

Syracuse University
College of Arts & Sciences
Biology



Department of Biology
**Graduate Program
Handbook**

Department Chair
Melissa Pepling

Graduate Program Director
Steve Dorus

Academic Support Coordinator
Sarah Hartmann

| | |
|---|-----------|
| A. Introduction | 4 |
| MS Program Outcomes..... | 4 |
| B. Summary of Degree Requirements | 5 |
| PhD Degree Requirements | 5 |
| MS Degree Requirements..... | 5 |
| Requirements and Deadlines at a Glance | 6 |
| C. Graduate Program Requirements | 7 |
| 1. Courses | 7 |
| a. First Year | 7 |
| b. Additional course requirements | 7 |
| 2. Laboratory Rotations (PhD only)..... | 9 |
| 3. Formation of Research Committee..... | 10 |
| a. Overview..... | 10 |
| b. Timing | 11 |
| c. Changes to committee..... | 11 |
| 4. Research Committee Meetings..... | 12 |
| a. First committee meeting | 12 |
| b. Annual committee meetings..... | 12 |
| c. Meeting Preparation..... | 12 |
| d. Meeting Reporting | 12 |
| 5. Qualifying Exam | 13 |
| 6. Annual Progress Report and Advising Summary..... | 13 |
| a. Annual reporting..... | 13 |
| b. Exit Plan | 13 |
| 7. Final Year | 13 |
| a. PhD Students | 13 |
| b. MS Students | 14 |
| c. Completion of Graduate Degrees after Leaving Campus..... | 14 |
| D. Qualifying Exams | 15 |
| 1. Purpose..... | 15 |

| | |
|---|-----------|
| 2. Nature..... | 15 |
| 3. Format | 15 |
| a. Timing | 15 |
| b. Objectives | 16 |
| c. Qualifying Exam Committee | 16 |
| d. Proposal..... | 16 |
| e. Oral Defense of Proposal..... | 17 |
| f. Oral Examination of General Knowledge..... | 17 |
| g. Evaluation | 17 |
| E. Financial Support | 19 |
| 1. Funding Sources..... | 19 |
| a. Teaching Assistantships..... | 19 |
| b. Research Assistantships | 20 |
| c. Summer Research Support..... | 20 |
| d. Special Awards..... | 20 |
| e. Travel Awards | 20 |
| 2. Satisfactory Progress | 20 |
| F. Policies Governing Graduate Programs..... | 21 |
| 1. Department | 21 |
| 2. College | 22 |
| 3. University Academic Integrity Policy..... | 22 |
| G. Additional On-Campus Student Resources..... | 22 |
| 1. On-Campus Financial Resources | 22 |
| 2. Office of Student Assistance: | 22 |
| 3. On-Campus Student Counseling Services: | 23 |
| 4. Campus Conflict Resolution Services: | 23 |

A. Introduction

The Department of Biology at Syracuse University is committed to research-oriented graduate training of the highest quality. A wide variety of disciplines are offered within the areas of biochemistry, developmental biology, genetics, molecular and cellular biology, neurobiology, plant biology and ecology, and evolution. Each student's program is individually structured to provide the maximum flexibility in the choice of coursework consistent with high quality graduate scholarship.

PhD Program Outcomes

- Demonstrated ability in scientific methods and research - ability to independently approach the design and execution of experiments to robustly address biological research questions.
- Possess sufficient knowledge in a subfield of the biological sciences to formulate and address contemporary biological research questions.
- Ability to explain and analyze concepts from other related sub-fields of the biological sciences.
- Develop communication and synthetic skills for presentation in oral, poster and written formats.
- Demonstrate an awareness of matters associated with ethics and the responsible conduct of research.

MS Program Outcomes

- Demonstrated ability in scientific methods and research - possess basic knowledge of how to approach the design and execution of experiments to robustly address biological research questions.
- Possess sufficient knowledge in a subfield of the biological sciences to formulate and address contemporary biological research questions.
- Ability to explain and analyze concepts from other related sub-fields of the biological sciences.
- Develop communication and synthetic skills for presentation in oral, poster and written formats.
- Demonstrate an awareness of matters associated with ethics and the responsible conduct of research.

B. Summary of Degree Requirements

PhD Degree Requirements

Courses: Forty-eight credits are required for the doctoral degree in Biology.

- A student entering the department with a B.A. or B.S. will complete a minimum of 24 credits of formal coursework. Students entering with a Master's degree will complete at least 18 credits of formal coursework.
- The remaining credits may be dissertation credits. At least 3/4 of the credits applied to a PhD program, excluding dissertation credits, must be at the 600-level or above.

