Stanford University, Department of Biology
Ph.D. Academic Handbook – 2025/2026 Academic Year

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Introduction

This handbook explains academic policies and expectations for all graduate students in the Department of Biology. Graduate students are held to the degree requirements included in the Stanford Bulletin (http://exploredegrees.stanford.edu) and the Ph.D. Academic Handbook published in the year of matriculation. Departmental practices and procedures may change year to year. Information on non-academic Department policies and other matters can be found on the Department of Biology website (https://biology.stanford.edu/academics/phd-program). Students are encouraged to contact the Director(s) of Graduate Studies (DGS) or the Student Services Office staff when they have questions about Department policies, procedures, standards, and expectations.

This handbook is divided into three sections:
1. Information relevant to all Ph.D. students
2. Information for Cellular Molecular and Organismal Biology (CMOB) track Ph.D. students
3. Information for Ecology and Evolution (Eco/Evo) track Ph.D. students

Within each section, the information is organized from a high level to a more detailed level. In some sub-sections, an attempt has been made to lay out program expectations and requirements chronologically as a student may encounter them as they move through the program over the years.

General Overview

Ph.D. degree program goals

The Ph.D. program seeks to prepare future research scientists and teachers. During the Ph.D., students work in the lab of an established research advisor. Student will also meet regularly with a committee of other faculty members. The goal of the Ph.D. is to conduct rigorous research that leads to the generation of new knowledge. An associated goal is for the student to disseminate that new knowledge to members of the scientific community in the form of scholarly presentations and peer-reviewed research publications.

The Department of Biology expects students to complete all Ph.D. requirements by the end of winter quarter of their 6th year. For example, if you joined Stanford in September 2025, the winter quarter of your 6th year would be Jan-Mar, 2031. It is recognized that individual circumstances may vary for legitimate reasons, such as the desire to complete a manuscript or due to a leave of absence. When Department expectations will not be met this should be discussed with the relevant Director of Graduate Studies (DGS).

Ph.D. student financial support

Students in the Ph.D. program are provided with a stipend/salary, tuition, and health insurance for four academic quarters each year. All funding is contingent upon satisfactory progress toward degree completion. The most up to date information on stipends and financial support is on the Department webpage. These details can change throughout the year as new policies are

introduced. Some further details relevant to CMOB students are outlined in the relevant section, below.

Stanford University Expectations

Communication

Per University policy, email to a student's Stanford email account will be presumed to have been received and read by the student (Notification/Obligation to Read Email).

Professionalism

As detailed in the Bulletin (Guidelines for Addressing Graduate Student Professional Conduct), graduate students are expected to meet certain standards of professional behavior. These standards include being present on campus to meet the academic and research expectations of the School or Department, communicating in a timely, respectful, and professional manner, complying with institutional policies and procedures, and participating appropriately in the program's community. Failure to meet these standards may be grounds for dismissal.

The Fundamental Standard

The Fundamental Standard has set the standard of conduct expected for all students at Stanford since 1896. It states: *Students at Stanford are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens*. Over the years, the Fundamental Standard has been applied to many situations. Actions that have been found in violation of the Fundamental Standard include assault, theft, and harassment. Penalties for violating the Fundamental Standard range from formal warning and community service to expulsion.

The Honor Code

The Honor Code articulates University expectations of students and faculty in establishing and maintaining the highest standards in academic work. The Honor Code is an undertaking of the students, individually and collectively, that they will not give or receive aid in examinations; that they will not give or receive unpermitted aid in class work, in the preparation of reports, or in any other work that is to be used by the instructor as the basis of grading; that they will do their share and take an active part in seeing to it that others as well as themselves uphold the spirit and letter of the Honor Code. The faculty for its part manifests its confidence in the honor of its students by refraining from proctoring examinations and from taking unusual and unreasonable precautions to prevent the forms of dishonesty mentioned above. The faculty will also avoid, as far as practicable, academic procedures that create temptations to violate the Honor Code. While the faculty alone has the right and obligation to set academic requirements, the students and faculty will work together to establish optimal conditions for honorable academic work.

Community Standards Resources

Graduate students are expected to familiarize themselves with applicable University policies and degree program requirements: (i) the Stanford Bulletin is the official statement of University policies, procedures, and degree requirements; (ii) Graduate Academic Policies and Procedures (GAP) includes information specific to graduate students, including general requirements, academic progress, University milestones, and graduate aid policy; the Administrative Guide contains policies related to graduate student employment and assistantships; the Research Policy Handbook contains a collection of policies, guidelines and general information related to research at Stanford University.

Academic Requirements for All Tracks

Registration and Enrollment
Graduate students are required by the Department to register for Fall, Winter, Spring and Summer quarters each year until the degree is conferred. Unregistered students will not receive University or department funds, have University paperwork processed, be eligible to take the Ph.D. oral examination, or be able to fulfill any other University requirements.

Unless otherwise instructed by the Department, all students must register for exactly 10 units each quarter until they advance to Terminal Graduate Registration (TGR) status (135 units). Access to Stanford student privileges (housing, financial aid, access to courses and facilities, etc.) is contingent upon timely and accurate completion of these primary activities each term:

1. Quarterly registration for courses on-line via Axess, with 10 units of courses and/or research.
2. Updating contact information entered in Axess.
3. Payment of University bill(s). The Department pays for tuition and Cardinal Care while students are responsible for other costs.
4. Completing and confirming a final study list by the University's quarterly deadline (study list = courses/units in which the student wishes to enroll).

Deadlines are set for each of these activities. These deadlines can be found on the login page on Axess. Deadlines include submission of the study list, dropping or adding courses or units, selecting credit/no credit (CR/NC) grading instead of letter grading for a course, withdrawing from a course, etc. Students who fail to meet the above deadlines will be responsible for paying any associated late fees.

Graduation Requirements and Residency
For Ph.D. candidates, the minimum requirement is 135 units of coursework. The reason for this requirement is educational: the minimum residency fixed for each program is the shortest period that students generally need to attain the level of expertise that a particular Stanford advanced degree signifies, by completing specified course work, research, and other degree requirements and by immersing themselves in the intellectual life of this University.

University policy dictates that graduate students are expected to maintain a significant physical presence on campus unless the degree program has granted an exception (GAP 3.1.1). The Biology Department may allow advanced Ph.D. students (5^{th} year and up) to complete their doctoral studies remotely with the approval of both the research advisor and the thesis committee, and so long as regular committee meetings occur, and relevant forms are submitted in a timely manner.

Stanford offers a co-terminal M.Sc. degree for former Stanford undergraduate students only. This program is administered separately from the Ph.D. program and has different expectations. Students admitted to the Ph.D. program who are in good standing and have advanced to candidacy will generally not be considered candidates for an M.Sc. degree. In some cases, students who fail to advance to candidacy may graduate with an M.Sc. degree. Students wishing to do so must complete 45 academic units of study and submit a scholarly 20-page research report (standard NIH format, not including references) to include ~10 pages introduction, ~5 pages of results, and ~5 pages discussion. This report must meet a sufficiently scholarly standard as judged by the relevant Director of Graduate Studies.

Satisfactory Degree Progress
The University's requirements for satisfactory degree progress for graduate students are found in the Bulletin at http://exploredegrees.stanford.edu/graduatedegrees/#degreeprogresstext.

In addition, the Department requires satisfactory and timely completion of each year's general and track specific requirements. Students are required to complete and submit all track specific requirements by the designated deadline (including, but not limited to, committee meeting forms, lab rotation evaluation forms, TA evaluation forms, etc.). Faculty will assess academic progress throughout a student's academic career to ensure timely progress towards the degree and satisfactory completion of the program's requirements and to ensure that the student is receiving constructive feedback and connected to resources.

Students not making satisfactory degree progress are subject to Departmental academic review and or dismissal from the program. In cases where a student is subject to dismissal, the Department will follow the Guidelines for Dismissal of Graduate Students for Academic Reasons found in the Bulletin at:

http://exploredegrees.stanford.edu/graduatedegrees/#degreeprogresstext.

GPA and Individual Course Grades
University policy requires graduate students to maintain a 3.0 or higher GPA. Policy also requires that students receive a B- or higher in any class for the class to count toward satisfactory degree progress and/or degree requirements. However, the Biology Department does not require that Ph.D. students take courses for a letter grade.

Responsibility for Grading
Grading (letter grades, student-elected credit/no credit (CR/NC), or satisfactory/no credit (S/NC) options) for research work within the Department should be discussed between the graduate student and the research advisor(s) in whose labs they work. Students are responsible for making sure grades are reported. If asterisks (*), incomplete grades (I), grade not reported (GNR) or No Credits (NC) appear on the end quarter grade report, students should check with their advisor immediately. The Student Services Office can assist students in clearing up missing and incomplete grades by forwarding the appropriate instructions and/or University forms to course instructors or advisors.

Written dissertation proposal and oral qualification exam
The second year written dissertation proposal and oral qualification exam is discussed in detail for each track, below.

