

GRADUATE STUDENT HANDBOOK

CONTENTS

I. GRADUATE STUDY IN BIOLOGY	2-3
A. Admission to the Department	
B. Financial Assistance	
II. MASTER OF SCIENCE (M.S.)	4-6
A. M.S. in Biology	
B. Courses of Study	
C. M.S.-M.B.A. Program	
III. DOCTOR OF PHILOSOPHY (PH.D.)	7-20
A. Program Requirements	
B. Lab Rotations & Finding A Ph.D. Advisor	
C. Ph.D. Qualifying Exam	
D. Advising and Mentoring	
E. Ph.D. Thesis Proposal Examination	
F. Annual Committee Meetings	
G. Ph.D. Candidacy & The M.Phil. Degree	
H. Ph.D. Dissertation & Defense	
IV. GRADUATE STUDENT REGULATIONS	21-22
A. Standards of Ethical Behavior	
B. Advisement and Registration Procedures	
C. Change of Status	
D. Transfer of Credit	
E. Academic Probation	
F. Graduation	
G. Full-Time Equivalency	
H. Leave of Absence	
I. Readmission	
V. ADDITIONAL INFORMATION ABOUT THE DEPARTMENT	23-24
A. Graduate Biology Group	
B. Travel Grants	
C. Departmental and University Awards	
D. Poster Sessions	
E. Departmental Conferences, Symposia, & Seminars	

I. GRADUATE STUDY IN BIOLOGY

Biology is the study of life in all its diverse forms. In recent years the field has been revolutionized with the development of powerful genomic, molecular and cellular techniques, enabled by computational and bioinformatic methods, that are now being applied to areas across the spectrum of science, from genetics and development to ecology, behavior and biomedicine.

The principal aim of graduate studies at NYU Biology is preparing students to contribute to advancing science. This is accomplished by providing students with a broad background in the fundamentals of modern biological sciences, training in state-of-the-art research methods, and acquiring the skills required to conceive and complete a substantial, significant and original research project. Additionally, graduate training includes mastering techniques to present scientific information, and knowledge of the structure of the scientific enterprise and its institutions. This training permits students to enter a wide range of career paths.

The biological sciences consist of a number of established sub-disciplines. Graduate training in the department is designed to expose students to a variety of perspectives (genomic, bioinformatic, molecular, developmental, genetic, evolutionary) and a variety of systems (prokaryotes, simple eukaryotes through higher plants and mammals, including humans). Although the most intensive component of graduate education is a defined and focused research project in a single area, graduate students at NYU Biology have many opportunities to broaden their training through coursework, seminars, colloquia, and interactions with a large and diverse faculty. Such multidisciplinary training and perspective are critical for successful academic and non-academic career paths.

A. ADMISSION TO THE DEPARTMENT

Graduate students come to the NYU Biology Department from a variety of backgrounds and institutions. Admission is highly competitive. Online applications for the M.S. and Ph.D. programs are available on the Graduate School of Arts and Science web site. Complete information about applying is available at the [Graduate School's Application Resource Center](#), including information regarding the GRE and TOEFL, letters of recommendation, and transcripts.

1. Masters Program

Applications for admission to the M.S. Program are accepted on a continuing basis, and students may begin their studies in either the fall, spring or summer semesters. Applicants for admission to the M.S. program must have successfully completed an undergraduate major in a science with a B average or better and must submit letters of recommendation from three individuals who are in a position to evaluate the applicant's academic and/or scientific potential. The Graduate Record Examination (GRE) is optional for admission to the M.S. Program.

2. Doctoral Program

Applications for admission to the Ph.D. program must be received by the [GSAS application deadline](#). Ph.D. students begin their course of study in the fall semester and attend full-time.

Minimal requirements for admission to the Ph.D. program are as follows:

- An undergraduate major in a science with a B or better average.
- Three letters of recommendation from individuals who are capable of assessing the applicant's academic and scientific potential.

Note: The GRE is not required for admission to the Ph.D. program.

3. Additional Information for Applicants

Foreign applicants to the M.S. or Ph.D. program whose native language is not English must submit scores of the Test of English as a Foreign Language (TOEFL) which is administered by the Educational Testing Service. The TOEFL is not required of foreign applicants who have previously completed a degree in an institution where English is the primary language do not.

Upon acceptance to the program, foreign students are required to also take the examination administered by the NYU American Language Institute to determine their level of English proficiency. In the event of a deficiency in this area, the Department may require the student to complete language training without course credit towards their degree.

Applicants with foreign credentials or nonimmigrant visas should refer to the admission, tuition, and financial aid section of the GSAS bulletin or web site for additional requirements.

On occasion, non-traditional students (e.g., students with undergraduate majors in non-science fields or students whose undergraduate grades do not reflect their special skills in scientific research) may be admitted to the program on a provisional basis. In these cases, the Admissions Committee and/or Director of Graduate Studies may prescribe undergraduate coursework or other remedial study to make up for deficiencies in background. These courses, usually taken without credit towards the graduate degree, must be completed satisfactorily prior to full acceptance of the student into the graduate program.

Students who choose to study without seeking admission to a degree program may apply as a nonmatriculant to the Department. Though not matriculated at the Graduate School, students must meet the same application deadlines and scholastic standards as students who are matriculated in a degree program. Nonmatriculants may register for a maximum of 12 points, at which time they must either petition the Director of Graduate Studies – M.S. Program, for a change of status or, if they are interested in the Ph.D. program, submit an application to the GSAS Office of Graduate Enrollment Services (GES).

B. FINANCIAL ASSISTANCE

Doctoral students are admitted to the program with the assurance of financial support, which provides a stipend and tuition remission. Additionally, doctoral students are provided a monthly housing supplement starting in their second year, as well as a one-time supplement in their first year that can be used towards supplies such as textbooks or a laptop computer. Tuition remission provided through fellowship and research assistantship covers the tuition and fees per point that each student registers for each semester.

Graduate students are strongly encouraged to actively seek external fellowship support. Such awards are available from a variety of federal (National Science Foundation, National Institutes of Health), private (Howard Hughes Foundation), public, charitable and industrial sources. Students are also eligible to apply for numerous grants that provide research costs, travel and other project funding.

University fellowships and scholarships (e.g. the GSAS Dean's Dissertation Fellowship) are available on a competitive basis to support students. Further information from GSAS on both extramural and intramural financial assistance is available [here](#).

Although Masters Students are generally not eligible for departmental financial aid, a small number of adjunct teaching opportunities may be awarded when positions are available. Masters students who are employed may find that they are eligible for tuition remission benefits from their employer.