Qualifying exam: Pass Qualifying Exams supervised by your Research Committee.

Manuscript submission: Submit at least one manuscript for publication to a peer-reviewed journal before your dissertation is submitted to the SU Graduate School for publication.

Conference presentation: Present (as first author and presenter) your research findings at a regional, national or international scientific conference. These presentations may be in either poster or oral presentation format.

Thesis and defense: Develop a thesis based on original research and successfully defend it in accordance with the regulations of the SU Graduate School.

MS Degree Requirements

Courses: 24 credits of formal coursework are required for the M.S. degree. These courses are to be selected in consultation with the GEC and the student's Research Committee. Six additional thesis credits are required.

Thesis and defense: Develop a thesis based on original research and successfully defend it in accordance with the regulations of the SU Graduate School.

*Full-Time Status: First- and second-year students supported by a TA-ship or RA-ship should register for 9 credits per semester. First- and second-year students supported by an SU fellowship should register for 12 credits per semester. All students should refer to their TA or Fellowship offer letter for guidance in relation to registration. Once students have completed the minimum coursework requirements for their degree (48 credits for PhD/ 30 credits for MS), they should register for GRD 998 (Degree in Progress) for 0 credits each semester (and also submit a "Certification of Full-Time Status" form to the Graduate Program Administrator if they are not a TA, an RA, or a Fellow).

Requirements and Deadlines at a Glance

| | MS Students | PhD Students |
|---|---|---|
| Complete bioethics CITI Module | by the end of first week of first semester | |
| Select Research Advisor (p. 10) | end of first semester | end of first semester (or if rotating, by one week after end of last rotation) |
| Select Research Committee (in consultation with Research Advisor, p. 10) | March 31 of first year | October 1st of the third semester (or March 1st for Spring admits) |
| Scientific Writing Course | Fall Semester, Year 1 | |
| Quantitative Skills Course | Before qualifying exam | |
| File "First Research Committee Meeting: Preliminary Program Outline" (Form #1) | Immediately following first Research Committee meeting | |
| Subsequent meetings with Research Committee (Form #2 and Form #3) | annually, between September 1st and May 15th | |
| Submit "Annual Progress Report" and "Advising Summary" (Form #5 and Form #6) | following each Research Committee meeting, but at least annually, and no later than April 15th | |
| Take Qualifying Exams (PhD only) (p. 12 and 14-16, Form #4) | N/A | no later than the end of the fourth semester |
| Completion of Graduate Seminar Courses requirement (p. 8-9) | at least 2 courses | at least 3 courses (at least 2 before Qualifying Exams; 1 after Qualifying Exams) |
| Approval, in writing, of dissertation or thesis by readers (p. 12-13) | prior to submission of "Request for Examination" form to the SU Graduate School | |
| Submit official "Request for Examination" form to the SU Graduate School and compete Graduate School degree audit | at least 3 weeks prior to defense | |
| Present formal Departmental Seminar (p. 12-13) | Immediately prior to defense | |
| Dissertation (PhD) or Thesis (MS) Defense (p. 12-13) | at least 3 weeks after submission of "Request for Examination" and completion of Graduate School degree audit | |

C. Graduate Program Requirements

1. Courses

a. First Year

First-year Biology graduate students typically register for at least 9 credits during each of the Fall and Spring semesters, and 6 credits during the Summer semester. The student's Research Advisor will review their background and educational objectives with them and assist the student in choosing an appropriate set of courses designed to meet their initial objectives. Students who are undertaking rotations during their first year will be appointed an interim First Year Advisor by the GEC.

- All First-year students are required to enroll in BIO 705 Graduate Research Seminars (1 credit), Bio 700 General Seminars in Biology and BIO 704 Scientific writing (3 credits)
- PhD students who are conducting laboratory rotations should also register for BIO 610 Graduate Research Laboratory (2 credits) for each semester (Fall, Spring and, if applicable, Summer) during which they are rotating.
- Other courses should be selected in consultation with their Research Advisor or Interim First-Year Advisor (for rotation students).
- Remaining credits should be used for BIO 999 Dissertation for PhD students or BIO 997 Master's Thesis for MS students.

b. Additional course requirements

Quantitative skills course

Each student is required to take an appropriate 3-credit quantitative skills course from among the existing courses available at Syracuse University, SUNY ESF, and SUNY Upstate. A partial list of available courses is included below. Students are expected to discuss the choice of course with their Research Advisor and/or Research Committee members and select the course best suited to their needs. Note: For PhD students, the quantitative skills course must be taken prior to the Qualifying Exams.