Advancing to Candidacy
All students must "advance to candidacy" by the end of their second year, not counting approved leave(s) of absence. For example, a student who starts at Stanford in September 2025 must successfully advance to candidacy by August 2027. In essence, "advance to candidacy" means that you are succeeding in the program and meeting certain specific requirements. Advancing to candidacy is contingent upon successfully completing course work, at least one TAship, and successfully completing the second-year oral qualification exam. If a student does not meet the requirements for advancing to candidacy, the student is subject to dismissal from the Ph.D. program. The University form required for admission to candidacy is available online at: https://stanford.app.box.com/v/appcanddoct. The written dissertation proposal requirement must be completed before the Application to Candidacy for Doctoral Degree can be approved. Please see the university's policy on candidacy in the Bulletin at http://exploredegrees.stanford.edu/graduatedegrees/#doctoraltext.

Note: Before advancing to candidacy, at least three units of work must be taken with each of four Stanford faculty members. Three units of work can include lectures, labs, seminars, teaching, research, directed readings, and independent study. Please see the University's policy on candidacy in the Bulletin at http://exploredegrees.stanford.edu/graduatedegrees/#doctoraltext.

Dissertation Reading Committee

The Dissertation Reading Committee is the formal name given by the University to what most students and faculty call the "Thesis Committee". The Dissertation Reading Committee is selected by the student and the research advisor and should consist of three thesis "Readers" (i.e., committee members). These three members are in addition to the principal research supervisor. The Dissertation Reading Committee will meet with the candidate annually, or in later years twice annually, and eventually certify their Ph.D. dissertation. All Dissertation Reading Committee members must be on the Stanford University Academic Council. If a student's primary mentor is a Biology faculty member, then (at minimum) one of three other Readers must be from the Department of Biology. For example, a Dissertation Reading Committee for this student might have the research advisor (from Biology), another Biology faculty member, and two faculty from the Medical School. If a student's primary mentor(s) is ***not*** a Biology faculty member, then the reading committee should contain two Readers who are Biology faculty. In this case, a Dissertation Reading Committee for this student might have the research advisor (e.g., from the Medical School), two Biology faculty members, and one other faculty from the Medical School.

The Dissertation Reading Committee form must be submitted to the Student Services Office at the end of second year in the program with the Candidacy form. Students must formally name the members of the Dissertation Reading Committee by the time TGR registration status (see below) is reached. For more detailed University policies regarding these requirements please see the Bulletin at:

http://exploredegrees.stanford.edu/graduatedegrees/#doctoraltext.

Terminal Graduate Registration (TGR)

Once students complete a certain number of credits and they are eligible for "terminal graduate registration". TGR is an administrative designation and does not have any bearing on research. TGR is a full-time student status and comes with a lower tuition rate which acknowledges that formal course work is no longer needed because the student's main activity will be dissertation research. TGR status is granted once the following requirements are satisfied: advancement to candidacy, completion of all required courses and degree requirements, and accrual of 135 units.

The Student Services Office will notify students when they become eligible for TGR. Students must complete the following forms prior to the start of the quarter in which they become eligible for TGR (typically Spring Quarter of the 4th year): (i) Request for TGR Status form, (ii) Doctoral Dissertation Reading Committee form.

All TGR students must enroll in BIO 802 for zero units, by selecting their primary advisor's section. Course work is no longer considered necessary during this advanced stage of study; however, students are allowed to take 1-3 units during TGR quarters if they choose to. Talk to the staff in the Student Services Office to inquire about this.

Ph.D. Graduation requirements

The doctoral degree is conferred upon candidates whose work represents a body of significant, original, rigorous, reproducible research, as evaluated and approved by the thesis committee. The thesis work must meet the highest standards of scholarship within the student's field of research and include at least one publishable manuscript (see below). Note that a manuscript alone is not necessarily sufficient to graduate; approval from the research supervisor and the graduate committee that the thesis work meets the expected level of scholarship is also necessary. Several additional formal requirements must be met before students will be eligible to graduate with a Ph.D. degree. Stanford academic requirements (e.g., completion of 135 credits) are outlined, above. Additionally, there are additional Biology-specific requirements and expectations.

The student's Dissertation Reading Committee (thesis committee) is responsible for agreeing that the ongoing thesis work meets the necessary scholarly standards, and that the student is prepared to defend the Ph.D. thesis work. An Oral Examination Committee is responsible for certifying that the quality, rigor, and scholarship of the final thesis itself meets appropriate standards for the student's field of research. Note: the Dissertation Reading Committee and the Oral Examination Committee are typically the same. The Oral Examination Committee typically contains all Dissertation Reading Committee members and additional members (see below).

Publishable Manuscript

A new and significant contribution to knowledge is the fundamental characteristic of all Ph.D.-level research. In modern Biology, these contributions generally take the form of peer-reviewed primary research. To graduate with a Ph.D., students in Biology are expected to have at least one first or co-first author research manuscript published or ready for publication (e.g., submitted to BioRxiv). This work should be of recognized high quality by the primary research advisor and thesis committee and published or being prepared for publication in a reputable journal. Note that in some areas of biology it is typical for a Ph.D. thesis to include more than one publishable primary research paper. This expectation should be carefully discussed with the research advisor and dissertation committee and, if necessary, the relevant Director of Graduate Studies.

The Decision to Graduate

The decision about when a student's research is sufficiently advanced to consider graduation is made through joint consultations between the student, the primary research advisor, and all members of the thesis committee. No single person can reach this decision alone. This decision is best reached as part of the normal cycle of thesis committee meetings, which typically occur every six months towards the end of the Ph.D. Oftentimes, this decision can be made based on the trajectory of the research, with a projection about future goals being met. For example, an early 5th year student may not yet have published a primary research manuscript, but they and their research mentor may both anticipate this occurring soon, and therefore the committee may grant permission on that basis to start planning for graduation.

Dissertation Defense and Dissertation Submission

Along with completion of all Departmental and University requirements noted above, conferral of the Ph.D. requires a written dissertation and successful completion of an oral exam. For more detailed University policies regarding these two requirements please see the Bulletin at: http://exploredegrees.stanford.edu/graduatedegrees/#doctoraltext. Further details are provided, below.

Written Dissertation (i.e., the thesis document)

The written thesis is a document that expresses the contributions that the candidate has made (alone and/or in collaboration with others) to advancing knowledge. Typically, the written document contains several chapters, at minimum one chapter of Introduction, one chapter of Results, and one chapter of Discussion / Future Directions. Additional chapters of Results are common and often correspond to distinct published or submitted manuscripts.

Collaborative work is increasingly common in many areas of biology, and it is allowable to include joint work in the written thesis, at the discretion of the thesis committee. Typically, the student is the first or co-first author on all their chapters. Regardless, the component of the work that was done by the candidate themself must be clearly identified and distinguishable from other aspects of the work. The evaluation of the Reading and Oral Committee should focus mainly on the component performed by the candidate. The specific roles of other major coauthors must be made clear in the thesis, and other presentations of the work.

The thesis must follow the specific written format determined by the University. It is the responsibility of every student to follow all policies. Graduate students should read the Directions for Preparing Doctoral Dissertations (https://registrar.stanford.edu/students/dissertation-and-thesis-submission). The University will not accept the dissertation unless the formatting and submission steps are followed exactly.

Candidates are expected to provide each member of their Ph.D. Oral Examination Committee (see below) a draft copy of their written dissertation at least **14 days** before the scheduled oral defense date. This dissertation is expected to be in final or near-final form, pending any changes suggested by the student's committee at the defense itself. The student should check in with the committee and incorporate any changes before or right after the exam. University guidelines for dissertations are available online at: http://studentaffairs.stanford.edu/registrar/students/dissertation-thesis.

Once the oral examination is passed and the written dissertation is finalized, the dissertation must be filed with the University along with copyright paperwork. The dissertation and accompanying paperwork must be submitted by the deadlines posted in the university calendar. These deadlines are strictly enforced. All deadlines, instructions, and resources for submitting the dissertation can be found at: https://registrar.stanford.edu/students/dissertation-and-thesis-submission.

Ph.D. Oral Examination Committee

The University Ph.D. Oral Examination Committee consists of five members. There are four examiners. Typically, this would be the research supervisor and the three members of the Dissertation Reading Committee (i.e., thesis committee), plus a University chair from a Department outside of Biology. At least three of the four examiners must be Stanford Academic Council members. A fourth examiner who is not an Academic Council member may be appointed to the University Oral Examination Committee if that person contributes an area of expertise not readily available from the Stanford faculty. Such appointments require approval by the Department Chair prior to scheduling the oral examination. Students must petition the chair using the Petition for Doctoral Committee Members form.

The student, with the assistance of their faculty advisor, is responsible for locating a University chair to serve on the University Oral Examination Committee. The University chair of the committee must be a member of the Stanford Academic Council and may be a Professor Emeritus. The chair may not have a full or joint appointment in the Department of Biology.

However, the chair may have a courtesy appointment in biology. Lastly, the chair may be from the same Department as other outside members of the committee.

The University Oral Examination form must be completed, signed, and delivered to the Student Services Office at least two weeks before the examination date. For more detailed university policies regarding these requirements please see the Bulletin at http://exploredegrees.stanford.edu/graduatedegrees/#doctoraltext.

Students must schedule the exam with their committee members and request a room from the staff in the Student Services Office. Further instructions about scheduling the exam are available at the Student Services Office.

