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# **Department of Biology**

# **Graduate Student Handbook for the**

# **M.S. in Biology and Ph.D. in Biology**

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2022–2023 Academic Year

Department of Biology  
Wake Forest University

# Program Leadership

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## Important Links

- **WFU Graduate School Website:** <https://graduate.wfu.edu/>
- **WFU Graduate School Resources:** <https://graduate.wfu.edu/reynolda-campus-homepage/>
  - Graduate Bulletin and Graduation Requirements
  - Graduate School Graduate Student Handbook
  - Graduate School Forms
  - Honor Code
  - Statement on Mentorship and Advising
  - Grievance Procedures
- **WFU Biology Department:** <http://college.wfu.edu/biology/>
- **Graduate Student Association:** <http://www.gsa.graduate.wfu.edu/>

# Table of Contents

<b>Program Leadership</b>	<b>2</b>
<b>Important Links</b>	<b>2</b>
<b>Introduction</b>	<b>4</b>
<b>1. Program administration, advisors, and guidance</b>	<b>4</b>
1.1. The Biology Department Graduate Committee	4
1.2. Graduate Advisor	5
1.3. Graduate Advisory Committee	5
1.4. Advisory Committee meetings	6
1.5. Changing Advisor or Advisory Committee members	6
1.6. Examination Committees	6
1.7. WFU Graduate Faculty membership	6
1.8. Academic and counseling support services	7
<b>2. General program requirements</b>	<b>7</b>
2.1. Academic Honor Code	7
2.2. Coursework and academic standing	7
2.3. Responsible Conduct of Research and Scientific Ethics training	7
2.4. Laboratory safety training	8
2.5. Participation in Biology Department seminars	8
2.6. Advisory Committee Meeting Reports	8
2.7. Annual Reports	8
2.8. The First-year Prospectus	8
2.9. Timely submission of all documents	9
<b>3. M.S. degree program additional requirements</b>	<b>9</b>
3.1. Coursework	9
3.2. Seminar presentation	9
3.3. Thesis and Final Examination	9
3.4. Switching degree programs	10
<b>4. Ph.D. degree program additional requirements</b>	<b>10</b>
4.1. Coursework	10
4.2. Seminar presentations	10
4.3. Teaching experience	10
4.4. Qualifying Examination	11
4.5. Third-year Prospectus	13
4.6. Dissertation and Final Examination	14
<b>5. Teaching Assistantships</b>	<b>14</b>
5.1. Teaching Assistant professional expectations	14
5.2. Teaching evaluations	15
5.3. Additional training	15
5.4. Termination of Teaching Assistantship support	15
5.5. Additional TA support	16
5.6. Outstanding TA Award	16
<b>6. Research funding opportunities and awards</b>	<b>16</b>
6.1. Biology Department Graduate Research Funds	16
6.2. WFU Biology Ph.D. Research Fellowships	16
6.3. The Elton C. Cocke Travel Fund	17
6.4. Vecellio Grants for Graduate Research	17
6.5. The Grady Britt Fund	17
6.6. Biology Graduate Program Funds	17
6.7. The Alumni Travel Award	17
6.8. Elton C. Cocke Outstanding Graduate Student Award	18

# Introduction

Welcome to the Graduate Program in Biology at Wake Forest University. We sincerely hope that together we can make your experiences in the Department of Biology personally rewarding and provide an atmosphere conducive to your continued growth as professional biologists. This handbook will help you understand how the Graduate Program functions and the requirements for the M.S. in Biology and Ph.D. in Biology degree programs. Other documents that contain important information are: the Graduate School Bulletin, the Graduate School's Reynolda Campus Graduate Student Handbook, and Dissertation and Thesis Instructions. Links to these documents and other important resources can be found in the [Important Links](#) in the front matter of this handbook.

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 the Department of Biology Graduate Student Handbook.