Potential Quantitative Skills Courses (3 credits each)*:

| COURSE # | COURSE TITLE |
|----------|--|
| BIO 608 | Quantitative Methods for Life Scientists |
| FSC 631 | Forensics Statistics |
| HTW630 | Spatial Statistics for Public Health |
| HTW631 | Intermediate Biostatistics |
| MPH 602 | Principles of Biostatistics |
| APM 620 | Experimental Design and ANOVA |

| COURSE # | COURSE TITLE |
|----------|--|
| APM 625 | Sampling Methods |
| APM 630 | Regression Analysis |
| APM 635 | Multivariate Statistical Methods |
| APM 645 | Nonparametric Statistics and Categorical Data Analysis |
| APM 696 | Special Topics in Quantitative Methods |
| APM 730 | Advanced Regression Modeling Methods |
| ERE 621 | Spatial Analysis |

*IMPORTANT NOTE: This list of suggested courses is dynamic and will change over time. Many courses listed are offered only in the Fall and Spring semester. If you are interested in a specific course listed here, please consult the [SU Schedule of Classes](#) (available via [MySlice](#)) to confirm availability.

Graduate Seminar Courses

Graduate students are required to enroll in BIO 705 (Graduate Research Seminars) each Fall and Spring semester in Years 1-3 of their degree (unless they have a course or a TA assignment which conflicts with the time of BIO 705, or they are off campus conducting field research). Fifth-year students are also required to present a research seminar in Bio 705 (or the regular Department Seminar) during the Fall semester of their 5th year. Students are also required to take BIO 704 (Scientific Writing) in their first semester and Bio 700 (Seminar in General Biology) in Years 1-2 of their degree. BIO 704, BIO 705, AND BIO 700 do not count toward fulfilling the Graduate Seminar course requirement.

In addition to the required BIO 700 and BIO 705, all graduate students are required to take a number of Graduate Seminar courses:

- MS Students: are required to take at least two Graduate Seminar courses.
- PhD Students: are required to take at least three Graduate Seminar courses; at least two must be taken prior to taking the Qualifying Exams. The latter is to assure that they are aware of the latest developments in specific areas related to their research interests.

PhD candidates not in residence (i.e., executing field research required for their dissertation) can be excused from participation in up to one Graduate Seminar course upon certification to the GEC by the supervising professor.

Graduate Seminar courses at the 600- or 700-level typically involve a substantial amount of student discussion and critical evaluation of primary literature as well as student oral presentations and/or grant writing. One purpose of this course requirement is to provide students with training and experience in organizing, evaluating, and communicating scientific data and information relating to specific areas in Biology.

Student who are uncertain about which courses count toward the seminar requirement should consult with their Research Advisor, Research Committee members, or the GEC.

This requirement may be fulfilled by graduate courses offered by Syracuse University, SUNY College of Environmental Science and Forestry, or SUNY Upstate Medical University.

c. Variable Content Courses

A number of variable content courses exist in the department. These courses can count towards 'formal' credits, but there are limits on the number and level of variable-credit courses that can be applied to each degree.

BIO 610 (Graduate Research Laboratory) "lab rotations" [maximum total 6 credits]
To be taken a maximum of three times. (Fourth rotations, if taken, are taken for 0 credits.) These courses are 13-week periods of independent study in a laboratory. During their first year, all rotating students should register for BIO 610 for 2 credits for the Fall and Spring semesters (and Summer semester, if applicable).

BIO 688 (Biological Literature) [maximum total 6 credits]

These courses are essentially tutorials in which a student reviews a specific area in conjunction with a faculty member. The content and procedures for evaluation are outlined in a petition to be filed with the department prior to registration.

BIO 690 (Independent Study) [maximum total 6 credits]

These courses are reserved for special projects during which students conduct laboratory or field research that is not related to their thesis or dissertation research. A petition is required, in which the project and procedures for evaluation are described.

d. Responsible Conduct of Research Training

Students are required to complete the Responsible Conduct of Research training through the [CITI program website](#) by the end of the first week of their first semester. Students must register on the CITI website and ensure that they select Syracuse University during the registration process as their affiliated institution. Once registration is complete the student must add a course and select the Responsible Conduct of Research training module. Syracuse University provides guidance on CITI registration and courses [here](#). Once the course is completed the student must provide proof of completion to the department.

2. Laboratory Rotations (PhD only)

Laboratory rotations are an invaluable opportunity for PhD students to gain a training in diverse concepts and techniques, and to ensure an appropriate match between a student and dissertation lab.

