provides training at the forefront of a variety of fields, including basic science, translational medicine, and technology development. In pursuit of this mission, we adhere to five core values:

Inclusivity: We hope to foster a community in which diverse viewpoints are valued and respected. Discrimination or harassment on the basis of personal identity will not be tolerated. We recognize that the strength of our academic community stems from the collection of unique viewpoints contributed by every member of our program.

Education: We aim to equip our trainees with a well-rounded understanding of the field of genetics with an emphasis on hands-on training and provide them with the skills necessary to pursue a wide range of career paths.

Integrity: We conduct our work in a rigorous, honest, and ethical manner. We encourage all members of our community to hold themselves and others to our high standard of integrity and academic honesty.

Collaboration: We believe that collaboration is at the core of successful research. We expect that all members of the Genetics department will foster productive, collaborative relationships based on mutual respect and constructive feedback, both within Yale and with members of other institutions.

Excellence: We continuously strive for excellence, with the goal of producing world-class researchers and research that will contribute to the forefront of scientific knowledge.

2 Overview of the PhD in Genetics

The PhD Program in Genetics is part of the Yale Combined Program in the Biological and Biomedical Sciences (BBS), and closely linked with the Molecular Cell Biology, Genetics, and Development track. The PhD in Genetics is sponsored by the Genetics Department in the Yale School of Medicine, and the PhD students are members of the Yale Graduate School of Arts and Sciences (GSAS). Students in the Genetics PhD program study a wide array of biological disciplines involving both model organisms and clinical research. Generally speaking, a student joins the PhD program because that student's chosen advisor holds an affiliation with the Department of Genetics. In addition to offering a variety of research topics, the PhD program in Genetics puts an emphasis on research training. Students in the program are expected to complete classwork in their First Year and finish their Qualifying Examination in the fall semester of their Second Year. After this point, the student's primary focus is completing their thesis research under the guidance of the student's advisor and thesis committee. The program requires all students to submit a peer-reviewed first-author publication in order to graduate. These high standards and rigorous research training prepare students in the department to secure competitive positions in academia and industry. The average time to graduation is less than six years.

3 Progression to the Ph.D.

3.1 Course Work

Each student is required to take at least five graded classes which are typically finished by the end of the first academic year. These classes are graded Honors, High Pass, Pass, or Fail. Students must maintain a High Pass average and receive at least two Honors grades. Seminars and rotations are graded SAT/UNSAT, and do not count towards the required number of courses.

Any questions about course requirements or registration should be directed to the DGS or Department Registrar.

Year One: Three of the five classes are mandatory, and two are electives. The mandatory classes are Basic Concepts of Genetic Analysis (GENE 625), Molecular Cell Biology (CBIO 602), and Biochemical and Biophysical Approaches in Molecular and Cellular Biology (MCDB 630). Exemptions from these requirements are rare and must be negotiated with the Director of Graduate Studies (DGS). In addition to these three classes, students are required to select two elective graduate-level courses. Final course selection is approved by the DGS.

First year students are also required to take Research Skills and Ethics I & II (GENE 900 & 901) in the Fall and Spring semesters, respectively.

While registering for classes, students should be aware that they must register for First Laboratory Rotation (GENE 911) and Second Laboratory Rotation (GENE 912) in the Fall Semester and Third Laboratory Rotation (GENE 913) in the Spring Semesters.

Year Two and beyond: In the second-year students must take the Graduate Student Seminar in the Fall and Spring (GENE 675/676).

As in the First Year, students must register in a pre- or post-candidacy research course, GENE 999 or similar, so long as they remain enrolled in the PhD Program. The specific details about research registration will be communicated to students by the Department Registrar.

All course requirements, including the two Honors requirements, must be completed by the end of the second year. After the requirements are fulfilled, students may take additional courses in consultation with their advisor.

Responsible Conduct of Research: The NIH requires that every student receive ethics training in their first year (GENE901). By mandate, only one absence is allowed. Students are required to take a refresher course in their 4th year which consists of 6 hours of RCR retraining.

M.D./Ph.D. Students: Some class requirements are different for students in the dual M.D./Ph.D. program. Please see Section 4: "The M.D. Ph.D. Program"

3.2 Research-in-Progress

Graduate students are expected to attend the *Research-in-Progress* (RIP) series held each week during the calendar year. This series gives graduate students the opportunity to present their research to members of the department. Details about RIP will be sent out by the Department Registrar at the beginning of each

semester. For guidance on preparing RIP seminars, please consult your faculty advisor and senior graduate students in the department.

