

BIOLOGY PH.D. PROGRAM REQUIREMENTS

OVERVIEW & LEARNING OUTCOMES

The Biology PhD program at Clark University trains students to become independent researchers and academic leaders in a broad range of biological subdisciplines. The program is research focused under the mentorship of a faculty member in Biology. This document outlines the timeline for completion of the program, program requirements, and policies regarding good standing in the program. It outlines the responsibilities of students in the program and of faculty.

Given the breadth of research interests in the department, the program's learning outcomes are general and cross-disciplinary as opposed to content-specific. There are four learning outcomes:

1. Ph.D. recipients will demonstrate a breadth of knowledge in biology, with expertise in a specific biological discipline.
2. Ph.D. recipients will demonstrate the ability to think critically and to design and execute original independent research.
3. Ph.D. recipients will communicate their research findings effectively to diverse audiences.
4. Ph.D. recipients will develop skills as science educators.

The program requirements map on to all of these learning outcomes.

TIMELINE

The basic timeline for the program follows. Each milestone is described in detail in the "PROGRAM REQUIREMENTS" section.

Year	Item	Notes
1	Initial Advisory Committee Meeting	Must be completed by end of 1 st year in program
1 or 2	Science Careers Course	Must be taken in first two years of program
2	Qualifying Exam	
2	Recruit External Member to Advisory Committee	External member not required for Qualifying Exam, but is required for subsequent milestones
3	Departmental Seminar	Full length departmental seminar
3	Proposal Defense	
4-6	Annual Committee Meeting	There should be an annual committee meeting during years when other milestones are not done
4-6	Dissertation Defense	Results in Graduation
7	Time Limit for Completion	Students may petition the department for a one year extension

PROGRAM REQUIREMENTS

This section lists and describes all program requirements, including the milestones listed in the timeline.

Course Work

1. Students are required to complete at least 16 units of study in residence. The time necessary for the completion of the degree means that students ultimately enroll in excess of this minimum.

2. Students must enroll in four units of study in each of the fall and spring semesters. They must enroll in:
 - a. One unit of Biol 350 – Graduate Research Seminar¹. This course comprises departmental seminars held approximately on alternating Wednesdays throughout the academic year. Each seminar is an hour-long talk given by invited researchers, department professors, and graduate students (third-year seminars). Students also participate in the Bumpus Symposium, which is a showcase of Biology graduate student research. Students are required to give either a poster or an oral presentation. The symposium is normally held the first Wednesday of the fall semester.
 - b. One to three units (as necessary to result in a total of four units) of one of three PhD courses depending on where they are in their program: Biol 317 Research, Biol 385 Proposal Writing or Biol 394 Doctoral Dissertation¹. Students should register in the section of these courses attached to their faculty advisor's name. Contact the Program Assistant if this section is not available.
 - c. Students may register for other graduate-level courses, with permission from their faculty advisor.
 - d. During one of the first two years of their program, student must register for Biol 390 Science Careers & Effective Practice¹, which is typically offered every other year during the Spring semester. Students with experience in grant writing and/or publication of manuscripts may request that the Biology Graduate Studies Committee waive this requirement.
3. Students must also register for three units of Biol 317 Research, Biol 385 Proposal Writing, or Biol 394 Doctoral Dissertation¹ during the summer, as an expectation of the program is that they work on their dissertation research during the summer.
4. All courses must be passed with a minimum of a B-. Grades lower than B- will not be counted toward the degree, and students who accumulate two grades lower than B- will not be allowed to continue in the program².

Teaching

- Students must serve as a teaching assistant for at least two semesters during their program.

Faculty Advisor & Advisory Committee

- During their first year of study, students must assemble their advisory committee and have their first advisory committee meeting. This must be done by end of the first year (12 months) in the program.
- The student may elect to work with any member of the full-time, tenure-track Department faculty as their primary advisor, excluding adjunct and affiliate faculty.
- The committee must comprise the student's advisor (chair), plus two other faculty members in the Biology Department (including adjunct), and an external member (external to the University). The three members of the advisory committee from the Biology Department must

¹ These courses are listed in Acalog, the academic catalog online at: <https://catalog.clarku.edu/>.