Ecology and Evolution Students

PhD students entering ecology and evolution labs are usually admitted directly into a research group. However, they are welcome to do laboratory rotations. In cases where a student's interests span both cell or molecular biology and ecology or evolution, rotations are optional upon approval of the GEC, but are highly encouraged, since success in an integrative PhD program depends on diverse training. In such cases, the GEC decision will be made following consultation with both the student and his/her interim First-Year Advisor.

Cell Biology, Developmental Biology, Genetics and Neuroscience Students PhD students who are interested in cell biology, developmental biology, genetics, and neuroscience labs are advised to do three research rotations. A minimum of two rotations is required. A student may forego a third rotation if the student has identified a home lab, and if both the student and the home lab Research Advisor agree that it is in the student's best interest to do so. Rotation labs will be chosen by the student in consultation with possible Rotation Advisors, and the student will notify the GEC of his/her choice of lab for each rotation by no later than two weeks before the rotation starts.

Rotation students are strongly encouraged to talk to specific faculty about rotations as soon as they arrive on campus, and to provisionally plan all three rotations. They should then let their interim First-Year Advisor and the Graduate Program Administrator know their plan before the first rotation starts. However, students are free to change their minds about where they do second and third rotations at any time up to two weeks before the rotation period starts.

The first rotation period starts no later than the last full week of September and should be at least 13 weeks long. The second rotation period starts on January 2nd and ends on March 31st. The third rotation period starts on April 1st and finishes on June 30th. In exceptional circumstances, a student may petition the GEC for permission to do a fourth rotation.

Note that rotation students are expected to conduct research when classes are not in session. This includes, but is not limited to, the latter part of winter break (approximately 1 ½ weeks before the starts of the spring semester) and during Spring Break. Thanksgiving Break consists of Thanksgiving Day and the following Friday.

3. Formation of Research Committee

a. Overview

All students are responsible for identifying a Research Advisor and together with their Advisor forming a Research Committee. This committee is responsible for advising

students as they develop their high-quality research program and for assisting them in identifying opportunities that could enrich their training. The Research Committee shall:

- develop an appropriate program of formal coursework and independent study with the student;
- advise the student on their research activities;
- administer the Qualifying Exams (PhD students);
- evaluate annually, on the basis of at least one formal meeting with the student, the student's progress toward completion of their degree; and
- participate in the student's final defense.

b. Timing

PhD students

PhD students who are not undertaking rotations must select a Research Advisor no later than the end of their first semester. PhD students who are undertaking rotations must select a Research Advisor no later than one week after the end of their last rotation. A Research Committee, consisting of three additional faculty members, one of whom may be from another department or institution, must be constituted by October 1st of the second year (or by March 1st for Spring admits).

MS students

MS students must select a Research Advisor no later than the end of their first semester. A Research Committee, consisting of two additional faculty members, one of whom may be from another department or institution, must be constituted by March 31st of the first year.

c. Changes to committee

A student may change their Research Advisor or the dissertation committee composition during the course of their graduate studies after obtaining approval from their dissertation committee. In situations of conflict, students are strongly encouraged to work directly with their Research Advisor and/or dissertation committee to resolve any difficulties they may experience. Students are also encouraged to communicate directly with the GEC chair(s) or Department chair for advice and support in these situations. The university also has many resources that can be accessed and are included in Section G of this handbook. To avoid conflicts with other Graduate Program or Department policies, the GEC is to be informed of all decisions to change a Research Advisor or dissertation committee composition.

4. Research Committee Meetings

a. First committee meeting

Students will arrange to meet with the Research Committee within 30 days after its formation. At that time, the Research Committee will review the student's objectives and progress toward a graduate degree. A "First Research Committee Meeting: Preliminary Program Outline" ([Form #1](#)) is to be developed by the student, advisor, and research committee. This program outline should reflect the student's interests and the committee's recommendations, and it will serve as one basis for annual evaluation of the student's progress. [Form #1](#) should be filed by the student with the Graduate Program Administrator after the committee meeting.