II. MASTER OF SCIENCE (M.S.)

A. M.S. IN BIOLOGY

1. *Degree Requirements*

Students are awarded a Master of Science degree on (1) completion of 36 points with an average of B or better and (2) satisfactory completion of a [qualifying research paper](#), commonly called a Master's thesis (see below). Of the 36 points required, 24 must be from the Department of Biology at New York University. Up to 12 points of graduate-level science courses may be taken in departments including Neural Science, Mathematics, Computer Science, Data Science, Basic Medical Sciences, Physics, Chemistry. Students enrolling in courses in other NYU departments must obtain prior permission from the course instructor as well as the Director of Graduate Studies – M.S. Program.

Courses numbered at the 1000- and 2000-level are open to students in the M.S. program. A total of 12 credits may be taken in individualized study at the 3000-level (either a Journal Club, Reading or Research course); of these 12 credits, a maximum of 8 are typically Research credits. Curricula are based on the individual student's background, interests, and future career goals. Advisement on course selection should be sought from the department's Coordinator of Student Advising and/or Director of Graduate Studies - M.S. Program.

All entering M.S. students typically take a full-year intensive team-taught core lecture course. In the Fall semester, Bio Core I: Molecular Systems (BIOL-GA1001) surveys the major areas of up-to-date molecular biology, molecular genetics and systems biology. Topics include the molecular structure and function of proteins and polynucleic acids and their fundamental roles in cell biology and disease. In the Spring semester, Bio Core II: Cellular Systems (BIOL-GA1002) surveys the major areas of up-to-date cell biology. Topics include review of cell and membrane structure, organelle function, cytoskeletal dynamics, cell motility and division, cell cycle, cellular energetics, protein and ion transport, cell signaling, stem and nerve cells, immunology and cancer. The purpose of these courses is to ensure that all Biology graduate students have a comprehensive background in modern biology.

All M.S. students enrolled in Lab in Molecular Biology III and IV (BIOL-GA1124-1125) or Research (BIOL-GA3303-04) are expected to prepare a poster to be presented at the Spring M.S. Poster Session, which provides students the opportunity to discuss their research with other students and faculty members.

2. *Qualifying Paper (Master's Thesis)*

Qualifying research papers fall into two categories, those based on laboratory research and those based on library research. Both types are mentored by a faculty member or principal investigator of a research laboratory sought by the student. For laboratory research, the student will write the paper based on original experimental results obtained in the laboratory of the mentor. For a library-based thesis, after selection of a suitable topic by the student and mentor, the student will research the topic by reading and analyzing original literature on the subject, and then prepare a substantive analysis that will constitute the paper.

Once the examiner and topic have been selected, the student must submit this information via email to the Director of Graduate Studies – M.S. Program. A final paper on the assigned topic must be submitted to the examiner. The examiner will then evaluate and grade the paper. The grade is either "Pass", "Pass with Distinction" or "Fail". The examiner should notify the Graduate Coordinator in writing. The student is required to submit a PDF copy of the paper to the Graduate Coordinator upon completion of the program.

Further information on the requirements for the Masters research paper may be obtained from the Director of Graduate Studies – M.S. Program, the Graduate Coordinator, or at the [NYU Biology Master's Program website](#).

B. COURSES OF STUDY

1. General Biology Track

The general track provides students with general knowledge of biology. Students interested in applying to medical school typically choose this track. Students admitted to this program typically take the following courses: BioCore I and II (BIOL-GA1001 and BIOL-GA1002), Protein Biochemistry (BIOL-GA1045), Special Topics in Physiology: Metabolic Disorders (BIOL-GA1031), Viral Diseases (BIOL-GA1080), and Hot Topics in Infectious Disease (BIOL-GA1023) and will be advised regarding additional courses they should take based on their background.

2. Recombinant DNA Technology Track

This track is designed to meet the needs of students with varied academic background who desire to develop significant experience in recombinant DNA. Both strategies of modern molecular biology and specific training in lab techniques are emphasized. Applicants with training in other areas who have a special interest in recombinant DNA technology will be considered for admission.

Students admitted to this program typically take the following courses: BioCore I and II (BIOL-GA1001 and BIOL-GA1002), Protein Biochemistry (BIOL-GA1045), and Lab in Molecular Biology I-IV (BIOL-GA1124-.1125)

Lab in Molecular Biology I and II is a course sequence designed to give students a thorough training in molecular biology, including both design of approaches that use recombinant DNA technology, as well as hands-on training in laboratory techniques. Lab in Molecular Biology III and IV consist of an independent research project by the student under supervision of a research mentor. The mentor is usually a faculty member of the Department of Biology at NYU, but can also be a faculty member at another institution. Once the mentor has been selected, the student must submit this information, in writing, to the Director of Graduate Studies – M.S. Program. In both cases the mentor must communicate with the instructor/supervisor of Lab III and IV about the research project, progress of the student, and the final grade. In general, Lab III and IV each require about 20 hours per week of lab work. If Labs III and IV are taken simultaneously, approximately 40 hours per week are required. If both are taken during the summer, the research project extends until the end of August.

Students in this program must complete a research paper as described above. The scientific results obtained during Lab III and IV may be integrated into this paper.

3. Bioinformatics and Systems Biology Track

The Bioinformatics and Systems Biology track provides students with a firm understanding of the application of computational technology to both theoretical and practical aspects of the study of biology. Students admitted to this program typically take BioCore I and II (BIOL-GA1001 and BIOL-GA1002), Programming for Biologists (BIOL-GA1007), Statistics in Biology (BIOL-GA2030), and Applied Genomics (BIOL-GA1130) and will be advised regarding additional courses they should take based on their background.

Each student completes a bioinformatics/computational research project under the supervision of a Biology faculty member. Students may seek approval from the Director of Graduate Studies – M.S. Program, for a sponsor outside these departments or outside of the university. A report of the research, similar in length and format to a M.S. qualifying paper (thesis), is approved by the sponsor. The sponsor must then sign a M.S. approval form available from the Graduate Administrative Aide.

4. Oral Biology Track

The oral biology track is offered through the Department of Biology in collaboration with the NYU College of Dentistry. The goal of the specialization includes advancing the knowledge base in oral biology in order to provide 1) pre-dental applicants with an opportunity to strengthen their bio-science education, thereby increasing their competitiveness for admission to dental school, and 2) US and international dentists with graduate-level training and experience in research methodology and technology to better qualify them for careers in academic dentistry and/or healthcare-related industry activities; and enabling practicing dentists to improve the quality of care they offer by increasing their understanding of basic biological principles in a field applicable to dentistry.

Students admitted to this program typically take Integrative Seminars in Oral Biology I (BIOL-GA2048) and II (BIOL-GA 2049), BioCore I and II (BIOL-GA1001 and BIOL-GA1002), and Protein Biochemistry (BIOL-GA1045), and will be advised regarding additional courses they should take based on their background.

