

Princeton University's EEB Graduate Student Handbook

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EEB's Departmental Website: <https://eeb.princeton.edu>

Preamble

Graduate study in the Department of Ecology and Evolutionary Biology at Princeton leads toward the Ph.D. degree. The special areas of strength in the department are evolution & genomics, behavior & sensory biology, ecology & the environment, conservation & biodiversity and infectious disease. The interests and research of faculty range widely over these areas, such that incoming students can select their adviser among several professors working in the chosen discipline. Graduate students also have excellent opportunities for combining several areas for innovative interdisciplinary work.

The ultimate goals of EEB's Graduate Program are: (1) to develop your own new and interesting ideas, and (2) to ensure that those ideas are sufficiently broad, deep, and novel to form the basis for a fine dissertation. Our requirements are intended to focus your work, and to define the Faculty's role, in reaching these goals.

Below, you will find a variety of sections with information regarding many aspects of our graduate program and student life.

Departmental Support Staff, Administrators, and Support

- *Chair*, Dr. Lars Hedin
- *Director of Graduate Studies (DGS)*, Bryan Grenfell
- *Department Manager*, Lucia Machnowsky Schutz
- *Graduate Program Administrator*, Sandra Kaiser
- *IT Help*: Jesse Saunders, Steve Nappa, Rajeshri Chokshi
- *Research Facilities*, Tina Hansen
- *Grants Manager*, Linda Bonura
- *Business Manager*, Martha Murdough
- *Research Support at Stony Ford*, Billy Craigens
- *EEB Website Support*, Kara Nygaard

Diversity and Inclusion

Below is a listing of resources for Diversity and Inclusion:

- Departmental
 - Women in Science Partnership (WiSP)
 - Climate Committee
- University-wide list
 - Extensive list (<https://inclusive.princeton.edu/community-resources/resources/graduate-students>)
 - The Graduate School Office for Access, Diversity, and Inclusion (<https://gradschool.princeton.edu/diversity>) and their Insider's Guide to Graduate School for Princeton Grads (<https://gradschool.princeton.edu/sites/gradschool/files/documents/Insider%27s%20Guide%20for%20Graduate%20Students.docx.pdf>). You can sign up for their newsletter (https://docs.google.com/forms/d/e/1FAIpQLSdLFyhC2KloD73opoCJtIL4H6tuHzJQ9p52kLF_12eby4SaQ/viewform)
 - Reporting sexual misconduct (<https://sexualmisconduct.princeton.edu/sites/sexualmisconduct/files/media/pumisconductrefcard.pdf>)
- Student Organizations (* these groups work directly with the Office for Access, Diversity, and Inclusion; for a full list, see <https://gradschool.princeton.edu/life-princeton/our-community/studentorg>)
 - Graduate Student Government*
 - Community Associates
 - Association of Princeton Graduate Alumni
 - Association of Chinese Students & Scholars at Princeton (ACSSPU)
 - Association of South Asians at Princeton
 - Black Graduate Caucus (BGC)*
 - Butler Yoga
 - Canadian Graduate Student Association
 - Colombia In Princeton
 - Distinguished Citizen Society Princeton University (DCS)
 - First Generation/Low Income Graduate Students Organization (FLI Grads)*
 - German Graduate Student Association
 - Grad InterVarsity Princeton
 - Graduate Turkish Student Association
 - Graduate Women in Science & Engineering (GWISE)*
 - Graduate Women of Color Caucus*
 - Hellenic Students' Association of Princeton University
 - Intersecting Queer Identities*
 - Inventory
 - Iranian Student Association
 - JGAP of Princeton (Jewish Graduates & Professionals)
 - Korean Graduate Student Association (KGSA)
 - Latino Graduate Student Association (LGSA)*

- Light and Shadows
- Princeton African Graduate Student Association
- Princeton Association of Taiwanese Students
- Princeton Capoeira
- Princeton Hidden Minority Council*
- Princeton Opera Company
- Princeton Slavic Club
- Princeton Tai Chi Club
- Princeton Tango Club
- Princeton University Mexican Student Association
- Princeton University SACNAS Chapter*
- Princeton Women in STEM Leadership Council*
- Queer Graduate Caucus*
- Centers
 - Carl A. Fields Center for Equality and Cultural Understanding
 - Lesbian, Gay, Bisexual, Transgender Center
 - Women*s Center
 - Pace Center for Civic Engagement
 - Religious Life
 - Davis International Center
- Outreach
 - Princeton Citizen Scientists
 - Mentoring first-generation, low-income undergraduates through SIFP, mentor first-generation and low-income
 - Princeton students as a Graduate Fellow
(<https://sifp.princeton.edu/https://sifp.princeton.edu/people/graduate-fellow>)
 - Undergraduates interested in research through the ReMatch program, mentor a Princeton undergraduate as a Graduate Mentor
(<https://undergraduateresearch.princeton.edu/programs/rematch>)
 - LGBTQIA undergraduates through the LGBT Center’s Q’nnnections mentorship program. Each mentorship “family” includes 1-3 graduate students/senior undergraduates and 4-12 undergraduates
(<http://lgbt.princeton.edu/qnnnections/>)
 - High school students in a lab mentors high school students interested in lab-based research opportunities on campus
(<https://research.princeton.edu/students/research-opportunities/>)
 - Mentor Trenton high school students as a Graduate Teaching Fellow
(<http://www.princeton.edu/pupp/>)
 - Open Labs
- Teaching
 - Teach your own class at Mercer Country Community College
(<https://gradschool.princeton.edu/professional-development/mercerprinceton-teaching-partnership-program-january-2017>)

- Teach prisoners through the Petey Greene or Prison Teaching Initiative (<https://dof.princeton.edu/faculty-retiree-handbook/teaching-opportunities/petey-greene-prisoner-assistance-program> or <https://www.prisonteaching.org/>)
- Teach undergraduate writing seminars (for DCE students only) (<https://writing.princeton.edu/seminars/teaching-opportunities/princeton-graduate-students>)
- Co-teach with a Princeton faculty member through a pilot program for humanities students to co-develop and teach a class with a faculty member. Contact your DGS to learn more.

Arriving on Campus

Graduate student Slack. To receive an invitation to join this Slack group, contact one of the graduate student representatives for the link, which you are kindly requested to not share with anyone outside the department. In this Slack group, there are various discussion boards for the graduate students to organize the traditions we are responsible for, discuss different research topics and plan social events.

Housing and residence

The university has a strict residency requirement, which can be viewed at this website (<https://gradschool.princeton.edu/academics/degree-requirements/standard-requirements>). You are required to live in the Princeton area and be present on campus a majority of days per week unless you are traveling for research or conducting fieldwork throughout the length of your program. If you have an extenuating circumstance please speak with your Advisor, DGS and GPA. Permission for exceptions require Graduate School approval.

