**Biology Department Chair**  
Dr. Susan Fahrbach

**Biology Graduate Committee:**  
Dr. Sarah McDonald Esstman, Graduate Program Director  
Dr. Michael Anderson  
Dr. James Pease  
Dr. Sheri Floge  
Dr. Josh Currie  
Graduate Student Representative (TBN)

**URLs**

Graduate School – Current Graduate Student Resources  
http://internal.graduate.wfu.edu/students/

Graduate School Bulletin – Graduate School:  
http://internal.graduate.wfu.edu/bulletin.html

Graduate Student Handbook – Graduate School:  
http://internal.graduate.wfu.edu/docs/academics/GradStudentHandbook.pdf

Graduate Student Grievance Procedures  
http://internal.graduate.wfu.edu/docs/academics/GradStudentHandbook.pdf

Graduate Student Association  
http://www.gsa.graduate.wfu.edu/

Graduate School Thesis and Dissertation Instructions  
http://internal.graduate.wfu.edu/students/graduationrequirements.html

Graduate School Mentoring Relationship Between Graduate Students and Advisors Statement  
http://internal.graduate.wfu.edu/students/documents/MentoringPhilosophy_statement0809.pdf

WFU Biology Department  
http://college.wfu.edu/biology/

Graduate Student Handbook – WFU Biology Department  
http://college.wfu.edu/biology/graduate/graduate-handbook/
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Welcome to the Graduate Program in Biology at Wake Forest University. It is our sincere hope that together we can make your experiences in the department personally rewarding and provide an atmosphere conducive to your continued growth as professional biologists. To help you understand how these programs function, and to serve as a useful reference for deadlines and requirements, we have prepared this document describing the essential features of our M.S. and Ph.D. programs. Other documents that contain important information are the Graduate School Bulletin, the Graduate School’s Graduate Student Handbook, and Dissertation and Thesis Instructions. Links to these documents and other important resources can be found on page 2 of this Handbook.

**NOTE:** Biology Graduate Students are bound to the deadlines and requirements set out in the Graduate School Bulletin for their year of entry and to those in the Department of Biology’s Graduate Student Handbook for their year of entry. In case of conflict, deadlines given in the Graduate School Bulletin and website supersede those given in this Handbook.

### A. The Graduate Committee

The Graduate Committee is a departmental committee consisting of the Chair of the Committee (i.e., Graduate Program Director), three to four other faculty members, a graduate student member, and the Chair of the Department of Biology (ex-officio). It is the responsibility of the Committee to evaluate all applications for admission to the graduate program, make recommendations for financial aid to the Dean of the Graduate School, and monitor the progress of graduate students. In addition, this Committee is responsible for making recommendations concerning continuing improvement in the graduate programs. To this end, the Committee actively solicits suggestions from students and staff. Any student should also feel free to consult the Committee or its Chair for assistance in dealing with any problems that cannot be resolved through other means.

### B. General Graduate Program Requirements and Features

Requirements by the University for the M.S. and Ph.D. are described in the Graduate School Bulletin. Included are minimum requirements for course work, residency in the program, admission to degree candidacy, etc. It is the student’s responsibility to make sure that all requirements in both the Graduate School Bulletin and the Department of Biology Graduate Student Handbook are met.

**1. Graduate Advisor**

The Graduate Advisor (hereafter referred to as the Advisor) is a member of the graduate faculty and is the primary mentor who guides the student’s research. During the process of choosing an Advisor, students should familiarize themselves with the research interests and philosophies of the various faculty members. The faculty member must indicate their willingness to assume the role of Advisor by sending an email stating such to the student with a copy to the Graduate Program Director; the arrangement is subject to the approval of the Chair of the Department of Biology.

*Timeline for selecting the Graduate Advisor*

- Most students enter the graduate program already knowing which lab they will enter and, therefore, they have an assigned Advisor.
b. Some Ph.D. students may wish to do a short rotation through 2-3 labs before selecting an Advisor. All rotations should ideally take place during the first semester of graduate study. In this case, students are asked to choose an Advisor within 2 weeks of completion of their rotations. This rotation and Advisor selection process will be coordinated by the Graduate Program Director.