C. M.S.-M.B.A. PROGRAM

This joint program will lead to an M.S. in Biology (GSAS) and an M.B.A. (Stern School of Business). This program is offered in conjunction with NYU's Stern School of Business. This program meets a need for academic preparation and training in Scientist-Managers for the biotechnology and pharmacology industries, academic Industrial Liaison personnel, Investment Specialists for the financial sector, and Government Regulatory personnel.

Students earn 30 credits in GSAS-Biology and complete a Qualifying Thesis plus 54 credits at the Stern School of Business. This is a full-time program, with the first year and summer at GSAS and the second and third years at Stern.

The GMAT exam is required for the application process, and each program's prerequisites remain; for instance Stern considers business experience essential and Biology requires the pre-medical core curriculum to matriculate in graduate level courses. Admissions are made by each school's admissions committee and students must be admitted to both programs to qualify for the joint degree.

III. DOCTOR OF PHILOSOPHY (Ph.D.)

The Ph.D. program is a full-time program designed to develop independent research scientists with a thorough training in biology. The major component of the program is the completion of an original and substantive research project under the direction of a member of the department faculty. Students are expected to become contributing members of the Department's scientific community, participating in journal clubs, seminar series, and other opportunities for the exchange of scientific information. The responsibility for tracking and advising a student is shared among the Department Chair, the Director of Ph.D. Graduate Studies (DGS), and each student's advisory committee which includes the student's Ph.D. thesis advisor. The overall goal is to guide the student through a series of milestones leading to a Doctor of Philosophy degree.

Doctoral students may not engage in outside employment or other appointments unless special permission is granted by the student's mentor, the Chair and the DGS.

A. PROGRAM REQUIREMENTS

1. *Course Requirements*

BIOL-GA 2003 – Bio Core 3: Molecules and Cells	4 points
BIOL-GA 2004 – Bio Core 4: Genes, Systems, and Evolution	4 points
BIOL-GA 2030 – Statistics in Biology	4 points
BIOL-GA 3001 – The Art of Scientific Investigation	2 points
BIOL-GA 3034 – Predoctoral Colloquium: Laboratory Rotation	2 points
BIOL-GA 3035 – Predoctoral Colloquium: Laboratory Rotation	4 points
BIOL-GA 3015 – Predoctoral Colloquium: Graduate Student Seminar	12 points
Two electives at the 1000 or 2000 level	8 points
Elective Credits for Research or Additional Courses	32 points

- To qualify for the doctorate, a student must satisfactorily complete graduate studies totaling 72 points, at least 36 in residence at New York University.
- **Grades:** Students must achieve a grade of B or better in all required courses.
- **Elective Credits:** A student's elective credit requirements will be determined by the Director of Graduate Studies (DGS) in year 1, and, in subsequent years, by the research mentor and thesis advisory committee. Students are minimally required to complete two electives at the 1000 or 2000 levels, and may be required to complete additional coursework as determined in consultation with their thesis advisor and committee.
- **Graduate Student Seminar:** Students register for Graduate Student Seminar (BIOL-GA 3015) for a total of six semesters, but they must attend the seminars every semester in which they are enrolled in the program in New York City. They must present their research progress in the seminar once a year from their second year onwards.
- **Statistics Requirement:** If the DGS determines that a student has an adequate background in statistics, the DGS, in consultation with the student, will choose an alternative quantitative course to Statistics in Biology, BIOL-GA 2030, or, if the student has extensive quantitative background, a course most relevant to their field of study.

2. Additional Degree Requirements

- **Ph.D. Qualifying Examination** (see Sec. III.C): The qualifying examination is taken near the end of the spring semester of the first year, and consists of two parts: a written research proposal and an oral exam before a committee of three faculty members. Committee members are assigned to each student by the DGS. The topic of the qualifying exam may not be in the area of the student's thesis research. The exam tests the student's skills in scientific reasoning, analysis, writing, interpretation of data in the literature, integration of scientific concepts, and creativity in the design of new experiments. The committee determines whether the student passes or fails the exam. Students who fail the qualifying exam must retake the exam within six weeks of the first exam with the same committee. Students who fail the first exam must pass the second exam and meet all other requirements of the program to remain in the Ph.D. program.
- **Thesis Proposal Exam** (see Sec. III.E): By the end of the spring semester of their first year, doctoral students must secure a faculty member who will be their thesis advisor. By April 1st of the second year, students must form a thesis advisory committee consisting of at least five (5) faculty: the Ph.D. thesis advisor(s), at least three faculty members from within the department, and an external reader from outside the University with expertise in the specific field of research. A thesis proposal must be presented to the thesis committee and defended orally before May 31 of the second year. Students who do not pass their thesis proposal exam are placed on probation for one semester and must successfully repeat and pass the exam at the end of that semester in order to remain in the Ph.D. program. Students are required to convene annual meetings with their thesis committee by May 31 of each year.
- **Doctoral Dissertation and Defense** (see Sec. III.H): The plan of study and the dissertation research are formulated in consultation with the thesis advisor and the thesis advisory committee. The dissertation must represent original independent research in a significant area of biology at a level comparable to research published in recognized journals. When the dissertation is completed and has been approved by the thesis advisor and by the thesis advisory committee, the candidate defends the results of the research before the committee.

3. Annual Review Process (see Sec. III.D-F)

Students in the doctoral program are reviewed annually by the DGS in consultation with the Department Chair. Appointments are contingent on the demonstration that the students are making adequate progress towards completing their degrees. Such progress is judged by achieving certain milestones within a specified time-frame, i.e., completing first-year coursework and laboratory rotations with adequate grades and evaluations, passing the qualifying examination at the end of the first year, and the thesis proposal examination at the end of the second year. Starting in the third year, these milestones are annual thesis committee meetings, designed to monitor the student's progress toward the Ph.D. degree (see below). A formal evaluation of progress must be made annually by the advisory committee and reported to the DGS and the Department Chair.

A student who does not make adequate progress towards completion of their degree will be placed on probation for one semester. An additional committee meeting must be held before the end of the probationary semester. If sufficient progress is not made in the probationary semester, the student will be dismissed from the Ph.D. program by the Department Chair.