² University-wide policy available on pages 6-7 of the Graduate Student Handbook: <https://www.clarku.edu/wp-content/uploads/2020/09/Graduate-Student-Handbook.pdf>.

have professional standing beyond the postdoctoral level. The external committee member must be beyond the PhD level. The external member should be selected during the second year of the program, does not need to participate in the qualifying exam, but does need to participate in the proposal defense and the dissertation defense. The external member should also attend any annual committee meetings after the second year (this may be done remotely, but attended synchronously). The advisor may invite additional scholars from within or external to the University to join the advisory committee, but three members of the Biology Department and one external member are a minimum.

- The advisor will communicate the composition of the Advisory Committee to the Chair of the Biology Graduate Studies Committee and the Graduate Studies Program Assistant.
- A doctoral student is unable to continue in the program without a faculty advisor. In the event that a doctoral student lacks a faculty advisor, the period of transition between advisors is acceptable, but a new primary advisor should be selected as soon as possible, typically within three months. In the event that the student is unable to find a faculty advisor within one month, the Chair of the Biology Graduate Studies Committee will convene a meeting of the department faculty to determine whether the student will be allowed to continue in the graduate program.

Qualifying Exam

- The qualifying exam must be completed by the end of the second year in the program.
- It consists of a series of written answers to questions about specific subject areas administered by each Advisory Committee member, followed by an oral examination by the Committee members on the same subjects, as well as general subjects in Biology.
- The Advisory Committee will decide whether the student passes or fails. Students who fail the qualifying examination may, at the discretion of the Advisory Committee, be given one additional opportunity to take the examination, or may be required to leave the Ph.D. program. Students who fail the qualifying examination twice will be required to leave the program.
- The student will be informed of the outcome of the qualifying exam by their primary advisor at the end of the exam. The outcome will also be communicated by e-mail to the student, the other committee members, the Chair of Biology Graduate Studies, and the Program Assistant within three business days of the exam.
- Students who pass or fail the Qualifying Exam may choose to complete and defend a M.S. thesis at this point, with the approval of their Advisory Committee.

Departmental Seminar

- Candidates are required to present their research in a Biology departmental seminar by the end of the third year in the program.
- This is a full length, one-hour long seminar, usually 45-50 minutes long to leave time for questions from the audience.
- The subject should be the student's research. Preliminary data/results are encouraged but not required. The proposal defense may be done in conjunction with the departmental seminar, but this is not required.
- The departmental seminar is not an examination and is not graded, but is intended to provide the student an opportunity to develop their communication skills and receive feedback on their research from a broader audience.

Proposal Defense

- The proposal defense must be completed by the end of the third year in the program.
- It consists of an oral examination by the Advisory Committee after submission of a written research proposal.
- The written proposal must be given to the Advisory Committee a minimum of 10 business days prior to the scheduled oral examination. Advisory Committee members may require the proposal be in their possession with a longer lead time (typically not exceeding 15 business days).
- There is no requirement to prepare a presentation for the proposal defense, unless this is done in conjunction with the departmental seminar.
- Preliminary data/results are encouraged but not required for the research proposal.
- The Advisory Committee will decide whether the student passes or fails. Students who fail the proposal defense may, at the discretion of the Advisory Committee, be given one additional opportunity to defend their proposal, or may be required to leave the Ph.D. program. Students who fail the proposal defense twice will be required to leave the program.
- The student will be informed of the outcome of the proposal defense by their primary advisor at the end of the exam. The primary advisor will also communicate the outcome by e-mail to the student, the other committee members, the Chair of Biology Graduate Studies, and the Graduate Studies Program Assistant within three business days of the exam.
- Students who pass or fail the Proposal Defense may choose to complete and defend a M.S. thesis at this point, with the approval of their Advisory Committee.

Annual Advisory Committee Meetings

- It is expected that the student schedule an annual Advisory Committee meeting to discuss progress toward milestones and completion of the program.
- An annual meeting is not required in years when other milestones are completed. The qualifying exam and proposal defense serve in lieu of the annual committee meeting.
- Within three business days of the meeting, the primary advisor will inform the Chair of Biology Graduate Studies and the Program Assistant by e-mail, with a copy sent to the student and the other committee members, that the annual Advisory Committee meeting has taken place.

