

**GRADUATE PROGRAM in  
ECOLOGY AND EVOLUTION  
HANDBOOK**

**2017-2018**



# **TABLE OF CONTENTS**

## **Student Handbook**

### **2017-2018**

- **The Department vs. The Program** Page 2
- **An Overview** Page 3
- **Contact People** Page 4
- **Sources of Funding Outside the Program** Page 5
- **Timeline for Ph.D. Students** Page 6
- **Ph.D. Degree Requirements** Page 8
- **Master's Plans and Requirements** Page 11
- **General Information** Page 14

#### **Appendices**

- **Annual Progress Report** Page 19
- **Core Requirements Document** Page 23

- **Revised July 2017**
- **Information compiled by Marsha Morin, Program Administrator**

## ***What is the difference between the Department of Ecology, Evolution, & Natural Resources and The Graduate Program in Ecology & Evolution?***

**The Department of Ecology, Evolution, & Natural Resources** (hereafter, "the Department") was founded in its current form in 1997. It superseded a previous department of Natural Resources, which had a long and successful history focused on undergraduate education and research. The Department is primarily responsible for matters relating to undergraduate education in Ecology and Evolution, Environmental Geomatics, and Environmental Planning curricula. It also provides a physical home for some (but by no means all) of the faculty and students associated with the Graduate Program in Ecology & Evolution (hereafter, the "Graduate Program"). Most faculty in the Department belong to the Graduate Program, but many members of the Graduate Program hail from other departments. Although it was envisioned that the Department would provide administrative and financial support for the Graduate Program, it currently does this to a rather limited extent. There are a few TA and GA lines administered by the Department that typically support students in the Graduate Program. However, most TA support still originates from outside of the Department, principally from TAs within the Division of Life Sciences, School of Arts and Sciences. The Department does not admit graduate students, or confer graduate degrees. The chair of the Department is typically not the director of the Graduate Program.

**The Graduate Program** (hereafter, "the Program") was founded in the mid 1970s by the well-known ecologists Murray Buell and Paul Pearson. The Program is a multidisciplinary umbrella group consisting of ~85 faculty in many different departments, drawn from three Rutgers Campuses and other locations including the Carey Institute of Ecosystem Studies. The Program defines criteria for graduate admissions, evaluates student progress, and ultimately is responsible for certifying that students have completed the requirements for a graduate degree. The Program also runs the weekly seminar series, coordinates the administration of graduate student financial support, and facilitates communication between the university and graduate students (e.g., we sort your mail). There are ~ 60 graduate students enrolled in the Program. Operations of the Graduate Program are overseen by the Graduate Program Director, who is elected by the Graduate Program Faculty, and the Graduate Program Administrator. The Program coordinates with both the School of Graduate Studies (SGS) and the School of Environmental and Biological Sciences (SEBS) in matters of fellowship support and various teaching, research, and travel awards. Some graduate programs at Rutgers are congruent with discipline departments (e.g., English, History, Physics). Our Program is much more extensive than that.

# *The Graduate Program in Ecology and Evolution Overview*

## **Program Director (3 year term)**

- Representative of Program students and faculty to the School of Graduate Studies and the School of Environmental and Biological Sciences.
- Sets policy for the program in consultation with the faculty.
- Maintains academic standards and quality of program.
- Appoints Admission Committee, Scholastic Review Committee, Curriculum Committee and Seminar Committee.
- Signs many necessary forms such as Ph.D. and Master's Candidacy forms, credit transfer forms, Change of Status forms, Extension forms.

## **Program Administrator**

- Support and contact person for all graduate students and faculty.
- Secretarial support to Program Director.
- Keeps files up to date on all students and faculty in program.
- Distributes many necessary forms for graduate students as named above and has Special Permission numbers for courses and Preliminary Proposal forms, among others.

## **Student Representatives to the Program**

- Two students: one post-qualified and one pre-qualified.
- Term runs from fall semester to fall semester.
- Voting power in all matters except faculty appointments and retention, student advancement, examination or accreditation.
- More information in the By-Laws.

