The Graduate Program in Biology

Department of Biology

Biology Graduate Handbook

2023–2024 Academic Year
A. INTRODUCTION

The Biology Graduate Handbook provides information about the UNCG and department policies, procedures, and degree requirements of the Master of Science Program in Biology and the PhD Program in Environmental Health Science for the academic year 2023-2024. The information provided here adds to or emphasizes certain requirements for both degrees found in the University Catalog. The handbook also highlights some UNCG Graduate School policies. Graduate students should become familiar with the Graduate School policies in addition to this document.

Please note that the handbook is a living document and may be updated during the 2023-2024 academic year. If significant updates are made, members of Biology’s graduate faculty and the graduate student community will be informed via email.

A.1 The Graduate Program Director and Graduate Studies Committee

The responsibilities of the Graduate Program Director (GPD) in biology for the 2023-2024 academic year, Dr. Jim Coleman, can be found here and students should always feel comfortable contacting Dr. Coleman with concerns.

The Biology Department’s Graduate Studies Committee (GSC) is led by the GPD with three additional graduate faculty members appointed by the department chair: Dr. Zhenquan Jia; Dr. Kim Komatsu; and Dr. Bryan McLean. The GSC oversees admissions, assignment of assistantships, departmental graduate program policies, graduate program curricula, annual graduate student evaluations, departmental travel grant awards, departmental research awards, nomination of students for college or university Fellowships, as well as working to create a rigorous, student-focused and inclusive environment for graduate students. The GSC also reviews and decides student petitions for transfer credits and waiving course requirements. Students should feel free to contact any member of the GSC with questions or to bring up academic/research related concerns if they cannot be addressed by their advisor. The GPD and at least one GSC member will also serve as committee members for MS non-thesis students.

Department Chair, Dr. Malcolm Schug is ex-officio on the GSC. Graduate students can contact Dr. Schug or the GPD with any confidential concerns related to their experience as graduate students.

Administrative specialist Page Turner supports the GSC and is extremely knowledgeable about graduate student policy, graduate student teaching assignments, and graduate student departmental activities. She is a great resource and works tirelessly to support graduate students.

Business officer, Patty Booker, works closely with the GSC on all business matters including budgets for graduate assistantships and tuition waivers. She is also a great resource for graduate students if your financial/assistantship questions cannot be answered by Dr. Coleman or Page Turner.

The Biology Department’s graduate faculty serve as graduate student advisors and dissertation/thesis committee members. Any changes in departmental graduate program policies, changes in graduate curriculum, or significant changes in departmental processes are
voted on by the department’s graduate faculty.

Biology graduate students are represented by two student senators in the UNCG Graduate Student Association (GSA). Senators are selected by the department’s graduate students. Senators in 2023-2024 are Rose Terry and Chaunesey Clemmons. The GSC aims to work through the senators to get input from graduate students on significant changes to policy, processes, or curriculum. The senators also represent the interests and concerns of the department’s graduate students in the GSA.

A.2 Policy Changes

Graduate students are generally subject to the policies in effect when they first matriculate into the graduate program. Minor changes in policy will not affect progress toward degree completion. On rare occasion, policy changes may be implemented immediately when it is determined to be in the best interest of students and/or the University, or if the changes are required by a legislative or regulatory body.

A.3 Nature of this Handbook

The Biology Graduate Handbook is a working document. Updates will be made regularly and inadvertent discrepancies may exist. If you find discrepancies in the Biology Graduate Handbook relative to the University Catalog, please consult with the GPD and do not assume that the information in the University Catalog automatically supersedes that in the Biology Graduate Handbook, or vice versa.

A.4 Official University Communication

According to UNCG University policy, email is the official method of communication. All official communications will be transmitted through UNCG University email to your official UNCG email address at the “uncg.edu” domain. Graduate students are responsible for monitoring this email account regularly while enrolled at UNCG. Failure to do so may cause you to miss important announcements and deadlines and will not serve as a basis for an appeal or modification of deadlines.
B. ROLES AND RESPONSIBILITIES

B.1. Graduate Student Expectations

Graduate students should review the departmental mission which encompasses the mission of Biology graduate programs. Students should also read the Biology Department’s diversity statement.

Graduate Students are expected to:

- Comply with all policies and requirements of the graduate program, graduate school, and institution, including institutional safe laboratory practices.

- Closely track milestones for the PhD/MS programs and meet them on time; if circumstances (e.g., personal matters, health challenges, or research setbacks) will make it difficult to meet a milestone, it is the student's responsibility to discuss the matter in advance of major deadlines with the advisor and/or DGS/ADGS.

- Work with their advisor to develop a thesis/dissertation. This includes establishing a timeline for completion of each chapter, the entire body of work, and the formal degree requirements. Non-thesis MS students should work with their advisor in a similar way to design a capstone experience.

- In collaboration with the advisor, select a thesis/dissertation committee and schedule and attend required annual committee meetings. Non-Thesis MS students will have an advisory committee that reviews the plan of student and capstone experience that will consist of an advisor and two members of the GSC.

- Meet regularly, at least once a semester but hopefully much more, with their research advisor and provide them with updates on the progress and results of activities and experiments as well as any challenges to that progress they face. Exact turnaround times and meeting frequency should be established between advisor and mentee. Non-thesis students should also meet regularly with their advisor.

- Be responsive to the advice of and constructive criticism from their advisor and thesis/dissertation committee. Ultimately, it is the committee that guides the university in conferring the graduate degree. If disagreements arise, the student’s committee, Graduate Studies Committee Members, or Department Head should be consulted to evaluate and facilitate a solution.

B.2 Expectations of Graduate Students in the Mentee-Mentor Relationship

Respond by the deadline to all emails from their advisor, the DGS, or the Department Chair/Head requesting information (e.g., updates on research progress, teaching assignment preferences, future funding expectations, etc.); for any such emails without a deadline, students must respond within three business days unless there are extenuating circumstances such as illness or research/academic related travel.