A student may subsequently switch Advisors if unusual circumstances warrant such a change. A link to the University’s Statement of Philosophy of the Mentoring Relationship between Graduate Students and Advisors can be found on page 2. Both graduate students and mentors are strongly encouraged to read it before making a formal commitment to each other.

2. Graduate Advisory Committee

Committee members should be chosen by the student in consultation with their Advisor, and will consist of the following individuals:

**M.S. Advisory Committee**
- Graduate Advisor
- 1 Biology Faculty Member
- 1 Biology or other WFU Faculty Member*
  - Minimum total: 3 faculty members
  - *Must be a member of the Graduate Faculty

**Ph.D. Advisory Committee**
- Graduate Advisor
- 3 Biology Faculty Members
- 1 Faculty Member not in WFU Biology (i.e., External Member)*
  - Minimum Total: 5 faculty members
  - *Must be a member of the Graduate Faculty; May be a non-WFU Faculty Member

Once constituted, the Advisory Committee assumes the responsibility for overseeing the successful completion of the degree program. The entire committee, in consultation with the student, will be responsible for advising the student in the completion of his/her degree program. These responsibilities include setting requirements for specific course work; critically evaluating the research prospectus; drafting, administering, and evaluating the Qualifying Examination (for Ph.D. only); providing regular review of the student’s progress toward the completion of the degree; and providing editorial input to the drafting of the student’s thesis or dissertation.

The student should freely and regularly consult members of their Advisory Committee for advice and assistance in research and other appropriate aspects of the student’s degree program. To ensure that the Advisory Committee is kept well informed of the student’s progress toward the completion of his/her degree program, the Advisory Committee should be convened regularly, usually once per semester.

3. Graduate Examination Committee

As indicated in the Graduate School Bulletin, the Advisory Committee and the Examination Committee are independently appointed. However, in the vast majority of cases, the Advisory
Committee members will be appointed as the Examination Committee. It is important that the Examination Committee be members of the WFU Graduate Faculty (see below); can be Reynolda campus faculty in another department, WFU School of Medicine faculty, or faculty from a different institution. If from a different institution, the Advisor must send a letter to the Dean of the Graduate School (Reynolda campus) requesting the external member’s temporary appointment to the WFU Graduate Faculty. **Note for Ph.D. students, that the External Member is Chair of the Examination Committee. For M.S. students, a committee member besides the Advisor serves as Chair of the Examination Committee.**

4. **WFU Graduate Faculty Status**
   
   All members of the M.S. and Ph.D. Examination Committees must be members of the WFU Graduate Faculty. Most WFU faculty members in the relevant departments are members of the Graduate Faculty. Non-graduate faculty WFU Faculty members and faculty members from outside of Wake Forest can be granted Temporary Graduate Faculty Status.

   To obtain Graduate Faculty Status for a non-WFU faculty member, send the committee member’s CV to the Biology Graduate Program Director along with a written justification as to the importance this committee member to the student’s academic progress. These items will be forwarded to the Dean of the Graduate School who will grant Temporary Graduate Faculty status.

5. **Minimum GPA Required to Maintain Financial Support**

   Students are required to maintain a GPA of at least 3.0 (B average). Students who earn a grade below “B” in their first semester must meet with the Graduate Committee for counseling. Beginning with the grade report at the end of their second semester, students whose GPA falls below 3.0 will be placed on academic probation for a one-semester period in which the GPA must be brought back up to 3.0 or higher. Failure to do so will result in dismissal from the Graduate School.

6. **Participation in the Departmental Seminar Programs**

   There are two arms of the seminar program in the Department of Biology: (1) Monday Biology seminars – these bring high-profile scientists from outside the University to share their research. **Attendance by graduate students is required;** (2) Other special seminars – these may be internal speakers (such as graduate students presenting their thesis/dissertation research) or external guests. Attendance at these seminars is strongly encouraged, but not required. A schedule of seminars for the upcoming semester is sent via email at the beginning of the term. Graduate students are encouraged to suggest potential seminar speakers for future semesters. See the Chair of the Seminar Committee for details.
7. The First-Year Prospectus

For graduate students in the WFU Department of Biology, a prospectus is a formal document that describes the plan for the research, including an appropriate review of the current literature, distributed to the student’s advisory committee. Before the end of the second semester, a brief Prospectus (4-5 pages) is required to be submitted to, and approved by, the Advisory Committee. This document should focus on the questions to be examined during the student’s dissertation/thesis work and the background/significance of the proposed research. However, it should provide sufficient details about the experimental design/methods to allow the committee to evaluate the scope and quality of the project. The Advisory Committee can recommend an extension to the third semester, subject to approval by the Graduate Committee, at least one month before the end of the second semester.