Doctoral Candidates and Preparation for the Qualifying Exams: During the first committee meeting, the student and the committee will also identify specific areas of biology and topics that are especially relevant to the student's research interests. Students will be expected to gain proficiency in these areas through reading the literature, taking courses, participating in seminars, etc. These areas will be potential topics of in-depth questioning during the Qualifying Exams.

b. Annual committee meetings

Students are urged to meet informally with their Research Committee on a regular basis. However, students **MUST** hold a formal meeting by the end of each Spring semester.

c. Meeting Preparation

One week prior to the meeting, the student will provide committee members with a 3-5 page summary of accomplishments since the previous formal meeting. This "Summary of Progress" should include: courses taken and grades obtained, specific success and/or difficulty in research, awards and publications, a description of and the rationale for any changes in the direction of the student's research, and a brief projection of future research objectives. During the meeting, students should be prepared to elaborate on any aspect of the summary and to present data documenting the results of their research activities.

d. Meeting Reporting

The student will bring printed copies of the two Research Committee Meeting forms to the meeting for the Research Advisor and Research Committee members to complete. The advisor fills out [Form #2](#), and committee members will out [Form #3](#). These signed forms should be submitted to the Graduate Program Administrator no later than one week after the Research Committee meeting. The student shall also file a copy of the

Summary of Progress with the Graduate Program Administrator for inclusion in his or her file by the same date.

5. Qualifying Exam

Students in the PhD program must take the Qualifying Exams by June 15 of their second year (December 15 for Spring Start). If the student does not PASS in the first attempt, then the Qualifying Exam(s) must be retaken by the end of the student's fifth semester in residence. Failure to do this is grounds for dismissal from the program. Preparation for the Qualifying Exams should include formal coursework, independent study, participation seminars and (when available) lab meeting/journal club, as well as development of an active research program. The Exam format and objectives are described in section E., below.

6. Annual Progress Report and Advising Summary

a. Annual reporting

In addition to holding a yearly committee meeting, which may occur at any time during the year that is agreeable to committee members, each graduate student must file an "Annual Progress Report" ([Form #5](#)) and "Advising Summary" ([Form #6](#)) by April 15th of each academic year. These reports must be signed by the student and their Research Advisor. The GEC uses this information to evaluate student progress during the academic year and to evaluate suitability for continued support in the upcoming academic year. In coordination with this report, the GEC will administer the Annual Graduate Mentoring Survey designed to obtain feedback on mentoring in the department.

b. Exit Plan

In spring of the fourth year, along with the annual progress report, PhD students are required to submit an outline of the dissertation/thesis and a plan for completing the remaining work. This 'exit plan' should first be approved and signed by the student's Research Advisor and all Research Committee members.

7. Final Year

a. PhD Students

Students anticipating completion of their degree requirements should obtain preliminary approval of their research efforts from their Research Committee. After a draft of the dissertation is completed, students must obtain approval from their Research Advisor and two other members of their Research Committee (*i.e.* Readers) that the dissertation is suitable for defense. Such certification is required before a "Request for Exam" form can be submitted to the SU Graduate School. Therefore,

Readers should receive the draft no later than one month prior to the anticipated date of the defense and the Graduate Program Administrator must be notified, in writing, by each of the 3 readers of their approval. The Graduate Program Administrator will then authorize a request for a formal defense.

PhD candidates shall present an approximately 50-minute departmental seminar on their research prior to the dissertation defense.

The Dissertation Defense Committee consists of at least five (5) members, including the student's Advisor, all members of the student's Research Committee and a Defense Chair (from another department). *Only Syracuse University tenured or tenure-track faculty outside the Biology Department may chair the defense.* One individual in addition to the Defense Chair may be from another Department or Institution. Final acceptance of the dissertation requires an affirmative vote of four members of the Defense Committee.

b. MS Students

Students will prepare a thesis in the form specified by the SU Graduate School. The thesis must be approved by their Research Advisor and one additional member of their Research Committee (*i.e.* Readers). Readers must certify in writing to the Graduate Program Administrator that the thesis is suitable for defense. Prior to authorization of a request to the SU Graduate School for a formal defense by the student, the Graduate Program Administrator will ascertain that this requirement has been fulfilled. The thesis defense may be scheduled no sooner than three weeks after submission of the required forms to the SU Graduate School and two weeks after providing each member of the Defense Committee with a copy of the thesis.

Prior to the defense, MS candidates will present an approximately 50-minute formal departmental seminar covering their research.