4. Year-by-Year Overview

Year 1

- Complete 24 credits in BIOL-GA courses:

First Year Coursework

FALL SEMESTER	SPRING SEMESTER
Biocore III (BIOL-GA 2003, 4 credits)	Biocore IV (BIOL-GA 2004, 4 credits)
Predocutorial Colloquia: Lab Rotation (BIOL-GA 3034, 2 credits)	Predocutorial Colloquia: Lab Rotation (BIOL-GA 3035, 4 credits)
The Art of Scientific Investigation (BIOL-GA 3001, 2 credits)	Biology elective (e.g. Applied Genomics)
Statistics in Biology (<i>or equivalent</i>) (BIOL-GA 2030, 4 credits)	

- Attend:
 - All research presentations by Biology faculty members (end of August and early September)
 - Departmental Seminar series – Mondays @ 4pm in CGSB Auditorium, 12 Waverly Place.
 - *Predocutorial Colloquium*: Graduate Student Seminars on Fridays at 9.30am.
- Perform three lab rotations, according to the following schedule:
 - Rotation 1: Sep. – Nov. (9 weeks)
 - Rotation 2: Nov. – Jan. (11 weeks, due to Thanksgiving & Winter break)
 - Rotation 3: Jan. – Mar. (9 weeks)

Rotations are graded and are considered a primary part of training and evaluation. Students must report to the lab every day of the lab's work week, as set by the principal investigator. Students are expected to work exclusively on the rotation project, except when in class or participating in study sessions or departmental seminars.

- Complete and pass the qualifying examination.
- Choose a thesis advisor by May 1, subject to approval by the DGS and the faculty member.
- Begin thesis research.

Year 2

- Complete 24 credits: A mixture of BIOL-GA 1000, 2000 and 3000 level courses (journal clubs and thesis research) to include Statistics in Biology (BIOL-GA 2030) if not taken in Year 1.
- Attend weekly Monday Departmental Seminar series.
- Optional adjunct teaching duties in undergraduate or graduate Biology courses (Fall and Spring semester courses are available; students are strongly encouraged to participate).
- *Predocutorial Colloquium*: Graduate Student Seminar (BIOL-GA 3015). Attend all seminars and present one seminar each year.
- *Thesis Proposal Examination*: Written proposal and oral defense. Each student must successfully present and defend a thesis proposal for their thesis committee by May 31.

Year 3

- Complete 24 credits of BIOL-GA 3000 level courses (journal clubs and thesis research).
- Attend weekly Monday Departmental Seminar series.
- *Predoctoral Colloquium*: Graduate Student Seminar. Attend all seminars and present a seminar.
- Present a poster at the Annual Biology Retreat.
- Meet with thesis committee to present yearly progress report by May 31.

Years 4 and 5

- Attend weekly Monday Departmental Seminar series.
- *Predoctoral Colloquium*: Graduate Student Seminar. Attend all seminars and present a seminar.
- Present a poster at the Annual Biology Retreat.
- Meet with thesis committee to present yearly progress reports by May 31.
- Complete thesis research, write and defend thesis.

B. LAB ROTATIONS & FINDING A PH.D. ADVISOR

In their first year, students are responsible for contacting faculty with whom they wish to rotate, and to arrange for rotations in three labs according to the yearly rotation dates. Faculty presentations take place before rotations begin, and provide students with a range of research opportunities. Students should discuss rotation possibilities with individual faculty, and communicate their rotation decisions clearly to all faculty with whom they have been in discussions. Students should inform the Graduate Administrative Aide of their rotation lab before each rotation begins.

Students are not required to commit to all three rotations at the beginning of the year. They are required only to secure rotations by each start date. It is strongly advised, however, to communicate as early as possible with faculty with whom a student would eventually like to rotate. The schedules of individual faculty and labs are often planned out months in advance, and the availability of faculty may vary widely from month to month depending on teaching schedules, research commitments, grant deadlines, and other departmental, university, and professional responsibilities.

Rotations can only be performed in labs headed by faculty that can serve as Ph.D. advisors. Students may perform at most one of their three rotations in an affiliated training program lab. Students may also perform joint rotations that include an internal Biology department faculty and an external affiliate.

After completing their three rotations, students should contact the faculty with whom they have rotated to discuss the possibility of joining their lab. It is advisable at this stage to discuss potential Ph.D. projects and long-term career goals, as well as the expectations and work styles of both the student and potential advisor. Faculty may or may not agree to take on a Ph.D. student depending on the quality of the student's work during the rotation and the number of positions available in their lab. While students can and should engage in preliminary discussions with multiple faculty, it is important during this time to communicate clearly to the faculty that one is weighing multiple options before making a final decision. Once students have found a Ph.D. advisor, they must communicate the decision to the Graduate Administrative Aide, who will in turn confirm with the potential Ph.D. advisor.

Students can contact the DGS for further advice on their decision-making process, or if they experience difficulty in finding a good match. In the rare cases where a match is not found after three rotations, students can discuss the possibility of a fourth rotation with the DGS. If a fourth rotation does not lead to a match the student will be dismissed from the Ph.D. program by the Department Chair.

C. PH.D. QUALIFYING EXAM

The Ph.D. Qualifying Examination consists of a written proposal and an oral exam. The exam takes place in April, according to the schedule set each year by the DGS.

Each student is assigned a qualifying exam committee of three faculty, one of whom serves as the Committee Chair. The committee is determined by the DGS on the basis of the student's choice of topics. The committee assigns the student a research paper which forms the major subject of the exam. The student is given three weeks to study the paper and relevant background, and to propose a follow-up research project addressing a well-posed and focused research question. The oral exam takes place a week after the proposal is submitted.

1. *Topic Selection & Committee Assignment*

Students submit their topic selections to the DGS in the first week of February. Topics consist of broad areas of fundamental research in biology, each of which may involve a wide range of techniques, e.g. microscopy, genome engineering, genomics technologies, computational biology, etc.

Students choose two (2) of the following topics (unranked):

Cell Biology	Microbiology	Neurobiology
Developmental Biology	Molecular Biology	Immunology
Evolutionary Biology	Plant Biology	

To select a topic, students fill out a topic selection form, in which they also detail all prior research work experience, accompanied by an up-to-date CV. The committee will select a research paper unrelated to any of the student's prior research experience. It is imperative that students report all previous research experience in sufficient detail as instructed on the form. Committees will be announced by early March.

2. *Proposal Writing Phase (3 weeks)*

- Students receive their assigned paper from the DGS the first week of April. The proposal is due to the committee and the DGS by noon three weeks later.
- Students must make every effort to avoid proposing research that has already been carried out and published by others. To this end, students should look up papers citing their key references to ensure that is not the case.
- All work on the qualifying exam, including all writing and preparation, must be carried out by the student working entirely on their own. Students may not discuss their proposal with anyone prior to the oral exam.
- The proposal is 4 pages in length, 11 pt Arial, 0.5 inch margins (not including references and figures).
- Students submit a single aim research project addressing a novel, focused research question related to the assigned paper. The proposal takes the following form:
 1. Introduction, (a) summarizing the key findings of the paper, (b) reviewing background literature that is directly relevant to the proposal, (c) posing a novel follow-up question to be addressed, (d) explaining why the question is important, and (e) identifying alternative hypotheses that will be tested in the proposal.
 2. Research Design, describing a logical progression of experiments and/or analyses addressing the proposed research question. This section must be divided into logical subsections with headings, and numbered 2.1, 2.2, etc. Each subsection should provide

sufficient details on how experiments will be performed, including which methods will be used, which controls will be carried out, and how data will be analyzed statistically where relevant. It is critical that the research design consider alternative hypotheses and implement tests to distinguish among them.