3.3 Rotations

Students must complete rotations in at least three laboratories in their First Year before selecting a Thesis Advisor. Each rotation lasts about 7 weeks. Rotations provide students the opportunity to explore the research done in the laboratory, to communicate with their potential colleagues, and to interact with the faculty mentor. The goal of these rotations is to identify a laboratory where the student feels they will be able to flourish and grow as a scientist while completing their thesis research. Students are permitted a fourth rotation if none of the first three rotations were a suitable match. Fifth rotations should be considered a last resort and are very rare.

If a student feels the lab is not a good fit near the beginning of a rotation and they wish to leave the rotation to work in another lab for that period, the student should talk to the faculty advisor and DGS as quickly as possible to arrange the change.

*COVID-19: The rotation paradigm has been adjusted. Please see Rotations in the separate COVID-19 update.

Formalizing Selection of a Dissertation Advisor Students are encouraged to discuss their interest in joining the laboratory with potential dissertation advisors throughout the rotation process. However, be aware that the decision to join a laboratory is not formalized until the end of the third rotation. This gives all students the opportunity to rotate in the laboratories in which they have interest, and accounts for changing preferences throughout the rotation process.

Note that laboratories are often limited in the number of students they can accept in a given year. As such, it is important for the student and advisor to discuss how many slots are available in a given laboratory before the rotation starts. In the end, joining a lab must be a mutually agreed decision between the student and advisor, with DGS approval.

Once a student has decided to join a lab and the advisor agrees to accept the student, the final selection must be discussed with the DGS by the end of the third rotation.

On rare occasions, students switch dissertation laboratories after thesis research has begun. This should be discussed with the DGS as soon as possible so that all options can be considered in a timely fashion.

3.4 Qualifying Examination

The Qualifying Exam (informally, QE or Quals) is a time for students to demonstrate their ability to read and think critically, identify major problems in a field, and use these skills to write and defend a research proposal. The Qualifying Exam typically spans 9 weeks and must be completed by December 15 in the student's second year.

The Qualifying Exam consists of the three parts spanning 8 weeks: (1) a five-week reading period during which the student discusses a selection of primary research articles with each of three Qualifying Committee members, (2) a two-week writing period during which the student writes two original research

proposals, and (3) a one-week presentation period during which the student prepares an oral defense of the research proposals. The Exam culminates in a two-hour oral defense of the research proposals during which the committee assess the student's readiness to begin their thesis research.

The Qualifying Exam requires the student's full attention. As such, the student should not take a TA position during the exam, and the student's advisor should not expect that the student engage in regular research activities during that period, although.

In the months before the Fall Semester of the Second Year, the student is responsible for assembling their Qualifying Exam committee. The committee comprises 3 faculty committee members, and at least one committee member must have an appointment in the Genetics Department.

While selecting the committee, the student should consider the reading topics that they will study with each professor. One of those topics must be in the student's own field (the on-topic), another must be unrelated to the student's field (the off-topic), and the third can be selected without restriction. The on-topic subject should be focused on the student's research, and the off-topic subject should be sufficiently distinct from the student's research that the bibliography of the off-topic proposal would not overlap with the student's on-topic proposal. One of the professors will chair the committee, and this committee member must have an appointment in Genetics. Prior to beginning the Qualifying Exam process, the committee and topics must be cleared with the DGS.

The student is also expected to make the necessary logistical arrangements for the exam. These include coordinating with committee members to schedule the exam, reserving a room, and informing the registrar of those arrangements.

Approximate Timeline

1. **June/July:** Meet with advisor and DGS to discuss exam
2. **July-September:** Select reading topics, set-up exam committee, schedule weekly reading period appointments, reserve room for qualifying exam, email all this info to the Genetics Registrar, committee, thesis advisor, and DGS.
3. **August-Early October:** Begin reading period (Week 1)
4. **Week 1-5:** Meet weekly with faculty for reading (1 hr. expected)
5. **Weeks 6-7:** Write proposals
6. **End of week 7:** Turn-in written proposals to committee, advisor, and Genetics Registrar
7. **Week 8 or 9:** Prepare oral exam presentations
8. **End of week 8 or 9:** Present oral examination, no later than December 15th

The Reading Period For the first 5 weeks the student meets with each professor individually, once per week. Leading up to those meetings, the student and professor agree on a set of articles related to their topic and read them. The structure of these meetings varies widely depending on the student and faculty

member, but they generally provide a chance for the student to learn more about the field, and to improve their ability to critically approach primary literature.