## *Contact People*

*and their relationship to you as students*

- **Olaf Jensen**, Program Director and Associate Professor  
[ojensen@marine.rutgers.edu](mailto:ojensen@marine.rutgers.edu)  
(410) 812-4842.
- **Marsha Morin**, Sr. Administrative Assistant and Graduate Program Administrator  
[mkmorin@sebs.rutgers.edu](mailto:mkmorin@sebs.rutgers.edu)  
848-932-3213
- **Janice Pawlo**; Departmental Administrative Assistant  
[Janice.pawlo@rutgers.edu](mailto:Janice.pawlo@rutgers.edu)  
848-932-3210
- **Georgie Digiglio**; Secretarial Assistant  
Any questions or problems regarding building maintenance, purchasing.  
848-932-9632  
[georgianna.digiglio@rutgers.edu](mailto:georgianna.digiglio@rutgers.edu)
- **Jennifer Schenk**; Business Supervisor  
All aspects of grant management  
[jennifer.schenk@rutgers.edu](mailto:jennifer.schenk@rutgers.edu)  
848-932-3213
- **Mayra Howell** Business Assistant  
All aspects of grant management.  
[mayrah@sebd.rutgers.edu](mailto:mayrah@sebd.rutgers.edu)  
848-932-9032
- **Barbara Sirman**; Graduate School–NB  
Known to all as “The Dissertation Diva”  
Any questions relating your thesis/dissertation format.  
[sirman@grad.rutgers.edu](mailto:sirman@grad.rutgers.edu)  
848-932-8122
- **Allison Gradina** Graduate School–NB  
All forms post-candidacy go to Allison and can be retrieved from Allison.  
[allimera@grad.rutgers.edu](mailto:allimera@grad.rutgers.edu)  
848-932-7034
- **Simona Turcu**; Business Manager; Graduate School–NB  
[sturcu@grad.rutgers.edu](mailto:sturcu@grad.rutgers.edu)  
848-932-2286
- **Teresa Delcorso**; Program Development Specialist, GradFund  
Teresa knows all there is to know about external funding for grad students.  
[delcorso@gradfund.rutgers.edu](mailto:delcorso@gradfund.rutgers.edu)

## *Sources of Funding Outside the Program*

There are sources of funding outside the Graduate Program, the Department and your advisors. Much of this sort of information will be forwarded to you throughout the year as information becomes available. You can find information under funding on the website for the **Graduate School–NB**, <http://SGS.rutgers.edu>. Several sources to keep in mind are:

- **GradFund**, the website is a source of much information: <http://chaser.rutgers.edu>  
This office was developed to assist students in acquiring outside funding. GradFund lists over 3000 sources in its database.  
**Teresa Delcorso**, Program Development Specialist  
[delcorso@gradfund.rutgers.edu](mailto:delcorso@gradfund.rutgers.edu)  
932-2705
- **ORSP**, this is the Office of Research and Sponsored Programs (ORSP); Their website is <http://orsp.rutgers.edu>  
Be sure that you have seen either Simona Turcu or Teresa Delcorso at the SGS when your proposal is ready for submission before you submit it to ORSP. In some instances, it is not necessary to submit it to ORSP. Simona and Teresa can help you with that information.
- **Bevier Fellowship**, Competitive yearly fellowship available to all-but-degree (ABD) senior level graduate students. The deadline for application is usually early March. Notices are sent via email and will be posted on the program Sakai site when the applications are due.
- **Conference Travel Awards**, The Graduate School–NB awards money for travel to conferences, on a competitive basis, if students are presenting either talks or posters. Deadlines are **March 1 and October 1**. You may apply before your conference with estimated costs or after the conference without receipts. You may only apply for any given conference one time. Applications are completed online.
- **Special Study Opportunity and Pre-Dissertation Awards**, Competitive awards offered by the SGS to support study and research off-campus. These awards are meant to cover the expenses of preliminary research into a study site or for attendance to a specialized meeting or conference that will serve as a catalyst to your dissertation research. A written proposal outlining the research being supported is submitted as the application. E-mails are sent out to all students when the time to apply is nearing. These notices will also be available on the program Sakai website. The usual deadline is late February or early March.
- **There are other sources available. It is in your best interest to use the websites within and outside the University to research the various options. Your advisors are also a good source of information.**

## *Timeline for Ph.D. Students*

### **First Year**

- **Select advisor/chairman and advisory committee:**  
You are admitted with an advisor. This person is **tentatively** your committee chair. In the first semester, you together with your advisor, should form an **advisory committee** consisting of your advisor, two other E&E faculty members and a senior level graduate student. It is possible that the faculty on the advisory committee may become a part your qualifying committee. You should talk with other professors to be sure your initial advisor is the best fit given your research interests. Please provide the names of the advisory and qualifying committee members to the Program Administrator for approval of the Program Director.
- **Select your tentative qualifying committee**  
In consultation with your advisor, a committee should be selected comprised of **your advisor (aka committee chair) and three other Ecology and Evolution faculty members** that will advise you on designing your curriculum, as best fits your personalized needs depending on your background and your aspirations. As mentioned above, this may be comprised in part by your advisory committee.
- **Begin taking Core Course Requirements (see Appendix)**  
**Seminar in Ecology (fall) and Ethics and Professional Development (spring) is required** of all first year students.