8. Teaching and Teacher Training

All students that will be teaching (M.S. students supported by a TA and all Ph.D. students) must complete the WFU Graduate School and the Biology department TA training when they arrive on campus and/or before entering the classroom. The standard workload for a TA is an average of 15-20 hours per week during the academic year. This translates to two core lab sections (~16 students each) in a semester.

Ph.D. students are required to have two semesters of teaching experience as part of their degree, generally as a teaching assistant in one of the core laboratories in the WFU Department of Biology. To fulfill the Ph.D. teaching requirement, students must be enrolled as Ph.D. students. Teaching as a Master’s degree student does not satisfy the Ph.D. requirement (an exception is made for students who switch degree programs from the M.S. to the Ph.D.; see section C.2., below). The Graduate Committee might waive the teaching requirement in exceptional circumstances.

If the student wishes to use a different teaching experience to fulfill the requirement, they must obtain prior approval of their advisory committee and of the Graduate Committee. Adequate documentation must be provided prior to the beginning of teaching to the Advisory Committee and the Graduate Committee (a syllabus, a letter from the professor running the class detailing the duties of the TA, etc.).

A student’s Advisory Committee can request that a student teach a specific class in the Wake Department of Biology, consistent with furthering the student’s career. These requests can be made of the Core Coordinator, although there are no guarantees of specific placements.

Teaching Assistants – Professional Expectations

As a Teaching Assistant (TA) employed by the Department of Biology, you are part of the Teacher-Scholar mission and tradition at Wake Forest University. The Department of Biology expects all Teacher-Scholars (faculty, staff, and graduate students) to carry out their duties to the highest professional standard. This expectation of excellence includes not just your time in the teaching lab or classroom, but also preparing to teach, evaluating student work, and interacting with students, faculty, and staff members.

The following are the general expectations of the Department of Biology for Teaching Assistants. The Department of Biology also expects you to follow all instructions from the Core Labs staff regarding your specific teaching responsibilities.

Guide to Biology M.S. and Ph.D. Programs, 2021-2022
1. Teaching Assistants are expected to prepare for and participate fully and professionally in all official training sessions and weekly meetings with the Lab Coordinators. This includes being conspicuously present and participatory at digital meetings.

2. Teaching Assistants are expected to follow the lab protocol as set by the Lab Coordinators, and not to deviate from the protocol, bypass steps, shorten the time, or change the scope of the experiment.

3. Teaching Assistants are expected to make every effort to avoid time conflicts with their assigned teaching times and notify the Lab Coordinators if they have an unavoidable conflict to obtain a substitute.

4. Teaching Assistants are expected to score assignments and enter grades into the grade book system in a timely manner by the deadlines set by the Lab Coordinators.

5. Teaching Assistants are expected to mark and score assignments accurately and with due consideration. Manufacturing grades or negligent grading practices are a serious breach of your teaching responsibilities and the WFU Honor Code.

6. Teaching Assistants are expected to be prompt in responding to communications from their students and the Lab Coordinators. Please try to respond to all student correspondence within 36 hours. Teaching Assistants are expected to notify their students and Lab Coordinators if they will be absent (for conference travel, etc.) and work with the Lab Coordinators to designate a substitute contact for questions.

**Evaluation**

The Lab Coordinators will provide feedback about a TA’s performance to both the Departmental Graduate Committee and their individual Advisory Committee. This information will also be noted on the student’s degree progress sheet. The Core Coordinator’s assessment will be based on data obtained from undergraduate students, from other TAs, and from faculty, and may include direct classroom observations, end-of-course student evaluations, the graduate student’s behavior during lab prep meetings, and other sources.