3. **Outcomes & Interpretation**, stating explicitly how the data, measurements, and results acquired will be interpreted to yield a conclusive answer to the original question.
4. **Conclusion**, summarizing how the proposed research will address the research question, and commenting very briefly on the overall significance and future studies enabled by the proposal.
5. **References**, on a separate page, cited in the text by number (i.e. [1], [2], etc), and including the original paper references with full titles.
6. **Figures**, on separate pages, with captions, must include at least one original, summary figure to go along with the Introduction and/or Research Design, which represents pictorially the overall system that is used in the proposal. Captions limited to 200 words / figure. Sources for any graphics or figures must be explicitly cited.

3. Proposal Scope

What constitutes a novel and focused research question related to the assigned paper? The assigned paper probes a **biological mechanism** or a **biological process**. The proposal must design research to answer a question about that same biological mechanism or process. The question must be novel in that it differs from the questions already answered in the assigned paper. Posing the same research question as investigated in the assigned paper but in a slightly different context – e.g. in a different organism, strain, or cell line – would not address a novel question and should be avoided. Be sure to define your question sufficiently well in your introduction so that it is absolutely clear how your question differs from what was previously studied.

Goals:

- Pose an as-of-yet unanswered question about the biological mechanism or process that was investigated in the assigned paper.
- In your Introduction, motivate this question by pointing out why it is an important missing piece of knowledge, i.e. point out the significance of the question you are posing.
- Propose a logical research design to answer that question; see proposal structure & guidelines above.

Methods:

- Use any appropriate method, not limited to the methods used or developed in the assigned paper.
- Do not take a method used or developed in the assigned paper and apply it to a different biological mechanism or process.

If you are uncertain about the proposal scope, contact your qualifying exam chair and cc the DGS.

4. Oral Exam (taken at the end of April)

The oral exam lasts up to 90 minutes, and tests students in the following three areas:

1. Broad biology background relevant to the assigned paper
 2. Research design of the written proposal
 3. Ability to apply the key methods and concepts in new contexts
- The exam begins with the **background component**, and students can expect questions examining their knowledge of the background and context of the research relevant to the assigned paper, including the major concepts and methods.
 - The exam then moves to a **defense of the research design** of the proposal, with the faculty raising questions regarding the technical construction of the experiments and analyses, including any relevant statistical methods in the proposed analysis of data. Students may be asked to use the whiteboard to explain experiments, methods, and analyses.
 - The exam concludes with a series of questions probing the student's **ability to adapt concepts and methods** from the paper to new contexts. Students may be asked to propose specific tests of additional hypotheses that were not considered in their proposal, and/or to explain how one may apply or adapt the methods to answer a different question.

During the exam, students may refer to their written proposal and to the assigned paper, which they should bring as a printed copy. Students may also bring a few pages of written notes with them to the exam. Laptops and phones may not be used.

Grading:

At the end of the exam, the student will be asked to leave the room while the committee discusses their performance. The committee chair will summarize the committee's discussion, and the exam will be graded as Pass or Fail. Any student who fails the exam must schedule with the DGS to retake the exam by early June, based on a different paper, using the same overall timeline and exam structure. Students must pass the exam on their second attempt in order to remain in the Ph.D. program.

Policy on Plagiarism:

Any instance of plagiarism on the qualifying exam will result in an automatic Fail. Guidelines on what constitutes plagiarism are presented and circulated in the Art of Scientific Investigation, and students are advised to carefully review those guidelines, as well as those of the Graduate School of Arts and Science, available [online](#).

5. Committee Evaluation Form

Below is the committee evaluation form which is used to assess performance in the qualifying exam.

**PH.D. QUALIFYING EXAMINATION
COMMITTEE EVALUATION FORM**

Student Name _____ Date _____

Proposal
Title _____

	Unsatisfactory	Satisfactory	Exemplary Performance
<i>Hypothesis</i> : stated the research question and hypothesis clearly			
<i>Motivation</i> : properly provided motivation for the proposed research			
<i>Context</i> : placed the proposed research within a broader context			
<i>Techniques</i> : thorough understanding of all methods & techniques relevant to the proposal			
<i>Data Analysis</i> : explained clearly how data will be analyzed using appropriate methods			
<i>Interpretation</i> : explained how results will be interpreted & considered alternative hypotheses			
Background Knowledge : mastered the relevant background for the assigned topic			
Proposal Logic : proposed and defended a logical and feasible research design			
Critical Thinking : demonstrated ability to adapt concepts and methods to new contexts			

Overall Grade (please circle): Fail* Pass Pass with Distinction**

*In the event of a grade of "Fail", the committee will provide the student with a written list of specific recommendations, and the student must repeat the exam on a new assigned paper by June 15th of the same year, according to the same overall schedule.

**Distinction requires exemplary performance in Background Knowledge, Proposal Logic, and Critical Thinking, and satisfactory or higher performance in all other categories.

Summarize the student's strengths and weaknesses in developing and defending the research proposal:

Other Comments (clarity of oral & written communication, command of English, etc.):

6. Preparing for the Qualifying Exam

Consider a proposal writing and study schedule such as

Week 1: Reading & Outlining

Week 2: Writing

Week 3: Perfecting

Week 4: Reviewing

Week 1

- Read the assigned paper and all relevant references in detail, and make sure you fully understand all of the relevant biology, taking notes where necessary.
- Be sure you can explain each and every figure in the paper and that you understand how the methods work and how the analysis was performed.
- Identify a novel follow-up research question and outline your research approach.
- Determine whether your research approach is feasible by additional background reading.

Week 2

- Write the Introduction, paying close attention to items (1.a) – (1.e) in the proposal guidelines.
- Be sure to define your question sufficiently well in your Introduction so that it is absolutely clear how your question differs from what the research described in the selected paper.
- Design your summary figure, which explains the overall research design of your proposal.
- Write the Research Design, paying close attention to the proposal guidelines. Be sure to explicitly state how you will analyze the data obtained.
- Complete the proposal with any additional figures that are directly relevant to the research and that would enhance readability of the proposal.

Week 3

- Read your proposal critically and list all the possible weaknesses of your research approach.
- Address the weaknesses by considering alternative methods and performing additional reading.
- Check your proposal for formatting guidelines, page limits, spelling, and grammar.
- Check your references to ensure that the reference formatting software has included all of the necessary information for each reference.