Dissertation & Defense

- A written dissertation and oral defense, including a public departmental seminar, must be completed by the end of the seventh year in the program.
- The dissertation is written under the supervision of the student's primary advisor and is based on the student's original research.
- The departmental seminar is a full-length, one hour seminar that is usually 45-50 minutes long to leave time for questions from the audience.
- The oral defense is closed to the public, consisting of the student and their Advisory Committee.
- A copy of the dissertation in final format must be approved by the student's primary advisor and submitted to each member of the Advisory Committee a minimum of 15 business days before the scheduled defense.
- The dissertation defense must be done at least six months after the proposal defense.

- The Advisory Committee will decide whether the student passes or fails. No second attempts to defend a Ph.D. are allowed.
- The student should be informed of the outcome of the dissertation defense by their primary advisor at the end of the defense. The outcome should also be communicated by e-mail to the student, the other committee members, the Chair of Biology Graduate Studies, and the Program Assistant within three business days of the exam.
- Students who fail the Dissertation Defense may revise their Ph.D. dissertation to serve as a M.S. thesis and be awarded a M.S. degree at this point, with the approval of their Advisory Committee.

POLICIES REGARDING ACADEMIC STANDING

Maintaining good standing

- A student will be considered in good academic standing if all milestones and requirements are completed by August 31 of the specified year in their program, or December 31 for students who start in January.
- If the student does not complete the milestones and requirements by the end of the specified year, the student's good standing will lapse.

Evaluation of good standing

- A letter will be sent to students at the end of each year from when they started, normally at the beginning of September (or else February), indicating their standing. If good standing is lapsed, the letter will describe the implications of this and how good standing may be regained.

Implications for a lapse in good standing

- The student will not be eligible for the university health insurance subsidy³.
- The student will not be eligible for departmental funds to support graduate student research.
- The student will not be eligible for departmental graduate student conference travel awards.
- It is required that the missed milestone be completed by the end of the lapsed year (one year after the original milestone deadline). However, this does not then extend the timeline on subsequent milestones.
- Students that started the program off-cycle are given the same amount of time as other students to satisfy milestones.
- A milestone that is not completed by one year after the milestone deadline (when the student is not in good standing) results in dismissal from the Ph.D. program, although an extension may be granted by a petition (see "Petitions" section below).
- When good standing lapses, students and their primary faculty advisors must set up a meeting of the advisory committee to formulate a plan for progress towards re-establishing and maintaining good standing within one month of the annual progress letter.
- the primary faculty advisor must send an e-mail to the student, the other members of the advisory committee, the Chair of the Biology Graduate Studies Committee, and the Graduate

³ University-wide guidelines about the health insurance subsidy are available on request from the graduate school. The health insurance subsidy began to be implemented in Fall 2021, and so policies and implementation are still developing.

Studies Program Assistant describing the plan to re-establish good standing within three business days of the meeting.

Petitions

- Students can petition the Biology Graduate Studies Committee in writing to maintain eligibility for departmental funds. The petition must describe extenuating circumstances leading to the lapse of good standing, and a timeline for re-establishing good standing.
- Students can also petition the Biology Graduate Studies Committee in writing to stay in the PhD Program if more than a year of lapsed good standing has elapsed or seven years in the program have elapsed. In this case, the petition must describe the plan formulated with the Advisory Committee for re-establishing and maintaining good standing and completion of milestone(s) after a year of not being in good standing. This petition is then circulated to full-time tenure-track Biology faculty and a decision about allowing a student to continue in the PhD program is done by majority vote of the faculty.

Dismissal from the PhD Program

- Students whose good standing has lapsed for more than one year, and who have not successfully petitioned the Biology Graduate Studies Committee for an extension, will be dismissed from the program.
- The decision will be made by majority vote of the tenure line Biology Faculty.
- Dismissal may include the conferral of a M.S degree, pending satisfactory completion and defense of an M.S. thesis.
- The advisor and Advisory Committee are not obligated to accept work for a M.S. degree. Appeals against dismissal should be addressed to the Dean of Research and Graduate Studies⁴.
- Students who pursue a M.S. degree are no longer eligible for TA support (via a "TA line") or departmental research or conference travel funds.
- Students who pursue a M.S. degree must complete it by the second University submission deadline following their switch to an M.S. degree. These deadlines are April 1, August 1, and December 1. For example, if a student is dismissed from the Ph.D. program but allowed to complete a M.S. degree on February 25, then they have until August 1 to complete all requirements for the M.S. degree.