Ph.D. Oral Examination

The University Oral Examination is a requirement for the Ph.D. degree. The purpose of the examination is to test the candidate's command of the field of study and to confirm competence for scholarly pursuits. To proceed to the Oral Examination, students must be registered, have advanced to candidacy, and have a Dissertation Reading Committee form on file in the Student Services Office during the quarter in which the University Oral Examination is taken.

The oral exam is a public seminar followed by a closed session with the student's Oral Examination Committee. The exam cannot be formally scheduled or publicly announced until the student receives approval from the committee. The student should start scheduling a date and time with the committee several months before the anticipated graduation date to ensure that everyone is available on the projected date. *As noted above, a final or near-final version of the written thesis must be submitted to the Oral Examination Committee at least 14 days prior to the scheduled oral defense.*

Many potential scheduling problems can be avoided if the date of the examination and the committee membership (including the outside Chair) are fixed as far in advance as possible. It is the responsibility of the student to be sure that these arrangements are made in a timely fashion. If a student is having difficulty with scheduling, they should contact student services for assistance and guidance. Faculty are expected to adhere to arrangements once they have been made.

Conferral of Degrees and Spring Commencement

Students must apply to graduate online via Axess for degree conferral. In Axess, select the "Student Center" tab, select "Apply to Graduate". Follow the directions given and complete the application carefully. Save the application once completed.

Commencement ceremonies are held each June for students who have received degrees in the previous Summer, Fall, Winter, and Spring quarters. Students who wish to receive their diplomas in-person at June commencement must designate this in Axess when applying to graduate. Information about commencement activities and distribution of diplomas is posted online: http://commencement.stanford.edu/. Information about the departmental ceremony will be sent to students by the Student Services Office. In addition, students who will graduate during Summer Quarter or the following Fall Quarter are also eligible to attend the June ceremony. Students who are interested in attending need to contact student services to be listed in the ceremony program.

Additional Degree Programs

Stanford University permits currently matriculated graduate students to petition to add a new degree program without going through an external application process. If a student is considering adding a second degree program they are required to do so with enough time that they can complete the secondary program before they are eligible to register for Terminal Graduate Registration status.

The Graduation Quarter (aka the "writing quarter")

Sometimes known colloquially as the "writing quarter", the graduation quarter is outlined in University policy as the final quarter when a student is enrolled at the University and can only be undertaken officially when all program requirements are met except for the final thesis requirements (e.g., the oral defense and submission of the written thesis). In the past, sometimes students have believed that it is possible to perform the oral thesis defense, then take a "writing quarter" to write the thesis document. As outlined above, this is no longer allowed: students must submit a substantially complete written thesis to the oral exam committee 14 days *before* the Ph.D. oral exam. Final corrections to the written thesis can be completed during the graduation quarter, after the oral exam, prior to the final submission of the document to Stanford.

Teaching

The Department of Biology considers teaching to be a core component of a doctoral student's academic training. All Ph.D. students are required to serve as a Teaching Assistant (TA) and/or Course Assistant (CA) for two Biology (BIO) courses. Students are expected to complete both TA requirements by fall of their 3rd year in the Ph.D. program. One quarter must be in the undergraduate lab courses (BIO 43, 45, 47) or the Foundations-level courses (BIO 81, 82, 83, etc). The second course may be one of the above courses or an advanced undergraduate BIO elective course or lab/introductory/foundations course. Biosciences mini-courses (BIOS) or summer teaching positions cannot be used to fulfill teaching requirements. To fulfill their teaching requirements, students have their teaching supervisors complete the Teaching Requirement form. Students must submit the form to the Student Services Office.

Note 1: Students who plan to TA for one of the core labs (BIO 45, 46 or 47) are required to attend a one-day training in the preceding quarter, BIO 291. Registering for BIO 291 to obtain units is optional.

Note 2: To support students in their teaching, students must complete BIO 296 Teaching and Learning in Biology concurrently with their first teaching assistantship. This workshop provides students with basic training, support and professional development.

Note 3: First year students who think they may join a lab at the Hopkins Marine Station must discuss TAing with the DGS at the earliest opportunity. There are often insufficient TAing opportunities available in year 2 at Hopkins and therefore students should consider completing both mandatory TAships in year 1 while housed on main campus in Winter and Spring quarters.

Note 4: Eco/Evo students will typically fulfill one of their two teaching assignments by teaching Bio 46 or 47 (Introduction to Research in Ecology and Evolutionary Biology), 81 (Ecology), or 85 (Evolution). In rare circumstances, particularly if students have distinctively relevant expertise, Eco/Evo students may instead fulfill the recommendation to TA an introductory course by TAing for another Foundations or undergraduate lab course (typically Bio 82 Genetics or 84 Physiology).

Note 5: CMOB students who TA during the Fall Quarter of their 2nd year can request to postpone their qualifying exam until the end of Winter Quarter. Petitions for postponement should be submitted to the DGS before the start of the Fall Quarter of the 2nd year.

Optional Teaching
Students who wish to do more teaching beyond the program's requirement may be considered for open TA positions once students who have not yet completed their requirements have been assigned. In all cases, students volunteering for additional TA opportunities must (i) have advanced to candidacy, and (ii) received consent of their advisor before being appointed given the expectation of reduced productivity in the lab during the quarter in which they will be a TA.

Occasionally, graduate students wish to co-teach a course with an instructor. Before doing so, all student teaching requirements must be completed. Students must also have approval from their advisor to teach and/or design a class. Students interested in designing a new course should see staff in the Student Services Office three to six months in advance of possibly offering the course to ensure that all administrative timelines are met. Note: The Department does not have funds budgeted to compensate students who wish to develop and teach their own course.

Graduate students who wish to design and teach a course should work with a faculty sponsor in the department and follow departmental policies and guidelines. Faculty sponsors are expected to guide graduate student instructors in pedagogy. Faculty sponsors also accept overall responsibility for the academic quality of the course, including instruction and evaluation. Examples of Biology courses developed by graduate students include BIO 133 (Network analysis for community ecology and conservation research), BIO 121/221 (Ornithology), and BIO 114 (bioBUDS - Building Up Developing Scientists: Science In & Beyond the Lab).

Outreach and Service
Service and outreach activities provide opportunities to impact society more broadly and to establish communication and leadership skills. However, participation in service and outreach is not a degree requirement. As a Department, we acknowledge the importance of service and outreach and support student participation in these activities within reasonable limits discussed and agreed upon by the student and research advisor. Students can include a description of their service and outreach activities during their annual committee meetings.

Mentoring
Individual Development Plan and Annual Planning Meetings
All Biosciences Ph.D. candidates and their faculty mentors in H&S and the Schools of Medicine are required to create and discuss their Individual Development Plan (IDP) by August 1st of each academic year. The IDP and annual planning meeting with the advisor are intended to help the student: Take ownership of their training and professional development, Think about short-, mid- and long-term training and development goals, Identify and use resources to help them achieve your goals, Have open and direct dialogue with their mentor(s), Establish clear expectations/steps. *Students should take the lead in organizing the IDP meeting.* See http://biosciences.stanford.edu/current/idp/ for more information and IDP forms, processes, and deadlines, including extensive FAQs and resources for both faculty and student.

Laboratory Safety Training
All biology lab personnel are required, under regulations from various governmental agencies, to be trained in laboratory safety pertaining to their lab. During orientation, each new graduate

student is required to attend the scheduled health and safety training session. Prior to working in the lab, new students are required to complete several Stanford University Environmental Health & Safety training courses online and any specialized classroom training that is required for the lab they will be entering. The department's safety officer will give a general safety overview and provide a Safety Training Certificate form, outlining the required and suggested courses for each student. Required courses may include but are not limited to some of the following: General Safety & Emergency Preparedness, Chemical Safety for Labs, Biosafety, Ergonomics, Radiation Safety, Laser Safety, Compressed Gas Safety, DOT: Shipping Biological Goods or Dry Ice. Additional training is required when students begin to use protocols involving radioactivity and or animals. Students who may be using radioisotopes must also attend the university's radiation safety course and pass the radiation safety examination. Arrangements to take this class are made through the Health Physics Division of the Department of Environmental Health and Safety. Students involved with animals may be required to take additional safety training.

In most labs, the Lab Safety Coordinator is responsible to see that every person entering the laboratory has completed the safety training. In labs with no Lab Safety Coordinator, the Principal Investigator (P.I.) is responsible for health and safety training. Additionally, every laboratory has a Stanford Safety Manual, which describes the Health and Safety program at Stanford, and the Emergency Response Plan for the department. Reference materials can be found on the EH&S website with a list of training videos and journals.

Exceptional Circumstances

Leave of Absence

In circumstances where continuous enrollment is not possible, students may request a suspension of their enrollment by means of a leave of absence. Graduate students must request a formal leave of absence from their advisor and the DGS (or co-DGS), and the agreement must be provided to the Student Services Office. Except in the case of pregnancy or parental leaves, the granting of a leave of absence is at the discretion of the Department and subject to review for approval by the Office of the Registrar. Leaves of absence are typically granted for a maximum of three quarters. An extension of leave, for a maximum of one year or four quarters, is approved only in unusual circumstances. Extension requests must be made before the expiration of the original leave of absence. Leaves of absence for graduate students may not exceed a cumulative total of two years (eight quarters including Summer quarters). Students on a leave of absence are not registered and therefore do not have the rights and privileges of registered students, including housing, health care, etc. Graduate students on a leave of absence do not receive any financial support from the Department. To request a leave of absence, students must initiate the Leave Absence form in Axess and route it for approval. Additional information and policies regarding leaves of absence can be found in the University Bulletin, http://exploredegrees.stanford.edu/graduatedegrees/#leavereinstatementtext.