- Maintain a high-level of professionalism, self-motivation, engagement, scientific curiosity, and ethical standards at all times, both on campus and at scientific events.

- Complete all Graduate School requirements on time.

- Request letters of recommendation from their advisors, committee members, and or other faculty with sufficient lead time (ideally at least two weeks, preferably a month).
• Discuss work hours policies, sick leave, and vacation with their research advisor and inform and consult with them before any planned absences.

• Contribute to general lab maintenance and training. Lab maintenance and mentoring/training are important parts of lab culture and fostering a lab community (for thesis/dissertation students).

• Graduate student researchers must maintain a detailed, organized, and accurate laboratory notebook and be aware that all original notebooks and tangible research data are the property of the institution.

• Be respectful of, tolerant of, and collegial with colleagues, faculty, and students.

• Never use verbal or other forms of abusive treatment or harassment toward faculty, staff, other graduate students, undergraduates, or any member of the campus community.

B.3 Thesis/Dissertation Advisors

Advisors/Mentors are expected to:

• Be knowledgeable of, and guide graduate advisees through, the requirements and deadlines of this graduate program and those of the institution.

• Meet one-on-one and/or have small group meetings with their graduate students regularly.

• Have clear meeting expectations and plans in place for the student during frequent travel periods or leave.

• Help their graduate students select a thesis/dissertation committee and assure that this committee meets at least annually to review the graduate students’ progress.

• Respond within three business days (unless it has already been communicated that they are unavailable) to their student's emails and phone calls.

• Provide feedback on thesis/dissertation chapters and drafts, as well as the final document within one month of receiving drafts and documents from the student. Non-thesis advisors should provide feedback on capstone experiences.

• Actively train their students on the techniques relevant to their research, or carefully delegate such training. Actively assist non-thesis students in pursuing their goals.

• Never use verbal or other forms of abusive practices.

• Help plan and direct the graduate students’ project, (or capstone experiences for non-thesis students), set reasonable and attainable goals, and establish a timeline for completion of the project.

B.4 Expectations of Advisors/Mentors in the Mentee-Mentor Relationship

• Promote the student’s completion of the MS or PhD within a reasonable time. The degree should be awarded based on the student completing the capstone experiences (non-thesis) or original research agreed on by the committee at the time of qualifying exams or thesis proposal, and not additional work to further the advisor’s research program.

• Provide financial resources for graduate students completing a thesis or dissertation as appropriate to ensure they can conduct their thesis/dissertation research.
• When appropriate, collaboratively work with their students on grants and manuscripts, including providing training on writing and giving feedback on the development of ideas.

• When appropriate, work with their graduate students to publish their work in a timely manner.

• Submit letters of recommendation/evaluation on time, especially when requested 30 days in advance, and alert the student when the letter has been submitted.

• Honor graduate student independent funding and not use or demand the use of it for expenses unrelated to the student’s thesis project.

• Focus on graduate students’ work to tasks related to their thesis/dissertation project or general lab management/training (see above) and not on performing tasks that are unrelated to their training and professional development.

• Discuss intellectual and authorship polices with the students with regard to disclosure, patent rights and publishing research discoveries.

• Acknowledge the graduate student’s scientific contributions as co-author where they have contributed to the research. Authorship requirements should be clearly established by the PI and mentee before projects commence.

B.5 The Advisory Committee: is a group of faculty members whose initial function is to assist the student in the development of the student’s Plan of Study. More details regarding the advisory committee are found below in Sections D.2 (MS students) and F.3 (PhD students) below.
C. GRADUATE REGULATIONS, POLICIES, AND PROCEDURES

C.1 Graduate Assistantships, Financial Support, and Other Information

The Graduate School has a web page where a student can find out about all aspects of graduate assistantships, including the distinct types (Teaching Associate, Instructional Assistant, Research Assistant, Clinical Assistant and Office Assistantship); eligibility; and I-9 instructions necessary for employment. A very important document to review for those on assistantships is the 2023-2024 Work Schedule.

The Graduate School also maintains a site that has information regarding other sources of financial support. Students can also review other information relevant to graduate student general information, professional development and graduate student life.

Graduate students are expected to be full-time students when on an assistantship. Full-time status is described below in Section C.6. Simply, for MS students, full-time enrollment is 9 credits unless all formal coursework (including BIO 695) in the plan of study has been completed. For PhD students, full-time status requires being enrolled in 9 credits before advancing to candidacy and 3 credits of BIO 799 after advancing into candidacy. In exceptional circumstances, the advisor can request to the GPD that a student be full-time with less than 9 credits in a semester, but with ≥6 credits for assistantship purposes, and the GPD can file a request to the Graduate School.

The Graduate School also maintains a policy for maximum workload associated with an assistantship (the policy can be found here in Section II). Students should review these policies. One key point to consider is:

- Graduate assistants are not permitted to accept off-campus employment without permission from the Graduate Program Director and Dean of the Graduate School.

C.2 Annual Report and Evaluation

At the beginning of the Fall 2023 semester every graduate student will complete a written report that details progress made during the preceding year and the goals for the 2023-2024 academic year. The GPD will send out a form to all students in August 2023. New students will only need to lay out goals for 2023-2024. Submitted reports will be reviewed by the Graduate Studies Committee and feedback on the student’s progress and proposed future activities will be provided to the students and the advisor (and possibly the Graduate School). The GSC reviews each annual report to make sure that students are progressing towards meeting milestones (e.g., committee meetings, proposal defense, dissertation).

C.3 The graduate Curriculum

An overview of the MS thesis and non-thesis programs in Biology and the required coursework can be found here.

An overview of the PhD in Environmental Health Sciences and required coursework can be found here.

Below is a “cheat sheet” for coursework in all Biology graduate programs.
Course transfer policies for graduate students can be found [here](#).