There are several different options for graduate housing in Princeton (<https://hres.princeton.edu/graduates>). Currently, the university can house ~ 70% of the graduate students in ‘on-campus’ residences such as the Old and New Graduate Colleges (dorm-style living, with meal plans required), Lakeside and Lawrence Apartments (studios, 1-, 2-, 3- and 4-bedroom apartments or townhouses). Incoming graduate students are always offered on-campus housing, though the highest priority in the annual room draw is given to second year and third year students. On-campus housing contracts are for 12 months, from 1 September - 30 August, and you are allowed to automatically renew your contract for a second year. After these two years, you will have to re-enter the room draw process if you wish to stay on-campus. Often, fourth and fifth year students do not receive on-campus housing and instead live off-campus, typically in Princeton town. Off-campus housing resources can be found at <https://offcampushousing.princeton.edu>.

There are several ways in which you can get ‘priority’ for on-campus housing as a graduate student, such as being part of the Graduate Student Government, working as a Community Associate or being on a housing committee. Please reach out to any of the current graduate students for more information on these roles.

Future plans for expansion of the university campus will include more graduate housing, with the aim of providing housing for >90% of graduate students (<https://campusplan.princeton.edu>).

Note that while meals plans are only required for residents of the Old and New Graduate Colleges, all regularly enrolled, degree-seeking graduate students (years G1-G5) automatically get six free meals to use at Procter Hall each semester.

Graduate Student Furniture Drives

Graduate Student Government (GSG) holds a furniture drive in early June to facilitate recycling gently used furniture and other items donated by undergraduates. You can volunteer to work shifts to establish higher priority for claiming donated items. GSG sends out emails to graduate students in advance of furniture drive date with additional information.

Getting around Princeton and the Surrounding Area

We understand that not all graduate students come to Princeton with a car. If you do own a car, there are some free parking options on campus (<https://transportation.princeton.edu/students/parking>). While getting around campus and to the Nassau street store fronts is easy enough on foot, you may be interested in or need to travel further from campus. Princeton runs several free bus services around campus and to local shopping centers on weekends (<https://transportation.princeton.edu/ttroutes>). There are also options like Zagster Bike Share and Enterprise CarShare Rentals. Princeton has amassed resources for students without cars found here: <https://transportation.princeton.edu/sites/default/files/inline-files/goingplaces.pdf>.

Financial Support

A *First-Year Fellowship* supports all graduate students entering the program for two semesters during their first two years. (This does not apply to grad students that are admitted as part of a faculty hire). This allows students to complete some of their AI requirements during the first year. Support during years 3-5 derives from department fellowships, training grants, external fellowships won by students, and assistantships for teaching in undergraduate laboratories and precepts. All EEB graduate students are encouraged to apply for external funding to cover tuition and stipend. In addition to receiving a financial award from the Graduate School for winning an external fellowship (\$4000 addition to stipend), students are relieved of two semesters of required teaching as an *Assistant in Instruction* (see below for more information on Teaching Requirements).

External funding. Below is a partial list of available external funding sources. Check with your adviser and colleagues for more field-specific fellowships. Some of the below awards may be obsolete.

- National Defense Science & Engineering Graduate Fellowship: Awarded by the Department of Defense (<http://ndseg.asee.org>). Only open to US citizens and nationals.
- EPA Science To Achieve Results (STAR) Fellowship: Awarded by the Environmental Protection Agency: Only open to US citizens and permanent residents.
- Howard Hughes Medical Institute (HHMI) International Student Research Fellowships (<https://www.hhmi.org/programs/open-competitions>): You must be in your 2nd or 3rd year to apply, and you must be institutionally nominated. Complete an application by early February and see website for more details.
- Fulbright Foreign Student Program: If you are not a US citizen, you may be eligible for a grant from this program. Application availability and eligibility varies by country.
- National Sciences and Engineering Research Council of Canada (NSERC): Canadian citizens or a permanent resident of Canada are eligible to apply.
- Graduate Research Fellowship Program: Awarded by the National Science Foundation (<http://www.nsfgrfp.org>). First and second year graduate students (without a Master's Degree) that are US citizens, nationals, or permanent resident aliens are eligible to apply. However, you now only apply once as a graduate student. If you are considering applying, email one of the graduate representatives to get access to past successful EEB applications. Please do not share these documents outside of the department, as the applicants have given us permission to share these with current department graduate students only.

Internal funding. Princeton University and EEB provide various sources of research and travel funding for you.

- EEB provides up to \$2,500 in research support during the summer after your 1st year. You will need to submit your proposal and letter of support via SAFE.
- During your 4th or 5th year, EEB provides funding for you to present your research at a national or international conference. Submit a request and budget via SAFE.

- Three times per year, the Graduate School accepts applications for the Dean's Fund for Scholarly Travel. This fund provides up to \$600 for travel to conferences at which you have been invited to present a paper (not a poster, not a panelist, not a job talk, etc.).
- The Program in Latin American Studies also provides student research grants for projects in the New World tropics.

How to find funding. The online database Pivot can be used to find funding sources for field work (pivot.cos.com). In Pivot, you can set up multiple profiles reflecting your various research projects and eligibility, and you will then be notified of relevant funding opportunities, as well as about application deadlines. There is a list of more EEB specific external funding opportunities, many of which are also listed on Pivot, available in the department Slack.

Taxes and Financial Literacy

For domestic students, while on assistantships for teaching taxes may be partially or fully withheld from your stipend. When your stipend is coming from other sources, taxes will likely not be withheld and students should look into quarterly estimated tax payments. For more tax information visit <https://gradschool.princeton.edu/costs-funding/tax-information>. International students should contact the David International Center for tax information.

For guidance on taxes and other financial literacy questions, please reach out to Mary Bechler (mbechler@princeton.edu), who is in the Office of Finance and Admissions for the Graduate School. She can provide resources to learn about taxes and related questions.

Teaching Requirements

Graduate students are required to teach as an *Assistant in Instruction* (AI) for a total of four teaching semesters expected in a typical five-year degree program. All students are required to teach one semester of a 6-AI hour Laboratory course. Graduate students can be guided by their advisor regarding suggested courses for them to AI. However, any discussion with faculty is non-binding. Graduate students will be asked to complete a GoogleForm that will list the available courses each semester, their AI hours, and the Faculty/Instructor. Graduate students will then select 2-4 courses for which they would like to be considered and write a 3-4 sentences explaining their qualifications/motivation (*i.e.*, committee suggests teaching course for learning/teaching experience). The Graduate Program Administrator (Sandra Kaiser) will distribute the application materials to the respective Faculty/Instructor. A committee of GPA, the Director of Graduate Students (DGS), and the Director of Undergraduate Students (DUS) will review the applications and make a final decision. Sandra will then alert the graduate students of final and non-negotiable AI assignments.

Overall, there will be measures taken to: 1) promote graduate students to AI courses suggested to them by their Faculty Advisor and Committee; 2) maintain at least one experienced AI in some courses that rely heavily upon such; 3) consider each applicant's

AI background when considering the AI selection for each course. It is always the priority to provide the best possible experience for the undergraduate students.