Internships

While not encouraged, it is possible for Ph.D. students to take a leave of absence from Stanford to complete an outside internship (e.g., in industry). During internships students are not paid by the Department and are considered to be on a formal leave of absence. Participation in internships requires approval from the student's primary research advisor because the student will need to take time away from their academic work. Students must discuss their internship intent and plans with their advisor far in advance of any start date and explain what they will be doing, how it will benefit their training, and their plan for accomplishing their academic goals once they return to the lab. The student must email student services their internship plan. The

email should include internship dates, if it is to be paid, and if the work will be directly related to their dissertation or if it is a professional development opportunity. Students are required to inform the Student Services Office immediately of their internship plan and may be required to complete necessary forms, such as a Leave of Absence Form.

Concerns & Grievances

Reporting Concerns and Grievances

There are multiple places for students and Stanford community members to report concerns and/or file grievances. Pathways to navigate specific grievances and outcomes depend on factors specific to each case. There is no one right answer about where to start; the important thing is to seek guidance. If you are not sure where to start, the Biology Student Services Office or Graduate Life Office are good first steps. Other resources are listed below if you would prefer to start there.

Grievance Reporting

● Academic: A Stanford graduate student who believes that they have been subject to an improper decision on an academic matter (anything related to degree progress) may file a grievance pursuant to the Student Academic Grievance Procedure.
● Non-Academic Grievances: Students should review the Non-Academic Grievance Procedure for a list of all current university policies. We recommend you begin by talking to a Graduate Life Office Dean, Student Services Officer, or confidential resource if you have questions about a non-academic grievance.
● ADA / Section 504 Grievances: For students who believe that they have been subjected to unlawful discrimination on the basis of disability, or denied access to services or accommodations required by law, see the ADA/Section 504 Compliance Officer, Diversity and Access Office, Kingscote Gardens, 419 Lagunita Drive, Suite 130, Stanford, CA 94305-8550; (650) 723-0755 (voice), (650) 723-1791 (fax), equal.opportunity@stanford.edu (email); see also the Office for Accessible Education (OAE) website.
● An individual whose matter has been substantially addressed through one of Stanford's grievance procedures (including but not limited to the Student Academic Grievance Procedure, the Student ADA/Section 504 Grievance Procedure, the Grievance Resolution Procedure for Postdoctoral Scholars, the Student-Athlete Grievance Procedure, or the Student Non-Academic Grievance Procedure) may not raise and seek redress of the same matter under a different Stanford grievance procedure. The University retains discretion to determine when a matter has been substantially addressed.
● SHARE (Sexual Harassment / Assault Response & Education) Title IX Office: The Title IX Office collaborates with the Stanford community to stop, prevent, and remedy interpersonal violence and gender-based discrimination through education, culture change, accountability, and empowerment. They offer options and resources to all students affected by these issues and are committed to providing a fair, thorough, and prompt investigation and adjudication process.

Confidential Resources

● Office of the Ombuds: A confidential resource available to all members of the Stanford community for any concern that is interfering with their academic or work life.
● Office for Religious & Spiritual Life: Guides, nurtures and enhances spiritual and religious life within the Stanford University community.
● Counseling & Psychological Services (CAPS): Counseling, mental health, medication management, referral management, case management, and workshops for students.
● The Bridge Peer Counseling Center: Student-run peer counseling for students available 24/7

● Confidential Support Team (CST): Confidential, trauma-informed consultation, counseling, and outreach for members of the Stanford community members impacted by sexual, relationship, and gender-based violence

CMOB Track-Specific Requirement

In this section requirements and advice specific to the CMOB track will be discussed. This section should be read by all CMOB students. Requirements that are specific for the ECO/EVO track are discussed separately.

Milestones & Deadlines

Below are milestones that must be completed to adhere to University and Departmental policy and ensure enrollment and degree progress. All forms and papers must be emailed to the Student Services Office. Years outlined below are academic years and span the fall of one calendar year to the summer of the following calendar year. For example, the 24/25 academic year starts in September 2024 and ends in August 2025.

First Year	**Due Date**
Lab Rotation Evaluation form*	End of each rotation
NSF Application**	Early fall due date (e.g., ~Oct 15th)
Teaching Evaluation form	End of each quarter in which you TA
Advisor/Lab Decision	End of Spring Quarter
First Year Planning/Evaluation form	June 1
IDP Meeting	August 1

*Required if student is rotating
**Required for all eligible students in their first year

Second Year	**Due Date**
TA Pre-Course Meeting Form	Within two weeks of starting TA
TA Evaluation form	End of each TA quarter
Dissertation Proposal paper	November 1*
Dissertation Proposal Exam	November 15*
Updated Dissertation Proposal and Exam	May 15**
Application for Candidacy form	End of Summer Quarter
Dissertation Reading Committee form	With Candidacy form
Non-AC Committee Member Form	With Candidacy form (if applicable)
IDP Meeting	August 1

*Students who TA in fall quarter of the second year may choose to defer the qualifying exam until winter quarter, with deadlines of February 1st and February 15th for submitting the written proposal and doing the oral exam.

**Students who receive a condition pass or fail the qualification exam in November must provide the committee with further information and/or pass a second qualification exam within six months (i.e., by May 15th).

Third Year	**Due Date**
3rd Year Committee Meeting form	February 15
TA Pre-Course Meeting form	Within 2 weeks of starting TA
TA Evaluation form	End of each TA quarter

IDP Meeting	August 1

Fourth Year	**Due Date**
Request for TGR Status form All tracks	135 units and all requirements met
4th Year Committee Meeting form	May 15
IDP Meeting	August 1

Fifth & Sixth Year	**Due Date**
5th Year Committee Meeting form	Nov 15 & May 15
6th Year Committee Meeting form	November 15 & May 15
Graduation Extension Petition	If applicable
Change of Advisor or Comm Member form	If applicable
IDP Meeting	August 1

Thesis Defense	**Due Date**
Draft of Dissertation	14 days before oral defense
University Oral Exam Schedule form	14 days prior to oral defense
Dissertation final approval and submission	Check due dates per quarter

Before Arriving at Stanford

Handbook distribution and lab match making

Before the start of Fall quarter, students will be provided with a Rotation Handbook that outlines CMOB labs who are open to taking new students and provide information on projects that are available. Before arriving on campus, students will be asked to identify two potential CMOB faculty that they are interested in working with or learning about their research, and the Biology Office will coordinate a match-making process to ensure that students and faculty are in communication and can begin to discuss rotations. New Ph.D. students will also be sent a copy of the Academic Policies document (i.e., this document) that will apply for the duration of their time in the Ph.D. program. Note that academic policies can change from year to year, and policies for previous cohorts of students may not be identical.

First Year Advising

First year academic advising

During Fall quarter all students will meet with the co-DGS and/or other members of the Graduate Studies Committee or the CMOB faculty to discuss lab rotations, coursework, TAing, lab selection, and adjusting to graduate life at Stanford. Meetings will be scheduled by the Biology student services office.

Ph.D. Course Requirements

Courses

There are three mandatory courses, generally completed in the first year (see below). Otherwise, all courses must be completed prior to Spring Quarter of the 4th year.

Mandatory first year curriculum

- BIOS 200: Foundations in Experimental Biology – Fall Quarter
- BIO 301: Frontiers in Biology – Fall Quarter
- BIO 165: Quantitative Biology: Rigor and Reproducibility – Winter quarter*

*Students who already have a solid foundation in statistics and scientific programming may satisfy the requirement by completing one of the following courses: STATS 202, STATS 208, STATS 251, BIOE 305 or, with prior approval from Jonas Cremer, another upper-level course in statistics or mathematical methods.

Mandatory first or second year
MED 255 (this course is offered in Fall, Winter or Spring)

A minimum of two additional courses must be completed. These courses should be in the areas of cell and molecular biology, broadly construed. These courses should be selected by the student in consultation with the research advisor. These courses may be “mini courses” in the Biosciences (BIOS). Additional courses beyond this requirement may be taken in related areas (e.g., statistics, computer science) but are not necessary. Available courses change from year to year.

First Year Lab Rotation Policies

Lab Rotations
During the first year, students must rotate in (i.e., temporarily join) different labs. The purpose of lab rotations is to see whether a good fit exists between mentor and mentee, in connection with research interests, mentorship, lab fit, and potentially other variables. At a minimum, students must complete two rotations. However, a third rotation is allowed. Typically, a fourth rotation is not allowed. However, exceptions for unusual circumstances will be approved on a case-by-case basis with the permission of the DGS. **In general, Biology PhD students are expected to rotate with and eventually join a lab in the Biology Department.**

Rotation caps
Dept. of Biology labs are limited to taking no more than three first year Biology students for rotations. Thus, if the Smith Lab has taken one Biology students in the first rotation block, and two Biology students in the second block, they cannot take any additional first year Biology students during the third rotation block. Note: a lab could take additional rotation students from other programs or Departments.