Week 4

- Prepare for the background component of the oral exam by further reviewing your notes, and filling in any remaining gaps in your knowledge of the relevant background.
- Prepare to explain each part of your research design. One way to do this is to practice giving a short chalk talk about your proposal on your own.
- Prepare to answer questions that apply concepts and methods from the paper in new contexts. To this end, come up with alternative follow up questions on different aspects of the paper, and make brief outlines of how you could address them.

D. ADVISING and MENTORING

1. Thesis Advisor

The chief overseer of a student's doctoral program is the thesis advisor. The choice of a mentor is made by mutual consent after the student completes the required lab rotations, and requires the written approval of the DGS. Mentors must be full-time members of the Biology Department faculty, or faculty within affiliated training programs.

There is a tacit agreement between the student and the mentor: the student agrees to undertake and complete in a timely fashion a substantive original research project of mutual interest, suitable for presentation as a doctoral thesis and for publication in the scientific literature; the mentor agrees to provide the student with training, support, resources, guidance and intellectual leadership.

Students can be co-advised by two faculty members, at least one of whom must be a faculty member of the Biology Department. Students can be co-advised by faculty that are external affiliates of the Biology Department, and with faculty that are members of affiliated training programs.

2. Thesis Advisory Committee

To ensure a breadth of expertise and perspective in a student's education and research progression, the department also requires that all students have a Thesis Advisory Committee to provide overall guidance and help monitor progress. Students should feel free to consult with their advisory committee about any issue concerning their graduate career. Under normal circumstances, the committee will remain intact for the duration of the student's tenure as a Ph.D. student.

Committee Composition

The committee consists of at least five (5) individuals: the student's thesis advisor(s), three Biology Department faculty members, and one external reader.

- *If a student is co-advised by two NYU Biology faculty*, their committee consists of two Ph.D. advisors, two NYU Biology Department faculty, and one external reader.
- *If the student is in an inter-institutional training program*, one of the Departmental members is replaced by a member of the collaborating institution's training program faculty.

External Reader

The external reader must be an independent specialist in the area of the student's dissertation research from outside the department, and not a collaborator in the thesis project or a close collaborator of the Ph.D. advisor. Additionally, if the Ph.D. advisor is a member of an inter-institutional training program, the external reader must be external to that program.

If the reader is not a member of NYU's Faculty of Arts and Science (FAS), a curriculum vitae (CV) of the proposed reader must be submitted to the department for approval and submission to the FAS Graduate Curriculum Committee. The CV should be filed well in advance of the scheduled examination. External readers are generally selected from local institutions. The department does not fund travel or subsistence for external examiners. Examiners are encouraged to attend all committee meetings but are only required to attend the thesis proposal examination and dissertation defense.

Choosing the Committee

The committee is chosen by the student under the guidance of his/her mentor, and must be officially approved by the DGS signing the Thesis Selection Form, which can be obtained from the Graduate Administrative Aide. The student should choose one of the internal faculty other than the thesis advisor(s) to serve as their advisory committee chair. The role of the committee chair is to summarize

the committee's recommendations to the student at the end of the annual meeting, and to write up the annual committee report.

3. Advising Students in Stressful Situations

A student's thesis advisory committee plays an important role in responding to the student's concerns about stressful, negative, or neglectful situations that they experience. The thesis advisory committee must provide a safe and responsive environment such that concerns can be brought forward without threat of repercussions. If the student's concerns regard their interaction with their Ph.D. advisor, the student should contact their Committee Chair, the DGS, or the Department Chair. If the student's concern regards one of their committee members, the student should contact the DGS or the Department Chair. See Sec. IV.A for additional information.

4. Changing Thesis Advisors or Advisory Committee Members

Students may wish to change their Ph.D. thesis advisor or members of their Advisory Committee. In such circumstances, students should first consult with their current advisors to determine an appropriate course of action. If a change is deemed necessary, the student may then petition the Department in writing. Such petitions must be approved by the Department Chair and the DGS. Changes should not be considered lightly as they are often disruptive and can add significant time to a student's doctoral training. Nevertheless, the Department recognizes that changes, for any number of reasons, are legitimate and often necessary to serve the best interests of the student.

E. PH.D. THESIS PROPOSAL EXAMINATION

The thesis proposal is presented to the thesis advisory committee and defended orally before May 31 of the second year. The purpose of this requirement is to test the student's ability to place their proposed thesis research in the context of current knowledge in the field, state concisely and specifically the questions they intend to address (Specific Aims) and demonstrate the ability to approach these questions with the most appropriate techniques available.

1. Proposal Format and Submission. The Ph.D. thesis proposal is prepared in the form of an NIH R01 grant application. It must adhere to the formatting guidelines set by the granting agency, and include the following sections: Specific Aims, Background and Significance, Preliminary Results, and Research Design. The total proposal is limited to 12 single spaced pages, with additional pages for References. The thesis proposal must be submitted to the committee at least one week prior to the oral defense of the proposal.

2. Scheduling the Exam. Students are responsible for arranging the time and place of the examination in coordination with the Graduate Administrative Aide. If for any reason a member of the committee is unable to attend, the DGS must be consulted to determine if the examination can proceed.

3. Exam Format. The examination begins with the student's presentation of the overall goals, specific aims and approaches to be used in the study, and supporting preliminary data. The presentation should last 20-30 minutes; it should not be a reiteration of the entire proposal but should highlight important questions and experimental approaches to be used. Committee members will ask the student questions about the work, its background, and the studies proposed. Questions are designed to determine the student's comprehension of the field of study, ability to defend the approaches to be used, ability to properly interpret the results obtained, and capacity to alter methods and approaches in response to the needs of the study or the intermediary findings. In this regard, questioning is generally focused on the proposal and the particular field of research it represents, but excursion into other areas is not excluded.

4. Evaluation and Outcome. The student's oral examination is either sustained or not sustained by the committee. Additionally, the committee will either accept the proposal in principle or reject it. If accepted, the proposal is taken as a framework for the studies expected to comprise the student's dissertation research. However, acceptance does not mean that the entire proposal must be completed in order to then accept the dissertation, nor does it guarantee the converse: that the dissertation must be accepted if the aims of the proposal are completed. The determination of thesis completion and acceptance of the final dissertation are the exclusive prerogatives of the committee.

The committee may also provisionally sustain the examination or provisionally accept the proposal, contingent upon revising one particular aspect of the material or correction of a deficiency. In this case, the revision may be reviewed by one or more Committee members, at the discretion of the Committee, followed by relief of the provisional status.