The agreement to serve as an AI commits both the salary of the graduate student and support for the course. *These are binding employment contracts* and are not subject to cancellation under normal terms and agreement. Changes to a course structure or instructor do not invalidate or dissolve the employment commitment. The graduate student will be expected to fully complete their agreed commitment to supporting a course as an AI. The number of AI's in a course is directly linked to the number of students enrolled in a course. While we do our best to estimate the number of AI's needed if there is an unusually low enrollment in a course that has multiple AI's, an assignment maybe canceled. In the situation where a course is canceled, the AI contract is also canceled. However, that graduate student will work with the EEB DGS and the GPA to find a reasonable solution. In the situation where a graduate student is unexpectedly unable to fulfil their AI contract, they will work with the EEB DGS and the GPA to find a reasonable solution.

Campus Resources

Libraries. At some point, even the most electronic of you will probably need a book. The main Biology collections on campus are across the street from Guyot in the basement of Fine Hall, the stacks are to the right after entering the library itself. New arrivals and journals are in Lewis Library (<http://library.princeton.edu/lewis>), the latter on the second floor. For some books you may need to visit other campus libraries (e.g. Psychology for some behavior books or Firestone for history of science). You can also request books and articles from off campus through Interlibrary Loan (<https://library.princeton.edu/services/interlibrary-services>), which is an amazingly effective and free service (very obscure records can often be tracked down), and recommend books for purchase. This being said, many of the journals, and even some books, you will need to access for research are available online via the University library catalog (<https://catalog.princeton.edu>).

Poster printing. Graduate students can use the University's Digital Print Center (<http://www.princeton.edu/printing/aboutdpc.html>) located at 201 Nassau Street for poster printing purposes. Note that EEB does not pay for graduate student poster printing, so payment for posters will have to be a topic discussed with your advisor. There are also other office stores near campus (i.e. Staples) that could also be adequate for your printing needs, and we recommend doing some research to determine which business will be best for your printing needs. If your advisor has a grant chartstring in PRIME that can be used to pay for poster printing, the best option is to use the printing service at Bowen Hall, located on campus in Bowen Hall room 121 (<https://posterprinting.princeton.edu/>). Printing here is typically 50-75% of what an office store would charge and reservations can be made online. Be sure to book in advance, especially in April and May, when the entire undergraduate population is printing out senior thesis posters.

Statistics. Students and faculty within the department and outside it are great resources for statistics help. If you are having trouble with a particular analysis or just have a general question, the best place to go first is usually your fellow lab and cohort members. In addition, you have access to the consultants at the Data and Statistical Services center in Firestone. They specialize in social sciences stats, so you might have to do some extra explaining, but the consultants are able to give advice on the use of stats packages or the

right stats to use. The lab also has computers with useful data analysis and database software such as Microsoft Access, SPSS, and Stata. You might find it useful to test out some of these programs before buying one if you don't already have a statistics program that you are used to using. For some online statistics help also see <https://dss.princeton.edu/training/>. Additionally you can download JMP for free. This is a statistics package that can be used on both macs and PCs. Just contact salf@princeton.edu or ITHELP@princeton.edu for the full details. R is another great and free stats package. The Department of Sociology and Department of Politics hold COMPASS workshops (<https://compass-workshops.github.io/info/>) every semester that focus on data analysis using R with Rstudio.

Research Computing. Princeton Research Computing (<https://researchcomputing.princeton.edu>) provides resources for research computing including free courses on programming and access to high performance computing clusters. They offer weekly drop-in help sessions if you're stuck on anything computing-related. You can email cse@princeton.edu for more information. There is also an intersession (late January-early February) Advanced Statistical Programming camp held by the university that introduces code parallelization and cluster usage.

GIS. The Maps and Geospatial Information Center in Lewis Library is a great resource for performing GIS analysis, or just learning how to use GIS software. You can schedule an appointment (<http://library.princeton.edu/collections/pumagic/hours-access>) with one of their analysts to help you get started with your project, or you can drop by and use one of their GIS computers anytime. They also hold GIS workshops each semester for students just starting out in GIS or those interested in specific GIS techniques. See their website (<http://library.princeton.edu/collections/pumagic>) for more information on their hours, appointments, and workshops. All Princeton students can also receive a license for ArcGIS, just ask one of the EEB IT team (ithelp@princeton.edu) to get set up. ArcGIS is currently only available for PC computers, QGIS is an open source alternative available for use on Mac and PC computers.

Departmental Resources

Computers. You are expected to bring your own computer, although some Advisors have provided laptops to their students. The Princeton Office of Information Technology has the Student Computer Initiative (<https://iss.princeton.edu/sci>) through which you can buy a laptop for a reduced price. For computer software, go to Princeton's OIT Online Store or email ITHELP@princeton.edu for EEB IT help from Jesse Saunders, Stephen Nappa, or Raj Chokshi. EEB IT will also help connect your laptop to departmental printers (black/white and color).

Copiers. A photocopier and scanner are available on the Guyot Mezzanine level and in the basement of Eno. Talk with Department Manager about getting your copy code. There are separate copy codes for making copies for courses you are teaching, for your own research and for Faculty groups.

Mailroom. The EEB mailroom is in Guyot 106A. All mail and packages are delivered there, and you can send USPS/FedEx/UPS packages. You can also get office supplies and interdepartmental mail envelopes; please write down what you take on the sheet posted on the office supplies cabinet door. USPS mail first goes through a central campus mail system before arriving at Guyot, so there can be a delay of a couple of days for that mail to arrive, and you may want to direct some mail to your apartment address for faster delivery. Packages from UPS and FedEx are delivered directly to Guyot, so there is no delay.

To get mail at the department, your address is: Your name, Princeton University, Department of Ecology and Evolutionary Biology, 106A Guyot Hall, Princeton, NJ 08544-2016

EEB Field Sites

Stony Ford Research Center. The Stony Ford Center for Ecological Studies at Princeton University was established in 1967 by Millard and Margaret Meiss in memory of their son Michael. Stony Ford encompasses ninety-nine acres of former farmland about four and a half miles from the central Campus of Princeton University. For more details, see <https://eeb.princeton.edu/about-us/field-stations/stony-ford-research-station>

Mpala Research Centre. The Mpala Research Centre (MRCC) was opened in November 1994 at the core of the Ewaso Ecosystem in central Kenya. Defined by the catchments of two perennial rivers, the Ewaso Ny'iro and Ewaso Narok, and by the protracted migrations of over 6000 elephants, this is a vast and diverse savanna landscape supporting prodigious wildlife populations. For more details, see <https://eeb.princeton.edu/about-us/field-stations/mpala-research-center>

Smithsonian Tropical Research Institute. Princeton University partners with The Smithsonian Tropical Research Institute (STRI). Princeton students travel to and conduct research in Panama to understand its biological diversity. For more details, see <https://eeb.princeton.edu/about-us/field-stations/smithsonian-tropical-research-institute>