Lab new student caps
Individual labs are allowed to accept no more than three CMOB students in any given year. Again, a faculty could in theory take additional students from outside the Biology program.

Fixed Rotation schedule
To provide structure and accelerate progress, the following rotation schedule applies to all rotations:

Rotation 1 (eight weeks): Monday September 22nd - Friday November 14th. Note that this first rotation is a bit longer than rotations #2 and #3 to help accommodate the transition to Stanford.

Rotation 2 (seven weeks): Monday November 17th - Friday January 16th. Note: Stanford Winter Closure is Dec 22nd to Jan 2nd and should be considered the winter holiday period. Extended holidays beyond these dates are discouraged in year 1.

Rotation 3 (seven weeks, optional): Monday January 19th - Friday March 6th.

Following the completion of the second or third rotation a lab should be selected in consultation with the desired PI/Lab. We exceptions for Hopkins students noted below, we expect every main campus student to have joined a lab no later than mid-March.

Rotation location
At least two rotations must be in a CMOB lab. *These two rotations can occur in any block.* The optional third rotation may also be undertaken in a CMOB/Biology lab or in a Bioscience lab located outside of Biology. Due to rotation caps and potentially limited lab space, students are encouraged to discuss rotations with potential mentors as early as possible. Signed Lab Rotation Evaluation forms are due at the conclusion of each rotation.

Selecting a Primary Research Advisor/Lab
Each first-year student is required to join a lab in which to perform dissertation research. The decision to join a lab can be taken as early as the conclusion of the second rotation but should occur no later than the end of the third rotation (i.e., mid-March) except under special circumstances in consultation with the DGS. It is important for students to efficiently select a lab and begin their thesis research. By doing so, students will have more time for productive summer research and to prepare for the qualifying exam in the fall of second year.

Students may select as a primary research mentor any faculty member with a primary appointment in one of the Biosciences Home Programs. The faculty member in charge of the lab must agree to accept the student, becoming the student's primary research advisor. The student and lab advisor must fill out the First Year Evaluation Form together and email it to Student Services and cc the advisor and the Director of Graduate Studies to indicate their lab decision. If the student cannot decide by the end of Spring quarter, they must inform the Student Services Office and meet with the DGS and to discuss.

Financial considerations
As noted above, all graduate students are supported financially throughout their time at Stanford. However, the source of funding can vary "behind the scenes" in a way that might influence the decision of a PI to take on a student or not.

In the 2025/26 academic year, Dept. of Biology students who join Dept. of Biology labs will be supported financially by the Dept. of Biology for four years, consistent with past practice. After four years, the lab PI is required to provide the financial resources to support individual students. Starting in the 2025/26 academic year, an incoming Dept. of Biology student who chooses to join a lab outside the Department (e.g., in the School of Medicine, SoM) will only be supported financially by the Department for two years, after which the PI of the outside lab will be responsible for providing financial support. This is aligned with new policy from the SoM where students will only be supported out of School resources for two years.

A note for PIs: PIs taking on Ph.D. students from the SoM in 2025/26 are subject to SoM policies around student funding going forward. E.g., those students from the SoM will be supported for two years by the SoM then must be supported thereafter by individual PIs, even if they are working in a Dept. of Biology lab.

Notes specific to Hopkins Marine Station
Students interested in rotating at Hopkins Marine Station face unique scheduling challenges due to the housing limitations and the need to complete mandatory first year coursework on the

main campus. Students interested in rotating at Hopkins should express this desire as clearly and early as possible to the co-DGS so that appropriate plans can be put into place.

Pre-Doctoral NSF Fellowship Applications

All eligible first year Ph.D. students are required to apply for a National Science Foundation Graduate Research Fellowship (NSF). Students must forward to Student Services a copy of the confirmation email and of the proposal to confirm that they've applied. Typically, the application deadline is in late October/early November. Please see the NSF website for deadlines: https://www.fastlane.nsf.gov/grfp/Login.do.

Students may request a one-year deferment from submitting their NSF GRFP application to the DGS. Permission to defer must be accompanied by the expressed written consent of the faculty mentor working with the student on the proposal. Valid reasons for deferment include the need for additional preparation or substantial personal hardship. If a deferment is approved, an NSF GRFP application must be submitted the following year.

Dissertation Proposal: Two-Part Qualifying Exam in Second Year

During the second year, each student must pass a two-part qualifying exam.

1. Written dissertation proposal that outlines the student's projected dissertation research
2. Oral defense of the dissertation proposal

The written dissertation proposal must be submitted electronically to the Student Services Office and student's Dissertation Proposal Committee no later than November 1st and the proposal defense must be completed no later than November 15th. (if these dates fall on a weekend, then the following Mondays). If the oral defense is completed prior to November 15th, the proposal should be submitted to relevant parties at least two weeks prior to the defense. One exception to these deadlines would be for students TAing a fall core course (e.g., BIO83) who are allowed to defer the qualification exam to the winter of the same academic year. In this case, the proposal should be submitted to the committee by February 1st and the exam completed by February 15th.

One exception to these deadlines would be for students TAing a fall core course (e.g., BIO83) who are allowed to defer the qualification exam to the winter of the same academic year. In this case, the proposal should be submitted to the committee by February 1st and the exam completed by February 15th.

Dissertation Proposal Committee Responsibilities and Proposal Guidelines

The dissertation proposal is evaluated by a Dissertation Proposal Committee. This Committee consists of four faculty members. Dissertation Proposal Committee requirements: Students are required to organize a committee that consists of their advisor (present in exam,), at least one other Biology Department faculty (have primary appointments in Biology) and two other members. At leat one of these members must be from outside the Biology Department. Faculty may be emeritus at the time of the exam.

The Dissertation Proposal Committee evaluates the written dissertation proposal and administers/evaluates the dissertation proposal defense. The Dissertation Proposal Committee also assists in such aspects as initial choice of dissertation topic, evaluation of the oral and

written proposal, planning and execution of research, dissertation and related publications writing and planning a career. The student is responsible for scheduling these meetings.

Members of this committee also typically serve on the Dissertation Reading Committee and the Oral Examination Committee, but in consultation with the advisor and other faculty, students have the option to change committee members in the future if needed.

Guidelines for the Written Proposal
The written proposal should include the following:

1. Introduction and specific aims (~1 page)
    a) Describe the broad significance of the research topic.
    b) Describe the gap in knowledge that hinders our understanding of the research topic.
    c) State your hypothesis (or goal, if not hypothesis driven) that will fill the previously stated gap in knowledge.
    d) State your specific aims that will directly address your stated hypothesis (or goal, if not hypothesis driven). Include a brief overview of the experimental design.
    e) Describe the beneficial outcomes upon completion of your proposed research. Remember to include broad significance to the research field.

3. Background and significance

4. Preliminary data (if available)
    a. Preliminary data should be included if relevant but is not required.
    b. This can be included before the research design or as each aim is proposed.

5. Overview and research design for each aim
    a. Detailed experimental plan
        i. Include plan for rigor and reproducibility, such as:
            1. Authentication of key reagents and methods
            2. Thorough and transparent data collection and documentation
    b. Statistical considerations (sample size, significance tests, power calculations, error propagation, outliers, replicates, etc)
    c. Possible anticipated results
    d. Limitations/contingency plans

The length of document should be roughly 10 pages (double-spaced, 11-point Arial font), excluding figures and references. References should contain information such as article title (e.g., in the style of Cell rather than Science).

Oral Exam
The oral exam must be scheduled for a minimum of 90 minutes. One member of the committee (Biology faculty), who is not the student's primary advisor will be designated as Chair. The Chair is responsible for facilitating the exam and recording the outcome of the exam. At the start of the meeting, the student will be asked to leave the room. Then, the student's primary research advisor will discuss the student's overall progress in the laboratory to date. The student will then return and begin presenting. The student's presentation should include slides that discuss project background, hypothesis, specific aims, preliminary results (if available), and planned experiments. *Oral examiners may ask questions at any point of the presentation.* The committee will question the student until consensus by committee is reached or maximum time (90 min) is reached.

Note that the oral qualifying exam is not a seminar—it is an evaluation of the student's ability to:
- Summarize the field of study, including past and current work from others
- Generate a working hypothesis
- Develop project goals
- Design logical experiments
- Draw conclusions and adapt hypotheses depending on results

Following the oral defense, the student will be asked to leave the room by the Chair and the committee will then discuss the written and oral parts of the exam, the student's progress, and whether the student has passed or failed. The student will then return, and the Chair will summarize the discussion in the presence of the student. The Chair is responsible for writing the summary in the Dissertation Proposal form provided by the student, ensuring that all committee members agree and sign and submit the signed form to the Student Services Office.

Outcomes of the qualification exam
There are three potential outcomes: pass, provisional pass, or fail.

Pass: Students who pass the qualification exam unconditionally will next meet with their thesis committees no later than the fall of the following year (3rd year committee meeting).