### **Second Year**

- **Tentative dissertation committee selected**  
In consultation with your **advisor**, select **at least two other members of the Ecology and Evolution Program and one person from outside the E&E Program**. The outside member can be from another program at Rutgers or from an entirely different institution. The outside member must hold a Ph.D. The Program Director must approve the final committee membership and send that approval to the SGS for final approval.
- **Qualifying exam date set and exam taken (see Ph.D. Requirements)**  
Students should complete this exam by the end of their second year. It must be completed by the end of the first semester of your third year. Failure to complete the exam within the time limit may result in sanctions. **Speak with the Program Administrator prior to the exam to obtain the necessary form.**
- **Continue with Core Knowledge requirements (see Appendix)**

### **Third Year**

- **Qualifying exam must be complete.**  
The SGS requires that at **least one year** elapse between your qualifying exam and completion of your PhD.
- **Core Knowledge requirements must be complete.**
- **Preliminary proposal (Prelim) defense date set and prelim possibly complete.**

## **Fourth Year**

- **Preliminary proposal exam complete** (see Ph.D. Requirements)  
See the Program Administrator for the necessary form.

## **Fifth Year**

- Research well under way and writing of dissertation should have begun.

**In most cases, students admitted with a B.A. or B.S. will complete their Ph.D. within six academic years. The SGS will allow seven years after initial registration before they question your progress. At the beginning of your seventh year you are required to apply for a one-year extension to be approved by the Scholastic Review Committee, the Program Director and the Dean of the Graduate School.**

**The SGS will not allow a student to register after 9 years.**

**Completion Dates:** These vary slightly with the calendar but the general rule of thumb is:

- ❖ **May 1**, with **diploma application** in on **March 15** and **final dissertation uploaded by April 15<sup>th</sup>**. (NO Exceptions)
- ❖ **October 1**, with diploma application in on same day
- ❖ **January 1**, with diploma application in on same day



## *Ph.D. Degree Requirements*

**It is important to note that the Ecology and Evolution Graduate Program requirements for Ph.D. and Master's students are more stringent than the School of Graduate Studies requirements.**

**You must adhere to those of the E&E Program.**

### **Credits**

- **72 total credits** are required.  
**30 Course and 42 Research**
- No more than 12 credits of undergraduate level (300 and 400) total and no more than 6 of those 12 at the 300 level.
- Only one course with a grade of "C" will be counted toward your degree.
- All research credits must have a grade of "S".

### **GPA**

- You must maintain a GPA of **3.0**

### **Transfer of Credits**

- Credits can only be transferred after 12 matriculated credits have been completed successfully at Rutgers.
- Maximum 24 credits may be transferred from another institution although in reality you need only 18 credits transferred after completing the required 12 at Rutgers.
- A maximum of 12 credits from non-matriculated course work at Rutgers may be transferred.
- Only courses with a grade of "B" or better will be considered for transfer.
- Approval must be obtained from the Program Director and the Dean of the SGS (form for transfer of credits can be found on the SGS website).
- Approval will be granted only for those courses pertinent to your field

**Core Knowledge Requirements** (This section is a synopsis taken from the complete document. Please be sure to read the complete document which is Appendix #2 of this handbook for a complete understanding of the Core Knowledge requirement.)

- All students must complete **Seminar in Ecology** (16:215:601) and **Ethics and Professional Development** 16:215:602 in their **first year**.

•

### **CORE KNOWLEDGE COMPETENCE**

The following core areas of knowledge are expected to be attained by all PhD students by the time of their oral qualifying examination at the end of their second or beginning of their third year. An annotated list of recommended readings or similar resources that could be used in support of each area will be available. Students must also be familiar with important past contributors to ecological and evolutionary knowledge and milestones of intellectual development in each field.

#### **Core Areas:**

- **Individuals, Populations, and Communities**
- **Phylogenetics and Systematics**
- **Ecosystems**
- **Biodiversity, Temporal and Spatial Scale**
- **Analysis of Data**
- **Academic Integrity**

### **CORE TOOL KNOWLEDGE**

(technical skills achieved through hands-on research, workshops, or courses)

#### **Information gathering and analysis**

- Statistics (univariate statistical tests [ $t$ , chi-square]; basic analysis of variance; simple linear regression)
- Molecular tools (DNA, gene expression, genomics, genetic variation)
- Morphometrics (phenotypic variation)
- Remote sensing and GIS (mapping, distribution, spatial variation)
- Building trees and networks of relationships of individuals, populations, and species
- Metrics and methods for evaluating community, genetic and/or taxonomic diversity and similarity
- Genetic analysis of molecular data (DNA sequencing, DNA fingerprinting, DNA barcoding, genome analysis, gene expression)
- How to use basic web tools (NCBI/Genbank, GBIF, Google Earth, library databases, MG-RAST...)