Annual Academic Activities

Committee Meetings (Fall). With the exception of the First Year graduate students, all students are to organize a 30-45 minute Committee Meeting in the early fall semester to discuss the graduate student's progress. One week before the Committee Meeting, the graduate student needs to send to each Committee Member a bulleted list that includes a paragraph of explanation for each item:

- Past Accomplishments, especially summer progress
- Current projects
- Future goals and directions

It is especially important to meet with your Committee to discuss plans for any field work well in advance of going into the field, especially if it is a long distance away, so that there is time to act on recommendations arising from your discussions, as well as time to get any needed permits. An analogous statement can be made for molecular-based research, especially regarding new pioneering techniques, animal care regulation, and funding. Remember to also network with others from outside the University to help broaden your scope and widen the range of technical advice, training, and machinery available. **Scheduling committee meetings is the responsibility of the student. Be sure to email your committee (cc Faculty Assistants) as far in advance as possible to schedule the meeting! Offer a range of time slots, or (better) a Doodle poll, to find a time that fits everyone's schedule.**

Committee Meetings (Spring). When the Graduate School opens the re-enrollment online system in March/April, each graduate student must enter the required information and hit the "Submit" button. This will trigger an email to your Advisor with instructions to complete their corresponding information online. The DGS reviews all re-enrollment documents and sends it to the Graduate School for review. New contracts will be issued after approval.

Student Talks. There are annual 2nd and 4th Year Talks (more details in sections below) that you are highly encouraged to attend. These talks are expected to present their aspirations and accomplishments. You will get to learn about what your peers are doing, as well as see the types of research conducted by your peers. These talks also provide you with a template for format and content expected of you when it is your turn to present.

Special Groups. There are several Special Topics Groups (e.g. Disease Group, Lab Tea, EvoGroup, IBRG, Conservation Group) that meeting weekly or biweekly where students, visiting scholars, post-doctoral scholars and faculty present and discuss research. You are highly encouraged to attend some or many of these groups, often selected to be relevant to your research interest. At the start of each academic year, emails will be sent out to graduate students with the option to opt-in to these special group list serves.

Seminars. Not only are you expected to attend the Department's weekly Colloquium (i.e. EEB 522, more details below) but you are also welcome to explore the seminar offerings of other departments and institutes (e.g., Lewis-Sigler Institute for Integrative Genomics (LSI), Princeton Neuroscience Institute (PNI), Woodrow Wilson School (WWS), Princeton Environmental Institute (PEI), and the Department of Molecular Biology). The dinners after Thursday seminars (EEB 522) provide a vital opportunity to socialize with colleagues and faculty in a congenial, informal environment.

Present your work. There are often many local or international conferences that you are encouraged to attend and present your research (e.g. posters, speed talks, etc.). Talk to your advisor and other graduate students about which of these opportunities is best suited to your research.

Socialize! As a Department that is highly social and centered on a strong interconnected community, there are many social events that you are encouraged to attend (Beer hour, holiday party, Halloween party). Social events are also posted in the graduate student Slack and Facebook group.

Outside of the department there are also an abundance of social activities and events. As a graduate student, you are automatically receiving a weekly graduate students event bulletin and Community Associates work to plan additional optional outings for graduate students across departments. Recurring events include weekly Social Hour at the Graduate College (Fridays at 8pm) and annual events like Princeton Reunions (a mass gathering of 25,000+ alumni on campus).

Traditions

Graduate student roles. Every fall, the EEB graduate students meet to voice concerns and to elect students to certain roles. Below are some ways to be involved and events in which you are expected to participate as part of the EEB Community.

- Graduate Student Representatives (a.k.a. “Grad Reps”): There are two Grad Reps at any point, and the tenure is for two years. The tenures are staggered so that each year we elect one new representative. The representatives act as liaisons between the graduate students and the faculty and are a major channel of communication between the two groups. The grad reps regularly meet with the chair of the department to discuss concerns brought up by the graduate students, concerns of the faculty, updates to departmental policies and our assessment of the prospective graduate students.
- Climate Committee graduate student representatives (a.k.a. EEB's Committee on Climate for All): The Committee aims to raise awareness of bias, to minimize discrimination, to enhance diversity, transparency and inclusivity and otherwise to improve climate for all members of our department. It's composed of faculty, post-doc, grad student and staff representatives, and they meet once a month during the academic year. Like the grad reps, there are two student representatives at any point, and the tenure is for two years. The tenures are staggered so that each year we elect one new representative.
- Town Hall meetings: A new effort has recently been installed for regular meetings between the graduate students, the Department Chair, and the DGS. These meetings allow for discussion of concerns and desires by the graduate students with the Department. There are plans to also include the faculty of the Graduate Student Committee and smaller representative groups of graduate students.
- Graduate student retreat: The EEB graduate student retreat is a newer tradition and typically is held in the first half of the Fall semester. As of 2017, the retreat is held at the Mountain Lakes House in Princeton.
- Graduate Student Government (GSG) Representative: This person is the EEB representative to the GSG and attends the monthly meetings. The representative is responsible for communicating important information to the EEB graduate students

and bringing up concerns to the GSG.

- Princeton, UPenn, Rutgers, Columbia and Yale (PPRC-Y): Every spring there is a one-day symposium between the EEB departments at Princeton, UPenn, Rutgers, and Columbia (and as of 2018, Yale), usually held on a Saturday in April. There are short, 5-minute talks, and longer, 15-minute talks. It is a great opportunity to get to know a broader group of peers and practice giving talks to less familiar faces. The location of the symposium rotates between the schools. In the years when it is not at Princeton, the organizers must secure grad students to give talks, and in the years when it is at Princeton, there is more work to organize the scheduling, secure locations to give talks, and organize meals and social activities.
- Prospective Week Organizers: As you all know, prospective week is an important time. The organizers are responsible for scheduling social events, getting volunteers to help guide the prospective graduate students, securing housing for them and supervising the chaos during the week.
- Beer Hour crew: Beer hour happens every Friday from 4:30 PM (in Eno Glade when it's warm and in Guyot Atrium when it gets chilly or rains). In addition to tasty drinks (beer, wine, sodas), it is a great chance to catch up with, or meet, grad students, post-docs and faculty in EEB. Beer hour crew: Traditionally the role of the first-year cohort, this group is responsible for setting up and cleaning up Beer Hour, and order drinking supplies when they are running low. There is typically a pass-the-baton every fall from the rising second year cohort to the new first years so more information is provided at that time regarding set up, clean up, and ordering.

Bagel Hour. Bagel hour happens on Wednesdays at 10 AM. Come grab a bagel, cream cheese, and fruit while you socialize with your department!

Eno Mile. A longstanding tradition of this mile competition occurs annually in the Spring. There have been previous winners that include some illustrious names (e.g. Robert May). Awards go to the top two male, top two female, and the best cohort (cohort cup).

Lab Group Meetings. Each lab has its own weekly meeting. It is generally OK for you to join them, given a previous correspondence with the Faculty member. In addition, there are weekly seminars that revolve around a broader theme: theoretical ecology, disease, and animal behavior (see Annual Academic Activities for details).