PhD students are allowed to transfer up to one third of non-research credits (research=BIO 790, BIO 791, BIO 799) to doctoral program if they have a MS degree with approval of the GSC, and ultimately the Graduate School, when they review the plan of study after a student’s first committee meeting.

MS students may be able to transfer non research/capstone (BIO 695, 698, 699) graduate courses they completed at another university. Any transfer must be approved by the advisor, the GPD, and the Graduate School. The advisor or the GPD must submit this [form](#) to the graduate school for transfer of any MS credits.

Credits on the quarter system are counted differently and described in the [catalog](#).

A very important consideration in transferring prior course credit is that any GIA/GTA/RA/GA still...
needs to be enrolled in at least 9 credit hours prior to admission into candidacy for doctoral students.

C.5 Waiving Course Requirements

Occasionally, a graduate student may have a significant amount of practical experience that is directly relevant to courses that are a part of the Graduate Program in Biology’s degree requirements. For example, a student may have acquired many technical skills in the workplace. Under these conditions, a student may request a specific course requirement waived (e.g. BIO 707).

Waiving a course requirement does not reduce the total number of courses or credits that a student needs to graduate. If a graduate student has technical experience that one feels eliminates the need to take some of the PhD requirements, you must first have the proposed waiver approved by the advisor and Advisory Committee. Following this approval, a written request should be made to the GPD. An advisor must sign the request. The request should include a detailed description of the technical experience and should outline how this experience relates to the course to be waived. The GPD will review the materials and decide on approval. If approved, the GPD will inform the Graduate School. In rare cases, the Graduate School can overturn such decisions. If this occurs, the student must take the UNCG course for which a waiver was requested.

C.6 Cross Registration

In some cases, students may want to take advantage of relevant courses being offered at other University campuses in the Triad/Triangle area. UNCG has agreements with many of these campuses and has policies that regulate how a student can cross-register for classes in their degree program. If a graduate student is interested in cross-registration, please review this policy. Questions can be directed to the GPD after review.

C.7 Full-Time Status

Full-time status is required for assistantships (with one exception described above in section C.1) and is also often required to maintain Visa status or to receive external Fellowships.

Graduate students enrolled in nine or more credit hours per term are considered full-time by UNCG with the following exceptions:

- After completing all required course work, a master’s student may be considered full-time while enrolling in 3 credits of the thesis course (BIO 699). Master’s students may maintain full-time status with 3 credits of BIO 699 for two terms. Defending the proposal is not a graduate school milestone for full-time status of MS students. Full-time status with 3 credit hours of BIO 699 is only granted when there is no more coursework (including BIO 695) on the plan of study except for BIO 699.

- A PhD student may be considered full-time by enrolling in 3 credit hours of dissertation (BIO 799), only after they are admitted to candidacy. Doctoral candidates may maintain full-time status with 3 credits of BIO 799 until completion of the required number of dissertation credit hours (12 credits is the minimum and 18 credits is the maximum in Biology).

MS students who have completed the maximum number of credits for BIO 699 (6) and BIO 695 (6) and
doctoral students who have completed the maximum number of BIO 799 (18) will need to enroll in extension credits to remain full time. Extension course credit is described below in the next section.

C.8 Continuous Enrollment Policy, Extension Credits, and Educational Leave of Absence

The Graduate School requires that graduate students are continuously enrolled from the time of entry through the completion of all required course work including the thesis (699) or dissertation (799). Students cannot miss more than two consecutive semesters (each with a minimum of 6 hours), not including summer, without an approved leave of absence (see below). The policy is here.

A student who is enrolled in the maximum number of 695 or 699 / 790, 791, or 799 credit hours, but has not fully completed the requirements of the thesis or dissertation, must enroll in extension credits: thesis (BIO 801), dissertation (BIO 802), or research extension (BIO 803) without missing two consecutive semesters (not including summer), until you have graduated. Permission to enroll in extension courses requires verification by the committee chair that the student is making satisfactory progress.

The following applies to students in extension status:

- Students must be enrolled in 9 credit-hours to be considered full-time, including extension credits.
- The Graduate School will no longer contribute towards the UNCG sponsored health insurance.
- Students may purchase this insurance if they are enrolled in at least one extension hour.
- Students on extension status lose eligibility for all state-funded support (i.e. assistantship stipends and tuition waivers) but may be supported by external funds. Contact the Graduate School for more information on this option.

IMPORTANT: All thesis and dissertation students must be enrolled in at least one credit of either 699/799 or 801/802 during the semester in which they apply to graduate. (Note: This includes summer.)

Graduate students who have not completed any 500-level or above courses at the University for two consecutive semesters, or a semester and a summer session, will be considered to have withdrawn from the curriculum unless they have been granted educational leave of absence.

Graduate students who must break continuous enrollment may apply for a leave of absence. Students choosing this option must file a Graduate School Request for a Leave of Absence that states the reason for the requested absence and that they will neither use University resources nor require faculty communication or interaction during the leave period. If the leave of absence extends beyond one academic year, the student's matriculation is closed, and the student must re-apply for admission to the Graduate School.

C.9 Grading Policy

Graduate students must maintain at least a 3.0 GPA in order to receive support on an assistantship and must have at least a 3.0 GPA to graduate. UNCG graduate grading policies are explained here.

Students who are working on their thesis or dissertation research will receive "IP" (in progress)
grades for their enrollment in 699/799 until they have completed the research. Upon completion, the "IP" will revert to an "S" (satisfactory) or a "U" (unsatisfactory).

C.10 Establishing In-State Residency for Tuition Purposes

As a state supported institution, the tuition rate for legal residents of North Carolina is less than the tuition rate for nonresidents. **After 12 months of continuous residence in NC, out-of-state students are expected to apply for NC residency in order to qualify for in-state tuition and to be considered for continued support by the Department.** All students wishing to claim North Carolina residency must file through the State’s Residency Determination Service. The rules for residency can be found on this site. Please contact the GPD or the department administrative support specialist if you have questions. The Graduate School residency review form is [here](#).