The Writing Period For 2 weeks after the Reading Period, the student must plan out and write two proposals (8-10 pages, double spaced), one for the on-topic, and one for the off-topic. Proposals must be original and solely written by the student, reflecting their own priorities and original ideas. While the student may discuss ideas with their readers and advisor prior to writing, only the student is allowed to read the proposals before they are submitted. The proposals should be sent to the committee and the registrar at least one week before the exam date. Each proposal should include the following sections:

1. **Specific Aims (1/2 Page):** Summary of project goals
2. **Background & Significance (3 pages or less):** Critical review of the field, establishing the questions to be addressed and their importance
3. **Experimental Plan (6.5 pages or less):** Description of experiments designed to address the questions you have established. Detail why you chose those experiments, how they would be carried out, potential results, possible pitfalls, and backup plans
4. **References:** Does not count towards page limit.
5. **Appendix (Optional):** Tables, figures, and models if visual guides can help the readers. Include legends, scale bars, axes, etc. as you would for a paper.

The Oral Exam One week after submitting the proposals, a 2-hour oral exam will be held. At the beginning of the exam, the committee will excuse the student from the room to briefly discuss the student's performance during the reading period. The student will then be invited back to give powerpoint presentations about their on-topic and off-topic proposals. Students typically create a 15-minute presentation for each topic, with the assumption that they will be frequently interrupted with questions. The length of time spent on each topic varies between exams, but the student should be fully prepared to present both topics. At the end of the oral exam, the student will again be excused, and the committee will discuss the student's performance and complete the Qualifying Exam Committee Report form. Following this, the committee will inform the student of their evaluation, and provide feedback on the entire exam period.

Evaluation: The student is graded on a number of metrics including: their ability to critically read journal articles, design experiments, and answer questions. For the full evaluation criteria, see the Qualifying Exam Committee Report form on the genetics website. There are three possible outcomes from the qualifying exam, as follows.

1. **Pass**
2. **Conditional Pass:** The student passes, but must correct a deficiency, often in the form of a rewriting a proposal or taking an additional course
3. **Decision Deferred:** The committee decides that the student's performance on two or more criteria is "unacceptable" or "marginal". This requires that the student retake their exam later (6 months

later). At that time the mentor will provide a letter outlining the student's progress. If the deficiencies are not corrected on the second attempt, the student will receive a failing grade

4. **Fail:** The committee decides that there are major deficiencies in the student's work, and that additional time will not be enough to improve these deficiencies

After the exam, the completed evaluation form must be signed by the DGS and turned in to the registrar. See "Guidelines for the Qualifying Exam" and "The Yale Genetics Qualls Survival Guide" on the Genetics website for more details and answers to FAQs.

3.5 Thesis Research

The centerpiece of graduate education is the thesis research and the preparation of the written dissertation. This research is expected to be organized in conjunction with the Dissertation advisor and Thesis Committee (see following section).

The exact nature of the research is expected to be flexible and will change from student to student. Any concerns that may arise as a student conducts their research should be brought up to the student's advisor, Thesis Committee, or DGS.

3.6 Thesis Committee Meetings

Once a student has begun their thesis research, their primary interaction with the faculty of the department is through their thesis committee. This committee has several functions:

1. Periodically review and evaluate the student's progress
2. Provide advice and guidance about the direction of the student's research
3. Approve the student to begin writing their dissertation
4. Provide advice over future career goals
5. Mediate differences between a student and advisor

The committee should be regarded as an ally and a resource. Students are encouraged to contact members of the committee as needed, even in informal settings. On occasion, the thesis committee can help resolve differences between a student and an advisor.

Assembling the Thesis Committee: The thesis committee normally comprises 3-4 faculty members, including the student's advisor. At least two members (including the advisor) must have primary or secondary appointments in the Department of Genetics. The thesis committee is assembled by the student in consultation with the thesis advisor. The student's advisor cannot be the chair of your thesis committee. Names of committee members should be given to the Genetics Registrar, following approval by the DGS within the first month of the Spring Semester of the student's second year. Note, the composition of the committee may be modified with the approval of the DGS.

The First Thesis Committee Meeting: The thesis committee must meet for the first time no later than May 15th of the spring term of the student's second year. The committee meeting is expected to take two hours. It is the student's responsibility to organize a time, date, and location for the committee meeting. Due to the difficulty of arranging schedules of multiple faculty members, the student is advised to begin scheduling 8 weeks in advance of the desired meeting date.