### **Information dissemination and communication**

- How to write a good scientific paper
- How to design a good poster
- How to give a good lecture (PowerPoint, chalk talk, etc.)
- Preparation of information-rich graphs and tables (math and stat programs, Adobe Illustrator, WORD, etc.)
- Preparation of illustrations and figures for publication (Adobe Photoshop, Illustrator, etc.)
- Understanding copyright
- The peer-review process (how to be reviewed and be a reviewer)

### **Teaching and outreach skills**

- Giving a good lesson to children and adults
- Designing active learning methods
- Evaluating student learning
- Mentoring skills
- Communicating science to the public

### **Qualifying Examination (Quals)**

To test the basic knowledge of ecology, evolution and other fields pertinent to your anticipated area of specialization.

- Minimally, those areas covered in the core knowledge requirements will be examined.
- Areas to be covered should be discussed with your committee at least 3 months prior to your exam.
- Candidacy forms to be signed at your Quals should be downloaded from the SGSwebsite under Current Students; Form; Candidacy for Ph.D degree. Please complete the first page online, print out all four pages and bring them to your exam.
- Exam may be oral, written or both and designed at the discretion of the chair of your committee.
- Committee consists of your advisor and three other members of the E&E graduate program faculty.
- A failed Qualifying Exam may be retaken once, at the discretion of your committee. A second failure will terminate your candidacy for your Ph.D.
- You will need to work with the Program Administrator well in advance so that a room suitable for the qualifiers can be scheduled.

## **Preliminary Dissertation Examination (Prelims)**

- To present a detailed written research proposal of your Ph.D. research for approval to your dissertation committee. This proposal should be presented to your committee **at least three weeks prior** to your exam date.
- Your dissertation committee consists of **your advisor, two other members of the E&E faculty and one person from outside the E&E program faculty**. This person can be from within Rutgers or from another institution entirely. The outside member must hold a Ph.D.
- The proposal cannot be approved if there is more than 1 dissenting vote from the committee members.
- The outside member of your dissertation committee does not need to be present at your prelim exam but must approve the document.
- Committee members may be changed with the approval of your chair and the Program Director.
- Pick up the necessary form to be signed at the Prelim from the Program Administrator.
- Let the Program Administrator know well in advance so that she can aid in scheduling the appropriate room.

**Students normally take their qualifying exam first and their preliminary exam at a later date. However, if your committee feels that you are advanced in your research they may advise taking the preliminary exam first. This allows them to constructively access your research before too much time has passed.**

## **Dissertation**

- **The actual dissertation must be in accordance with the Graduate School–NB regulations.** Before drafting the document, get a copy of the style guide from the Program Administrator or from the SGS online.
- The SGS holds workshops every semester on dissertation preparation. It is to your advantage to attend one of these workshops in the year before you plan to defend.
- A final draft should be presented to your **dissertation committee and the Program Director at least three weeks prior** to your defense. **If the Program Director deems that the draft is not complete enough to defend, your defense will be postponed.**
- Pick up your forms from the SGS prior to your defense. They will be the same forms that you used for your Qualifying Exam. You will receive other information with these forms that you will need for your defense.
- The SGS must verify the format of the dissertation and any necessary changes must be made. If your committee wants more changes at the time of the defense, these changes must be incorporated into the final document.
- The final revised “perfect” dissertation must be turned in to the SGS on, or preferably before, the completion dates of April 15, October 1 or January 1.

- Electronic submission of the dissertation is mandatory. The submission site is located on the SGS website under Current Students. May degrees must be submitted by April 15<sup>th</sup>.
- Title page must be signed in **black ink**.
- Title page and signed Candidacy Form must be hand delivered to the SGS to complete the process.
- The Program Administrator can help with any questions. The Program Administrator should be made aware of your defense timetable so that she can be proactive in helping you before problems arise.
- **A checklist is provided every year from the Program Administrator that you should follow as you finish your work.**

## Defense

- Obviously, you must schedule the defense at a time convenient for your committee members. Plan ahead, these people are very busy. **“Plan ahead”** means **months** not weeks in advance. **This cannot be stressed enough.**
- Once the **outside member** has been decided upon, his or her name and professional address and affiliation must be **submitted to the Program Director and the SGS for approval.**
- If your outside member cannot be present at the defense, he or she must submit a letter/email to the Graduate Program Director stating that they have read and approved the dissertation. The Program Director will sign and initial the outside member’s name.
- Be sure that you have **scheduled a room** for your seminar and a room for your actual defense. The Program Administrator can help with this. Keep in mind that rooms book quickly at the end of the semester as people rush to defend, so **plan ahead.**
- It is ultimately up to the committee members to decide if they will allow a defense to be scheduled during the summer break. Scheduling your defense over the summer break is not encouraged by the program.