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## 1. Program administration, advisors, and guidance

### 1.1. The Biology Department Graduate Committee

The Graduate Committee is a Department of Biology committee consisting of a Chair (the Graduate Program Director, GPD), three to four other faculty members, a graduate student member, and the Chair of the Department of Biology (ex-officio). The Biology Department Graduate Committee is responsible for supporting and guiding nearly all aspects of the Graduate Program, including:

- evaluating applications for admission and extending offers of admission
- organizing new student recruitment/interview days
- making recommendations for financial aid to the Dean of the Graduate School
- administering the Biology Graduate Program budget
- monitoring the progress of graduate students towards degree completion
- making recommendations concerning improvements to the program and curriculum
- advocating on behalf of the graduate students to WFU administration
- serving as a mediator and/or assisting graduate students with individual issue/conflicts
- providing guidance for students not meeting expectations and decisions on dismissals from the program

The Graduate Committee actively solicits suggestions from students, faculty, and staff. All students should feel free to consult the GPD and Graduate Committee members for assistance or to suggest improvements.

### 1.2. Graduate Advisor

Each student in the graduate program works closely with a Graduate Advisor, a member of the WFU Graduate Faculty who is their primary research mentor. During the process of selecting a Graduate Advisor, students should familiarize themselves with the research interests and philosophies of the various faculty members. WFU's Statement of Philosophy of the Mentoring Relationship between Graduate Students and Advisors can be found on the Graduate School Resources website (see [Important Links](#) in the front matter). Both students and Advisors are strongly encouraged to read this statement before making a formal commitment to each other.

**Rotations.** Some students enter the Graduate Program with an assigned Advisor. Ph.D. students may opt (with permission from the GPD) to do a short rotation through 2-3 labs before selecting an Advisor. Rotations should ideally take place during the first semester of study. Rotating students are expected to select an Advisor within 2 weeks of completion of their rotations.

### 1.3. Graduate Advisory Committee

In their first semester of study, students should consult with their Graduate Advisor and invite several faculty members to serve on their Advisory Committee. Faculty members are at their discretion to decline the invitation, if they have other commitments or feel they will not be able to contribute appropriate expertise. Once the Advisory Committee has been determined through mutual agreements, the student should email the list of names and email addresses of their Advisory Committee to the GPD for approval. Students may opt to change their Advisory Committee composition during the course of study, especially in cases when the student's research projects change direction.

#### **M.S. Advisory Committee** (minimum of 3 faculty members)

- Graduate Advisor
- 1 Department of Biology faculty member
- 1 or more additional members from the Biology Department, another WFU department, or another individual of appropriate expertise\*

#### **Ph.D. Advisory Committee** (minimum of 5 faculty members)

- Graduate Advisor
- 2 Department of Biology faculty members
- 1 External member from another Department at WFU or another research institution\*
- 1 or more additional members from the Biology Department, another WFU department, or another individual of appropriate expertise\*

\*Must be a member of the Graduate Faculty (see [Section 1.7](#))

The Advisory Committee is responsible for overseeing the successful completion of the degree program, including: (1) setting requirements for specific course work, (2) critically evaluating research prospectus documents and presentations, (3) drafting, administering, and evaluating the Qualifying Examination (for Ph.D. only), (4) providing regular review of the student's progress toward the completion of the degree, and (5) 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.

### 1.4. Advisory Committee meetings

Students should convene their Advisory Committee regularly to ensure efficient progress toward degree completion and receive steady feedback on their research plans and progress. Students are encouraged to consult frequently and enthusiastically with their Advisory Committee team. M.S. students are expected to meet with their Advisory Committee once per semester and Ph.D. students once per year. Students are responsible for scheduling these meetings (not the Graduate Advisor or Advisory Committee), and also for reserving a meeting space (using DeaconOne). Typical committee meetings last ~1–2 hours.

At the committee meeting, students will apprise their committee of current academic coursework and research progress including presentation of written documents and/or slideshows. Committee members will ask questions and/or provide suggestions for the student. Students who do not meet with their committee at regular intervals may become ineligible for Graduate School funded support in the upcoming semesters.

## 1.5. Changing Advisor or Advisory Committee members

In consultation with the GPD, a student may switch Advisors or Advisory Committee members. If you have questions or concerns, consult the GPD. A student who switches advisors is not guaranteed any additional departmental support, and must make requests for extension on departmental deadlines separately to the Graduate Committee. The Graduate Committee evaluates such requests on a case-by-case basis.

