

Requirements for Ph.D. Candidates in the Department of Biology

The goal of the Ph.D. program in the Department of Biology is to produce comprehensively trained professionals who excel in their individual research and possess a deep and broad understanding of Biology. Each program's coursework and research goals will vary; however, a guide to critical steps in the student's graduate career is useful for both the student and his/her advisor(s). The following guidelines have been developed as an aid to in planning a student's graduate career. Because the department guarantees financial support for five years only, students are encouraged to be cognizant of time and work efficiently.

Annual Milestones (done every year, all students):

Each student is responsible for creating, and organizing **annual** meetings with, the committee that will advise and oversee his/her Ph.D. program, or their Thesis Advising Committee. The annual meeting with the committee is critically important. During these meetings the student will receive advice and guidance in his/her professional development and will have the undivided attention of several faculty members simultaneously. In addition, all students in the Cell and Molecular (or CM) program are required to give an annual seminar to students in their program as well as the MCBB program every year prior to their committee meeting – as part of the CAS BI 583/584 Molecular Biology Seminar Series. Students in Ecology, Behavior & Evolution (EBE) are also required to give an annual “chalk talk” to their peers and EBE faculty as part of the CAS BI 579 Ecology Seminar Series. Students in Neurobiology are also expected to give an annual seminar in the graduate/postdoctoral seminar series (MED NE 500) in the Graduate Program in Neuroscience.

Students are also required every Fall to submit an **Annual Report**, which indicates the student's progress the previous year, including but not limited to: cumulative credit count, courses completed, academic progress, cumulative teaching assignments, publications, meetings attended, preliminary and qualifying exam status, committee members (if formed), summary of research to date as well as future directions. All advisors are required to assess their student's progress. All paperwork is then turned in to the Graduate Program Coordinator for review of credit count, any issues with research progress or missing milestones are flagged. The reports are then reviewed by the departmental Graduate Committee and any gaps in progress are then addressed by the Director of Graduate study to the faculty advisor as well as the student.

Stage 1: Qualification Stage

The Qualifying Exam Committee will help the student prepare for the qualifying exam and will administer the qualifying exam in the student's fourth semester. The student must pass this exam to advance to candidacy for the Ph.D. degree (see **The Qualifying Exam and Advancing to Candidacy**). It is recommended that the student organize his/her Qualifying Exam Committee as early as

possible (most people do it at the beginning of their third semester) and arrange to take courses or directed readings with the faculty members. Finally, the Dissertation Committee is the group ultimately responsible for overseeing the student's dissertation research. They will advise the student during the course of his/her research and it is important that the student keep them informed of research progress and plans through annual committee meetings.

Year 1

Semester 1: EBE students, in consultation with advisor, develops a plan of coursework and research*. Students in CM and Neuro are advised by the associate chair of their program during their 1st year, which is a rotation year. In regards to coursework, research plans for CM and Neuro begin in Summer of their 1st year.

Students also take a grant writing course (CAS BI 581 B1) with the goal of submitting a NSF GRFP in November.

Semester 2: Coursework, students take graduate student teaching colloquium (BI697) to prepare them for teaching during their 2nd semester. Teaching evaluations are done after every semester to assess progress. Students in CM and Neuro are matched to labs at the end of Spring. EBE students plan their field season.

Summer I: Students begin dissertation research.

Year 2

Semester 3: Students in CM and Neuro prepare for the preliminary exam. CM students also present literature talks to the Department while Neuro students present seminars in the GPN seminar series. Students in EBE form their Qualifying Exam Committee and meet with committee members (individually or collectively) to discuss preparation for the Qualifying Exam. Preparation may include coursework, directed readings, or other requirements with the explicit aim of developing the student's breadth and depth of knowledge in Ecology, Behavior, and Evolution.

Semester 4: Students in CM and Neuro take the Preliminary Exam. Students are required to pass all portions of the preliminary exam to be eligible for the Qualifying Exam. Students in EBE take the Qualifying Exam. All CM and Neuro students are expected to schedule to take their Qualifying Exam within 6 months of passing the Preliminary Exam. The student is responsible for organizing the time for the Qualifying Exam and should make arrangements as soon as eligible to avoid problems with committee members' schedules.

The exams will be designed to test the student's breadth and depth of knowledge. It is strongly recommended that students take courses in each of these areas prior to the exam and/or organize

directed readings with committee members well in advance of the Qualifying Exam (see above).

Summer II: Student pursues research with the explicit aim of demonstrating the feasibility and importance of the project.

NOTE: Faculty members are often under severe time constraints so students should organize their committees and meetings well in advance of the dates for the qualifying exam, thesis defense, etc.

Stage 2: Thesis Stage

Year 3

The student should have a clear plan for a feasible dissertation project and sufficient data to apply for independent research funding.

The student should present their research in an annual seminar that includes the conceptual background, rationale, methodology, preliminary results and plans for their dissertation work. The seminar course BI579 Progress in EBE & Marine Biology in EBE, CAS BI 583/584 in Cell and Molecular, and MED NE 500 for Neuro. All students are expected to present once per academic year and all students are required to register for the course at least once except NE 500.

The student should present their research progress and plans to their Dissertation Committee in their annual committee meeting, for discussion and approval. Students should provide their committee with a written synopsis of their research progress and dissertation plans in advance of the meeting to facilitate feedback. Scheduling a committee meeting to immediately follow a seminar is efficient, if possible, but students may present their research during the committee meeting if necessitated by scheduling constraints.

Years 4 & 5

It is expected that students will pursue a fruitful line of research and will publish in a timely fashion, or submit for publication at this time. We especially encourage students to develop scholarly publications prior to completion of their dissertation.

Year 6

It is expected that the student will file and defend the Ph.D. dissertation by the end of the sixth year. Students should arrange the time for their dissertation

defense and should submit the dissertation to committee members well in advance of the defense (two weeks or more prior to the defense).

For current students beyond their first year in the PhD program.

Students beginning their second year should establish their Qualifying Exam Committee, meet with their committee members early in the academic year, and prepare for Qualifying Exams in the spring semester. We expect that by the end of the academic year all second year students will have passed the Qualifying Exams and be on track with the schedule outlined above.

Third year students, if they have not already done so, should establish their Dissertation Committee immediately, develop and distribute their dissertation prospectus, and schedule a seminar and committee meeting to present and discuss the prospectus. All third year students should have passed their Qualifying Exam and presented their dissertation prospectus by the end of the Fall semester. We also encourage third year students to actively pursue grant funding for their dissertation work.

Students who are beyond the third year should already be well on track to complete their dissertation by the end of the fifth year. If they have not done so they should submit a dissertation prospectus to their committee members for feedback.

Milestone Deadlines

PhD Timeline

- Breadth Requirements: 2 courses per semester (8 credits) – done with required coursework by end of 2nd year. Elective credits can be taken later on at advisor's discretion.
- Oral Exam: Preliminary Exam must be done in Spring semester of the 2nd year, and Qualifying Exam should be no later than the end of the 3rd year.
- Thesis Proposal: Prospectus must be submitted by 2nd semester of the 6th year.
- Thesis Defense: Must be completed by 7th year.
- Annual Milestones: Students must complete an annual report by October of every year, meet with their committee once a year and give an annual seminar.