The Thesis Defense Committee consists of four (4) members: the three Research Committee members (which includes the student's Advisor) and one additional individual, chosen by the members of the Research Committee. This person may be from another Department or University. Final acceptance of the thesis requires an affirmative vote of three members of the Defense Committee.

c. Completion of Graduate Degrees after Leaving Campus

Any matriculated student desiring to complete a graduate degree after leaving the campus (excluding periods of off-campus research) must, in conjunction with their Research Committee, develop a specific timetable for completion of the degree for

approval by the GEC. The timetable must establish deadlines for the periodic submission of requisite material, i.e., data analyses, drafts of theses or dissertations, etc. Failure to meet established deadlines or to obtain approval for a modified timetable may result in dismissal from the program. Students must register for GRD 998 (Degree in Progress) for 0 credits each semester until graduation to maintain their active student status.

d. Objectives of the dissertation/thesis defense

The defense is tailored to each individual student and project. In general, it includes discussion of:

- the candidate's research findings, especially the broader implications of those findings within the discipline and across disciplines;
- how the research topic might be pursued in the future to expand on the candidate's findings;
- areas of the written document itself that may need to be clarified or expanded.

D. Qualifying Exams

1. Purpose

The goals of the PhD Qualifying Exams are two-fold: 1) to determine students' depth and breadth of knowledge in their specific fields of study and in related disciplines; and 2) to determine whether students will be capable of conducting independent research. This means that they must be able to demonstrate the ability to identify relevant questions, and to develop approaches, either empirical or theoretical, to address those questions. Moreover, students should be able to articulate their ideas clearly in both written and oral formats.

2. Nature

The Qualifying Exams consist of two parts. These include an oral defense of a written research proposal, and an oral examination testing the student's depth of knowledge in relevant subdisciplines of biology that had previously been designated by the student's research committee. The order in which the two parts of the Qualifying Exams are taken is to be determined by the student's Research Committee.

3. Format

a. Timing

During their third semester, students must meet with their research committee to identify specific areas of biology and topics that are especially relevant to their

research interests. Students will be expected to demonstrate proficiency in these areas and they will be questioned in depth on these topics during the Qualifying Exams.

At the end of the third semester, or early in the fourth semester, students should meet with their Research Committee to discuss their progress toward defining a research project and set up the dates for the two parts of the Qualifying Exams. At that time, the additional member of the Qualifying Exam Committee will be designated. PhD students must attempt the Qualifying Exams by June 15 (December 15 for Spring Start). PhD students failing to attempt the Qualifying Exams prior to this deadline may be terminated from the PhD program; exemptions from this rule will only be granted under exceptional circumstances or conditions, and only with the prior approval of both the student's research committee and the GEC. If a second attempt is necessary, this should be completed by the end of the fifth semester.

b. Objectives

The department views each of the following to be an important criterion for PhD candidacy. Students qualified for candidacy should:

- be able to identify valid scientific problems within their general field, and to understand how the solution of such problems would impinge on a larger scientific endeavor;
- be able to design individual experiments and to organize a series of experiments into a feasible research program that could contribute to the solution of a selected problem;
- have a reasonable understanding of the theory, capabilities, and limitations of those techniques they propose to use; and
- be able to express and defend their ideas clearly and concisely, in both written and oral formats.

c. Qualifying Exam Committee

The Qualifying Exam Committee will be composed of the student's Research Committee and an additional individual chosen by the Research Committee. One member of the Qualifying Exam Committee, or exceptionally two, may be a qualified academician from outside the Biology Department. One member of the Research Committee will be designated as Committee chair. The student's Research Advisor participates in both parts of the Qualifying Exams but does not vote on the outcome.

d. Proposal

The topic of the written proposal will be the student's own dissertation research project. As a result, it is natural that many aspects of the proposed plan might be

discussed with the Research Advisor and other lab members; however, the written document must be prepared independently and represent the student's own work. For example, complete or partial drafts of the written proposal should not be given to others for comments or suggestions.

The main proposal should be no longer than 8 single-spaced pages, including all text, figures and tables. The reference list is not included in this page limit. The proposal format should be appropriate for the student's research area as discussed in BIO700 and in consultation with the student's research committee. In general, it should include a concise statement of the specific aims of the study, a brief survey of the pertinent literature, and a detailed research strategy, including project significance, experimental approach, and all figures and tables.

A copy of the proposal must be presented to each committee member no later than one week before the scheduled date of the Oral Defense of Proposal.

e. Oral Defense of Proposal

The proposal as submitted is the document which the student will defend. Therefore, a majority of the Qualifying Exam Committee members must judge the proposal to be defensible in order for the exam to proceed. If a majority of Committee member judge the proposal to be indefensible, then this will constitute failure of this part of the Qualifying Exams.