## 1.6. Examination Committees

Examination Committees oversee the Ph.D. Qualifying Examination and the Final Examination for the M.S. Thesis and Ph.D. Dissertation. A student's Advisory Committee and Examination Committee are independently appointed by the GPD. However, in the vast majority of cases, the Advisory Committee members will be appointed as the Examination Committee. In compliance with the Graduate Bulletin, the Examination Committee must be members of the WFU Graduate Faculty (see [Section 1.7](#)). For Ph.D. students, the External Member is Chair of the Examination Committee. For M.S. students, the most senior member of the committee other than the Advisor generally serves as Chair of the Examination Committee.

## 1.7. WFU Graduate Faculty membership

Most WFU faculty members are also permanent members of the Graduate Faculty. Non-graduate faculty members of the WFU community and individuals from outside of Wake Forest can be granted "Temporary Graduate Faculty Status." In order to obtain Temporary Graduate Faculty Status, the student should send the committee member's CV to the GPD along with a written justification as to the importance of this committee member to the student's academic progress. The GPD will then contact the Dean of the Graduate School, who in turn will generally grant Temporary Graduate Faculty status to the External Member.

## 1.8. Academic and counseling support services

General academic counseling is available by contacting the GPD, a member of the Graduate Committee, or the Graduate School of Associate Dean of Students Jennifer Rogers. The Center for Learning, Access, and Student Success (CLASS) at WFU has the mission to provide opportunities for all students (undergraduate and graduate) to succeed at Wake Forest. CLASS is available for graduate student consultation on adaptive technologies, support, and accommodations to facilitate equitable access to all portions of the academic requirements (your coursework, teaching requirements, and research).

Additionally, the WFU University Counseling Center, Women's Center, Intercultural Center, LGBTQ Center, Office of the Chaplain, and many other student support offices are available to graduate students for additional support and counsel during your graduate studies.

(<https://advising.wfu.edu/emergencies/campus-resources-support/>)

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## 2. General program requirements

Requirements set forth by WFU for the M.S. and Ph.D. degrees are described in the Graduate School Bulletin. These include minimum requirements for course work, residency in the program, admission to degree candidacy, etc. Students bear primary responsibility for making sure they are meeting their requirements in both the Graduate School Bulletin and the Department of Biology Graduate Student Handbook.

### 2.1. Academic Honor Code

Graduate students are expected to strictly adhere to the Academic Honor Code as outlined in the Graduate

Student Handbook provided by the WFU Graduate School. Suspected Honor Code violations should be immediately reported to the GPD, who may in turn file a formal report with the Graduate Honor Council.

## 2.2. Coursework and academic standing

All M.S. and Ph.D. Biology Graduate Students are required to take Graduate Integrative Biology I (BIO 720; 3 credit hours) and Graduate Integrative Biology II (BIO 721; 3 credit hours) in their first two semesters in the program. Students also are required to take one 3-credit hour technical elective (e.g., Graduate Microscopy, Graduate Statistics in R, etc.) approved by their Advisory Committee.

While not mandatory, all students are encouraged to also take the Teacher-Scholar Professional Development I and II (BIO 785 and 786) and Research Seminar (BIO 789) courses in their first year. The M.S. in Biology program has additional course requirements (see [Section 3.1](#)). The Ph.D. in Biology program does not require additional courses, unless recommended by their Advisory Committees (see [Section 4.1](#)).

**Minimum GPA.** Students are required to maintain a GPA of at least 3.0 (“B” average). Students who earn a grade below “B” or an “Unsatisfactory” for Thesis or Dissertation Research must meet with the GPD. 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.

## 2.3. Responsible Conduct of Research and Scientific Ethics training

All Department of Biology graduate students are required to participate in an Annual Responsible Conduct of Research (RCR) and scientific ethics (SE) training. Graduate students who are not RCR certified cannot be supported as Research Assistants (RAs) and cannot work on any project supported with federal funds. Dates and details about this annual training will be provided by the GPD at the beginning of each academic year.

## 2.4. Laboratory safety training

The WFU Office of Environmental Health and Safety conducts regular online and in-person laboratory safety training. The type of training needed will depend heavily on the type of work being done by the student. As such, students should contact their Advisor, the Core Lab Coordinator, and/or the GPD for details about the needed training.