Student-invited speakers. Two of the weekly department seminar speakers are chosen by the graduate students. One is the Robert May invited lecture on Ecology and Modeling, and the other is the John Bonner invited lecture on Behavior and Evolution. Through a voting process, graduate students choose researchers and role models that particularly excite graduate students. During the nomination process (each summer), try to consider researchers at the cutting edge of their field, especially if it's an emerging one. Older researchers are often the first to come to mind because they have a long publication history, but early-career researchers are often the ones at this cutting-edge and also present better opportunities as potential post-doc advisors/collaborators as they are just beginning their research program. Your nominee could be someone you find inspiring not only for their research, but also for their personal story, contributions outside academia, and/or for their representation of a generally underrepresented group and increasing diversity in EEB (if you're looking for inspiration, take a look at DiversifyEEB (<https://diversifyeeb.wordpress.com>) which has a self-reported list of diverse graduate students, post-docs, and faculty in EEB).

Student-designed mini-courses. In addition to lab meetings and official courses, there is the opportunity for graduate students to organize "mini-courses" in order to explore a particular topic of interest. These mini-courses typically consist of one or two short sessions a week for approximately six weeks. If you are interested in organizing a mini-course, you need to draft a syllabus, find a Faculty member to lead the course, compile a preliminary list of people interested in taking the course (you need at least maybe 5-10 participants), and then talk to the Department Chair to get it started!

Your Dissertation

According to the Graduate School, “the dissertation must show that the candidate has technical mastery of the field and is capable of doing independent research.” Generally, an EEB dissertation consists of three to four inter-related chapters that together contribute something important to your field of study. You are encouraged to structure your chapters in a way that each is publishable on its own merits based on the importance and quality of that work.

Your dissertation does not have to be a record of everything you have done in graduate school. Each chapter should be a manuscript or a draft of a manuscript.

You should submit your dissertation to your Dissertation Committee (more details in below sections) at least two weeks before your Final Committee Meeting, which typically occurs in the Spring of your 5th Year. The Committee will review your dissertation and determine whether it qualifies you to proceed to your Final Public Oral Examination (FPO) (see below for more details). When you are qualified to advance to schedule your FPO, you must submit your dissertation to the Graduate School via the web before you complete your FPO. See the Graduate School webpage for more details:

<http://www.princeton.edu/gradschool/academics/policies/dissertation/>

Your Committees

Advisory Committee. Early in September of your first year, you will meet with a group of three EEB faculty members and the DGS who will help you begin your career as an EEB graduate student. This is your 1st Year Advisory Committee. The purpose of this meeting is to discuss your background strengths and weaknesses in relation to your aspirations. The Advisory Committee will recommend some combination of taking courses, auditing courses, guided reading/exercises, and/or independent reading, to supplement the rest of your program.

Dissertation Committee. By the end of your 1st Year, you will form a new committee that contains at least four people, at least three of whom must be EEB faculty members (one of those being your adviser). This will be your Dissertation Committee. Ideally, by the time you take your General Examination, you will have settled on the best possible committee for your needs. You will meet with your committee every spring for your Re-enrollment meeting, in addition to an annual fall committee meeting. In your Final Committee meeting, your Committee reviews your dissertation and decides whether to allow you to proceed to the FPO (see details below). It is strongly advised that you hold regular meetings with your Committee members to discuss research plans and any aspect of the General Exam (i.e. general knowledge content) that is of concern or ambiguity.

Research: Regulatory Bodies on campus

More information regarding research compliance, forms, and travel requirements can be found on the EEB website (<https://eeb.princeton.edu/about-us/research-compliance>).

Institutional Animal Care and Use Committee (IACUC). This committee is in charge of reviewing all research protocols involving vertebrate animals, including laboratory and field research, both here and abroad. When you submit research for publication, you will need to present the approved IACUC protocol that you obtained prior to the start of your project. Depending on your animal species and protocol, you will be required to fill out several forms and submit them for a review by Faculty members at Princeton. If your project is related to other projects in your lab that your Advisor already has clearance for, you might be eligible for inclusion on a preexisting protocol. If not:

- Choose a deadline for submission as your target. Keep in mind that the approval process can take several months after initial submission, so you should prepare and submit far in advance of when you want approval.
- Contact IACUC directly (iacuc@princeton.edu) with a short summary of your research to verify the forms you need to complete.
- Complete online training specific to your research (IACUC staff can help direct you to the appropriate modules for your work).
- Submit your proposal by your target deadline. The proposal will automatically be reviewed by Princeton's veterinarian and you will have an opportunity to make changes based on the veterinarian's comment before the committee reviews it.
- If you conduct research for more than a year, you will have to submit annual renewals each year
- Any changes to the protocol (i.e. additional researchers, change in animal number) must be approved by the committee. If these are small administrative changes- they can be handled quickly, but submit as soon as possible.

Institutional Biosafety Committee (IBC). This committee is in charge of evaluating risks associated with chemicals and biological agents. They provide support for shipping of dangerous goods and are the best people to talk to about import/export permits of hazardous materials.

- Choose a deadline for submission as your target. There are few submission times open per year, and the committee is often not in session. It will take at least two months to get the final approval letter after submission, but try and allow for four months.
- If you have any questions, consult with the Environmental Health and Biological Safety Officer before submitting documents. As with any of these processes, the staff working for the committees are incredibly helpful and willing to talk you through anything you are confused about.
- Submit the paperwork by your target deadline.

Institutional Review Board (IRB). This committee oversees any work with involving humans. This includes, but is not limited to: Questionnaires, medical data, human population surveys, etc. If you will be interacting with humans or data collected from

humans, consult the website to determine where you will need to submit protocols for review.

- Choose a deadline for submission as your target. Keep in mind that although this committee meets relatively frequently, they can take a long time to approve protocols.
- Take necessary online training that pertains to your research.
- Research that involves minimal risk can be submitted for expedited review; however, research involving greater than minimal risk requires full review.
- Submit your proposal by your target deadline.
- IRB requires annual renewal, and if your research duration is longer than one year, you will be required to submit renewal forms each year.

Traveling for research. All graduate students must register any University-sponsored international travel in Enroll My Trip. However, it is strongly encouraged that you register even if your travel is not University sponsored. When traveling internationally, you may want to purchase international health insurance, although check with your Student Health Plan policy to see if it covers emergencies that happen while traveling internationally.

Princeton has an agreement with HTH Worldwide to provide coverage for about \$35/month (or \$9/week). Please consult the Princeton University Travel website for more information: <https://travel.princeton.edu> and a helpful checklist <https://travel.princeton.edu/graduate-students/checklist>. Any international travelers must also register with International SOS using Princeton's membership number (11BSGC000022, <https://www.internationalsos.com>) and are encouraged to print and carry an ISOS card while abroad. This service provides numerous benefits, including emergency evacuation and access to special clinics around the world. Finally, international travel often requires immunizations or medications that you may not have already. These can usually be obtained at McCosh Health Center. Consult the Travel Medicine website for details on what immunizations and medications are suggested, and what is available at McCosh (<https://uhs.princeton.edu>).