## *Master's Requirements*

**There are two options in the Master's Program.**

### **Master's with thesis**

#### **Credits**

- **30 total credits** are required.  
**24 course** and **6 research**
- No more than 12 credits of undergraduate level courses (300 and 400) total and no more than 6 of those 12 at the 300 level.
- Only one course with a grade of "C" will be counted toward your degree.
- All research credits must have a grade of "S" (satisfactory)

#### **GPA**

- You must maintain a GPA of **3.0**.

#### **Transfer of credits**

- 12 credits must be completed (matriculated) at Rutgers before outside credits can be transferred.
- Maximum 12 credits may be transferred from another institution or from non-matriculated course work at Rutgers.
- Only courses with a grade of "B" or better will be considered.
- Approval of transfer credits must be obtained from the Program Director and the Dean of the SGS. The form is found on-line at the SGS website.
- Approval will be granted only for those courses pertinent to your field.

#### **Core Course Requirements**

- **Seminar in Ecology and Ethics and Professional Development are required** of all first year students..
- One course in **statistics**, either as a graduate or undergraduate is suggested. Members of the students committee may require remedial course work, as they deem necessary. These may include classes that cannot be counted towards the degree.

## Thesis and Committee

- The thesis committee consists of at **least three members of the E&E Program Faculty**, including your advisor.
  - One extra committee member may be appointed from outside the faculty but is not necessary.
  - **Formatting guide can be found online.**
  - Candidacy forms for the master's degree can be found on-line at the SGS website under Current Students; Forms; Master's Degree, Master's of Science. The form should be completed on-line and **reviewed by Allison Mera in the SGS prior to your defense.**
  - Electronic submission of the thesis is mandatory. The submission site is located on the SGS website under Current Students. May degrees must be submitted by April 15<sup>th</sup>.
  - Title page must be signed in **black ink.**
  - Title page and signed Candidacy Form must be hand delivered to the SGS to complete the process
- 
- **Thesis master's should be completed within three consecutive calendar years.**

## Non-thesis Master's

### Credits

- **30 total course credits**, no research credits.
- No more than 12 credits can be selected from undergraduate level courses (300-400) and only 6 of those 12 can be from the 300 level.
- Only one course with a grade of "C" will be counted toward your degree.

### GPA

- Must maintain a GPA of **3.0**

### Transfer of credits

- 12 credits must be completed (matriculated) at Rutgers before those credits can be transferred
- Maximum 12 credits may be transferred from another institution or from non-matriculated course work at Rutgers.
- Only courses with a grade of "B" or better will be considered.
- Approval of transfer credits must be obtained from the Program Director and the Dean of the SGS. The form can be found on line at the SGS website. Approval will be granted only for those courses pertinent to your field.

## **Core Course Requirements**

- **Seminar in Ecology is required** of all first semester students.
- One course in **statistics**, either as a graduate or undergraduate is suggested.
- Members of the students committee may require remedial course work, as they deem necessary. These may include classes that cannot be counted towards the degree.

## **Committee and Essay**

- The committee consists of **at least three members of the E&E Program Faculty**, including your advisor.
- Typically the Non-thesis master's requires an essay be written that is evaluated by the committee. This essay does not need to be turned in to the SGS with your candidacy form.
- Candidacy forms for the master's degree can be found on-line at the SGS website under Current Students, Forms; Master's Degree, Master's of Science. The form must be completed on-line and **reviewed by Allison Mera in the SGS prior to your defense**.
- Signed Candidacy Form must be hand delivered to the SGS to complete the process

**Non-thesis Master's should be completed within two consecutive calendar years and is considered a terminal degree.**

**A student wishing to complete a Ph.D. after a Non-thesis master's will have to re-apply for admission to the Program and satisfy all admissions requirements.**



## *General Information That Applies to All Students Regardless of Degree Sought*

### **Registration Information**

- **Full-time** is 9 credits.
- **TAs** must register for **6E** credits (don't forget the E prefix) **16:215:877**
- **GAs** must register for **6E** credits (don't forget the E prefix) **16:215:866**
- **Fellowships** must register for **16:215:811 with 0 credits**. This allows your fellowship to be recorded on your transcript for future reference. There is no other way for anyone looking at your transcript to know that you were on a Fellowship. **This is important information in the future.**
- **You may register for up to 16 credits**. This 16 includes your 6E for a TA or a GA.
- If you are taking under 16 credits in total with your TA/GA and courses, make up to the 16 by registering for **research credits (16:215:701 or 702)** with your advisor.
- If you are taking a **300-400 level course for graduate credit**, be sure to use the **G** prefix.
- If you are taking a course “**not for credit**”, use the **N** prefix. You will do all the work but will not take the final exam and you will receive an S or U grade.
- “**N**” allows the course to show on your transcripts, whereas if you simply ask the professor to let you sit in on the course (**audit**), it will never show on your transcripts.
- **Matriculation Continued** requires a Special Permission number and is only to be used by pre-qual PhD students and master's students. Master's students can only use this designation **if they are not at the thesis writing stage. You can register for Matriculation Continued for a maximum of two semesters.** If you are writing your thesis, you must register for at least one research credit whether you are on campus or not.
- Once you have completed 71 credits (any combination of course and research) you need register for only 1 research credit to be considered full-time by the GS–NB. However, if you register for only 1 research credit, you are considered part-time for the purposes of the campus health centers. Therefore, if you plan to use the campus health centers, you should plan to register for at least three credits.