The student should be prepared to give a 15-20 minute presentation at the beginning of the exam period summarizing the proposal. Faculty will ask questions about the proposal that permit the student to demonstrate those qualities expected of a PhD candidate and outlined above in section b., Objectives. Such questions may be directed toward conceptual or experimental details, the potential significance of the problem under consideration, or areas tangential to the proposal relating to current concepts and knowledge in the student's general field of interest. This portion of the Qualifying Exam should not exceed three hours.

f. Oral Examination of General Knowledge

The questioning will be focused on the areas of biology and topics that were identified during the previous Research Committee meeting, as described above. This portion of the Qualifying Exam should not exceed two hours.

g. Evaluation

When the Qualifying Exams are completed, the student will be excused from the room and the committee shall render a verdict on the student's suitability for candidacy.

Although the student's Research Advisor participates in both parts of the Qualifying Exams and the subsequent discussions, the Research Advisor does not vote on the outcome. The remaining four members of the committee make the final decision, with a minimum of three affirmative votes required to pass. The Qualifying Exam Committee shall vote on one of three possible outcomes:

- PASS: the student passes and advances to PhD candidacy.
- FAIL: the student is terminated from the PhD program and, if recommended by the research committee and approved by the GEC, may switch to the MS degree program.
- CONDITIONAL PASS upon completion of conditions set by the committee.

If the outcome is FAIL, the student must transfer to the MS program and may not switch back to the PhD. If the outcome is CONDITIONAL PASS, the committee will mandate requirements designed to remedy deficiencies observed during the Qualifying Exams. These requirements could include retaking the one or both parts of the Qualifying Exams, and/or re-writing the proposal, additional formal coursework, preparing a review manuscript, etc.

Following the first part of the Qualifying Exam, the Qualifying Exam Committee may recommend that the student delay the second part of the Qualifying Exam until after the end of the fourth semester deadline. If the student accepts this recommendation, they forfeit their first attempt at the second part of the Qualifying Exam and the Qualifying Exam Committee can only allow the student to take the second part of the Qualifying Exam once, regardless of the outcome. The student must notify the Chair of their Qualifying Exam Committee and the Chair of the GEC in writing, within 48 hours of receiving the recommendation, of their decision regarding the delay in taking the second part of the exam.

The Chair of the Qualifying Exam Committee will complete and submit the "Certification of Candidacy for the PhD Degree in Biology" ([Form #4](#)) to the Graduate Program Administrator. Upon receipt, the Graduate Program Administrator will forward the appropriate information to the GEC and to the SU Graduate School certifying that the student has achieved the status of a formal candidate for the PhD degree in Biology. This process must be complete by the end of the fifth semester, or the student will be terminated from the program.

E. Financial Support

Student progress is reviewed annually, and academic year (Fall and Spring semesters) financial support is guaranteed for five years (PhD students) and two years (MS students), contingent on satisfactory progress. Financial support beyond five years (PhD students) or two years (MS students) is only granted in exceptional circumstances. This requires a petition from the student and their Research Committee and approval by the GEC. To be considered, petitions for continued support must be received by April 15th of the preceding Spring semester, along with an updated dissertation/thesis outline and plan for completion. These must first be approved by the student's Research Committee.

1. Funding Sources

a. Teaching Assistantships

Teaching assistants generally aid in the instruction of undergraduate students, with duties ranging from conducting recitation sections in an introductory course to activities associated with a laboratory course. Requests for assistantships for the following academic year will be solicited from presently enrolled students approximately one semester prior to the availability of support. TA positions available for the next academic year, after allocating support to incoming graduate students, will be used to support continuing students in good standing. Good standing is monitored annually by the GEC and is defined as meeting departmental requirements of formal progress reports, committee meetings, and Qualifying Exams (where applicable), including timeliness of meeting these requirements and all associated paperwork. In addition, good standing encompasses satisfactory performance as a TA (where applicable), obtaining at least a B in each formal course taken, weekly attendance in BIO 705 (Graduate Research Seminars), and satisfactory progress toward completion of a PhD or an MS degree. Good standing also includes compliance with department and university regulations including those of the Environmental Health and Safety Office, the SU Graduate School, the Syracuse University Student Code of Conduct, and SU Academic Rules and Regulations. Failure to fulfill any one of these requirements may result in dismissal from the graduate program at the discretion of the GEC.