**Process when Expectations are not Met**

In practice, if a Teaching Assistant does not meet these standards, the Lab Coordinators will typically first work individually with the TA to address the issue. TAs are expected to promptly correct any issues identified by the Lab Coordinators or faculty mentors.

If expectations continue to not be met, then the Graduate Program Director and the student’s faculty advisor will be notified of the issue, and the student may be asked to meet with the Graduate Committee. The Graduate Committee may also place the student on teaching probation.

If a student on probation continues to not meet expectations, or in the case of a serious breach of professional ethics, the Teaching Assistantship and the associated stipend will be revoked by the Graduate Committee. As stated in the Letters of Award and Letters of Continuing Aid, the University reserves the right to withdraw awards for unsatisfactory academic work, or for unsatisfactory performance of your assigned duties. Support will be discontinued if you leave, graduate, or fail to meet academic or work standards.

**9. Responsible Conduct of Research Requirements**

The National Institutes of Health and National Science Foundation have established formal
requirements for Responsible Conduct of Research (RCR) training and certification. Graduate students who are not certified or in the process of completing it cannot be supported as Research Assistants (RAs) and cannot work on any project supported with federal funds. More details will be provided during departmental Orientation regarding RCR training, as the requirements for certification change often. Master’s students who are coming back for the Ph.D. are NOT exempt from RCR certification; they must enroll in the appropriate courses.

10. Laboratory Safety Training
The WFU Office of Environmental Health and Safety conducts annual safety training each August at the start of the Fall semester. This is a required meeting for ALL graduate students (RAs, TAs, GAs, and scholars/fellows) and post-docs. Further details will be provided during Orientation.

11. Funding Opportunities
The Biology Department allocates funds for research each academic year to the Graduate Advisor for each graduate student. These funds are available for research costs (e.g., consumable laboratory supplies, chemical reagents, small equipment etc.). Consult with your Graduate Advisor about these funds. These funds are not for travel, or for any item that benefits solely the student and not the overall research mission of the lab. To request these funds, please email the Chair of Biology (and copy Cindy Davis). Note that any equipment purchased using these funds is the property of the Department, not the property of the student.

Other funding sources are available to biology graduate students (listed below). All awards are subject to taxes. Guidance is available online from the IRS: https://www.irs.gov/taxtopics/tc421.html.

- **The Elton C. Cocke Travel Fund** is an endowed fund maintained by the Department to help defray student costs for traveling to regional, national, or international meetings to present a paper or poster. Funding requests go to the Director of the Graduate Program in Biology in the form of a letter (email is acceptable). The following information must be supplied with the request: 1) Date, location, and name of meetings; 2) Title of poster or paper student will present; and 3) Budget. The Budget must include estimated travel costs, hotel costs, registration fees, and any other pertinent information. Awards are made as a lump sum that is deposited directly into the student’s bank account. Awards from this fund are subject to taxes. Most awards are partial, and students are advised to seek other sources of funding in addition to the Cocke Award (such as the Graduate School Alumni Travel Fund). Students may only receive one Cocke Award per fiscal year (the fiscal year runs from July 1 through June 30). Please note that endowment income varies from year-to-year, and that you should apply for funds as soon as you have submitted your abstract.

- **Vecellio Grants for Graduate Research** is to support graduate training in biology by (1) providing competitive research grants of up to $1000, and (2) supporting participation in conferences and workshops. Vecellio Grants are competitive awards designed to reward graduate students making outstanding progress in their degree program and to recognize ability to write an effective proposal. Successful proposals will demonstrate merit clearly (importance of the project to science, project feasibility). The Vecellio Fund supports lab supplies and instruments; travel to and from study sites; fees at research stations and labs; registration and/or travel to workshops and to locations of research collaborators, and registration and/or travel to present at conferences in the USA (up to $300) or outside the USA.
Requests for stipends, tuition expenses, or funds for standard equipment and supplies (normally available in an institutional research laboratory) will not be awarded. Awards are subject to any restrictions related to the pandemic. Requests for funds to present at a conference should have a parallel request to the Cocke fund; the two funds may support the need jointly. The amount requested from the Cocke fund should be a line in the proposal’s budget. Proposals to attend a conference should describe what amount that any existing grant (for example, to the PI) could supply if the Vecellio request were not awarded. Proposals to attend a conference, but not make a formal presentation there, will not be awarded. Registration fees for remote attendance and presentation at a conference is fine. Proposals should be written to a professional standard. Poorly written proposals will not be considered.