Research: Ethical approval and Safety

Regardless of whether you have conducted independent research before, there are several important committees and regulations your work must satisfy before the beginning of the project. Even if you think your work will be mostly computational, please read all the following so that you will be familiar with ethical committees if your work shifts into any research fields that these committees regulate (e.g., human health data).

Laboratory Work. Whether you will be doing laboratory work in Princeton University or elsewhere, there are some things you should keep in mind. If you plan on working in a lab at Princeton, you must attend Lab Safety Training (<https://ehs.princeton.edu>). It is offered frequently and takes about 3 hours. You may also need specialty training if you are working with live viruses, blood-borne pathogens, etc. Any laboratory work that involves animals requires that you get approval from IACUC and perhaps the IBC. Any protocols with hazardous or potentially hazardous material will need IBC approval. (See below for details.)

Field Work. Depending on the location of your research you may need to prepare and submit the following:

- **Princeton University.** IACUC, IBC, and IRB protocols. These committees consider applications only a few times per year, so you must consult their websites and plan your submission dates in advance (see below for details).
Travel Health Appointment: Meet with the University Health Services (UHS) Travel Clinic in McCosh Health Center well before you plan to leave for a country. Many vaccines and boosters take a while to become effective.
- **National Regulations.** Sometimes research or student visas are needed to conduct research in a foreign country. Check with the field station or your collaborators and the State Department for specifics.
- **Local Approval.** Sometimes collaborators or field stations require you to submit a proposal before beginning research. Further, some countries/foreign institutions may require an IACUC/IRB/IBC-equivalent. Determine if your collaborators (and their governments/institutions/agencies) will require you to obtain ethical approval in addition to Princeton's approval.
- **Research Agreement.** Institutions may also ask for a Research Agreement (RA) with Princeton. The easiest way to set this up is as an agreement between your professor and a professor at the institution. However, some may require more institutional buy-in in the form of a Memorandum of Understanding. These take over a year to complete and require evaluation by Princeton University's legal team in the Office of Research and Project Administration.

Academic Program:

The University requires all pre-general exam students to be on campus during the semester. EEB requires few courses, and all are completed during this time. If you have an extenuating circumstance, please speak with your advisor, DUS, and GPA.

The First Year

Fall semester. At the onset of your first year of graduate study, you will meet with an Advisory Committee consisting of three pre-assigned faculty members to discuss your aims and academic background, strengths and weaknesses in relation to your aspirations, and future overall trajectory. This Advisory Committee might recommend specific courses to remedy any possible academic deficiencies you may have. In consultation with the Director of Graduate Studies (DGS), you will choose a temporary adviser with whom you will plan your academic and research programs, as well as guide your coursework plan. After this committee meeting, you should begin navigating the different requirements of research that pertain to your goal (e.g. gather permits, submit IACUC/animal protocols, Biosafety training, etc).

Establish your program of reading interesting papers, attending seminars, engaging in discussions, and, if possible, starting some research.

Additionally, there are three required core courses to enroll in this semester (*See Table of Contents for more details on each course*):

- EEB 504 Fundamental Concepts
- EEB 507 Recent Research (*a.k.a.* “Journal Club”)
- EEB 522 Departmental Colloquium

Spring semester. By the end of this semester, you will have decided on the composition of your Dissertation Committee. This committee should include advisers closely aligned with your research interests who can guide you throughout the next four years. It is mandatory to schedule a Re-enrollment Meeting with this new Dissertation Committee to discuss your dissertation plans and the interests that you have developed and wish to pursue. The Re-enrollment Meeting typically occurs in late Spring but can be earlier if you anticipate a field season your first summer, with these details needing to be in place by early Spring.

Additionally, there are two required core courses to enroll in this semester (*See Table of Contents for more details on each course*):

- EEB 506 Responsible Conduct of Research (offered every other year)
- EEB 522 Departmental Colloquium
- EEB 521 Tropical Ecology

Academic Program: The Second Year

Second-year graduate students will attend the required Departmental Colloquia (EEB 522) with the addition of completing EEB 502 in the Fall and EEB 506 in the Spring. Some students opt to teach in the Fall of their 2nd year. This avoids over-committing in the Spring with the 2nd Year Talks and the Generals Examination. There are two departmental activities to be completed in the Spring of your second year: The 2nd Year Talk and the General Examination. The 2nd Year talk is a 20-minute presentation (plus 10 minutes of questions) to the department that gives you a chance to present your research proposal to colleagues and faculty. By Spring of this year, you should also have had a meeting with your Committee to discuss progress and select a date for your General Examination to be held in mid/late Spring (after your 2nd Year Talk). For more details, see the section on *The General Examination* below.

Academic Program: Years 3 and 4

Plan on a second term as an AI, often in a more advanced course or possibly a field course, if you have not already done so. Continue to gain experience presenting your work as talks or posters in your advisor's group meetings, Special Topic Groups in our Department, and at society meetings. Meet with your committee every semester and establish a plan for finishing your dissertation, and also begin discussions about your goals for post-Ph.D. life (e.g. career, post-doctoral fellowships, industry, NGOs, etc). This is also a great time to establish your web-presence and set up your own webpage. This is a great mechanism of listing your experience, skill sets, publications, awards, and research interests. The 4th Year Talk is expected to occur in the Spring semester of your 4th year. This is a 45-minute presentation (plus 15 minutes for questions) to the department that gives you a chance to present the research you have been conducting since your 2nd Year Talk and your General Examination. The 4th Year Committee Meeting is one in which you will discuss your plan to finish the following year. Some students prepare by giving their Committee Members an outline of their dissertation chapters. This should include a "progress report" regarding which chapters are completed, which are in progress, and what they need to complete those remaining projects and write the dissertation in the next year. *Some general advice:* Write your dissertation chapters and associated manuscripts as you progress on each research project.

Academic Program: Years 5 and 6

Most graduate students submit their dissertation to their Committee for final review in the Spring of their 5th year. After submission, you will have a Final Committee Meeting, in which your dissertation is reviewed and decided if you have fulfilled all the expectations and requirements of the Department. At least 2 weeks after your Final Committee Meeting, you will present your accomplishments in your Final Public Oral (FPO) examination. For more details on the FPO, see the section below. A sixth year in residence is possible, but requires well-documented special pleading to the Graduate School that includes arrangements for funding support from your Adviser or from additional teaching if positions are available.

The General Examination

Scheduling the exam. The *General Examination* (a.k.a. “Generals”) occurs in the spring of your 2nd Year. Once your Committee agrees you are ready, you can schedule the General Exam. Work with your Committee well in advance to find a date where they all can meet. After setting the date, remind them to avoid anyone from a scheduling conflict, and inform their Faculty Assistants to put the exam date on their University calendars. Make sure to reserve a room for this with help from the Graduate Program Administrator or your Advisor’s Faculty Assistant.