## 2.5. Participation in Biology Department seminars

**Biology Departmental Seminars (Mondays at 4:00 PM).** High-profile scientists from outside the University are invited to share their research and meet with members of our WFU Biology research community.

**Other special seminars.** Internal speakers (such as graduate students presenting their thesis/dissertation research), external guests, or journal club speakers.

Attendance at these seminars is expected of all students in the program. A schedule of seminars for the upcoming semester is sent via email at the beginning of the term by the Seminar Committee Chair. Graduate students are encouraged to suggest potential seminar speakers for future semesters, as solicited by the Seminar Committee.

## 2.6. Advisory Committee Meeting Reports

Students must submit ((via digital form submission, see instructions in the WFU Biology Graduate Resources Drive) a report including a meeting summary after each committee meeting or milestone (i.e., first year prospectus meeting, qualifying exam, third year prospectus meeting). To ensure that all graduate students are making consistent and timely progress toward their degrees, submitted reports will then be distributed to the student’s committee members through this form within a week. The length of the report will be up to the

student and their Advisory Committee, but we encourage students to carefully document the advice, decisions, and expectations discussed at these meetings for your own purposes.

## 2.7. Annual Reports

Students are required to submit (via digital form submission, see instructions in the WFU Biology Graduate Resources Drive) a brief Annual Report of activities at the conclusion of each academic year. The report will include any publications, grants, and presentations, among other achievements. Such information is vital for the Graduate Committee to promote student success to the Graduate School administration. Students will also submit a current CV with this report. This report is due annually from all graduate students on May 15.

## 2.8. The First-year Prospectus

**KEY DEADLINE: Students must complete this first year prospectus milestone before the end of their second semester in the program to remain in good standing.**

A prospectus is a formal document that describes the general plan for the student's research project. The first-year prospectus document should be approximately 4–6 single-spaced pages in length and focus on the background, scientific premise, and questions to be examined during the student's dissertation/thesis work. The prospectus should provide sufficient details about the experimental design and methods to allow the Advisory Committee to evaluate the scope and quality of the project. The student should work closely with their Advisor to write this document while in their first year of study.

Once the document is complete, the student should hold a meeting with their Advisory Committee, wherein they present an overview of the document. Students should submit the written prospectus document to their Advisory Committee no later than two weeks before the scheduled meeting (and see [Section 2.9](#)).

**Requests for an extension on this deadline.** All requests for extension should be emailed to the GPD at least three weeks before the student's second semester ends. Students who fail to meet this milestone on time (without approved extension) may become ineligible for Graduate School funded support.

## 2.9. Timely submission of all documents

Committee members need adequate time to evaluate your work or students cannot receive complete, carefully considered, and useful feedback. Additionally, the Biology Department and Graduate School require that Advisory Committee members have sufficient time to ensure submitted work is in accordance with program academic standards and training goals. Student submission of all documents to committee members in a timely and professional manner is therefore a necessity.

Formal documents (Prospectus, Qualifying Examination, Thesis, and Dissertation) should be submitted to all Advisory Committee members no later than two weeks before a meeting. All other documents should be submitted no later than one week before a meeting. Failure to submit documents in accordance with these guidelines are considered grounds for Advisory Committee members or the GPD to reschedule the meeting. In the case of thesis and dissertation meetings, this could result in delayed graduation.

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## 3. M.S. degree program additional requirements

### 3.1. Coursework

As a part of their degree program, M.S. students will complete a minimum of 24 credit hours of coursework. A minimum of 12 credit hours at the 700 level is required. The remaining 12 credit hours can be fulfilled with either 600- or 700-level courses. Course selections should be made in accordance with the General Coursework Requirements ([Section 2.2](#)) and in consultation with the Graduate Advisor and the Advisory Committee

### 3.2. Seminar presentation

Each M.S. student must present at least one Departmental Seminar. This seminar normally covers the thesis research prior to the private thesis defense and is typically given in the Spring semester of the second year. Contact the GPD if you have questions or concerns about this requirement.