## Continuous Registration

- You must remain registered every fall and spring semester, either with course and research credits or as Matriculation Continued as the situation warrants. Summer session registration is not required.
- **Matriculation Continued** is to be used only if you are on leave from your studies and are either a master's student or a pre-qualified Ph.D. Student. There is a two semester limit on registering as Matriculation Continued.
- **One (1) research credit** is considered full-time by the SGS for all doctoral students who have completed 71 total degree credits in any combination.
- **Three (3) research credits** are required to be considered full-time by the SGS of students working at the University on dissertation or thesis-related research with less than 71 total credits.
- Any lapse in registration will require an Application for Re-admission form and approval of the Program Director and the Dean of the SGS, and the payment of a restoration fee.

## Change of Status

- If you decide to change your degree status in any way, i.e. master's student to doctoral student or vice versa, a Change of Status form must be sent to the SGS.
- The form can be found on line at the SGS website.
- It must be approved by the Graduate Program Director and the SGS.

## Incomplete Grades

- Incomplete grades must be made up within one year (i.e. an incomplete in the fall semester must be completed by the end of the next fall semester). The SGS has become very strict about this policy so do not expect to be granted an extension.

## Scholastic Review and Annual Progress Reports

- An annual **Scholastic Review** is completed on each student's progress by the Program Administrator and reviewed by the **Scholastic Review Committee** each spring.
- Appropriate recommendations are made if requirements are not being met, if your GPA falls below 3.0, or other problems arise.
- An **Annual Progress Report** must be completed by **ALL** students in the spring semester. These reports are reviewed by your advisor and your committee. An electronic version is sent to the Graduate Program Administrator for your file. A copy of the Annual Progress Report is attached to this handbook to aid you in planning. Please review it.
- The Scholastic Review Committee has the sole authority to place students on academic probation or to recommend dismissal from the program.

### **Advisory Committee Qualifying Exam Committee Members**

- Once your advisory committee has been decided upon, the names of the members should be given to the Program Administrator. In the case of Ph.D students these faculty may or may not become your Qualifying Exam Committee. All committees must be approved by the Program Director. Please keep the Program Administrator apprised of any changes in your committee make-up. Those changes will be made known to the Graduate Program Director.

### **Change in Address, Phone or E-mail**

- The Program Administrator should have your most current contact information at all times, both on and off-campus.

### **Summer Research Credits**

- You may register for summer research or course credits. If you were a full-time TA in the previous two semesters (fall and spring) then you can register for up to 24 credits for the entire year. This will typically mean that you can register for 4 research or course credits over the summer and your TA tuition remission will cover these credits. This assumes you have registered for 10 course and research credits in each of the previous fall and spring semesters. .
- If you are being supported as a **GA on an external grant** (NSF, NOAA, USDA etc) please check with your advisor and/or the business specialist handling your grant **BEFORE** registering for summer credits. The money for summer credits may not have been budgeted into the grant.
- One very good reason to register for summer research credits is that if you are planning on doing research or writing out-of-state after your qualifiers, you need to accrue as many research credits as possible (you will need 42 research credits to get your PhD) before you leave the state. Then you may register for 1 research credit while out-of-state, pay the student fees and the out-of-state tuition on one credit only. This could save you quite a bit of money. Your student fees are directly related to the number of credits you take, and your tuition is related to credits and whether you are in or out-of-state.
- You register for summer research credits through the summer session. If you do not see your advisor listed in the research section of the summer session contact the Program Administrator for help.

### **Time to Degree**

- In most cases, students admitted with a B.A. or B.S. will complete their Ph.D. within six academic years. The SGS will allow seven years after initial registration before they question your progress. At the seven-year limit, you may apply for a one-year extension to be approved the Scholastic Review Committee, the Program Director and the Dean of the SGS.

**ANNUAL GRADUATE STUDENT PROGRESS REPORT**  
Graduate Program in Ecology & Evolution  
Rutgers University

By **June 1**, \_\_\_\_\_, please submit an *electronic copy* of this report *with signatures and advisor's comments* to Marsha Morin (ENRS ROOM **150**; [mkmorin@sebs.rutgers.edu](mailto:mkmorin@sebs.rutgers.edu)).  
(If you completed this form last year, simply update your Word document of this form.)