C.11 Changing Committee Members or Advisors

Occasionally, a student may find it necessary to change advisors. Changing advisors is generally discouraged but can be arranged through consultation with the Director of Graduate Studies in Biology and the student’s current advisor. Changes in the composition of doctoral committees can be made by filling out this [form](#). Such changes may be necessary because faculty leave the University, because your research focus changes, or because scheduling conflicts make the original committee structure untenable.

C.12 Policy on Length of Departmental Stipend and In-State/Out-Of-State Waiver Support

**MS students:** Departmental support for graduate study toward the MS degree is provided if funds are available. Support can include an assistantship (TA, GA or RA) and/or tuition waiver. If a student is supported in the first year of an MS degree, support is not guaranteed beyond that year of support, but will depend on funding availability. Support is also contingent on satisfactory progress toward completion of degree requirements.

**PhD students:** PhD students will be supported by the department for up to four years if funds are available. Support may include an assistantship (TA, GA or RA) and a tuition waiver. Continued support is contingent on satisfactory progress being made towards their degree requirements and satisfactory performance in prior TA/GA/RA assignments.

C.13 Policy on Final Research Presentation for MS and PhD

Within two weeks of their MS or PhD defense meeting with their committee members, all graduate students are required to present a publicly announced seminar of their thesis or dissertation research. This seminar may coincide with the day of their defense meeting.

- **MS student presentation:** The MS student must have a notice of the public seminar posted one week before.

- **PhD student presentation:** The PhD student is responsible for having a notice of the public seminar advertised by flyer and email by the Biology Department Office two weeks prior to the seminar. In addition to the Biology Department advertisement, two weeks prior to the dissertation defense, the student must submit the [Final Oral Examination Schedule Form](#).

C.14 Policy on Dual Enrollment in M.S. and Ph.D. Degree

A student may not be concurrently enrolled as a MS and PhD student.
C.15 University Research Policies

The Office of Research Integrity oversees the university policies on responsible conduct of research, research using human subjects, animal use and care in research, biosafety, export controls, conflict of interest, and research and intellectual property policies including research misconduct, access and retention of research data; conflicts of interest and commitment, copyright ownership, IT accessibility, minors in research labs, and patents and invention. Violation of these policies could result in adverse actions that could include stopping a student’s research and dismissal from the university. Graduate students should be familiar with these policies and be able to discuss them with your research advisor. The Office of Research also supports training programs to ensure compliance. A student’s advisor should work with the student to complete all required training.

C.16 Unfavorable actions and key policies

Graduate students can be the subject of unfavorable actions for the following reasons:

- University policy requires that graduate students maintain 3.0 to be eligible for any university assistantship and to be in good standing. As soon as a graduate student’s GPA drops below a 3.0 they will lose their assistantship. They will return to eligibility for an assistantship when the GPA is 3.0 or greater.

- Graduate students can also lose their assistantship if they are not making progress towards their degree. Progress is assessed each year by the GSC based on each student’s annual report. The student will be notified if they are “on-track;” “on-track with concerns”; and “not on track.” If the GSC has concerns, they will be expressed in the annual evaluation along with actions that are needed for a student to get on-track. If a student does not follow the recommendations of the GSC, and is still not progressing towards their degree, then they are at risk of losing their assistantship or not being able to remain in the program.

- Graduate students must adhere to the student code of conduct. Violations of code of student conduct which can lead to disciplinary actions including being dismissed from the program.

- Graduate students conducting research (all MS-thesis and PhD students, as well as non-thesis students who conduct research), must adhere to all the research policies described in Section C.14. Violations of that policy could result in adverse actions such stopping research projects, or dismissal from the university.

- Graduate students on a GTA or an IA are required to meet the expectations detailed for them in GIA, GTA training and in written communication from the individual supervising their teaching. Failure to do so can result in the loss of an assistantship.

- Violations of other university policies such as Title IX and workplace harassment can also lead to a range of disciplinary actions.
C.16.1 Grievance and Due Process Policies

The University has processes that allow graduate students to formally submit a grievance resulting from unfavorable actions or grade disputes (pending University Graduate Council approval; see section I under student rights and responsibilities to access the policy). The Dean of Student’s office maintains and administers a number of policies regarding appeals.

Due process rights relating to the research policies described are included in the policies or processes linked in Section C.14 above as well as in Title IX and workplace harassment polices.

C.17 Travel and Research Grants

The GSC manages two grant programs. A research grant program to help support dissertation or thesis research, and travel grant program to help pay for costs of graduate student travel, particularly to national/international meeting where they are presenting their research. These programs will generally be announced in early Fall.
D. **MASTER OF SCIENCE (MS) PROGRAM**

### D.1 Selecting Your MS Thesis Advisor

MS-thesis students will be advised by a faculty member in the Biology Department. Advisor selection occurs through mutual agreement between the student and advisor and is determined during the application process or the program's first semester. Students admitted to the program who have not selected an advisor prior to arriving on campus are required to register for Research Lab Rotations (BIO 749, 1 cr) during their first semester. Students who have not yet selected an advisor and enroll in Bio 749 rotate through the research labs of one to three potential advisors, who may be identified based on shared research interests and discussions with the Director of Graduate Studies. Graduate students (or advisors) must enter a description of the rotation activities in the Canvas site for BIO 749. By the end of the first semester, all students should complete their selection of a thesis advisor.

BIO 749 is also required for PhD students in each of the first two semesters who have selected an advisor.

The advisor for MS non-thesis students will be the GPD. But, Non-thesis students are welcome to select another advisor within the first semester, with that faculty member’s approval, whose expertise is aligned with the student’s interest.