One week prior to the first meeting of the thesis committee, the student must distribute to their committee:

1. 10-page thesis research proposal
2. The Individual Career Development Plan (available on the Genetics website and from the Department Registrar)

The research proposal should be developed in consultation with the advisor will resemble an updated version of the Thesis Proposal submitted during the student's Qualifying Examination. The Individual Career Development Plan will be used as a guideline to discuss their career goals with the thesis committee during this meeting. For guidance on preparing a career plan, the student should consult the ScienceCareer myIDP website: myidp.sciencecareers.org/.

During the first thesis committee meeting, the student will prepare a 45 minute presentation summarizing (1) the students proposed thesis research, (2) the progress the student has made so far, and (3) plans for future experiments. It is expected that the student will show raw data (including negative results) demonstrating the efforts the student has made in the lab. The Committee Meeting is an opportunity for the Committee to critically examine the current state the project, so the student must provide material to guide this discussion. If the research has run into difficulty, this is an opportunity for the student, their advisor, and the committee to contemplate a potential change in direction.

The outline of the meeting is as follows:

1. The committee privately discusses the student's progress with the advisor. The student waits outside the meeting room for this discussion.
2. The committee privately discusses with the student any concerns the student might have about their research or their relationship with the advisor or other lab members. The advisor waits outside the meeting room for this discussion.
3. The student presents a 45-minute presentation of their research during which it is expected the committee will interrupt the student to ask questions.
4. Committee briefly discusses career goals
5. The student is excused from the room while the committee fills out the Evaluation Form (a copy of which may be obtained from the Registrar). During this time, the committee decides if the next meeting should take place in 3, 6, 9, or 12 months.
6. The student returns to the room to discuss the evaluation form with the committee members and advisor.

Following the conclusion of the committee meeting, the student must bring the Evaluation Form to the DGS for approval and hand in the form to the Registrar.

In addition to formal committee meetings, the student should keep in close contact with the individual members of the committee so as to make the best use of their expertise and have informal discussion throughout the year. Generally, the committee members are happy to accommodate these informal meetings as they provide a venue for mentorship and guidance in a less stressful environment than the committee meetings.

Subsequent Committee Meetings: Subsequent committee meetings differ from the first in the following ways:

1. Prior to subsequent committee meetings, the student should prepare a 1-2 page outline of progress made and of proposed research. This progress report should be sent out 2-3 days in advance of committee meetings.
2. Beginning in the student's fourth year, the committee must meet every 6 months.
3. When the student is nearing readiness to graduate, the student must discuss this with the committee. In order to begin preparing the dissertation, the student must receive official approval on the evaluation form.

3.7 Dissertation Prospectus/Research Proposal

By May 15 of the second year at Yale, each student must prepare a written summary of the proposed nature and scope of the thesis research, together with a provisional title for the dissertation. This document should be written in clear, plain English with minimal jargon, abbreviations, or colloquialisms. Because the prospectus is required fairly early in a graduate career and because of the uncertainties of research, the content of a thesis may change over time, and a student *should not feel bound by what is submitted*. The dissertation prospectus for Genetics students is usually an updated and somewhat abbreviated form of the thesis research proposal prepared for the student's first thesis committee meeting. The prospectus must be signed by the advisor indicating that the prospectus has been approved and then submitted to the DGS. The DGS may require additional changes. Once the DGS has approved the prospectus, it will be submitted to the Graduate School Registrar. **Students will not be admitted to candidacy, nor will they be allowed to register for the third year of study without an approved Prospectus.**

3.8 Admission to Candidacy

On order to be admitted to candidacy, the student must fulfill all Course requirements, the Honors requirement, the Qualifying Examination, submit the Dissertation Prospectus, and hold a satisfactory Thesis Committee Meeting. Upon completion of these requirements, Admission to Candidacy is approved during a subsequent Faculty Meeting.

A student who has not been admitted to candidacy will not be permitted to register for the fourth year. Exceptions must be approved in advance by the DGS, the department faculty, and the Graduate School Associate Dean.

3.9 Master's Degrees

M.Phil. The Master of Philosophy degree is awarded to Ph.D students who have been admitted to Candidacy. See the Yale University Graduate School Programs and Policies booklet.

M.S. Students are not admitted for this degree but may be awarded this degree if they leave Yale without completing certain requirements for the PhD degree. Students who are considering leaving the PhD program should consult with their DGS. Additional information can be found in the Yale University Graduate School Programs and Policies booklet.

3.10 Evaluation of Progress

Students may view their academic record (unofficial transcript) online. All students are encouraged to have frequent conversations with the DGS, course instructors, and thesis advisor, as well as members of the thesis committee. In addition, students will receive a copy of the summary statement of each thesis committee meeting. In later years, the advisor and thesis committee will report to the faculty on the student's thesis research progress. If at any point the faculty finds deficiencies in a student's performance, a detailed letter will be sent to the student by the DGS describing those deficiencies and making suggestions to remedy them.