The faculty of the Graduate Program in Ecology and Evolution would like our students to take a proactive role in their annual evaluation of progress toward degree completion. To that end we ask students to complete and/or update this form, which can be the basis for your C.V. The form will not be used to determine priority for financial support, but rather is a way for you and your advisor to evaluate your progress during the previous year. You should maintain an electronic copy of the form, which can then be updated each year with the previous year's accomplishments. Access to information on the form will be limited to the student, their committee members, the director and secretary of the graduate program, and the academic standing committee. Questions about filling out the form can be directed to the chair of the academic standing committee – Dr. Peter Smouse. Note that much of the information about completed course work and exams is provided in your annual progress statement from the graduate program.

**Name:** \_\_\_\_\_

**1. General Information**

Date entered graduate program (Semester/Year):

(Circle or highlight) PhD    MS(Thesis)    MS(non-thesis)    Full-time or Part-time:

Advisor:

Anticipated Graduation Date:

Graduate Committee Members:

- 1.
- 2.
- 3.
- 4.
- 5.

Plans post-graduation:

Date of Preliminary Exam (proposal defense):

Date of Ph.D. Qualifier Exam:

Dates of All Graduate Committee Meetings:

Dissertation Title or Topic:

Short Description of Research Project:

## 2. Funding History

*Please list your funding source (TA/GA) for each semester and your TA responsibilities.*

## 3. Coursework

### A. Completed Coursework and Grades.

*List semester/yr taken, full course number and title, credits, and grade.*

- Cumulative GPA: \_\_\_\_\_

#### **PhD Students:**

- Total course credits completed of minimum 30 required credits: \_\_\_\_\_
- Total research credits completed of minimum 42 required credits: \_\_\_\_\_
- Total course + research credits completed toward 72 credits: \_\_\_\_\_

#### **MS Thesis Students:**

- Total course credits completed of minimum 24 required credits: \_\_\_\_\_
- Total research credits completed of minimum 6 required credits: \_\_\_\_\_
- Total course + research credits completed toward 30 credits: \_\_\_\_\_

#### **MS Plan Non-Thesis Students:**

- Total course credits completed of minimum 30 required credits: \_\_\_\_\_
- Total research credits completed of minimum 0 required credits: \_\_\_\_\_
- Total course + research credits completed toward 30 credits: \_\_\_\_\_

### B. Projected Coursework.

*List semester/year, full course number and title, and credits.*

#### **4. Research**

*Provide full citation of all manuscripts (published, in press, or submitted), abstracts and meeting presentations [state if poster or presentation, and if invited], including month and year. List citations with complete details in reverse chronological order (i.e., most recent first), list all authors, note presenting author for presentations.*

#### **5. Report on Core Knowledge/Tools Requirement - progress, mastered areas and skills**

*Complete a brief account on each of the five topic areas (1-3 pages total) describing your developing knowledge in the five topic areas. See Core Requirements document for detailed instructions.*

#### **6. Awards/Honors/Other**

*List in reverse chronological order (most recent first with year of application), include all applications even if denied funding.*

#### **7. Service and Outreach**

*Include service within and outside of the university, committees, reviews provided for journals, educational work, media coverage, etc., with dates. List in reverse chronological order.*

#### **8. Notable progress and achievements this year**

*Provide a short summary in narrative form.*

#### **9. Analysis of progress**

*Provide an assessment and self-analysis of challenges, problems, and achievements in your graduate education this year. Be concise*

#### **10. Plan of work for the coming year:**

*Provide a concise, but detailed, research plan.*

## 11. Comments from advisor

*Please e-mail completed progress report to advisor and your committee, and schedule a meeting with your advisor to discuss the progress report and have it signed [electronic signatures are OK].*

*Signed:*

Student \_\_\_\_\_ Date \_\_\_\_\_

Advisor \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_ Check here if you want this report to be reviewed by the Academic Standing Committee.  
(Can be requested by either the student or the advisor.)

**The completed, signed report should be emailed to Marsha Morin, your advisor, and your committee members.**

## **Knowledge requirements for PhD students in the Graduate Program of Ecology & Evolution, Rutgers University**

The Program has developed a list of topics representing the ‘*core knowledge*’ that every PhD student graduating from the Program should have. We have also developed a parallel list of ‘*core tools*’, used in ecology and evolution today. Mastery of a high proportion of these tools would develop over the course of the student’s participation in the Graduate Program.

The list of ‘core knowledge’ topics is accompanied by an annotated reading list of texts, historically-important papers, and/or current review papers that would provide a basic level of understanding of the specified core knowledge topics. The Curriculum Committee in consultation with Program faculty will develop and update this list of resources.