### D.2 Selecting Your MS Advisory/Thesis Committee

The MS Advisory Committee for MS-thesis students approve the Plan of Study, participate in planning the thesis, evaluate the written thesis and evaluate its defense. Committee members should be selected in consultation with the Advisor. The committee consists of at least three faculty members, including the Chair (typically the student’s advisor). At least two of the committee members, including the Chair, must be non-adjunct faculty members of the Department of Biology, while the third member may be an adjunct member of the Biology Department. Additional members from outside the Biology Department are also permitted. External members who are not part of the UNCG graduate faculty must be given a courtesy appointment by the Graduate School. The external committee member’s curriculum vitae and a brief description written by the graduate student of why the committee member is needed should be emailed to the GPD who will fill request the courtesy appointment. The Thesis Committee must be formed by the end of the second semester (excluding summer) in the program.

The committee for MS non-thesis will include the advisor and two members of the GSC. The committee will examine the plan of study and the plan for a capstone experience and give feedback as necessary to the student and the advisor. If the student’s advisor is someone other than the GPD, the GPD will be one of the two committee members from the GSC.

### D.3 MS Plan of Study

MS students must prepare a Plan of Study (see [MS Plan of Study template](#)) form in the Appendix) as soon as possible or before the start of the third semester (excluding summer). The Plan of Study lists the courses that the student will take, the topic of the thesis (if an MS thesis student), and the members of the Advisory Committee, and thereby serves as an outline of the student’s MS program. The Plan of Study should be completed in consultation with the Advisor and the Advisory Committee and approved by the advisor.
For MS-thesis students, students should submit the plan of study form for approval by the GPD at least two weeks before defending the research proposal. No changes can be made to the Plan of Study after 3 weeks from the start of the semester the student plans to graduate.

D.4 The MS Thesis Proposal for MS-Thesis students only

In close consultation with the Advisor, an MS thesis student selects a master’s research project, prepares a thesis proposal and defends the proposal to their Thesis Committee. The Advisor must approve the proposal prior to submission to the Thesis Committee. Preliminary results may be included in the proposal, but this is not a requirement. The proposal must be submitted to the committee members at least one week prior to the review meeting. The student is responsible for arranging the date/time and location of the meeting and for ensuring any presentation is advertised to the Department (by email and flyer) at least one week before the presentation. A presentation component should be scheduled at a time when classes are being taught (e.g. not during breaks, holidays, or between semesters). Summer proposals are discouraged, but not prohibited.

D.4.1 The Proposal Presentation: The student shall give a presentation (30 minutes including time for audience questions) minimally to the committee. The department (as of August 14, 2023) is in discussion of whether the proposal presentation to the department is required. A proposal presentation should include sufficient background information for the audience to understand the proposal, a discussion of the research questions, hypotheses, and objectives, details of the experimental methods and approaches that will be used, and a discussion of the predicted outcomes. Preliminary results may be included in the presentation, but they are not required. Immediately after the presentation, there will be open questioning by all in attendance. MS-Non Thesis students do not have to make a presentation.

D.4.2 The Proposal Meeting/Defense: The MS-Thesis committee (non-thesis students do not defend their capstone experience) will meet with the student after the presentation to discuss the merits of the proposal and provide suggestions for changes intended to improve the quality of the research. While the proposal meeting is not an exam, it is often the practice that the committee asks open-ended questions that challenge the student to think critically about their work and to test their understanding of the scientific and intellectual foundations of the proposed research. Prior to the meeting, the thesis committee should come to a collective understanding of how the meeting will proceed with respect to questioning of the student and the Advisor’s participation in that process. After the meeting, the student will leave the room and the committee (including the Advisor) will discuss the student’s written and oral proposal presentation. A vote is not required, but the thesis committee may approve the research as proposed or may ask for revisions. If major revisions are required, the committee may request to see the revised proposal and/or may decide that another proposal meeting is required. The final approved proposal should be submitted to the Director of Graduate Studies who will place it in the student’s file.

If the proposal defense is the first meeting of the Thesis Committee, the committee should also discuss and approve the courses listed on the Plan of Study at the meeting.

D.5 The MS Thesis Defense

A thesis must be prepared based on data collected during the thesis research. Typically, the
Advisor works closely with the student until they are satisfied that the document is of sufficient quality for defense. The thesis document must be submitted to the committee members at least one week prior to the presentation and defense. The student is also responsible for arranging the date/time and location for the presentation and the meeting to follow, and for ensuring the event is advertised to the Department (by email and flyer) at least one week before the presentation. The thesis presentation and defense must be scheduled at a time when classes are being taught (e.g. not during breaks, holidays, or between semesters) and the thesis defense should not occur during the same semester as the thesis proposal meeting. Summer proposals are discouraged, but not prohibited.

**D.5.1 The Thesis Presentation:** The thesis defense begins with a presentation of the thesis research (typically 30 to 40 minutes). Thesis presentations typically include sufficient background information for the audience to understand the context and rationale for the research, a discussion of the research hypotheses/questions/aims, details of the experimental methods and approaches, presentation of experimental results, and a conclusions/summary discussion. This portion of the process is open to the university community and immediately following the presentation there will be a period of open questioning by all in attendance.

**D.5.2 The Thesis Defense:** A closed session will follow the thesis presentation in which committee members will ask the student questions related to the thesis research approaches, findings, and conclusions. Questions are often open-ended and challenge the student to think critically about their work. The student should be able to explain and defend the thesis work on their own; thus, it is recommended that the mentor not attempt to lead the student to the correct answer or to clarify a student’s answer. After questioning has ended and the student leaves the room, the committee (including the Advisor) will discuss and evaluate the student’s performance. Three outcomes are possible:

- **Acceptance:** In this case, the student has met the standard set forth for theses by the committee and the department. Minor revisions may still be required of an acceptable thesis prior to submission to the Graduate School. The Advisor alone can supervise these revisions and the committee has the option to request to see the document before final approval.