- **The Grady Britt Fund** is maintained by the Department to assist students in the area of parasitology (symbiosis). Funds may be used for a student’s research project, for travel associated with a student’s project, or for travel to scientific meetings. Students in parasitology or a related discipline must submit a request to the Department Chair (email is fine). Awards from this fund are subject to taxes.

### 12. Biology Graduate Student Information Form

One or more times annually the Graduate Program director will request all graduate students submit an updated electronic Biology Graduate Student Information Form. Please fill out this form in a timely manner. The information is crucial in assessing the Biology department’s training of graduate students. The information is also necessary to supply to the Graduate School and accreditation organizations. A link will be sent to all graduate students at the appropriate time.

### 13. Electronic Graduate Student Progress Forms

To ensure that all graduate students are making consistent and timely progress toward their degrees, the Graduate Committee and Department Chair review yearly accomplishments, teaching, and Advisory Committee evaluations. Students update their information using the department’s online information system (i.e., the Google Sheet Graduate Progress Forms), and committee members submit anonymous assessments. It is essential that information is kept current to ensure accurate evaluation. It is our expectation that in the vast majority of cases, evaluation will show adequate progress. However, if there is a problem, this system allows for early intervention and correction. The information is also necessary to supply to the Graduate School and accreditation organizations. Each student and their committee members will receive a link this form in their first semester.

### C. Switching Advisors, Switching Degree Programs, and Additional TA Support

#### 1. Switching Advisors

A student may switch Advisors if circumstances warrant such a change and all parties are in agreement. If you have questions or concerns, consult the Graduate Program Director. A student who switches advisors does not receive any additional departmental support, but may request an extension of certain departmental deadlines. It is the responsibility of the Graduate Committee to evaluate such requests on a case-by-case basis.
2. Switching Degree Programs

A current M.S. student in Biology may wish to switch to the Ph.D. program (without completing the M.S. degree). The request for change in degree program must be discussed with the student’s Advisory Committee and subsequently sent, in writing, to the Graduate Committee for review, evaluation, and possible approval. The following documents must be furnished to the Graduate Committee for consideration:

1. A letter from the student containing the formal request for the switch in degree programs, including justification for the change;
2. The student’s current CV;
3. A statement of research, teaching, and academic accomplishments that augments the original application to the Wake Forest Biology graduate program;
4. A letter of support, signed by the student’s advisor and thesis committee, addressing academic progress while at Wake Forest.

Such requests must be made by the December priority deadline for new student applications, because switching programs affects the awarding of TAs and scholarships. Requests to switch programs will be considered along with new applications. Requests submitted after the deadline will not be considered until the next year. If approved, the total number of semesters of departmental support the student is entitled to is the same as if the student entered the program as a Ph.D. student (10 total semesters).

3. Additional TA Support

It is expected that M.S. and Ph.D. students will complete their degrees during the time they are supported by the Graduate School (currently four semesters for the M.S. and 10 semesters for the Ph.D.) with or without additional support (RA) from their advisers. It is rare that a student is awarded additional TA support beyond the 4/10 semesters.

Requests for additional TA support are due by the priority application deadlines for the following semester (consult the Graduate School website for these deadlines). These requests will be considered along with new applications. Requests for additional support should include letters of support from the advisor and from the advisory committee. Requests should indicate why additional support is needed and include a clear timetable for finishing the degree. Requests made after the deadlines may not be considered.

D. M.S. Degree Program: Additional Requirements

1. Course work

As a part of their degree program, M.S. students will complete a minimum of 24 hours of coursework. This includes a minimum of 12 hours at the 700 level, with the remainder at the 600 or 700 level. Choices of coursework should be made in consultation with the Graduate Advisor and the Advisory Committee.