### 3.3. Thesis and Final Examination

M.S. students must write a thesis and defend it successfully during an oral Final Examination (i.e., thesis defense). Guidelines for preparation of this document are available from the Graduate School.

1. Students must schedule both a public seminar and a private defense (see the Graduate School website for deadlines each semester). Students should email the GPD early in the semester or summer they intend to complete their degree to get more information on the procedure for scheduling their seminar.
2. Students will also need to submit an "Intent to Graduate" form by the semester deadline set forth by the Graduate School.
3. Students should submit the final version of the dissertation to their Examination Committee no later than two weeks in advance of the thesis defense date (see [Section 2.9](#)).
4. Upon completion of the thesis defense, the committee Chair should submit the ballot to Sheila White (Graduate School Student Records Coordinator) via email (and copy the GPD) to indicate the outcome (Unconditional Pass, Pass Upon Rectifying Minor Deficiencies, Pass Upon Rectifying Major Deficiencies, or Fail).

### 3.4. Switching degree programs

A student in the M.S. in Biology program 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 submitted in writing to the GPD for review by the Graduate Committee. The following documents must be furnished 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.

Requests for program change must be made by December 15th and will be considered alongside new applications for the next academic year. Requests submitted after the deadline may not be considered until the following academic 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).

## 4. Ph.D. degree program additional requirements

### 4.1. Coursework

All Ph.D. students must meet the General Coursework Requirements ([Section 2.2](#)). Additional academic coursework is recommended as needed to develop their scholarship, but not specifically required except as recommended by the student's Advisory Committee.

### 4.2. Seminar presentations

Each Ph.D. student must give at least two seminars during their program of study. One must be the public presentation of their dissertation work on the Wake Forest campus, given prior to the private 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.

### 4.3. Teaching experience

Ph.D. students are required to complete 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. Prior teaching as a WFU Biology Master's degree student does not satisfy the teaching requirement for the Ph.D. (except when students switch degree programs at WFU from the M.S. to the Ph.D without completing the M.S.).

A student who wishes to use a different teaching experience to fulfill the requirement must obtain prior approval of their Advisory Committee and of the Graduate Committee. Any teaching training conducted without prior approval will not be guaranteed to fulfill the requirements for graduation and may delay graduation. 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.).

### 4.4. Qualifying Examination

**KEY DEADLINE: Students should complete both the written and oral portions of their qualifying examination before the start of their fifth semester (third year) in the program.**

The Ph.D. qualifying examination consists of two parts: a written examination and oral examination. This examination should be taken in or before the student's fourth semester of study. At least two weeks prior to the examination start date, students should select five topic areas from the three categories in the table below that will comprise the qualifying exam. These topics should be selected in consultation with their Advisor and Advisory Committee. Each committee member will be responsible for leading the questions and evaluation of one topic. The examination should include no more than five questions. If the committee has more than five members, several members will collaborate on one topic area.

The Graduate Committee recommends that a member of the Advisory Committee who is not the student's primary Advisor serve as a Proctor for this exam. Contact the GPD if you or your Advisory Committee have questions on this recommendation.

### **Qualifying Examination Topic Areas.**

- **Focal area (one, required):** Student's research topic – a “deep dive” into the specific intellectual area of the dissertation.
- **Core disciplines (select 3–4):** Behavior, Biochemistry, Biomechanics/Functional Morphology, Cell Biology, Development, Earth Sciences, Ecology, Evolution, Genetics, Immunology, Microbiology, Molecular Biology, Neurobiology, Oceanography, Parasitology, Physiology, Plant Biology, Virology (or other areas are possible, based on student's area of interest)
- **Technical area (one, optional):** Biostatistics, Biochemical assays, Microscopy, Molecular Genetics (or other areas are possible, based on student's area of interest)