Finally, at the end of the academic year (approx. May 15th) the Graduate School requires a Dissertation Progress Report from students in their 3rd, 4th, 5th, and 6th year. This report is now completed online at the following web site: <http://www.yale.edu/sis/dpr/>. The DPR needs to be approved by the faculty advisor and by the DGS. You may attach your most recent thesis committee outline of progress made and of proposed research.

3.11 Teaching

Genetics Ph.D. students are required to participate in two semesters (or its equivalent) of teaching. Students are not expected nor encouraged to teach during their first year or during their qualifying exam. Teaching must be in a science related course. **Teaching assignments in fulfillment of the requirement must be approved in advance by the DGS.**

Students teaching for the first time are required to participate in a session called Teaching at Yale Day. This event is designed to help new teachers develop the skills and confidence to make an effective start to the semester. Students must attend mandatory training.

Genetics students wanting to serve as teaching fellows after completion of their teaching requirement must obtain the approval of their thesis advisor and the DGS beforehand. The Genetics Graduate Program is a full-time commitment and any part-time jobs for pay, including tutoring to Yale College students, requires the approval of the thesis advisor and the DGS.

3.12 Graduate School Policies

Any questions regarding these policies should be addressed to your assistant or associate dean.

Policies webpage <https://gsas.yale.edu/academics/programs-policies>

4 The M.D. Ph.D. Program

4.1 Overview

Typically, one or more research rotations are completed prior to beginning clinical clerkships, either as part of the START@Yale program or during the summer between year one and two of medical school. No set number of research rotations is required. Students having selected a thesis adviser and deciding to enter the Department of Genetics Graduate Program are strongly advised to meet with the DGS of Genetics to complete the affiliation form, discuss required coursework, and review the process for the departmental qualifying exam prior to beginning their 12 weeks of protected Step 1 study time. MD/PhD students typically begin thesis research and participating in departmental activities after completion of the Step 1 examination. Coursework and teaching requirements for the PhD portion of MD/PhD training are modified from the typical course of study to account for coursework found in the medical school curriculum. Besides the modifications in these requirements, MD/PhD students in the Department of Genetics are subject to the same requirements as other graduate students in the department.

4.2 Laboratory Rotations

One or more rotations should be completed to identify a thesis advisor.

4.3 Coursework

Four graduate level courses taken for a grade as well as enrollment in the genetics graduate student seminar (GENE675/676) are required. The selection of courses should be discussed with the DGS and tailored to fit the field of research relevant for the student's research pursuits. Graduate courses taken during medical school (e.g. CBIO501, CBIO600, MBB800) may count towards this requirement. To serve as a refresher course in responsible conduct of research BBS 503 should be taken during the 4th year of study. By the end of the 4th year of study a grade of honors must be achieved in a minimum of 2 courses. Students are encouraged to take elective courses beyond those required to fill in gaps in knowledge and methodology relevant for their thesis work.

4.4 Teaching

One semester of teaching is required by the end of the 4th year of enrollment in the MD/PhD program. Students must attend mandatory training.

4.5 Qualifying Exam

MD/PhD students should complete the qualifying examination in the semester following the completion of their coursework. The structure of the qualifying exam is identical to that for other Genetics PhD students (Section 3.3).

4.6 Prospectus

MD/PhD students should submit their prospectus after the qualifying exam has been completed, but no later than the 15th of May following their exam.

4.7 Candidacy

MD/PhD students will be admitted to candidacy once they have completed their coursework, obtained a grade of honors in 2 courses, passed their qualifying exam, and submitted their dissertation prospectus.

4.8 Thesis Committee Meetings

The first thesis committee meeting typically occurs in conjunction with the submission of the prospectus. Frequency of thesis committee meetings are up to the discretion of the committee but must occur at least once per year in the first two years after completion of the qualifying examination, and twice per year thereafter. Students are strongly encouraged to have additional meetings if they feel their project could benefit from the assistance of members of the thesis committee. The thesis committee must include at least one MD/PhD associate director as well as one faculty member in the department of Genetics that is not the student's primary research mentor.

4.9 Clinical Re-entry

Students are required to successfully submit their PhD thesis, hold their thesis seminar, and have submitted a first-author manuscript for peer review prior to reentering clinical clerkships. Students must consult with the Associate Director for Clinical Education at least 6 months prior to planned reentry to complete reentry requirements.