2. Departmental Seminar

Each M.S. student will present at least one departmental seminar. This seminar normally covers the thesis research prior to the thesis defense and is given in the Spring semester of the second year.
Students must consult with their Advisory Committee and the Graduate Director at the beginning of the semester to schedule their seminar.

3. M.S. Degree Candidacy

M.S. Students may petition the graduate school for candidacy to the M.S. degree when (1) coursework is within one semester of completion, and (2) the First-Year Prospectus has been approved by the Advisory Committee. Application to Candidacy forms may be obtained from the Graduate School’s web page link, Current Students.

4. Thesis Preparation and Final Examination

M.S. students must write and successfully defend a thesis. Guidelines for preparation of this document are available from the Graduate School. Prior to the oral examination and defense of the thesis, students must allow at least five working days for the review of the completed thesis by members of their Examination Committee. Examination Committee members must also be given sufficient time for review of preliminary drafts of a thesis.

5. M.S. Final Examination

For the M.S., the thesis defense constitutes the final examination. The Examination Committee is appointed by the Dean of the Graduate School (see the Graduate Bulletin). In practice, however, the Advisory Committee is usually appointed to be the Examination Committee (see page 5). Master’s candidates must notify the Biology Department Faculty of their final examination date at least two weeks prior to the exam. Notice must include the title, time, and location of the seminar.

E. Ph.D. Degree Program: Additional Requirements

1. Coursework

There is no minimum requirement for coursework for Ph.D. students. However, appropriate academic coursework is strongly recommended to develop your scholarship. Courses will be determined in consultation with the Advisory Committee as part of your regular meetings.

2. Seminars

Each Ph.D. student must give at least two seminars during their tenure. One must be the public presentation of their dissertation work on the Wake Forest campus in advance of the dissertation defense. The other may be a second presentation to the department or the presentation of research work in oral form at a national, international, or regional meeting. Talks given to lab groups, informal research groups, and in graduate courses do not fulfill this requirement.

3. Teaching Requirement for the Ph.D.

Ph.D. students are required to have two semesters of teaching experience as part of their degree, generally as a teaching assistant in one of the core laboratories in the WFU Department of Biology. To fulfill the Ph.D. teaching requirement, students must be enrolled as Ph.D. students. Teaching as a WFU Biology Master’s degree student does not satisfy the teaching requirement for the Ph.D. (an exception...
is made for students who switch degree programs from the M.S. to the Ph.D.; see section C.2.)

The standard work load for a TA should average 15-20 hours per week during the academic semester. This translates to teaching 2 sections (~16 students each) of core laboratory courses each semester.

4. Ph.D. Qualifying Exams and Advancement to Candidacy

Advancing to the status of Ph.D. Candidate is done in two steps:

1. The qualifying exams, which consist of both written and oral parts. Qualifying exams are normally taken before the start of the third year. Students who are unable to take their examination by this deadline should notify the Graduate Program Director and indicate the reasons for the delay. Regardless of when the examination is administered, it must be passed at least twelve months prior to the date of the awarding of the degree, as mandated by the Graduate School.

Subject matter to be encompassed by the qualifying exams should be decided at least thirty days before the exam is to take place. The student must select five topic areas (listed below) in consultation with his/her advisor and committee:

**Focal area (1; required)**
Student’s research topic – a “deep dive” into the specific intellectual area of the dissertation.

**Core disciplines (select 3-4)**
- Ecology
- Evolution
- Behavior
- Physiology
- Molecular Biology
- Biochemistry
- Neurobiology
- Biomechanics/Functional Morphology
- Genetics
- Microbiology
- Virology
- Parasitology
- Immunology
- Cell Biology
- Oceanography
- Earth Sciences
- Plant Biology
- Development
- Other areas are possible, based on student’s area of interest

**Technical areas (select 0-1)**
- Microscopy
- Biostatistics
- Molecular Genetics
- Biochemical assays
- Other areas are possible, based on student’s area of interest