Students whose oral examination is not sustained or whose thesis proposal is not accepted by a majority of the committee will be placed on probation for one semester, and will be permitted to repeat the examination one time before the end of the probationary semester. No changes may be made in the composition of the committee for the second examination without prior approval of the Department Chair and the DGS.

F. ANNUAL COMMITTEE MEETINGS

Students are required to meet annually with their thesis committee. This annual meeting is compulsory; it must be held by May 31 of each year. These meetings are used both to evaluate performance and assess progress toward degree completion, and enlist expertise of the committee in guiding subsequent studies.

Students must submit a brief, written progress report and an updated CV to committee members and the Graduate Administrative Aide *at least one week prior to the meeting*. A written report of the student's progress must be made by the committee, signed by the committee members as well as the student, and included in the student's departmental file. This report, together with grades and other evaluations of performance, is used to determine annual reappointment to the doctoral program. A copy of the report is made available to the student.

Scheduling these annual meetings is the responsibility of the student. At each meeting, the student should present new data, discuss problems in the work and any changes in direction or approach, and provide objectives for the following year. The committee may ask questions related to both background, experimental details, interpretation and analysis, and suggest additional experiments and new approaches.

If the committee determines sufficient progress has not been made the student will be placed on probation for one semester, and required to schedule another meeting before the end of the probationary period. If sufficient progress is not demonstrated in the second meeting, the student will be required to leave the program.

G. PH.D. CANDIDACY & THE M.PHIL. DEGREE

A student that has passed the Qualifying Exam and Thesis Proposal Exam, and has completed all of the required Ph.D. coursework totaling 72 credits, is considered a Ph.D. candidate. This means that the student has fulfilled all doctorate requirements except the dissertation and its defense. Students that achieve Ph.D. candidacy receive a Master of Philosophy (M.Phil.) degree.

H. PH.D. DISSERTATION & DEFENSE

The principal element of the doctoral program is the completion of a substantial, scholarly, original and independent research study. The mechanism by which this is demonstrated is completing a dissertation, which the student must present and defend before an examining committee. Successfully completing this requirement constitutes the final basis for conferral of the doctorate.

The point at which the sufficient data and analysis have been developed to comprise an acceptable thesis is determined by the student's mentor and advisory committee. Only students who have achieved candidacy are permitted to defend their thesis

1. Graduation Protocols

- The dissertation must be prepared in accord with the requirements of GSAS, which are detailed [here](#).
- *At least 5 months prior to the expected date of graduation:* (in September, January, and May at each academic year), a candidate must apply for graduation via Albert. Once a doctoral candidate applies for graduation, the candidate should follow carefully all of the instructions for dissertation submission according to the GSAS requirements detailed [here](#). It is critical to submit *preliminary and final dissertation materials* by the specified deadlines. **Both of these deadlines are strict: students who miss either of these will not be able to graduate on time.**
- *Approximately 1 month before the dissertation defense:* the student should contact the Graduate Administrative Aide to obtain the necessary forms for this exam. It is the student's responsibility to arrange the time for the defense, secure the presence of committee members,

and arrange for any facilities necessary. The dissertation must be distributed to the Ph.D. advisor(s) and each committee member **at least one week prior to the defense date** as an electronic pdf (or hard copy if specifically requested).

2. Dissertation Defense

Membership of the committee for the Ph.D. defense is usually the same as for the thesis proposal exam, but it must be approved by the Department Chair and DGS. If for any reason a member of the committee is unable to attend, the Department Chair and DGS must be consulted to determine if the examination can proceed. Prior to distributing the dissertation to committee members, the dissertation must be approved by the student's thesis advisor.

The dissertation defense generally begins with a presentation by the student of their results, in a typical seminar format, lasting approximately 45 minutes. This component of the examination is open to the public; an announcement of the defense is distributed to department members and posted. Thereafter, the meeting is closed and members of the defense committee question the student. This component of the examination is not open to the public but can be attended by other full-time members of the department faculty, who may also question the student. Such questions are usually related to the substance of the dissertation and are designed to test the student's comprehension of the field, ability to explain the results, and justify the conclusions obtained. However, the questions may vary from this theme at the discretion of the committee.

The committee must vote to accept the dissertation and the student's presentation for the student's performance to be considered acceptable. The committee may require revision of the dissertation without re-examination. In the event that the student fails, re-examination is at the discretion of the committee but, if permitted, can only occur once.

In addition to the GSAS Guidelines, copies of the final accepted version of the dissertation must be submitted to the thesis advisor(s) and to the department, in electronic pdf format (or hard copy if specifically requested). Individual members of the committee may also request from the student a final copy of the dissertation for their records.

IV. GRADUATE STUDENT REGULATIONS

A. STANDARDS OF ETHICAL BEHAVIOR

The department requires that all its members (students, faculty and staff) adhere strictly to the highest standards of ethical academic and scientific behavior, in accord with NYU's [Code of Ethical Conduct](#). This includes strict enforcement of accepted principles of scientific integrity. Among the offenses considered unacceptable and taken as grounds for immediate dismissal from the graduate program are: plagiarism, falsification, cheating, sexual harassment, bias and discrimination; see NYU's [Non-Discrimination and Anti-Harassment Policy](#). Deviation from these standards should be reported to the Chair, the DGS, or the appropriate University office (for Student Grievance Procedure, see additional information [here](#)). Any questions or issues relating to ethical behavior may be addressed to the same individuals.

B. ADVISEMENT AND REGISTRATION PROCEDURES

Students first discuss their course schedule with their advisor or advisory committee. Some courses may require permission of the instructor prior to registration, as noted in the bulletin. After obtaining approval of the schedule by the Coordinator of Student Advising and any other approvals required, the student receives an access code for each course and then registers on [Albert](#).

Continuous Registration: GSAS requires continuous enrollment of its students each fall and spring semester until the degree sought is granted. This can be accomplished by (1) registering for at least 1 point each fall and spring until the degree is conferred; (2) taking an approved leave of absence, except in the semester of graduation; or (3) registering for Maintenance of Matriculation during semesters when no course work is being taken until the degree is conferred.

C. CHANGE OF STATUS

Students may enroll in graduate Biology courses on a non-matriculated basis for up to 12 points. Current nonmatriculated students in the Department with an average GPA in graduate-level courses of 3.0 or better who wish to change to the M.S. program must submit an application to the Graduate School of Arts and Science.

Current non-matriculated and M.S. students who wish to change to the doctoral program must also submit an application to the Graduate School of Arts and Science. Students should be aware that the application review process for the doctoral program is highly competitive; students already enrolled in a program in Biology are reviewed in the same fashion as new applicants who apply through the Graduate School.