5 Requirements for Graduation

A detailed guide for submitting the thesis can be found on the Genetics Department Website. The registrar for the Genetics Department will also send out relevant information to those submitting their thesis and will hold an information session that semester.

5.1 First Author Manuscript Requirement

Each student is expected to have at least one first-author manuscript reporting original thesis research accepted or submitted for publication in a peer-reviewed journal before submitting his or her thesis to Yale Graduate School for the Ph.D. degree. This requirement will be waived for an individual student only

with the approval of the student's advisor, thesis committee, and the faculty of the Department of Genetics.

5.2 Approval to Write Thesis

Final Committee Meeting Before starting to write the thesis, the thesis committee must meet and certify that the experimental results necessary for writing the dissertation have been completed. It is very helpful for the student to present an outline of their thesis to their committee members for this meeting. In order to obtain approval for a student to start writing their thesis, the evaluation form must be completed and none of the eight criteria are cause for concern.

DGS Approval The thesis committee meeting form must be approved by the DGS and submitted to the Department Registrar.

5.3 PhD Dissertation

Writing the Dissertation Most students devote one to several months' full-time effort to writing their thesis. Be sure to allow ample time to receive and incorporate the comments of the thesis committee members. Each student should discuss the schedule of writing and review with the advisor and committee members early in the process. **A completed draft of the thesis should be given to all committee members at least 4 weeks prior to the submission date.** Each committee member will provide written and/or verbal comments that the student should address in the final copy of the thesis that is turned in to the Graduate School.

GSAS guidelines for thesis formatting can be found on the GSAS website.

Evaluation of the Dissertation The dissertation will be formally evaluated by two "inside" readers (usually members of the thesis advisory committee, but not the thesis advisor and are ladder or ladder-track faculty members at Yale) and one "outside" reader (who can be a Yale faculty member but who cannot be a member of the thesis committee or a collaborator on the thesis project or on a closely related project of the advisor). You can also choose an outside reader that is from an institution other than Yale. All readers must hold the Ph.D. degree as well as a faculty position or be considered otherwise qualified to evaluate the dissertation. Readers should be chosen by the advisor in consultation with the student. Detailed instructions for selecting readers can be found in the Thesis Submission Guide on the Genetics Department Website.

Submitting the Thesis Graduate School degrees are awarded in December and May. The deadline for petition and submission of dissertations to the Graduate School are posted on the Yale Academic Calendar

Guidelines for Dissertation Submission: The Graduate School requires one original unbound (loose) copy and a pdf file for their records. The unbound copy should be on acid-free thesis paper, no binding, staples,

or paperclips. You can put the loose copy in a pocket file or a manila envelope or anything that keeps it from falling apart or getting lost.

The readers' copies should be emailed as a PDF to the Genetics registrar (for distribution to the readers).

Detailed submission guidelines can be found in the Thesis Submission Guide on the Genetics Department Website.

Thesis Seminar Each student is required to give a department seminar on their research. The thesis seminar is scheduled through the Genetics registrar and can occur before or after submission of the thesis. The student must consult their thesis committee as to when to schedule the seminar. However, the seminar must be presented before the DGS signs the departmental recommendation form for conferral of the Ph.D. degree (dates can be found on the Yale Academic Calendar).

Thesis Research Publications When material is published from dissertation research, the Graduate School requires that it include a statement saying that the paper is taken from (or based on): "a dissertation submitted to fulfill in part the requirements for the degree of Doctor of Philosophy, Yale University".

Where a student has been supported by a training grant, regulations require that the following statement be included in publications: "This investigation was supported by National Research Service Award (number of the training grant) from the NIH (awarding unit)".

The Genetics registrar can supply the relevant grant information. If a student has received other grants (for example, NSF), these should be acknowledged, as should any financial aid received from faculty research grants.

5.4 Starting Postdoctoral Positions

Students frequently start postdoctoral positions before the degree has been formally awarded. In such cases, most institutions require a letter from an appropriate University official, such as the Registrar, DGS, or Department Chair, which certifies that the student has satisfactorily completed all the requirements for the degree. Such a letter cannot be written until the Department has received the readers' evaluation of the thesis.

