REQUIREMENTS FOR GRADUATE DEGREES IN BIOLOGY

– Masters Degree –

Applicants who express a desire to obtain a Masters degree only will not be admitted to the program. However, students who decide to leave the program with a Masters will be permitted to do so. Biology Masters degrees will follow the standard regulations as described in the Bulletin of the Graduate School.

- Doctoral Degree -

GENERAL PHILOSOPHY OF THE PH.D. PROGRAM:

Biology is the most diverse of all the disciplines in the natural sciences. Consequently, the allied fields to which the various subdisciplines in Biology share natural affinities differ. For example, molecular biology makes connections with physical chemistry, biomechanics with engineering and physics, and ecology and evolutionary biology with statistics, mathematics, geology, and atmospheric sciences. The goal of the Biology Doctoral Program is to train young scientists who:

- excel at research and teaching in their own subdisciplines;
- demonstrate competence in fields allied to their subdisciplines; and
- display a breadth of knowledge in Biology as a whole.

TRAJECTORY THROUGH THE PROGRAM

The DGS will assign to each beginning graduate student a temporary advisor (typically the sponsor of that student's admission). Before registering for the first semester, new students should discuss with their temporary advisors the courses they need to take. First-year students are encouraged to interact with other faculty in their research area to ask them about courses they should take before the preliminary exam—these faculty may very well become members of their Ph.D. committee.

However, the philosophy of the department is that new students need not spend a great deal of time in coursework. They should take only the courses that would fill gaps in areas that will be needed in their research, and spend most of their time starting their research.

During the first three semesters, students will also be required to take up to three tutorials with different faculty members in the department. The tutorial requirement is waived as soon as the student declares an advisor. Tutorials may involve laboratory work, directed reading in the primary literature, greenhouse or field studies, mathematical or computer modeling, or any other activity that would assist the student in identifying a suitable dissertation topic. Other goals of the tutorials are to expose students to the diversity of faculty research interests in their specialty and to help them to identify an appropriate advisor and dissertation committee.

By the end of the third semester, the student must choose an advisor and the advisor must convene an initial meeting of the dissertation committee. Dissertation committees will consist of

a minimum of four faculty members, one of which will represent the student's minor (see below). The goals of the initial meeting are to assess the novelty and feasibility of the proposed dissertation topic, to ascertain whether the student needs to take any additional courses to demonstrate preparedness for the preliminary exam, and to decide the format of the written dissertation proposal (see below). If a student fails to meet with his or her committee before the end of the third semester, the DGS will notify the student of this fact in writing, and will discuss with the student and their advisor ways to resolve any difficulties.

Preferably by the end of the fourth semester, but certainly by the end of the sixth semester, students must pass an oral preliminary examination to establish candidacy for the Ph.D. One week prior to the exam, students must present to their committee members a written essay describing their proposed dissertation research. The exam itself will be both specific and wide-ranging. That is, it will cover the specific research areas addressed in the student's proposal, but it will also test both the student's depth of knowledge in their area of specialty and the student's breadth of knowledge in Biology as a whole.

When the dissertation research is completed, the student will present the written dissertation to the committee two weeks prior to the dissertation defense (the dissertation also has to be submitted to the Grad School two weeks before the defense). Students are also required to present their results in a seminar. Students will be expected to complete the degree requirements as soon as possible, ideally by the end of the tenth semester, but students making progress toward their degree will be considered to be in good standing through the twelfth semester.

MINORS

All graduate students will be required at the time of the initial meeting of the dissertation committee to declare a minor. At least one member of the dissertation committee must represent the minor field, and will be charged with assessing the student's knowledge in the minor during the preliminary exam. The goal of the minor is to ensure that each student acquires a breadth of knowledge beyond their immediate specialty, either in a different area of Biology or in an allied field. Given the wide range of research areas represented in the Biology Graduate Program, dissertation committees will have the freedom to determine the specific nature of the minor, so as to tailor it to the needs of the individual student. However, to ensure that the chosen minor truly lies outside of the student's specialty, minors are subject to approval by the DGS and the Graduate Affairs Committee.