**The Written Examination.** The Written Examination is conducted as described below:

1. The Proctor collects the questions from the Advisory Committee members and evaluates them to ensure that they are appropriate in scope and minimal in topic overlap.
2. The Proctor emails the five questions to the student to begin the exam. The student has up to six weeks to write and submit their first-draft responses. Written responses will require that the student engage with the literature and/or design experiments. Each response should be approximately 2–4 pages in length (excluding references, 6–8 of which are required at minimum). Students are reminded this is an examination and they should not discuss their exam questions or answers with anyone else. Students also should not have their answers read, commented on, or edited by anyone else prior to their submission for evaluation. Students are permitted to contact Advisory Committee members to ask clarification questions during this period, but not have their answers read by the Advisory Committee members prior to submission. Inappropriate assistance on exams constitutes an Honor Code violation.
3. The student submits their first draft responses to each Advisory Committee member, who will then provide comments/feedback to the student for improvement. The Graduate Committee recommends that each answer be read by two Advisory Committee members (a “first reader” who proposed the question and a “second reader”). 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.
4. The student then has up to 3 weeks to revise the answers and resubmit them for final evaluation. The entire written examination process should ideally not exceed 12 weeks total time, though the committee can extend the timeline, at their discretion.
5. The Proctor will solicit feedback from the Advisory Committee members and communicate the exam results to the student. The Graduate Committee recommends the Advisory Committee members meet (without the student) to discuss the exam results prior to communicating the overall result to the student. Three outcomes of the written exams are possible: (1) all topics passed; (2) some, but not all, topics passed; or (3) no topics passed. In the case of outcomes (2) or (3), the Advisory Committee may recommend that the student be dismissed from the graduate program, or the committee may choose to reexamine the student in some or all of the topics.
6. Reexaminations must be scheduled no earlier than six months after the date of the first examination. A student may be reexamined for the written exams only once. The student must pass the written examination before proceeding to the oral examination..

**The Oral Examination.** The Oral Examination is conducted as described below:

1. The oral portion of the examination will take place within 30 days of completing and passing the written portion (except in extraordinary circumstances, with approval from the GPD).
2. The oral examination will include the same set of topics that formed the written portion of the qualifying exams. The oral examination is intended to satisfy the committee that the student has an understanding

of relevant areas of biology sufficient to enable the student to carry out high-quality dissertation research with a firm intellectual grounding.

3. The oral examination should take approximately two hours, where approximately 20 minutes is allocated for discussion of each topic area.
4. At the end of the exam, the student should be asked to leave the room so the committee can deliberate the outcome. Three outcomes are possible: (1) all topics passed; (2) some, but not all, topics passed; and (3) no topics passed. In the case of outcome (2) or (3), the Advisory Committee may recommend dismissal or reexamination of the student. Reexamination may not take place earlier than six months after the first attempt. A student may be reexamined for the oral examination only once.

**Deadline extension.** Requests for an extension on beginning the Qualifying Examination in or after the fifth semester of study should be emailed to the GPD at least 3 weeks before the fifth semester begins. Students who fail to meet this milestone on time (without approved extension) may not be eligible for Graduate School funded TA support in the upcoming semesters. This examination must be passed at least twelve months prior to the date of the awarding of the degree, as mandated by the Graduate School.

#### 4.5. Third-year Prospectus

**KEY DEADLINE: Students should complete this third year prospectus milestone before the start of their seventh semester (fourth year) of study to remain in good standing.**

While in their third year of the program, Ph.D. students must submit to their Advisory Committee a more extensive prospectus document that covers the specific plan for their dissertation. The student and their Advisory Committee may choose one of two formats for this document:

- **Grant Proposal Format.** This format can be based upon the 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. Expectations for length are at Advisory Committee discretion, but typically these documents are approximately 12 pages in length (including Figures/Tables, but non including references).
- **Dissertation Format.** This format should ideally include at least one complete chapter/study of the students dissertation along with outlines for the other chapters. The outlines should include sufficient descriptions such that the committee is assured that timely completion is the likely outcome. Expectations for length are at Advisory Committee discretion, but typically these documents are more than 40 pages in length (including figures and tables, but not counting pages for references).

Whichever format is chosen, the student should hold a meeting with their Advisory Committee, wherein they will present an overview of the document, accompanied typically by a slideshow. The student should also submit the actual written prospectus document to their Advisory Committee no later than two weeks before the scheduled meeting (see [Section 2.9](#)). Upon approval of the third year prospectus by the Advisory Committee, the student shall be considered a Ph.D. Candidate in the Department of Biology.