Pre-generals meeting. This is an unofficial tradition to gather with other EEB graduate students for some socializing and relaxing the night before your exam. Make sure to get lots of sleep.

Preparing for the exam. Before the exam, consult with your Advisor to designate a chair of the exam; this person cannot be your Advisor. Make sure to have informal meetings with your Committee members to discuss both the research proposal and help shape the specific general knowledge you are expected to know for your exam. Two to four weeks before your *General Examination*, you will submit to your Committee two documents (generally by April 1st): 1) a written review of background information relevant to your thesis topic and 2) a dissertation proposal detailing research objectives, preliminary progress and future plans (more details below). Further, you should have an informal presentation prepared to give to your Committee at the beginning of the exam. This should be a 5-10 minute presentation to summarize your conceptual framework, hypotheses and goals. Preparation is mainly a matter of mastering the literature of your proposed dissertation research, doing at least a promising pilot project, and writing a solid *Generals Proposal*. The writing of drafts and final documents should be done weeks to months, rather than days, before the *General Examination*. Do not underestimate the time you should spend reading and writing on your dissertation proposal and literature review.

The exam. Make sure to print out and bring the appropriate forms to the exam, which are available on Canvas or from the Graduate Program Administrator. After the examination, your Committee will complete the forms and return them to the Graduate Program Administrator. Just before the exam starts, your Committee will send you out of the room for a few minutes while they coordinate their questions. Then, you will be asked to return to the room and begin the exam with your 5-10 presentation to summarize your conceptual framework, hypotheses, and goals. Questions during the exam focus on the dissertation topic but also cover all relevant areas of both general and specialized knowledge. The general knowledge section of the exam is largely driven by the composition of your Committee. Ensure that you know the basic concepts and theories in ecology and evolution, as well as review all readings and themes covered in EEB 504. Successful completion of your General Examination qualifies you for a Master’s of Arts in Ecology & Evolutionary Biology. To obtain your diploma, follow the instructions on TigerHub in the Student Center, and click on “*Advanced Degree Application*”. If you do not pass your *General Examination*, you can make a second attempt in the following fall semester.

Document 1: Literature Review (a strict maximum of 25 pages, double spaced, excluding references although most historically have been around 10 pages). In this document, you are to present the background (historical and recent) of your field of study, defend your interest in the questions, and detail the hypotheses you have derived. You can include figures, tables, and charts. Remember that if these are not your own illustrations or data, you are expected to adhere strictly to proper citation methods. This document is where you are expected to provide the broader conceptual foundation upon which your hypotheses are founded. Please fully reference this document with a *Literature Cited* section. Some past examples can be found on Canvas under the “EEB Concentrators” section. Past students have written this section in a way that has allowed them to, with some edits, submit their Generals Literature Review as a literature review to a journal in their field.

Document 2: Proposal (a strict maximum of 25 pages, double spaced, excluding references). This document should include a detailed presentation of your research project, similar in style to a federal grant proposal. You can use aims and objectives to organize your thoughts within each Chapter of your Dissertation. You can include figures, tables, and charts. Remember that if these are not your own illustrations or data, you are expected to adhere strictly to proper citation methods. Please fully reference this document with a *Literature Cited* section. Some past examples can be found on Canvas under the “EEB Concentrators” section.

Final Public Oral Examination

The Graduate School considers the *Final Public Oral (FPO) Examination* the definitive test of a student’s completion of requirements for the Ph.D. degree. However, EEB considers the FPO as a more symbolic and celebratory rite of passage. In recompense, the Department takes the thesis evaluation by Principal Readers and the Dissertation Committee as the defining criterion of an acceptable thesis. You are highly encouraged to submit your complete and definitive dissertation version to your Committee with plenty of time for them to read, evaluate it, and provide feedback. Any serious issues that the Readers or Committee have with the thesis must be dealt with and resolved in the definitive document before the Department will ask the Graduate School to authorize the FPO. On a positive recommendation from your Committee and the Department, accompanied by positive written reports from two Faculty Principal Readers, the Graduate School will authorize the Department to conduct your FPO.

Committee Meeting. You should have a Committee Meeting for you to share an outline of your chapters before you start writing. This ensures that everyone is on the same page about the dissertation and when you plan to defend. Discuss a deadline for your FPO with your Committee. Although your Committee may appreciate it if you give them one or two chapters at a time, you should make sure that they have the whole document at least six weeks before your FPO. This ensures that they will have at least two weeks to read it. You must ask two of your committee members ahead of time to be your primary readers (one which could be your main Advisor), let all the other members of the Committee know who will be the primary readers.

You then have to schedule a committee meeting about four weeks before the FPO. Please keep the Graduate Program Administrator involved. In EEB, this meeting is essentially the dissertation defense. All of your Committee Members must be physically present at this meeting. Make sure you bring a copy of your own dissertation to the meeting. At the meeting, you do not have to give a presentation as you did for generals. Your Committee Members meet first without you to discuss their opinions of the thesis (i.e. you will step out of the room). Then they will call you back in to have a group discussion of their reservations, comments, and questions. You should make the requested revisions and return it to your Committee three weeks before the FPO. At this time, they are likely to approve and sign off on the paperwork. Check the Graduate School website for required forms and a checklist. You should also talk to the Graduate Program Administrator to help you meet all the deadlines.

Dissertation content. You are required to submit your dissertation to the Mudd Library (see their webpage for more details). Although the guidelines from the University are strict, there is enough flexibility to accommodate many published formats, so each chapter can usually be in whatever format is required by the journal to which you are submitting it. The only guideline to remember is that you must have substantial novel work substantially done by you while at Princeton University. If you have substantially reduced your chapters for submission and publication because of journal limitations, you are encouraged to add this material back in into the dissertation to help construct a more comprehensive document for your readers. This may include material that was relegated to an appendix or supporting online material for publication. If you have supplemental material that provides extra details but is not key to understanding your work, you may want to include it as an appendix. It will be easier on your readers if you attach appendices to each chapter for which you have supplemental material instead of lumping the appendices together at the end of the document. Intersperse your figures and tables with the text, if possible, instead of placing them all together at the end of each chapter as you would do for a manuscript submission. Describe the general contents of tables and figures explicitly in the prose, not just as parenthetical references.

Scheduling. Work with the Faculty Assistants to help schedule the FPO on dates where most of EEB's Faculty are able to attend. You are required to have three faculty who did not read your dissertation to be at your FPO. You should send individual emails inviting them to attend and ask for a confirmation that they can indeed attend your FPO. There must be a minimum of three business days between Graduate School authorization and the FPO. That means that your final Committee meeting should be at least TWO WEEKS before your anticipated FPO. Once you have scheduled your FPO, reserve a room and confirm with the examiners ahead of time that you will have enough Faculty present. The Graduate School requires a list of the expected examiners in the pre-FPO application due at least two weeks before the exam; mismatches between the list and actual faculty in attendance have never been challenged. However, you should compile the list with enough Faculty for back-ups in advance and send out reminders. Keep in mind when planning your FPO and Committee Meeting dates that faculty are not required to be on campus during the summer (many are gone from Class Day in early June until the first week of classes in September). This is especially important if you plan to hold your FPO in August (as many do).