Provisional Pass: In some cases, a student may be successful in most aspects of the exam but falls short of requirements for a "Pass". Examples include, incomplete understanding of project background, inability to describe the details and rationale of their proposed project or discuss an alternate experimental approach, or propose a project assessed to be incremental or not feasible based on current information, etc. Here, the committee may ask for specific actions, including a more detailed literature review, or an updated research proposal, and/or with a 1:1 meeting to discuss certain elements of the proposal in person. Actions must be completed to the satisfaction of the committee within six months of the initial qualification exam.

Fail: Should the student fail one or both parts of the exam, the committee should identify specific areas that need to be addressed, and agree on the next steps, including completely re-writing the proposal and/or a second oral defense no later than six months from the date of the initial exam. This discussion should be summarized on the Dissertation Proposal form and followed by an email from the committee to the student outlining the problems, what the student needs to do to pass and a timeline to complete this task. Student Services and the Director of Graduate Studies should be cc'd on this email. A second fail could lead to a process that results in dismissal from the program.

Committee Meetings
Students must meet with their Ph.D. advising committee in Fall Quarter each year (years 2-4), and both Spring and Fall quarter thereafter (years 5+). In second year, the Fall Quarter meeting will be the qualifying exam. Once the qualifying exam is passed, subsequent meetings are 'regular' committee meetings. See Appendix I for notes on scheduling your committee meetings. Failure to meet meeting deadlines constitutes unsatisfactory degree progress and may result in the withholding of funding to the student.

Apart from the Qualifying Exam, before all other regular committee meetings students are required to submit a shorter written progress report (~3 page, double-spaced, not including figures or references, Arial 11-point font) to their committee at least seven days before each meeting. This progress report should consist of the following:

1. Describe the broad significance of your research project.
2. Describe the gap in knowledge that hinders our understanding of your research topic.
3. State your hypothesis (or goal, if not hypothesis driven) that will fill the previously stated gap in knowledge.
4. State your specific aims that will directly address your stated hypothesis (or goal, if not hypothesis driven).
5. Describe your progress towards your research goals in the past year.
6. Describe your research goals for the upcoming year.
7. Describe your use of rigorous and reproducible methods, such as:
    a. Authentication of key reagents and methods
    b. Thorough and transparent data collection and documentation
    c. Statistical considerations (sample size, significance tests, power calculations, error propagation, outliers, replicates, etc)

● 2nd Year: due by November 15 (this is the qualification exam, which will count as the 2nd year committee meeting). Conditional passes or failed qualification exams must be re-taken or resolved within six months, by May 15th.
● 3rd Year: due by November 15
● 4th Year and beyond: due by November 15
● The 4th year committee meeting written progress report should describe the following:
    ● Progress towards goals
    ● A timeline to graduation consistent with Department expectations.
    ● A timeline towards publication(s)
● The meeting must also include a formal slide presentation and timeline to degree completion with specific milestones outlined.
● Career planning should be discussed at this meeting and can be included in the written progress report.
● 5th Year and 6th Year: due by November 15 and May 15

Beginning in the Fall Quarter of the 5th year students will need to have committee meetings twice a year, every 6 months until degree completion. These meetings should include an updated progress report of work done and the timeline of experiments to finalize degree completion, which must occur no later than the winter quarter of 6th year (5.5 years total in the Ph.D. program).

The CMOB PhD thesis

Publications, the Written Dissertation, and self-plagiarism: Students are expected to publish primary research papers; students also publish their PhD theses. A version of the same work can be found in both, typically with materials from a published paper often making their way into the final thesis document. It is important when preparing the written dissertations to avoid accidental "self-plagiarism". The official Stanford Dissertation Checklist (https://studentservices.stanford.edu/my-academics/earn-my-degree/graduate-degree-progress/dissertations-and-theses/submit-your/checklist) makes the key point:

[students must obtain] Written permission from the appropriate copyright holder(s) to reproduce any copyrighted material in the dissertation or thesis. Each letter is formatted and uploaded as a single PDF file. Maximum 10 permission files.

If/when a student includes a published manuscript (more or less unmodified) in the final PhD thesis document, the appropriate permission from the journal where the work was published

should be obtained and included in the written thesis. Note that it can sometimes take time to obtain these journal permissions.

What about a ‘published’ PhD thesis that is now going to be turned into a manuscript for a journal? The assumption here is that the thesis will be modified before publication as a journal article, and therefore differ to some extent. However, some figures or text passages could be identical, and current guidance suggests that a best practice is to cite the published thesis document in the written manuscript or to acknowledge the duplications in the acknowledgement section (e.g., "Portions of this work were originally part of the lead author's PhD dissertation"). The situation could also be discussed with the journal editor prior to publication to manage any issues.

Defining contributions: Cellular, molecular and organismal biology research is increasingly collaborative. It is often the case these days that a student will contribute to the research of someone else (in the home lab or another lab) in different ways and to different degrees. As noted above in the general guidelines, it is entirely appropriate for all research contributions to be included somewhere in the final written thesis document. However, care must be taken not to include written materials that were not produced by the PhD candidate themselves; all written materials in the PhD thesis should be *substantially the product of the candidate alone or the work of the candidate in close collaboration with the research advisor*. For example, it is appropriate to directly include first author (or co-first author) papers essentially unmodified in the final thesis document, along with an appropriate description of the work performed specifically by the candidate (e.g., in the case of joint publications). On the other hand, if for example a PhD candidate contributes a panel of data to a paper from another person or lab, but otherwise does not contribute to the writing process, it would not be appropriate to include the resulting manuscript in unmodified form in the thesis, even with the appropriate acknowledgements. The chances for misunderstandings in the literature in this situation is high (e.g., a research paper and a thesis will be published, and the text would be the same, but the authors would be different). Instead, the student, if they wish to include one or more experiments of this nature, should add these to a separate chapter or Appendix of the thesis, with a unique description of the hypothesis, experimental methods, results and conclusions that is written by the PhD candidate.

ECO/EVO Track-Specific Requirement

In this section requirements and advice specific to the Eco-Evo track will be discussed. This section should be read by all Eco/Evo students. Requirements that are specific for the CMOB track are discussed separately.

Milestones & Deadlines

Below are milestones that must be completed to adhere to University and Departmental policy and ensure enrollment and degree progress. All forms must be emailed to the Student Services Office. Years outlined below are academic years and span the fall of one calendar year to the summer of the following calendar year. For example, the 23/24 academic year starts in September 2023 and ends in August 2024.

Every year	**Due Date**
TA Pre-Course Meeting Form	Within two weeks of starting TA
TA Evaluation form	End of each TA quarter
IDP Meeting	August 1

First Year	Due Date
First Year Committee Meeting form	First two weeks of Fall quarter
BFF Meeting form	First two weeks of each quarter
Lab Rotation Evaluation form*	End of each rotation
NSF Application**	mid-October
Advisor/Lab Decision	June 1st
Seminar Talk/Evaluation form	June 1st
First Year Paper Form and paper	June 1st
First Year Planning/Evaluation form	June 1st

*Required if student is rotating
**Required for eligible students in their first year, or second year with permission of DGS. The precise deadlines change each year.

Second Year	Due Date
Dissertation Proposal paper	Two weeks prior to the Dissertation Proposal Exam
Dissertation Proposal Exam (aka “Quals”) and Dis. Prop. Form	June 1
Application for Candidacy form	By end of Summer Quarter
Dissertation Reading Committee form	With Candidacy form
Non-AC Committee Member Form	With Candidacy form (if applicable)

Third Year	Due Date
Third Year Committee Meeting and form	May 15

Fourth Year	Due Date
Request for TGR Status form	135 units and all requirements met
Fourth Year Committee Meeting and form	May 15

Fifth & Sixth Year	Due Date
Fifth Year Committee Meeting and form	Nov 15 & May 15
Sixth Year Committee Meeting and form	November 15 & May 15
Graduation Extension Petition	If applicable

Thesis Defense	Due Date
Draft of Dissertation	14 days before oral defense
University Oral Exam Schedule form	14 days before defense
Preparing and submitting dissertation	Check due dates per quarter

Before Arriving at Stanford

Handbook distribution and lab match making

In the summer before arriving at Stanford, new Ph.D. students will be sent a copy of the Academic Policies document that will apply for the duration of their time in the Ph.D. program.

First Year Advising

First year academic advising

During Fall, Winter, and Spring quarter all students will meet with the co-DGS or another member of the faculty to discuss lab rotations, coursework, TAing, and adjustment to Stanford. Meetings will be scheduled by the Biology student services office.

Eco/Evo First-Year Advising Committee
Eco/Evo students meet during the week immediately before the start of Fall Quarter, or during the first week of Fall Quarter, with an advising committee consisting of three faculty members. Student Services and the Eco/Evo faculty work together to assemble a committee close to the student's scientific interest; the initial meeting will be scheduled by Student Services. For students who are likely to directly enter the PhD lab, the likely PhD Advisor will recruit two other faculty for the First Year Advising Committee prior to the start of the Fall Quarter. For students who expect to perform rotations, the First Year Advising Committee will likely consist of faculty with whom the student had close interactions during the admissions process.