The written exams. After the areas of study are identified, the student is expected to meet with each committee member to refine the scope of the question. The student is given the questions (5– one from each committee member. If there are more than 5 committee members, then two members may collaborate on a question. In no case should the number of questions exceed 5) 4-6 weeks in advance. Written responses require engaging with the literature, but are 2-3 pages in length (excluding references, 6-8 of which are required). The written responses should not be read, commented on or edited by anyone else prior to their submission for evaluation. The student turns in the responses, and these are read and commented on by committee members. Comments are given to the student, and
he/she has 2-4 weeks to revise the answers and re-submit them for final evaluation. The process of writing and revising is intended to mimic the process of writing and submitting papers for publication, and thus will be of substantial benefit to the student. Three outcomes of the written exams are possible: (1) all topics passed; (2) some, but not all, topics passed; and (3) no topics passed. In the case of (2) or (3), the advisory committee may recommend that the student be dismissed from the Department’s graduate program, or the committee may choose to re-examine the student in some or all of the topics. Re-examinations must be scheduled no earlier than six months after the date of the first examination. A student may be re-examined for the written exams only once.

The oral exam. Students cannot schedule the oral portion of their examination until they have passed the written portion. Except in extraordinary circumstances, the oral portion of the examination will take place within 30 days of completing and passing the written portion. The subject matter of the oral examination is the same suite of topics that formed the written portion of the qualifying exams. As guidance, whatever papers the student cites as references for his/her answers to the written questions are fair game on the oral exam. As the written responses require 6-8 references each, this means that the student is expected to be sufficiently conversant with 30-40 references to be able to discuss their findings, experimental design and methodology, and implications at a deep level. The oral exam is intended to satisfy the committee that the student has an understanding of relevant areas of biology sufficient to enable him/her to carry out high-quality dissertation research with a firm intellectual grounding. As with the written exams, the same three outcomes are possible: (1) all topics passed; (2) some, but not all, topics passed; and (3) no topics passed. The same options are available to the advisory committee in the case of (2) or (3): recommend dismissal, or re-examine the student not earlier than six months after the first attempt. A student may be re-examined for the oral exam only once.

2. The third-year prospectus/dissertation plan. No later than the start of the fourth year, the student must submit to their Advisory Committee a more extensive document that covers the specific plan for their dissertation. The student and their committee may choose one of two formats for this document, either:

a. Grant proposal format: in the format of a grant-funding agency of the student and committee’s mutual designation (e.g., NSF, NIH, USDA), the student presents the plan for their dissertation, including extensive background, specific aims, experimental plan, and broader impacts/significance.

b. Completed dissertation chapter plus outlines for other chapters: the student is expected to have at least one study within their dissertation completed, and sufficient description of subsequent chapters that the committee is assured that the whole can be completed in a timely fashion.

Whichever format is chosen, the student is expected to make a formal oral presentation of their dissertation proposal to their committee and answer detailed questions.

Upon approval of the dissertation plan by the advisory committee, the student will be accorded the status of Ph.D. Candidate.

5. Dissertation Preparation and Final Examination
   Students must write a dissertation and defend it successfully during an oral examination. Guidelines for preparation of this document are available from the Graduate School. Students must:
   1. Submit a preliminary draft of their dissertation to their Examination Committee at least 6
weeks before the end of the semester of graduation. The Examination Committee must agree that the dissertation is defendable in order to proceed.

2. Schedule the defense (see the Graduate School website for deadlines each semester) and notify the Biology office and the Graduate School office of the particulars of the defense so that it may be advertised to the university community.

3. Submit the final version of the dissertation to the Examination Committee at least five working days in advance of the oral examination. Two Examination Committee members will serve as first and second dissertation readers. The Graduate Advisor and first and second readers will have final editorial approval of the dissertation. Most students elect to give all members of the committee opportunity to provide editorial input for the dissertation.

6. Final Examination

The final examination of the Ph.D. candidate includes both a defense of their dissertation and a broader examination of the candidate’s area of concentration. The Examination Committee is appointed by the Dean of the Graduate School. In practice, however, the members of the Advisory Committee are usually appointed to the Examination committee (see page 5). The Examination Committee determines whether the student passes. For details, see the “Requirements for the Doctor of Philosophy” in the Graduate School Bulletin.