TIME LIMITS

- Students must complete the requirements within seven years of enrollment in the Ph.D. program. Approved leaves of absence do not count against the time limit, but time spent in non-resident status does.
- Students who do not finish the degree requirements within the time allotted may petition for an extension of time to complete the degree requirements.
- Such requests normally will be for no more than one academic year.

⁴ University-wide policy available on page 7 of the Graduate Student Handbook: <https://www.clarku.edu/wp-content/uploads/2020/09/Graduate-Student-Handbook.pdf>.

- Petitions should include a timeline for completion of the degree requirements and must be approved by the primary faculty advisor and the department before submission to the Dean of Research and Graduate Studies for final approval⁵.
- Typically, only one extension of time will be granted. In extenuating circumstances, a second extension may be approved following the same procedure as the first.
- Family, medical, or other personal leave does not negatively impact a student's standing⁶. If a student takes leave, the timeline for milestone completion is extended accordingly. In these cases, students must be proactive in requesting and taking leave as appropriate. Retroactive leaves will not be granted.

International students need to fill out a Graduate Student Program Extension form if remaining after five years (see link: <https://www.clarku.edu/offices/isso/resources/forms-for-students-scholars/>). It is their responsibility to remain in compliance with the conditions of their visas, and are encouraged to communicate with the International Students and Scholars Office (ISSO) regarding visa topics.

⁵ See Graduate Academic Catalog online under "Time Limits for Degrees":

<https://catalog.clarku.edu/content.php?catoid=28&navoid=2369#time-limits-for-degrees>.

⁶ Leave policies, including "Parental reassignment of duty" are University-wide and details are available on pages 7-9 of the Graduate Student Handbook: <https://www.clarku.edu/wp-content/uploads/2020/09/Graduate-Student-Handbook.pdf>.

FACULTY RESPONSIBILITIES

Faculty play a key role in mentoring Ph.D. students, and this includes facilitating timely completion of milestones and maintaining transparent communication between the Advisory Committee and both the student and Biology Graduate Studies Committee.

Communicating with student and Graduate Studies Committee

- After each milestone (with the exception of the departmental seminar, which is public) is completed, the primary faculty advisor will compose an e-mail describing the outcome of the milestone and send it to the student, the other members of the Advisory Committee, the Chair of the Biology Graduate Studies Committee, and the Graduate Studies Program Assistant.
- The e-mail should identify the milestone, date of completion, the outcome, and any recommendations made by the Advisory Committee for the student. Recommendations might include conditional passes, requirement to take a course, further assignments, suggestions for succeeding with future milestones, etc.
- This e-mail must be sent within three business days of the completion of the milestone.
- Importantly, this e-mail serves as a record for the student, faculty advisor, Advisory Committee and department of expectations, successes and challenges going forward.

Facilitate scheduling of milestones

- Ensuring on-time completion of milestones is a shared responsibility of Ph.D. student and faculty advisor.
- Faculty advisors should facilitate the completion of milestones through effective mentoring and support in scheduling Advisory Committee meetings. Faculty advisors are also expected to mentor the student in finding an external committee member in the student's second year of the Ph.D. program.
- Faculty serving on Advisory Committees have a responsibility to facilitate completion of milestones by making time for scheduling of milestones.
 - Faculty should reply to student requests within a reasonable amount of time, usually less than five business days.
 - Faculty must provide feedback on qualifying exam essays within 10 business days of receiving them, including whether any responses need to be revised.
 - Faculty must allow for scheduling of Advisory Committee meetings, qualifying oral exams, proposal defenses, and dissertation defenses within 20 business days of receiving the request, or 30 business days in the summer or while on leave if they remain on an Advisory Committee.
 - It is reasonable, based on discussions between the Ph.D. student and primary faculty advisor, to replace an Advisory Committee member that is on leave or unable to schedule milestone meetings within a reasonable amount of time. In such an event, the Chair of the Biology Graduate Studies Committee and Graduate Studies Program Assistant should be notified of the change in Advisory Committee membership.