Students are required to complete a brief account on each of the five topic areas (1-3 pages total) describing their developing knowledge in the five topic areas as part of the annual report that is currently filled out by all students. This account should describe how the student has met, or is planning to meet (for first-year students), the learning goals in each topic area (i.e., courses, independent reading, workshops, etc.). With advice from the student’s first-year advisory committee, all topic areas should be addressed in the first two years of study. The annual reports will be available to the qualifying examination committee, to be used at their discretion as part of the oral examination to test the student’s knowledge in each topic area.

Students will be required to complete the oral qualifying examination by the fall semester of their third year, at the latest. Failure to do so would result in potential sanctions such as loss of financial support. Failure to demonstrate adequate mastery of core knowledge in each topic area at the qualifying examination would result in a decision of “failed; allowed to retake once” at the exam.

Under this system, the only currently required course for Ph.D. students is the 1-credit seminar course, which familiarizes students with the faculty and their research interests. As a part of this class, every participating faculty member should include one historic paper on their list of papers for the students to read, and then discuss the importance of this paper in their presentation to the class.

We believe this system will ensure that students leave the program with basic knowledge of the topics that constitute our field(s), and also allow considerable flexibility for students to meet the requirements. Students should take responsibility for their own education, and this system requires that they actively consider what to study, how to study each topic, and how to demonstrate their mastery of basic concepts.

Curriculum Committee  
(Approved by Graduate Program Faculty, May 2010)



## CORE KNOWLEDGE COMPETENCE

The following core areas of knowledge are expected to be attained by all PhD students by the time of their oral qualifying examination. This knowledge may be obtained through formal coursework (both graduate and advanced undergraduate courses, including if necessary independent studies and special topics courses), informal ‘reading’ guided by a professor, workshops, courses at institutions other than Rutgers (note, might not be covered by Rutgers tuition) , and/or through not-for-credit and extra-curricular independent reading and study . An annotated list of recommended readings or similar resources that could be used in support of each area will be available.

It is expected that in addition to knowledge of current theory and factual content, students will be familiar with important past contributors to ecological and evolutionary knowledge and milestones of intellectual development in each field.

- **Individuals, Populations, and Communities**  
genes, alleles, gene expression, molecular and non-molecular variation, abiotic factors, genetics, ecophysiology, basic population biology, mechanisms and modes of species interactions, population, functional, and single cell genomics, niche analysis, metapopulations, natural selection, mutations, behavior, community assembly rules, dispersal
- **Phylogenetics and Systematics**  
adaptation, molecular and morphological systematics, species identification, niche conservatism, classification and naming of groups, phylogenetic models and theory, evolution of the target group of organisms of the student’s project, horizontal gene transfer, gene evolution
- **Ecosystems**  
food webs, energy flow through ecosystems, nutrient cycling, global change, co-evolution, symbiosis, biome evolution, human influence over biological systems
- **Biodiversity, Temporal and Spatial Scale**  
history of life and evolution of biodiversity, tree of life, geographic patterns of species distributions, biodiversity and biomes, biogeography, conservation ecology, restoration ecology, geologic processes and fossil records, origin of life
- **Analysis of Data**  
basic probability theory and distributions, hypothesis testing, model choice
- **Academic Integrity**  
ethical rules and practices with regards to publication, collaboration, and information sharing

## **CORE TOOL KNOWLEDGE**

(technical skills achieved through hands-on research, workshops, or courses)

### Information gathering and analysis

- Statistics (univariate statistical tests [ $t$ , chi-square]; basic analysis of variance; simple linear regression)
- Molecular tools (DNA, gene expression, genomics, genetic variation)
- Morphometrics (phenotypic variation)
- Remote sensing and GIS (mapping, distribution, spatial variation)
- Building trees and networks of relationships of individuals, populations, and species
- Metrics and methods for evaluating community, genetic and/or taxonomic diversity and similarity
- Genetic analysis of molecular data (DNA sequencing, DNA fingerprinting, DNA barcoding, genome analysis, gene expression)
- How to use basic web tools (NCBI/Genbank, GBIF, Google Earth, library databases, MG-RAST...)

### Information dissemination and communication

- How to write a good scientific paper
- How to design a good poster
- How to give a good lecture (PowerPoint, chalk talk, etc.)
- Preparation of information-rich graphs and tables (math and stat programs, Adobe Illustrator, WORD, etc.)
- Preparation of illustrations and figures for publication (Adobe Photoshop, Illustrator, etc.)
- Understanding copyright
- The peer-review process (how to be reviewed and be a reviewer)

### Teaching and outreach skills

- Giving a good lesson to children and adults
- Designing active learning methods
- Evaluating student learning
- Mentoring skills
- Communicating science to the public