D. TRANSFER OF CREDIT

Students who have successfully completed graduate coursework elsewhere may be eligible to obtain credit for these courses applicable to their graduate degree program at NYU. Consideration for such advanced standing is determined by the Department within the first calendar year of attendance. Courses for which a Master's degree has been awarded may be considered for transfer credit toward the Ph.D. but not toward a second Master's degree. Only courses with a grade of B (3.0) or better will be considered. Courses considered for transfer credit must have been taken at a recognized and accredited graduate institution and must be substantially equivalent to those offered by GSAS.

Transfer credit cannot exceed the difference between the number of points needed for a degree in GSAS and the minimum number of points that must be earned within GSAS. For the M.S. degree, a minimum of 24 points must be earned in GSAS. For the M.Phil. and the Ph.D., a minimum of 32 points must be earned in GSAS. Approval for transfer of credit is required from the Director of Graduate Studies and the Office of Academic and Student Affairs. Requests for approval must be accompanied by an official transcript.

E. ACADEMIC PROBATION

Students must maintain grades of B or better in all required courses, and have a GPA of at least 3.0 with at least a 2/3 completion rate of coursework; and must fulfill their degree requirements in the appropriate time frame as detailed above. Students who fail to do so will be placed on academic probation. If the circumstances of the probation have not been corrected within one semester of the institution of probationary status, the student is subject to dismissal by the Department Chair.

F. GRADUATION

Degrees are conferred in September, January, and May; NYU's Commencement ceremony is held in May. A degree candidate must apply for graduation at least 5 months prior to the expected date of graduation via [Albert](#). Graduation deadlines, application instructions, and general information can be found [here](#). *One year must lapse between conferral of all degrees awarded through GSAS.*

It is the responsibility of graduate students to know the deadlines for submission of any necessary forms required for graduation. Failure to meet a September or January graduation deadline will require the maintenance of matriculation by fee for an additional semester. However, if the May graduation deadline is missed, no additional fee is required to file for a degree in September.

G. FULL-TIME EQUIVALENCY

Students registering for less than 9 points per semester may obtain full-time equivalency if they meet the criteria stated in the [GSAS Policies and Procedures Manual](#). For more information, students should contact the Graduate Student Advising Coordinator.

H. LEAVE OF ABSENCE

Students can apply for a leave of absence in accord with [GSAS Policies and Procedures](#). In such cases, students must discuss their reasons for requesting a leave with the DGS, and submit a written statement to the DGS and the Chair detailing the reasons for the leave request, along with any relevant documents such a doctor's letter in the event of serious illness, or evidence of national service. If the department approves the request, a Leave of Absence Request Form, the student's GSAS transcript and the documentation received from the student are then sent by the department to the Dean for approval.

I. READMISSION

A student who has been matriculated but then fails to register for at least one entire academic year must apply for readmission and pay an application fee. This applies to students maintaining matriculation by fee as well as those taking courses. Students who have completed all coursework and are readmitted are responsible for the maintenance of matriculation fees for the intervening years. The time to degree for a readmitted student begins with the *first* semester of the *first* admission.

V. ADDITIONAL INFORMATION ABOUT THE DEPARTMENT

A. GRADUATE BIOLOGY GROUP

All Biology Department graduate students automatically belong to an organization known as the Graduate Biology Group (GBG). The purpose of the GBG is to represent the interests of its constituency (all Biology graduate students) at university functions. Representation on various committees, Graduate Student Council meetings, and miscellaneous University functions, are undertaken by the GBG. The GBG is involved in coordinating a number of activities during the annual Ph.D. recruitment days in February and March.

With a budget obtained from GSAS based on the number of graduate students, the GBG organizes various functions including the Annual Biology Retreat, student-sponsored seminars, and social functions. The Department may supplement these funds when possible. The GBG executive board is composed of 3 or more student members. Although many of the duties are carried out by these executive board members, all students are encouraged to become active members. It is noteworthy that involvement in the GBG often helps a student academically, as several University awards take service and GBG participation into account.

The GBG is an important component of the department; helping to unite the students and mold the academic environment into an ever more favorable place for study and research. It is a progressive organization that is constantly pursuing these goals.

B. TRAVEL GRANTS

Starting in their second year, each Ph.D. student can apply once per year for a Biology Departmental Travel Grant for conference travel. Students are encouraged (but not required) to present a poster or give a talk at the conference they will be attending. To apply, students complete the [application form](#), send it to the Department Administrator, and cc their Ph.D. advisor. Applications will be approved subject to availability of funds.

Additionally, GSAS travel grants are available to all graduate students; details can be found [here](#).

C. DEPARTMENTAL AND UNIVERSITY AWARDS

A number of Biology [departmental awards and fellowships](#) are given on a yearly basis to Ph.D. students in the department. Nominations for research and teaching awards are made by the faculty, and decisions are made by the Biology Awards Committee, which consists of at least five faculty, and whose membership changes annually. The Biology Awards Committee weighs a number of factors in making these decisions, including the student's research progress, publications, recommendation letters, research presentations, course work, and other contributions to the scientific environment of the department. Nominations for the service award can be made by both faculty and Ph.D. students, and decisions are made by student voting, which is run by the GBG. Decisions are communicated to the Graduate Administrative Aide, who arranges for the awards to be made, and traditionally announced at the Annual Biology Retreat.

The university has a number of fellowships and awards that are awarded by GSAS on a yearly basis. Award descriptions, eligibility, and deadlines are provided on [GSAS's webpage](#). When awards are announced by GSAS to the department, the Graduate Administrative Aide circulates the announcement to the faculty for nominations, which are reviewed internally by the Biology Awards Committee to determine the final nominees. The department submits its nominations to GSAS for final decisions by the GSAS Awards Committee.

D. POSTER SESSIONS

The Department of Biology holds two graduate student poster sessions each year, a Ph.D. poster session held during the annual retreat, and an M.S. poster session held in the Spring semester. The poster sessions give students an opportunity to present their research to other graduate students, faculty members, and undergraduates. All doctoral students are encouraged to participate in the Ph.D. poster session, and doctoral students in their third year and beyond are required to present a poster describing their current research. M.S. students who are currently doing or have done laboratory research during the past year and were enrolled in a research or lab course, are required to present a poster describing their research at the M.S. poster session.

E. DEPARTMENTAL CONFERENCES, SYMPOSIA, & SEMINARS

The department hosts special events and symposia which include the participation of internationally recognized scientists as keynote speakers and a large audience of faculty and graduate students. These include the Developmental Genetics Symposium during the Fall semester and the Genomics Symposium at the end of the Spring semester.

In addition to special symposia and conferences, the department conducts weekly seminars held at 4:00 PM on Monday afternoons. These seminars provide graduate students and interested individuals from the region with the opportunity to gain knowledge about a broad range of current research in the field of biology.

Attendance at these seminars is strongly recommended for all Biology graduate students.