- **Provisional acceptance:** This outcome indicates that there are substantial format, content, or analysis problems with the thesis that make it unacceptable as written, but upon revision, the document will likely be acceptable. The committee will outline the problems and present them to the student. The student may be asked to resubmit the document to the committee and/or be asked to convene an additional meeting to explain and defend the revisions to the committee. Provisional acceptance may also be granted if the student’s thesis is acceptable, but their ability to defend the thesis is inadequate. In such cases, the committee will clearly define the steps needed for the student to overcome the inadequacies. The inability of a student to rectify any inadequacies may result in rejection of the thesis. All committee members must approve the revised thesis.

- **Rejection:** A thesis is rejected if the student has not adequately conducted, analyzed, or interpreted the research in the thesis, and the committee judges that the problems cannot be amended through simple revision of the document. In such cases, the student must complete additional data collection and/or perform analyses and revisions to the thesis.
Prior to acceptance of the revised thesis, the student may be asked to resubmit the document to the committee and/or may be asked to convene a meeting with the committee to explain and defend the revisions. All committee members must approve the revised thesis. In some cases, the problems are so serious that the final decision is to reject the thesis, leading to the student’s dismissal from the program.

In most cases, the thesis defense meeting will result in several suggested or required revisions in the thesis document. Accordingly, the student should allow enough time for revisions before the Graduate School deadline for receiving the thesis.

D.6 Filing the Thesis with the Graduate School

The thesis must conform to rules established by the Graduate School. Be sure to note the specific instructions and deadline dates affiliated with each step (see the Fall 2023 and the Spring 2024 University Academic Calendars). Directions for format requirements and completing the required online submission of the thesis to the graduate school can be found here.

D.7 The Capstone Experience for MS-Non-Thesis students

Non-thesis students must complete 3 credit hours of BIO 698* (Capstone). The student’s faculty advisor will be the instructor for their section of BIO 698. The capstone experience will be designed by the student’s faculty mentor in collaboration with the GSC members on the student’s committee. The Capstone experience can include a comprehensive exam, written report, scholarly literature review on a pre-approved topic relevant to the student’s career field, an internship experience with documentation, or other rigorous activities approved by the advisor and the GSC committee members.

* BIO 698 is new in Fall 2023. Non-thesis students will be informed during 2023-2024 (and this paragraph will be edited) if the requirements for BIO 698 change or become more detailed during the academic year.

D.8 Applying for Graduation

Students must make a formal application for graduation to The Graduate School by the end of the first week of classes of the term in which the degree will be granted (see the Fall 2023 and the Spring 2024 University Academic Calendars). They must also be enrolled in at least 1 credit in the semester they plan to graduate. Degrees are granted at the end of each semester and the second summer session. A graduation fee must be paid to The Graduate School by the end of the first week of classes of the term in which the degree is earned. Students who do not graduate in the semester for which they originally applied may be charged an additional fee when they reapply for graduation.

A suggested timeline and checklist for MS thesis students can be found here.
E. DOCTOR OF PHILOSOPHY (PHD) PROGRAM

There is a general timeline for PhD students here.

E.1 Changing from the MS Thesis Program into the PhD program

If you were admitted as an MS thesis student into the Graduate Program in Biology and finished the degree requirements, you must still file an application to the Graduate School to be considered for admission into the PhD program. If accepted, you must complete the MS degree prior to matriculation into the PhD program.

E.2 Selecting your PhD Dissertation Advisor

All PhD students are currently required to sign up for Lab Rotations (BIO 749). Students admitted to the program who have not selected an advisor prior to arriving on campus will use the lab rotations to rotate through the research labs of one to three potential advisors, who may be identified based on shared research interests and discussions with the Director of Graduate Studies. Students who enter with an advisor will use BIO 749 to integrate into their advisor’s laboratory. Graduate students (or advisors) must enter a description of the rotation activities in the Canvas site for BIO 749. Advisors should be selected before the end of the second semester, preferably earlier. The role of the advisor is explained above in Section B.

E.3 Selecting your PhD Advisory/Dissertation Committee.

A student should establish an advisory committee and advisor by the end of the first year after admission. The advisor and advisory committee will advise the student on coursework and outline a plan of study. Among many other responsibilities, the dissertation/advisory committee will be responsible for assessing the written research proposal and the oral defense of the proposal that is a requirement to enter candidacy. The committee will also approve the final dissertation and conduct the oral defense of the dissertation.

Committee members should be chosen based on their expertise relative to the student's specialization and dissertation research area. A person with specific research expertise is in a better position to assist the student and to examine the student's competence and progress through the degree process.

The PhD Advisory/Dissertation Committee must be comprised of at least four members. Three members of the committee, including the Chair of the committee, must be members of the Biology Faculty and members of the UNCG graduate faculty. The chair of the committee must be a full member of the Biology Department faculty and the UNCG Graduate School faculty. One member on the committee must be from outside the biology department. Faculty from other departments or institutions who also have official adjunct appointments to the biology department are considered biology faculty.

All members of the Committee, including any external members, must have Graduate Faculty Status at UNCG. External members not part of the UNCG Graduate Faculty must receive at least a courtesy appointment prior to the first committee meeting. For that appointment to be made, graduate students are responsible for sending the GPD a copy of the external member’s curriculum vitae and a brief description of why the external committee member was chosen. The GPD will use that information to request approval from the Graduate School.
The **Recommendation for Doctoral Advisory/Dissertation Committee Appointment and Plan of Study** is required after the first committee meeting (where the Plan of Study should also be approved). All committee members and the GPD must sign the form.

Should it be necessary for a change to the makeup of the advisory committee, the **Recommendation for Doctoral Advisory/Dissertation Committee Revision** form must be submitted for approval by the Graduate School.