The purpose of this committee is to advise the student on their academic activities during the first year. The committee will discuss several topics with the student: recommendations for courses to take during the first year, plans for teaching assistantships, fellowship applications, general research areas of interest, and rotation plans (if applicable). The student can call on members of this committee throughout the first year to request further guidance on these topics as the year progresses.

For NSF-eligible students, the student will also discuss with the First Year Advising Committee whether to apply for the NSF fellowship in the first year or in the second year.

For Eco/Evo students, the First Year Advising Committee provides the main academic advising during the first year (with supplementation by the BFF, who is sometimes also a member of the First Year Advising Committee).

Students also meet with the First Year Advising Committee at the end of the first year to discuss the first year's progress and to complete the First Year Evaluation Form. A good time for scheduling this end-of-year meeting is immediately after the First Year Seminar.

PhD Course requirements

Courses

It is a University requirement that students must complete at least four courses of three or more units with at least four separate faculty members. The four courses must be completed by the end of Spring Quarter of the second year.

Mandatory courses:

- BIO 302, 303, 304: Current Topics and Concepts in Population Biology, Ecology and Evolution – students must enroll in Fall, Winter and Spring quarters of 1st year
- Ethics Requirement: Bio 313 (strongly recommended) or Med 255 – recommended in the first year, and must be completed by the end of the second year.

Two additional courses are to be decided upon by the student and their first-year advising committee or faculty mentor. These courses may be "mini courses" in the Biosciences (BIOS). These courses should be in relevant areas that enhance a student's knowledge-base or skills, including relevant classes in the Biology Department or other departments within the School of

Medicine or the School of Sustainability (e.g., Earth System Science), as well as classes in Statistics, Computer Science or other quantitative sciences. We encourage the student to consider carefully how to use these classes to fill gaps in their training background or to prepare for their planned research focus.

Note that the Bio 302-303-304 course counts as one of the four courses. Enrolling in units for TA service can potentially count as one of the four courses subject to approval by the thesis advisor.

Descriptions of available courses can be accessed through http://explorecourses.stanford.edu/.

Many students continue to take or audit classes beyond these minimal requirements, often into later years of their degree. This can be a great way to gain relevant skills, for example in statistics or computer science; you should always discuss these plans with your PI in advance.

You may also wish to consider the following wellness course, offered from time-to-time. BIO 315: Skills to Survive and Thrive in Graduate School and Beyond. This course does not count towards the requirements described above.

Lab Rotations

EcoEvo students may choose to perform rotations. They may rotate with and select as a PI any faculty member with a primary appointment in one of the Biosciences Home Programs. Ordinarily rotations take place during a single quarter.

Due to potentially limited lab space, students are strongly encouraged to arrange their first rotation prior to arriving on campus in Fall Quarter. Signed Lab Rotation Evaluation forms are due at the conclusion of each rotation.

Selection of Thesis Advisor/Lab

Each first-year student is required to join a lab in which to perform dissertation research. This decision can be made as early as the conclusion of the first quarter but should occur in all cases no later than end of spring quarter.

Biology PhD students are encouraged to join a lab in the Biology Department. However, they are permitted to select as a PI any faculty member with a primary appointment in one of the Biosciences Home Programs. The faculty member in charge of the lab must agree to accept the student, becoming the student's primary research advisor. The student and lab advisor must fill out the First Year Evaluation Form together and email it to Student Services and cc the advisor and the Director of Graduate Studies to indicate their lab decision. If the student cannot decide by the end of Spring quarter, they must inform the Student Services Office and meet with the DGS to discuss and resolve this issue.

Pre-Doctoral NSF Fellowship Applications

All eligible first year Ph.D. students are required to apply for a National Science Foundation Graduate Research Fellowship (NSF-GRFP). Students must forward to Student Services a copy of the NSF confirmation email to confirm that they've applied. Typically, the application deadline is in late October/early November. Please see the NSF website for deadlines: https://www.fastlane.nsf.gov/grfp/Login.do.

Students may request a one-year deferment from submitting their NSF GRFP application to the DGS. Permission to defer must be accompanied by the expressed written consent of the faculty mentor working with the student on the proposal. Valid reasons for deferment include the need for additional preparation or substantial personal hardship. If a deferment is approved, an NSF GRFP application must be submitted the following year.

First year seminar

The First-Year Seminar requirement is fulfilled by presenting a talk of length 30-45 minutes. The student must arrange for at least two faculty members from the Department of Biology to attend the seminar and evaluate the presentation. In most cases, the two faculty members will be from the First Year Advising Committee. Evaluation will consist of a discussion with the two faculty immediately after the seminar. The Seminar Evaluation Form must be submitted to the Student Services Office no later than June 1 of the first year.

The First-Year Seminar is intended to be an opportunity for students to advance their research interests and to develop practice in scientific presentation. Students should pre-arrange the topic of the seminar with the Advisor or the rotation supervisor for the quarter in which the seminar takes place.

Typical topics of the First-Year Seminar include the following:

- A research project completed prior to arriving in the PhD program.
- An ongoing or completed research project undertaken since arriving in the PhD program.
- A literature review or scientific overview of an area relevant to the student's planned PhD research.

The First-Year Seminar can be presented in any of several venues, including a lab meeting of the student's lab (if the student has joined a lab), a lab meeting of a rotation advisor, a lab meeting of one of the First Year Advising Committee members, the Eco/Evo lunch, or a specially arranged talk.

The topic of the First-Year Seminar does not need to be the same as the topic of the First-Year Paper, but the topics are allowed to be the same.

Immediately after the First-Year Seminar is a good time to meet with the First Year Advising Committee to review the progress of the first year (if only two members of the committee attended the seminar, the student can meet with those two members, and consult with the remaining member of the First Year Advising Committee separately).

First Year Paper

Each student must prepare and submit a paper before the end of the first year that will be evaluated by at least two faculty members. The two faculty members will typically both be on the First Year Advising Committee. This paper needs to involve new writing undertaken since entering the Stanford program.

Depending on the nature of a student's research, different approaches to the First-Year Paper are appropriate. Acceptable examples include any of the following:

- Completion of a research paper on research undertaken prior to arriving in the PhD program
- A completed research paper on research undertaken in the first year.
- A draft of the completed portions of a research paper undertaken in the first year.
- A term paper from a course in a topic relevant to Eco/Evo.
- A review of the literature in an area relevant to the PhD research.
- Another form of scientific writing that the student and Advisor or rotation supervisor agree would meet the requirement.

The First-Year Paper is an opportunity to receive feedback from faculty on work in progress. Students should choose a topic on which it would be helpful for faculty to devote some attention. Hence, for example, a paper published prior to the student's arrival in the PhD program is not a suitable choice.

The First-Year paper should ordinarily be at least 10 and typically ~15 double-spaced well-referenced pages. It need not be work on a path to publication, but it should be written in a style typical of scientific papers.

The paper must be read by two faculty members. The First Year Paper Evaluation form and a copy of the first-year paper must be submitted to the Student Services Office no later than June 1 of the first year.

Second Year Dissertation Proposal (Qualifying Exam)

The qualifying exam consists of two parts: a written proposal and an oral exam. The proposal should be distributed to the committee at least 14 days in advance of the exam. The oral exam must take place by June 1 of the student's second year; students are encouraged to start the scheduling process around three months in advance of the target date.

The Eco/Evo faculty view the written dissertation proposal and exam (the "quals") as an opportunity for the student to present their research ideas to a set of faculty mentors with knowledge and expertise in the student's area of interest, and to get their feedback to improve the research plan and anticipate and avoid any pitfalls. The goal is to present the proposed research questions and approaches in enough detail that they can really understand what the student is doing and why, and to help the student identify where more work is needed, or methods need to be refined. As most faculty have found over the course of their careers, sometimes a little bit of thoughtful, constructive feedback can be just as valuable as approval and validation in bringing a student's science to the highest level possible, and faculty aim for quals to provide both. All share the goal of helping students to conduct the best research they can and to be successful in their PhDs and beyond; quals is intended to help achieve this.

Format: A typical written proposal is ~15 double-spaced referenced pages but the length is flexible and is not a strict requirement. A typical oral presentation is a 30-45 minute plan for your dissertation, covering completed work, work in progress, and planned work. The oral exam should be scheduled for 2 hours to allow sufficient time for questions, faculty discussion, and feedback to the student. Discussion will often be interspersed throughout

the presentation, so students should not expect to complete the entire presentation uninterrupted but should instead be prepared for discussion and questions within each section of the presentation. However, the Eco/Evo faculty vary in their precise expectations for the qualifying exam and **students should talk to their advisor and committee members about specific expectations.**

Committee makeup: The committee should include 3-4 members including the primary advisor. At least two members of the committee must be Eco/Evo faculty. Once a student successfully defends their dissertation proposal and is admitted to candidacy at the end of the second year, the Dissertation Proposal Committee typically becomes their Dissertation Reading and Oral Examination Committee. Please note the additional requirements for these later committees, as listed elsewhere in this document.

As you prepare for quals, please keep the following in mind:

1. Quals are a chance to present your research proposal to your committee, chapter by chapter, starting with an introduction that gives the motivation behind your proposed work. This is a formal presentation with slides that usually lasts around 30-45 min (though it often takes longer when interspersed with questions). Some faculty will ask questions throughout your presentation, while others will wait for breaks between your chapters to discuss each section. You can discuss expectations around the length of the presentation and whether questions will be asked throughout the presentation or just at the end ahead of time with your advisor and committee members. You can shape the discussion by letting your committee know what specific ideas you most want feedback on, and where you have specific questions for them.