Students who have accepted a TA award may not accept alternative support during the period of their TA award without permission of the GEC. Approval is dependent upon finding a qualified replacement for the TA position. TAs or RAs holding a full-time (average 20 hours per week) appointment are expected not to accept any other employment.

b. Research Assistantships

RAs are awarded by individual faculty members who have external funding. The duties and responsibilities of an RA are established by the faculty member within the general policies of the SU Graduate School. Students who are awarded an RA must maintain good standing within the department.

c. Summer Research Support

Graduate students are typically provided a summer research stipend that is funded either by the department or their advisor's research grant. In recent years this stipend has been \$2500 and has come from research grants or the departmental budget.

d. Special Awards

The Graduate Recruitment Committee nominates exceptionally qualified incoming students for competitive awards. These include one departmental award (Marilyn Sue Kerr Scholar Award), and two university awards (Syracuse University Fellowship and Syracuse University STEM (Science, Technology, Engineering, and Math) Graduate Fellowship).

e. Travel Awards

Each year, graduate students are eligible to apply for a travel award from 1) the department (Robert and Susan Hallenbeck Travel Award) and 2) the Graduate School for travel to conferences. All students are strongly encouraged to apply for these awards, in addition to any Awards available through the conference or professional societies. While the value of these awards change from year to year, this funding is available to all students who are presenting their research at conferences.

2. Satisfactory Progress

All students must make sustained progress toward completion of a graduate degree and comply with the conditions and timing of their graduate program as outlined in Section C, regarding:

- Course work
- Selection of research advisor and committee
- Annual committee meetings
- Progress reports
- Qualifying exam

In addition, the student must comply with the following:

- Students failing to achieve a B or better in any graduate course may be placed on Departmental Academic Probation. Failing to achieve B or better in an additional

course, after being placed on probation, is grounds for dismissal from the graduate program.

- Students failing to make satisfactory progress in their research may be placed on probation by their Research Committee. Specific conditions and a timetable for removal of probation must be established and filed with the GEC. Failure to satisfy these conditions will result in dismissal from the program.
- Students failing to perform satisfactorily as TAs, based on information obtained from their teaching supervisors, will be subject to non-renewal of their contract. Subsequent reappointment requires approval by the GEC and Associate Chair of the Department.
- Continuation in an MS program on a part-time basis requires satisfactory completion of 12 hours of formal coursework per year and/or sustained research progress, as judged by the student's Research Committee.

In certain cases, the GEC or the Research Committee, may, after carefully reviewing the records and performance of a student, require that the student's financial support not be renewed or that the student terminate his/her enrollment in the Department. Such decisions would not be made lightly, and the student has the right to appeal. Actions taken by a Research Committee may be appealed to the GEC, and actions taken by the GEC may be appealed to the Department Chair. Should the student feel that they have been unfairly judged after completion of the internal appeal process, the case may be taken to the Committee on Students of the Board of Graduate Studies for further consideration.

F. Policies Governing Graduate Programs

1. Department

The Graduate Education Committee (GEC) is responsible for the overall administration of the PhD and thesis-based MS graduate programs of the Department of Biology. This committee and its Co-Chairs are appointed by, and serve at the discretion of, the Department Chair, who may also be a member. The GEC is composed of 5 to 6 Biology faculty members and 1 graduate student representative, who is chosen by the Biology Graduate Student Organization (BGSO) from among the PhD students. The GEC's responsibilities include:

- meeting biannually with the graduate student body to discuss the program and arising issues;

- meeting with incoming graduates during orientation week to introduce them to details of the program;
- together with the Graduate Recruiting Committee, awarding financial support under the control of the department and determining fellowship awards;
- providing the faculty with information on new graduate students;
- monitoring students' progress toward degree completion; and
- periodically reviewing the graduate program and graduate curriculum.

2. College

All graduate students at Syracuse University are expected to follow the policies and procedures of the Syracuse University Graduate School.

3. University Academic Integrity Policy

Syracuse University's [Academic Integrity Policy](#) reflects the high value that we, as a university community, place on honesty in academic work. The policy holds students accountable for the integrity of all work they submit and for upholding course-specific, as well as university-wide, academic integrity expectations. Graduate students are required to review an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice. Above and beyond this and the CITI Module completed at the beginning of the first year, students are encouraged to pursue additional training in the Responsible Conduct of Research and Bioethics, such as BIO 602 Ethical Issue in Bio/Biotech.

G. Additional On-Campus Student Resources

Syracuse University Biology graduate students may utilize any of the following on-campus resources:

1. On-Campus Financial Resources

[Financial Aid Office](#)

[Meet with a Financial Aid Counselor](#)

[Financial Literacy](#)

[Meet with a Financial Coach](#)

2. Office of Student Assistance:

[Office of Student Assistance – Home Page](#)

[Crisis Help](#)

[Case Management](#)

3. On-Campus Student Counseling Services:

[Counseling – Barnes Center at The Arch](#)

[OSA?](#)

4. Campus Conflict Resolution Services:

[Office of the University Ombuds](#)