**E.4 Plan of Study**

A plan of study (a template for the PhD plan of study can be found [here](#)) for the doctoral degree must be outlined by each student and her/his advisory/dissertation committee preferably in the first year and no later than the completion of 18 semester hours. The plan of study must be approved by the Director of Graduate Studies or by the department head if the GPD is not available. The plan of study should be sent to the GPD along with the **Recommendation for Doctoral Advisory/Dissertation Committee Appointment and Plan of Study** as soon as possible after the first committee meeting. The GPD will review the study plan and then submit it with the form to the Graduate School for approval. The Graduate School will send an email approving the plan of study or will contact the student and the GPD if there is a concern.

All changes to a plan of study, when an earlier one was approved by the Graduate School, must be approved by the advisor, committee members, the GPD and the Graduate School through the submission of the form **Doctoral Plan of Study Revision**. No changes to the plan of study can be made after admission into candidacy.

**E.5 Annual Committee Meeting**

The full advisory committee (or the Graduate Studies Committee if the advisory committee has not been selected) should be assembled to review the progress of the student no less than once per year. The date of these meetings should be recorded on the plan of study form (section F.) and reported in the graduate student’s annual report. Two weeks prior to a committee meeting, students should provide a written progress report to the committee. The report should summarize the work conducted since the last meeting (including figures and tables of data), problems that are impeding progress, a plan for work to be conducted in the next year, and a timetable for completion of degree requirements. Within two weeks after a meeting, a summary should be prepared and signed by the major advisor and then submitted to the GPD for incorporation into each student’s file.

**E.6 The Dissertation Proposal**

Before a student can be admitted to candidacy and proceed to the dissertation, they must write and defend a proposal which states the goals and aims of the dissertation research, justifies the research, and provides a detailed plan to carry out the objectives of the research. The Dissertation Proposal and Qualifying Exam is for the student to show that they have mastered technical writing skills and can synthesize material from courses and self-study into a plausible, testable hypothesis. A student should submit and defend the proposal as soon as possible during the degree program.

Students will develop a Dissertation Proposal in consultation with their primary research mentor in an NIH or NSF format. Briefly, the proposal is similar to a “seed” grant for an investigator who is initiating a new line of research. As such, the feasibility of the project will be evaluated based upon the student’s logical arguments that have been built upon the primary literature and previous data from the
research mentor’s experiments. In addition, the proposal should describe the skills needed to complete the proposed project and that the student has acquired those skills or defined how they will acquire those skills. A high-quality proposal will be hypothesis-driven, rather than methods-driven.

The advisor is expected to guide the student towards a worthwhile project. The advisor assists the student by discussing issues related to the research including philosophy, aims, and methodology. It is expected that the student will write the proposal, whereas the mentor’s role in the proposal writing is limited to making minor editorial revisions and suggesting organizational changes. The mentor may not re-write major portions of the proposal for the student. It is realized, however, that the proposal serves multiple functions as an educational and training exercise in grant writing, as a roadmap for the completion of the student’s dissertation research, and as an evaluation tool.

E.7 The Oral Defense of the Dissertation Proposal

The student is responsible for scheduling the Dissertation Proposal Defense/Qualifying Exam. Students must submit the finished proposal two weeks prior to the scheduled proposal defense date to give the committee ample opportunity to review and comment on the document.

On the scheduled proposal defense date, the committee will assemble and provide written comments regarding the proposal to the committee chair. The proposal will then be discussed in the presence of the student. The student must be prepared to defend the details of the proposal (e.g., logic, hypothesis, experimental design, etc.) and to discuss all issues regarding the scientific and intellectual foundations of the proposed research. This includes general background from EHS course degree program material.

During the oral defense, the advisor:

- Introduces the student at the proposal defense.
- Sets the agenda for the meeting and makes sure that the defense and qualifying exam proceeds in a timely and orderly fashion.
- **Does not ask questions of the student related to the dissertation research and may not speak to lead the student or clarify their answer.**

After questioning has ended and the student leaves the room, the mentor will fully participate in the evaluation of the student’s performance.

E.7.1 The Proposal Defense/Qualifying Exam

Three factors will be used to assess whether a student has successfully defended their proposal – the written proposal, the public presentation, and the oral defense. The student’s performance in these three areas is evaluated as an overall picture, not as three separate entities.

The written proposal will be evaluated as a stand-alone document. In this case, the student’s ability to effectively communicate their ideas and research plan will be evaluated based upon readability, clarity, logic, and completeness. This is the written component of the qualifying exam.

The oral component of the exam involves the oral defense. The student will be evaluated on their ability to clearly explain the details of the proposal and to answer questions about the content of the proposal. During this process the student will be expected to know the intellectual and scientific foundations that underlie the proposed research (e.g. ecosystem
function, toxicological mechanisms, genomics) and questions may cover any aspect of the coursework taken by the student during the period of graduate study on any subject logically related to, and basic to an understanding of, the subject matter of the major and minor areas of study. Finally, the student will be expected to defend the proposed work from criticism levied by the Dissertation Committee.

E.7.2 Outcome of Proposal Defense/Qualifying Exam

Unanimous approval by the committee is required for passing the preliminary examination, and there are three possible outcomes to the proposal defense: Acceptable, acceptable with the need for improvement, and unacceptable.

**Acceptable:** Indicates the student is prepared for PhD candidacy and that their proposal can be viewed as an approved roadmap for completion of the dissertation.

**Acceptable with the Need for Improvement:** This outcome means that the idea and the experiments proposed are adequate, but the student’s performance in one of the three areas of evaluation (i.e. Proposal presentation, oral defense, or written proposal) was inadequate. The Dissertation Committee must provide a written evaluation that explains how the student is to “improve” and a time frame within which the student must meet the conditions set forth by the committee. Common outcomes may require that a student take another course, revise the written proposal, or repeat the oral defense of the proposal (i.e. the oral exam). A student may resubmit a revised proposal and/or set a new defense no earlier than three months and no later than six months after the initial review. Failure to meet the conditions of the Dissertation Committee within the time frame set by the committee may result in dismissal from the program.