5.5 Information Required by Genetics Registrar

The Genetics Department is required by the NIH to track students for 15 years after graduation. Please send the Registrar the following information before you leave the university:

1. Updated CV
2. Future career goals or employment information
3. Thesis Abstract

6 Other Information of Interest

6.1 Grievance Procedures

If the situation arises where you disagree with a decision made about you, or where you feel you have been treated wrongly by someone in the University there are several courses of action. You may ask a faculty member, the DGS, the Director of the BBS, or the Department Chair for advice or assistance. Alternatively, you do not wish to raise the issue within the Department, there are University-agencies that can act for you. The Dean of the Graduate School, Lynn Cooley, is the initial contact for students for cases in which a student has a complaint against a member of the Faculty of Arts and Sciences or a member of the administration. The Provost of the University governs cases against a faculty member who is not a member of the Faculty of Arts and Sciences or against an employee who is not an administrator in the Graduate School or who is not subject to discipline by the student's Dean. Please see the Yale University Graduate School Grievance Procedures booklet which students receive at the start of the academic year or on-line. In addition, there is a standing University-Wide committee to consider student complaints of sexual harassment. The SHARE center located at 55 Lock St is an available resource, and they operate a 24/7 anonymous call line (203-432-2000). You can contact a Title IX Coordinator for the Graduate School of Arts and Sciences, or the Yale School of Medicine. For more information, please see the SHARE center's website.

6.2 Vacation Policy

Students making satisfactory progress toward the completion of their PhD degree will have two weeks vacation in addition to the stated University holidays and the break from Christmas Eve through New Year's Day. Please refer to the GSAS academic calendar for more information. Additional vacation time will require permission from the thesis adviser or track director for 1st year students.

6.3 Yale Health Plan (YHP)

The Yale Health Plan is a prepaid comprehensive health care program, located at the University Health Services Center (YUHSC), 55 Lock Street. All Yale graduate students enrolled at least halftime are automatically members of the YHP and are eligible for ambulatory care services and use of the infirmary at no additional charge. For entering students, membership in YHP begins on the day of registration. Yale requires that students have hospitalization coverage as well. This coverage is included for all PhD students, but please refer to your offer letter for additional information. Students may enroll their spouses and dependents under age 26 by filing an application with the YHP. A fee is applied through the Bursar's Office. Only those spouses and dependents enrolled are eligible to receive YHP benefits and service. Members of the YHP use the University Health Services for both routine and emergency outpatient care. The YHP encourages its members to select a personal physician from its full-time primary care medical staff. Appointments are scheduled weekdays Monday – Friday between 8:30 a.m. and 5:00 p.m. Emergency care is available 24 hours a day. In addition to primary care and emergency care, a full range of specialty services are available, including Allergy, Dermatology, General Surgery, Mental Health and Counseling, Neurology, Obstetrics and Gynecology, Ophthalmology, Optometry, Orthopedic Surgery, Otolaryngology

and Urology. For further information about the Yale Health Plan please see the Yale Health website or visit the Yale University Health Services Center subscriber services office at 55 Lock Street.

6.4 Dean's Emergency Fund

An emergency fund is available for all PhD students by the Dean's office. Developed in consultation with the Graduate Student Assembly, the Dean's Emergency Fund is intended to assist Ph.D. students who face unanticipated financial hardship that would likely impact or hinder academic progress. The fund does not cover recurring expenses; instead, it is intended for Ph.D. students who cannot reasonably resolve their immediate financial difficulty through fellowships, loans, or personal resources. The funding is a one-time award, normally up to \$2000, and does not require repayment. Situations eligible for funding include such events as: Temporary housing for displacement due to fire, flood, or other unforeseen circumstances, emergency dental expenses (e.g., root canal), and travel costs related to unexpected crisis or death in the immediate family.

6.5 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 the whole term in which the support and relief are granted, the student's academic clock stops, effectively adding an additional term to the total time to degree. During this period, students remain registered full-time, receive a standard financial aid stipend and Health Award, and receive modified departmental academic expectations that best suit the specific situation. The precise nature of the academic responsibilities undertaken or suspended during this period should be a determined between the adviser and the student, with the understanding that students are entitled to full relief from responsibilities for at least an eight-week period. Most students take an entire term of parental relief, but the relief may be split in two, with a student taking only eight weeks of relief during the term in which, or just after, a birth or adoption occurs and then receiving an additional eight weeks of stipend funded by the Graduate School postponed to a later term. Parental relief may not be combined with other funding. To arrange for parental relief, a student should contact the GSAS associate dean for graduate student advising and academic support prior to the term of the birth or adoption. This benefit is limited to two birth or adoption events. If both parents are Ph.D. students at Yale, both may receive this benefit per birth or adoption event.

The PhD Student Family Support Policy offers a flexible subsidy of \$4,600/year to GSAS Ph.D. students with children up to age 12. It can be used to purchase spousal Yale health coverage, for childcare or other family costs, and is not means-tested (no income ceiling or documentation).