**Deadline Extension.** Requests for an extension on this deadline should be emailed to the GPD at least 3 weeks before the seventh semester begins. Students who fail to meet this milestone on time (without approved extension) may not be eligible for Graduate School funded TA support in the upcoming semesters.

#### 4.6. Dissertation and Final Examination

Students must write a dissertation and defend it successfully during an oral Final Examination (i.e.,

dissertation defense). Full guidelines for preparation of this document are available from the Graduate School. Required steps are as follows:

1. Students must submit a preliminary draft of their dissertation to their Examination Committee >6 weeks before the end of the semester of graduation. The Examination Committee must agree that the dissertation is defensible in order to proceed.
  2. If approved, the student should schedule both a public seminar and a private defense (see the Graduate School website for deadlines each semester). Students ready to schedule this seminar should email the GPD early in the semester or summer they intend to complete their degree to get more information on the procedure for scheduling their seminar.
  3. Students will also need to submit an “Intent to Graduate” form by the semester deadline set forth by the Graduate School.
  4. Students should submit the final version of the dissertation to their Examination Committee no later than two weeks before the defense date (see [Section 2.9](#)). 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. Students are strongly encouraged to give all members of the committee the opportunity to provide editorial input for the dissertation.
  5. Upon completion of the defense, the committee Chair (i.e., the External Member) should submit the ballot to Sheila White (Graduate School Student Records Coordinator) via email (and copy the GPD) to indicate the outcome (Unconditional Pass, Pass Upon Rectifying Minor Deficiencies, Pass Upon Rectifying Major Deficiencies, or Fail).
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## 5. Teaching Assistantships

Many graduate students are fully or partially funded through Teaching Assistantships (TAs) during their graduate study. All students must complete the WFU Graduate School and the Biology Departmental TA training before beginning teaching duties.

Teaching assignments each semester will be determined by the Chair of the Biology Department and the Core Labs Manager. Teaching assignments for most students will involve guiding undergraduates in the core labs (BIO 150L or 160L), or laboratory sessions for the biology course offered primarily for non-majors (BIO 101). The Biology Department strives to create teaching assignments that are equitable in their responsibilities and time commitments, and congruent with your graduate training goals. Students can request to teach a specific class in the Department of Biology, but we cannot guarantee placements. Requests for a specific teaching assignment should be made to the Core Lab Coordinator well in advance of the upcoming semester. If you have questions or concerns about your teaching responsibilities, please feel free to bring concerns to the Core Labs Manager, the GPD, or your Advisor.

### 5.1. Teaching Assistant professional expectations

As a student teaching assistant in 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 in a manner that is conducive to a professional working environment. This expectation of excellence includes not just your time interacting with students 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 TAs. The Department of Biology

also expects you to follow all instructions from the Core Labs staff regarding your specific teaching responsibilities:

- TAs 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.
- TAs 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.
- TAs are expected to make every effort to avoid time conflicts with their assigned teaching times and notify the Core Lab Coordinator and/or instructor of record if they have an unavoidable conflict to obtain a substitute.
- TAs are expected to score assignments and enter grades into the grade book system in a timely manner by the deadlines set by the Core Lab Coordinator.
- TAs 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.
- TAs 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.

## **5.2. Teaching evaluations**

The Core Lab Coordinator will provide feedback about a TA's performance to both the student and to the Graduate Committee. The Core Lab 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.

## **5.3. Additional training**

If a TA does not meet expectations, the Core Lab Coordinator 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 GPD and the student's Advisor will be notified of the issue and the student may be asked to meet with the Graduate Committee.

In some cases, the Graduate Committee may recommend additional teaching training or support through a written Performance Improvement Plan (PIP) that will provide support and oversight for their training and development.

## **5.4. Termination of Teaching Assistantship support**

If a TA continues to not meet expectations after initial recommendations for remediation, or in the case of a serious breach of professional ethics, Teaching Assistantship support and the associated stipend may be terminated by the Graduate Committee. As stated in the Letters of Award and Letters of Continuing Aid, the University reserves the right to withdraw Teaching Assistantship support for unsatisfactory academic work or unsatisfactory performance of your assigned duties. All remaining semesters of guaranteed support will be terminated if a student (1) leaves the program, (2) is dismissed from the program, or (3) graduates from the program.