2. Two to three months in advance of the quals you should contact the individual faculty (in addition to your Advisor) that you would like to have on your quals committee. You should inform these faculty of your research and invite them to join your Quals committee. The committee composition for the oral presentation need not be the same as the First Year Advising Committee; it must include at least two members of the main campus Eco/Evo faculty (including the Advisor).

3. Faculty may pose questions that challenge you to justify your proposed approaches, think through the ideas more deeply, and connect your work to previous work in the field. The aim of these questions is to help improve the quality of the proposed research, not to trip you up, embarrass you, or put you on the spot. It is okay to admit that you do not know the answer, or to ask your committee members for their opinions and feedback if you do not know how to address a question. It is also okay to take a minute to regroup and think through your answer before you respond. The goal is to generate an engaging discussion.

4. This is an opportunity for you to get a group of experienced scientists focused on your ideas and to pick their brains about how to improve the work. Viewing the quals through this lens can help to make the process seem less personal, evaluative, and judgmental.

5. Many faculty will follow up on quals by sending links to relevant papers or follow-up ideas, and this can create meaningful dialogue among you and the members of the committee.

6. At the end of the oral presentation, the committee will send the student out of the room and discuss the student's presentation and progress for a few minutes. The committee will call the student back and discuss conclusions with the student. The committee will then send the Advisor out of the room for a few minutes, and the student and the rest of the committee will discuss any concerns.

After the oral defense the advisor is responsible for writing the summary in the Dissertation Proposal form provided by the student, ensuring that all committee members agree and sign. The student is responsible for submitting the signed form to the Student Services Office.

If the student had trouble with a specific aspect of the exam (poor understanding of the background, failure to address fundamental flaws in research design, etc.), then the committee may give a "provisional pass" and the committee will require specific actions to be taken in the near term (e.g., to get writing or oral presentation assistance, to take additional coursework in relevant areas, etc.). In rare cases where there are major deficiencies, the student may be required to retake either or both parts of the exam; in this event they must pass the retake exam to remain in the program. However, as students, you should be reassured that it is very much our goal and expectation that you will pass quals successfully and that it will be a constructive process.

Eco/Evo Committee Meeting Guidelines Beyond the Second Year

Membership
Committees will typically include either three, four, or five faculty. The committee must include at least two of the core Eco/Evo faculty (main campus faculty in the Ecology & Evolution faculty group, not including faculty with courtesy appointments). One of these two can be the Ph.D. Advisor. Many students will proceed with a committee of three faculty until the Dissertation defense, at which time they will need to add a fourth committee member and an external chair. Students whose committee consists of three faculty should plan well ahead of the defense to identify a fourth member to serve on the committee at the time of the defense.

You should take note of the University requirements for the makeup of the Dissertation Reading Committee and Oral Defense, and plan ahead for whom you may add to your annual committee to form these final committees.

Scheduling
By the nature of their work, many Eco/Evo faculty have low availability during Summer Quarter, and it is extremely challenging to schedule committee meetings during the summer. **By informal agreement, no Ph.D. committee meetings of Eco/Evo students at any level take place during the Summer Quarter** (other than Dissertation Defenses if all committee members are available and agree to participate). Ensure that you arrange committee meetings far enough in advance that they can be completed during the Spring Quarter. Please note that faculty time for committee meetings is sometimes limited in May when first-year and second-year students are meeting their requirements; third-year and higher-year students are advised to attempt to schedule committee meetings in April or even as early as January, February, or March. In case of a scheduling challenge, while an in-person group meeting is strongly preferred, in exceptional circumstances, students will need to meet with a subset of the committee or with committee

members individually, or students will need to obtain permission from Student Services to postpone the meeting until Fall Quarter.

Format of the meeting
A typical meeting will focus on a student's current project, on topics on which the student is most interested in faculty feedback. The student will usually begin by reminding the committee of their collection of completed, ongoing, and planned projects, then proceed to spend most of the time on current topics in need of input. Many students choose to send an informal 1-2 page brief prior to the meeting updating committee members on their progress and status of each chapter (this is optional). After the discussion has ended, the committee will send the student out of the room and discuss the student's progress for a few minutes. The committee will call the student back and discuss the progress. The committee will then send the Advisor out of the room for a few minutes, and the student and the rest of the committee will discuss any concerns. Some committees may choose to send the Advisor out at the beginning rather than at the end, and some committees may send the student out at the beginning in addition to the end; students should not interpret these slight variations in procedure as reflecting negatively on their progress.

Committee Meeting Schedule
- 3rd Year: due by May 15
- 4th Year and beyond: due by May 15
  - The 4th year committee meeting written progress report should describe the following:
- Progress towards goals
- A timeline to graduation within 5.5 years
- A timeline towards publication(s)
- If applicable, a written petition for extending the time to graduate beyond 5.5 years with an explicit anticipated date for graduation; a petition could be for health, personal or scientific reasons.
- The meeting must also include a formal slide presentation and timeline to degree completion with specific milestones outlined.
- Career planning should begin at this meeting.
- 5th Year and 6th Year: due by November 15 and May 15

Beginning in the Fall Quarter of the 5th year students will need to have committee meetings twice a year, every 6 months until degree completion. These meetings should include an updated progress report of work done and the timeline of experiments to finalize degree completion, which must occur no later than the winter quarter of 6th year (5.5 years total in the Ph.D. program).

Appendix 1
Protocol for setting up a committee meeting.

Relative to your committee meeting day (CMD):

1. CMD minus 60 days (or earlier). Schedule your meeting using whatever online scheduling tool you prefer. Provide a narrow range (2 weeks maximum) of specific dates and times. Consult with your PI ahead of time to avoid potential conflicts in their schedule. You really cannot schedule future meetings too soon. PI schedules are hectic and fill up quickly. The earlier you

look to get *your* meeting on their calendar the easier it will be. Students are encouraged to schedule their next committee meeting 3 or even 4 months in advance.

2. CMD minus 7 days. Send your committee your written report. Per the Biology Handbook: “Students are required to submit a maximum three-page written progress report to their committee before each meeting. Follow instructions in the “Committee Meetings” section for details on the content of the report. The written progress report and signed Committee Meeting form must be submitted to the Student Services Office following the committee meeting”.

In years 3 and onward, when you send your current written report, you should also include a copy of your report from the previous meeting. This helps the committee assess how your project and your thinking may be evolving over time (almost every project evolves – this is totally fine).

These written reports are not meant as busy-work – they are essential to get the most out of your meeting by having a committee that is as up to date as possible on your situation before the meeting starts. It saves you time by allowing for the meeting to focus on matters that you feel are important versus committee members asking for reminders about your project or what year you are in, etc.

There are four important benefits of the written report: (i) preparing regular written summaries, over time, results in a file of materials that can be cycled back and forth between manuscripts, grant applications, your eventual thesis, etc; (ii) the written report is an opportunity to impress your committee with your professionalism and organizational skills; (iii) forcing yourself to write out logical and defensible hypotheses and results is a great stimulus to productive scientific thinking. The common experience writing paper(s) and your thesis is that this process stimulates very useful thoughts about important experiments and controls. In this way, writing out your report is a great way to help accelerate your own thinking and progress, quite apart from the meeting itself; (iv) the written report and the way the first part of your meeting is handled (see below) will over time help generate that inevitable momentum that carries you over the graduation finish line.

3. CMD minus 1 day. Send a reminder email with the date, time, place, and type of meeting you are holding (e.g., in person or online).

4. CMD. Guidance for your meeting and presentation.

At the start of the meeting, present one slide with a reminder/update containing key pieces of administrative information: what lab are you in, what year are you in (i.e., in the program, in your current lab), what is the status of your course and TA requirements, conferences attended, papers you have submitted/published, what service you have performed, when approximately you are aiming to graduate. This should only take 2-3 minutes to review. All this program/academic information will be crucial for your committee to understand the context of your ongoing science. Remember: your committee members might only see you once a year or once every six months, so they will not remember all the details of your situation. Help them out. Also, showing academic progress meeting-to-meeting is another way to create positive momentum towards your degree completion (e.g., from having two classes left to take, to having all class work finished; from having no publications to contributing to one or more papers, etc).

After having presented this slide, you should leave the room so your committee and your PI can have a brief (< 5 min) private discussion of your progress. If you are meeting on Zoom, make

sure you have set up a way to leave the meeting temporarily and come back. Once you return, the full remainder of the meeting will proceed.

How the rest of the meeting proceeds is up to you. But keep in mind that year-to-year your goals may shift from: (i) showing mostly what you plan to do, to (ii) showing mostly what you are working on and what is/is not working, to (iii) showing mostly how you intend to wrap things up. As you move along in the program, remember that you will not have time to present everything you have done. This is another reason the submitted written report and the first administrative slide are very helpful: you can describe in those places things you have accomplished that are finished (e.g., published papers) so that you don't have to walk through all those data and instead talk about your most recent stuff and future plans/timeline.