6.6 Tuition and Stipend

Also see the Yale University Graduate School Programs and Policies and the BBS funding guidelines.

Tuition

With rare exceptions, tuition must be paid for all Ph.D. students for the first four years (eight terms) of their program. In essentially all cases, tuition for graduate students in Genetics is paid by NIH NRSA

institutional training grants, individual predoctoral awards from various agencies such as NSF, or by the Department, supplemented with Yale fellowships. These funding sources often cover the first three years of study. After students are no longer covered by external funding, tuition and stipend is paid by their thesis advisors' research grants.

After four years of tuition have been paid, the student is expected to continue registering until the dissertation is submitted or the terminal date is passed. The fee for continuous registration (CRF) is paid by the student's thesis advisor.

Financial Aid

The Department of Genetics attempts to ensure that all students registered in its Ph.D. program are provided with adequate financial aid. Because financial aid is budgeted on a year-by-year basis, it is not possible to guarantee any particular level of financial aid in subsequent years. However, it is our expectation that graduate students in the Department of Genetics will be supported in the years to come at least at the level described below.

Sources of Support As of 2019, tuition will be paid for all students by the aforementioned grants and funding resources. In addition, stipends (either the BBS stipend or Combined Award when applicable) will be paid over 12 months in bimonthly installments (see How Are Stipend Paid? below). All stipends are considered taxable income, and students are expected to file a tax return with the IRS. For the first three years of study, when U.S. citizens are not working as teaching assistants, taxes are usually not withheld by the university, and it is the student's responsibility to pay taxes to the state and federal governments as described by current tax laws. Most students file quarterly estimated tax reports. The University will withhold tax on all research, teaching and other assistantships; on casual wages paid; and on the fellowship stipends of foreign students. Withholding forms for Connecticut State and Federal taxes must be on file at the Payroll Office, 155 Whitney Avenue and updated annually, otherwise the maximum amount will be deducted from stipend checks. Students who are on assistantships in research (ARs) should file a Federal and State W4 form. For more information, see Yale's web page on graduate student taxes and/or speak with a tax professional. Foreign students should also refer to IRS publication 901 U.S. Tax Treaties.

USPHS National Research Service Awards (NRSA)

These awards (which are also called traineeships) support the great majority of students in the Department for the first three years of study. NRSA's (training grants) are awarded to the Department by the National Institutes of Health (NIH), and pay one-half to two-thirds tuition plus a partial stipend of \$24,816. A supplement is added by the BBS or the Department of Genetics and the School of Medicine to bring the total tuition and stipend to the current University levels. These positions are only available to US citizens and permanent residents. Taxes are not withheld for students on NRSA's, and such students are expected to file estimated tax reports with the IRS and state of Connecticut.

Travel to Scientific Meetings

Attendance at scientific meetings is an important part of graduate education. Limited travel funds are available to students in years 1-3 that are on training grants. Students should consult the registrar associated with their training grant regarding travel/supply allowances and requirements.

External Fellowships

There are several fellowships administered by federal sources for which students may be eligible (e.g., National Science Foundation, Department of Defense). Announcements of these fellowships are

forwarded to eligible students and are on-line at the respective websites. Also, the Yale School of Medicine Dean's office maintains an extensive file of fellowships and publishes the online Graduate School Fellowship Guide. Students should be aware of the fellowships that are available and should make every effort to apply for those for which their training and background are appropriate.

Students who obtain external fellowships receive the award in conjunction with the University funding described in the student's offer of admission. According to Graduate School policy, one may combine funding from these two sources up to \$4,000 beyond the standard stipend for the program.

Research Assistantships

Federal and non-Federal research grants and contracts awarded by outside agencies to support the research projects of faculty members may contain funds for research assistantships that can be held by graduate students. Appointments as research assistants are usually only made to students who have been admitted to candidacy for the Ph.D. This is the most common source of support for advanced students, and federal taxes are withheld.

How is the Stipend Paid?

The Graduate Student Payroll System (GSPS) is a semi-monthly payroll; stipends are paid on the 15th and the last day of each month. Students may have their stipends deposited directly to their banks. Forms are available in the Graduate Program Office, the Financial Aid Office of the Graduate School or on-line. Questions about pay checks should be directed to the Genetics Registrar.

Loans

Students should consult the Financial Aid Office, 127 HGS, tel. 432-2737. This office can provide short-term loans during temporary financial crises (for example, if a stipend check is delayed). This office also has up-to-date information on federally sponsored student loan plans.