## 5.5. Additional TA support

Standard admissions offers from the Graduate School include 10 semesters of TA support for Ph.D. students and 4 semesters of TA support for M.S. students. Additional semesters of TA support are not guaranteed, even if a student does not complete their program requirements. Requests for additional TA support are due by December 15th for the following academic year. These requests will be considered alongside new applications.

Requests for additional support should be sent to the GPD and include letters of support from the Advisor and from the Advisory Committee. Requests should include (1) why additional support is needed, (2) a statement addressing the availability or lack thereof of other support funds, and (3) a clear timetable for program completion. Requests made after the deadline cannot be guaranteed consideration.

## 5.6. Outstanding TA Award

The Outstanding TA Award is awarded to a student who has demonstrated excellence in their role as a Teaching Assistant. The Core Lab Manager will solicit nominations for this award in April of each academic year. The award includes a monetary prize, plaque, and addition to the awards display in Winston Hall.

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# 6. Research funding opportunities and awards

The Department of Biology is pleased to provide full tuition remission and stipend support. Additionally, financial support for graduate student research, travel, and other professional development. The availability of funding via each of these mechanisms varies from year to year. Please contact the GPD to better understand the opportunities available in any given year. These awards may be subject to taxes. Guidance is available online from the IRS: <https://www.irs.gov/taxtopics/tc421.html>.

## 6.1. Biology Department Graduate Research Funds

The Biology Department typically allocates research funds for each graduate student (approximately \$700 per year per student). These funds are available for research costs (e.g., consumable laboratory supplies, chemical reagents, small equipment, etc.). Students should consult with their Advisor about proper uses for 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 the Biology Department. Any equipment purchased using these funds is the property of the Department, not the property of the student.

## 6.2. WFU Biology Ph.D. Research Fellowships

The WFU Graduate School sponsors internal research fellowships for outstanding Biology Ph.D. students each academic year. This fellowship provides one semester of stipend support to a Ph.D. candidate, giving them dedicated time to focus on their research activities. The expectation is that students will use this time to work towards a primary peer-reviewed paper, extramural graduate fellowship application, and/or help their advisor with an extramural grant application. Please contact the GPD for information about deadlines and specific eligibility requirements.

## 6.3. The Elton C. Cocke Travel Fund

The Elton C. Cocke Travel Fund is an endowed fund maintained by the Biology Department to help defray graduate student costs for traveling to regional, national, or international meetings to present a paper/talk or poster. Funding requests should go to the GPD in the form of a letter that includes (1) the date, location, and

name of meetings, (2) the title of poster or paper/talk student will present, and (3) an itemized budget. The budget must include estimated travel costs, hotel costs, registration fees, and any other pertinent information. Most awards are partial, and students are advised to seek other sources of funding in addition to the Cocke Award. Students may only receive one Cocke Award per fiscal year (July 1 to June 30).

#### **6.4. Vecellio Grants for Graduate Research**

Vecellio Grants for Graduate Research are used 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 (up to \$800). 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 should go to the Vecellio Committee Chair. 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.

#### **6.5. The Grady Britt Fund**

**The Grady Britt Fund** is maintained by the Department of Biology 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 via email to the Chair of the Biology Department.

#### **6.6. Biology Graduate Program Funds**

The Biology Graduate Program Funds may be available to support student travel for research, conferences, or workshops. Funding requests go to the GPD in the form of a letter (email is acceptable that includes (1) date and location of travel and (2) a budget of estimated travel costs, hotel costs, registration fees, and any other pertinent information.

#### **6.7. The Alumni Travel Award**

The Alumni Travel Award is allocated by the WFU Graduate School. Students can find more information about this award on the Graduate School website. Funding is limited and students are encouraged to apply for this award early in the academic year.

#### **6.8. Elton C. Cocke Outstanding Graduate Student Award**

The Elton C. Cocke Outstanding Graduate Student Award is given each year to a graduating student who has excelled in the areas of research, teaching, and service. The GPD will solicit nominations for this award in April of each academic year. Awardees receive a monetary prize, plaque, and addition of their names to the awards display in Winston Hall.