The minor may: 1) lie entirely outside Biology (e.g., Statistics, Mathematics, Computer Science, Chemistry, Engineering, Atmospheric Sciences, Geology); 2) require the student to acquire knowledge about a group of organisms that differs from those on which the student's dissertation research focuses; or 3) represent a biological subdiscipline that is distinct from the student's own subdiscipline. For example, a student whose advisor is in the Evolution, Ecology, and Organismal Biology sub-department might choose Developmental, Cellular, and Molecular Biology (DCMB) as a minor, with appropriate representation by a DCMB faculty member on the preliminary exam and dissertation committees. A student in ecology might choose evolutionary biology as a minor.

SCHOLARLY PRODUCTIVITY

To become recognized as independent scientists and to have an impact on their fields, graduate students must communicate their findings to their colleagues. Therefore, all students are strongly encouraged to begin submitting the results of their research to refereed journals as soon as possible (ideally well before the dissertation is completed). It is expected that, in order to give their committee members an opportunity to comment on them, manuscripts that are intended to be included in the dissertation will be given to all committee members at least two weeks prior to submission. Each student should submit copies of papers accepted for publication to the DGS, to be included in the student's file.

TEACHING

All graduate students will be required to serve as a teaching assistant for two semesters. Teaching is not simply a mechanism to provide financial support to graduate students. Rather, it is an integral part of each graduate student's professional development as both an educator and a researcher.

ANNUAL EVALUATION OF STUDENT PROGRESS

All students beyond the first year will meet with their committee annually. For students in the second year of study, the first committee meeting serves as the annual committee meeting, and for students in the third year, the preliminary exam, if taken in the Fall semester, serves this purpose. In addition, all students[1]:

- in their third year who either passed their prelims in their second year or will not take their prelims until their sixth semester (i.e., Spring of their third year)
- in their fourth year of study
- in their fifth or later years who are not planning to complete the dissertation in the current academic year

are expected, prior to November 15, to present to their committees a written report on the progress made over the previous year, and on any difficulties encountered, as well as a plan for completing the dissertation. Before the end of the final exam period in December, the advisor will then convene a meeting of the committee to discuss the progress report with the student. By January 1, the advisor must send a letter to the DGS summarizing the discussion in the meeting, providing the committee's evaluation of the student's progress, and recommending whether the student should receive continued financial support from the department. The progress report submitted to the committee by the student should be attached to this letter. All faculty members not on the student's committee will also be able to submit to the DGS any written commentary on the student's performance (e.g., as a student or teaching assistant in a course taught by that faculty member). After January 1, the DGS, in consultation with the Graduate Affairs

[1] In short, you are ***not*** required to have an annual progress meeting with your committee ***only*** if: 1) you are in your first or second year; 2) you are in your third year and are taking your prelim this Fall (not Spring, and not in your second year); or 3) you are defending your dissertation this year. Otherwise, you must have one each fall.

Committee as needed, will review the written materials to determine whether the student shall be granted departmental support for the following academic year. Students will receive letters from the DGS if any remedial measures need to be taken. The student's written progress report, the advisor's letter to the DGS, any letters from faculty not on the student's committee, and any letters from the DGS will be placed in the student's folder as a record of the student's annual progress and evaluation.

COMMITTEE MEETINGS, EXAMS, AND DEFENSES DURING SUMMER

Scheduling committee meetings, preliminary exams, and dissertation defenses during the summer is strongly discouraged, because faculty members typically have research or other travel plans that must take precedence during this time. Summer meetings, exams, and defenses can only be scheduled by agreement of all members of the committee. In accordance with Graduate School regulations, such meetings can only be held while the summer semester is actually in session, and the student must be registered for the summer semester.

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Summer meetings section approved Apr. 23, 2001.
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