**Unacceptable:** The Dissertation Proposal is one that lacks clarity and focus and is poorly presented and/or poorly defended. Following this outcome, a student may resubmit a revised proposal and set a new review date no earlier than 3 months and no later than 6 months after the initial review. If the second dissertation review also leads to an unacceptable rating, the student will be terminated from the program.

Because the purpose of the Dissertation Proposal and review are to aid the student in the planning of the dissertation research, a completed dissertation will not be accepted until at least one year after applying for admission into candidacy.

E.8 Admission to PhD Candidacy

After successfully defending the proposal and completing (or will complete during that semester) all non-dissertation coursework (everything but BIO 791 and BIO 799 on the Plan of Study), a student must make a formal application to the Graduate School for admission to candidacy for the doctoral degree. The following forms must be submitted to the Graduate School to be considered for admission into candidacy:

- Application for Admission to Candidacy
- Dissertation Proposal Approval
- Results of Doctoral Preliminary Examinations – Written
- Results of Doctoral Preliminary Examinations - Oral
E.9 Defending the Dissertation

It is the advisor’s role to determine when the written dissertation is acceptable and defendable. A student cannot schedule a dissertation defense without the approval of the research advisor. As with the proposal, the final dissertation should not, in the advisor's view, need major foreseeable modifications. However, the student should understand that revisions will be forthcoming. The student must give each committee member a copy of the dissertation at least two weeks (ten business days) before the scheduled defense date. Students should follow the guidelines set forth by the UNCG Graduate School when preparing the dissertation.

The Graduate School requires that all PhD students submit the Final Oral Examination Schedule at least two weeks before the scheduled oral defense. The dissertation defense will begin with a presentation of the completed thesis research in a public presentation. The presentation will be open to the community and will be announced through the biology department office. Audience members will have the chance to ask questions after the presentation. The advisor has the authority to end the questioning by the community.

After the presentation and questions from the community, the advisor will convene a meeting of the student with the student’s dissertation advisory committee where the student will defend their dissertation. In practice, the defense of the dissertation usually occurs immediately after the public presentation, but that is not a requirement (e.g., the defense can be on a different date than the public presentation). The committee members will ask questions of the students about the proposal until they are satisfied or unsatisfied with the ability of the student to defend the proposal. The advisor does not ask questions of the student related to the dissertation research and may not speak to lead the student or clarify their answer.

The student will then be asked to leave the room. The committee will then work together to assess the performance of the student. The advisor participates in the discussion. Three outcomes are possible: acceptance, provisional acceptance, and rejection:

- **Acceptance of the dissertation indicates the student has met the department's dissertation standard.** Minor revisions may still be required of an acceptable dissertation prior to submission to the Graduate School. However, the major advisor can supervise these revisions.

- **Provisional acceptance** indicates that there are substantial format, content, or analysis problems with the dissertation that make it unacceptable as written, but that upon revision, the document will likely be acceptable. The committee will outline the problems in writing and present them to the student. Before accepting a revised dissertation, the student must convene an additional meeting to explain the revisions to the entire committee. All committee members must approve of the revised dissertation.

- **Rejection/Non-acceptance** of the dissertation will occur If a student is unable to rectify any inadequacies in the dissertation related to their ability to communicate the research with respect to the way they conducted the experiment, the way they analyzed data, and/or the way they interpreted the research, then the dissertation will not be accepted. A student will be dismissed from the program if their dissertation is not accepted, or they will be required to initiate a new thesis project.

If the dissertation is accepted, the advisor and the advisory committee must complete the Results of Oral Examination in Defense of Thesis/Dissertation form.
**E.10 Filing the dissertation**

The process for submitting the dissertation to The Graduate School has two components: submitting the copy for formatting approval and submitting the final copy. Be sure to note the specific instructions and deadline dates affiliated with each step. It is very important for graduate students to check the dates for submission of both components by looking at the [Fall 2023](#) and the [Spring 2024](#) for dates. Students file the dissertation electronically via the online submission system available on The Graduate School’s website. In final form, the dissertation must comply with the rules prescribed by the Graduate Studies Committee in the “Guide for the Preparation of Thesis and Dissertations” in addition to the requirements of the Department of Biology. The approved electronic submission must be uploaded by the deadline date (see [University Academic Calendar](#)).

Publication of the dissertation by UMI Dissertation Publishing/ProQuest Information and Learning is required by The Graduate School. The candidate must pay associated publishing fees. Your committee members may also request a paper copy for their files.

Students file the dissertation electronically via the [Graduate School’s online submission system](#). More information on electronic submission is at [here](#). The Graduate School has strict formatting requirements, so it is very important to review the information.

Publication of the dissertation by UMI Dissertation Publishing/ProQuest Information and Learning is required by The Graduate School. The candidate must pay associated publishing fees. Your committee members may also request a paper copy for their files.

**E.11 Applying for Graduation**

Students must make a [formal application for graduation to The Graduate School](#) by the end of the first week of classes of the term in which the degree will be granted (see the [Fall 2023](#) and the [Spring 2024](#) University Academic Calendars). Students must also be enrolled in at least 1 credit hour in the semester they plan to graduate. Degrees are granted at the end of each semester and the second summer session. A graduation fee must be paid to The Graduate School by the end of the first week of classes of the term in which the degree is earned. Students who do not graduate in the semester for which they originally applied may be charged an additional fee when they reapply for graduation.

**F. USE OF TEACHING SPACE AND EQUIPMENT FOR RESEARCH**

Research activities associated with the MS and PhD degrees need to be contained within research labs. The BIO Department will do everything within reason to accommodate the odd/limited request for use of teaching space and equipment for use in research, but the granting of these requests will be limited and requires prior approval from the Department Head.