Paperwork. Your two primary readers will complete the Reader's Reports. Keep in mind that the evaluation and description of your dissertation's novelty can require time to complete, so you provide these forms for the Reader's Reports when you submit the final draft. Make sure to bring three forms to the Committee Meeting: 1) Reader Report (two copies), 2) the prior presentation and publication form, and 3) the request to hold an FPO form. Once the meeting is over (or once you make the changes suggested and the Committee Members sign all the forms), take ALL the forms to the Graduate Program Administrator, where she will submit them to the Graduate School Office (which should be at least two weeks before the FPO). Go online to TigerHub and fill the online "Advance Degree Application". You will need to upload your title, abstract and other thesis related information. Let the Graduate Program Administrator know once that is completed. You should actually start on this before your final Committee Meeting and submit once your Committee has signed the forms. You need to also complete a survey of the Graduate School (you will get the link once you start the process on TigerHub). You will need to include the names of you three principal examiners in the TigerHub form and the Committee Meeting forms. Also, begin inviting specific Faculty to attend your FPO and ask for confirmation of their attendance. Also send reminders to ensure you have enough Faculty attending your FPO to meet the Graduate School requirements.

Formatting and submitting your dissertation. Follow closely the guidelines for format, which can be found on the Mudd Library webpage. Be sure to pay attention to the ProQuest guidelines and make sure you submit this on time (this also means deciding on Copyright, Embargo and other issues). You can read about this on the Mudd Library webpage and ProQuest. You can submit your dissertation to ProQuest before the FPO. One copy of your dissertation (either bound or as a PDF) must be submitted to the EEB department office two weeks before the FPO. If you submit a bound copy, it does not have to be library quality. If you are following this timeline, you should have plenty of time to complete any final edits and obtain the library quality copy. Take the same copy to the library after your FPO to save you \$50 for cheap bound copies.

The FPO. The FPO consists of your presentation and defense of the dissertation in a public seminar, and examined by at least three Princeton (or equivalent) Faculty, two of whom were the Principal Readers (not your advisor). After your seminar, you will take questions from the audience (excluding questions from faculty). The FPO is then followed by a closed session with you and the faculty for continued questions and exploration of your dissertation accomplishments. After questioning, they will then decide if your presentation passed the requirements and inform you immediately (*aka* on the spot). Only after your FPO is completed will you take your thesis to the Mudd Library where they will sign your FPO form. Take all of the paperwork of your FPO to the Graduate School office to officially be done and filed!

Binding. It is cheaper to buy the paper and do the photocopying yourself. Hinkson's on Spring St. sells reams of library-approved paper. It costs about \$40-50/ream (Strathmore 25% Cotton). The best place to get your thesis bound is Smith-Shattuck Bookbinding (<http://thesisbookbinding.com>) on Rt. 206, just north of Princeton University. It usually takes about 3 days to get the basic library binding done (about \$38/copy), although it may take longer during high traffic periods (e.g. April).

Suggested FPO Time Line:

- Before you start writing: Have a Committee Meeting
- 6 weeks before FPO: Give complete draft to Committee
- 4 weeks before FPO: Have final Committee Meeting, Complete application in TigerHub
- Day of FPO: Give your seminar to the department! Upload your dissertation PDF to ProQuest and submit one bound copy of your dissertation to Mudd Library with your FPO forms. Submit your FPO report and proof of completion of your exit questionnaire and survey of earned doctorates. Then celebrate!
- Within one week post-FPO: Complete your End of Enrollment form and submit to the Graduate School in Clio Hall.
- 2 weeks post-FPO: If you have changes to make to your dissertation after your FPO, you may have a two-week extension for submission of your dissertation and paperwork to the library.

Learn from your peers

You are surrounded by successful peers. They are a wealth of information and there are weekly opportunities to ask for guidance, explanations, details, and advice. In preparing your own documents and seminars, remember to attend the 2nd and 4th Year talks as well as consulting with other graduate students. These interactions are crucial. You also have a graduate student mentor; meet with them. Talk to your graduate student representatives. Talk to your lab members. They have all been through the process and it is unlikely that you are going to find a better source for information about being a graduate student in EEB.

Also, some general advice: Write your dissertation chapters and associated manuscripts as you progress on each research project! This effort will make a huge difference with your degree progression and give you a publication record that is often helpful when looking into the next stages of your career.

Required Courses

There are five required EEB courses that you are expected to enroll in and complete your 1st Year, detailed below. Additional courses may be required if you are in the PEI-STEP Program (<https://environment.princeton.edu/grads/step/>) or on a fellowship from a training grant. **You must enroll in each of these courses for your transcript to reflect their completion and you earn course hour credits towards your degree!**

Fundamental Concepts in Ecology, Evolution, and Behavior (EEB 504): This course occurs in each semester of your first two years and involves reading and discussing papers fundamental to the development of the fields of evolution, ecology, and behavior, as chosen by the faculty. Each week, a different faculty member leads the class and will have previously assigned 3-5 key papers in their area of expertise. These papers comprise much of the material for the general knowledge component of your general exam. Come prepared to class by reading the papers and be ready to summarize/synthesize in a short essay and discuss as a group. Dinner is served with discussion.

Research Conduct in Research (EEB 506): This course is typically offered in the Spring of either first or second year. This is a half-semester course and is important for satisfying requirements from NSF, NIH and most other funding agencies. This course covers the essential topics of what constitutes responsible conduct in research through examples of case studies and discussions of ethical issues dealing with: research organisms, data, the literature, and other humans: subjects, colleagues, students, and/or mentors. Different faculty members typically lead each week of discussion.

Recent Research in Population Biology (EEB 507) ('Journal Club'): Offered the Fall of first year. You will read and discuss current literature with Faculty in order to become familiar with key scientific journals and get up-to-date on current research in your cohort's areas of interest.

Tropical (or Winter) Ecology (EEB 521): This is an intensive 3-week field course held in January of the first academic year. It has historically alternated between Costa Rica, Kenya, and Australia with other trips to South Africa and Brunei. Recently, Yellowstone National Park has been included as a field site. Students go into the field with a faculty member and take part in readings, discussions, and complete group projects. The department has normally covered airfare to/from the field location, while other expenses are the student's responsibility. This course is to encourage you to collaborate with other first-year graduate students and conduct a research project collecting and analyzing data, with the expectations of writing a manuscript for fulfillment of the course requirement. Regular preparatory meetings are likely to occur in the preceding Fall, with follow-up meetings in the spring. You are highly encouraged to work on formatting it for submission to a peer-review journal. Several past projects have been published.

Departmental Colloquium (EEB 522): Attendance at the EEB Department's weekly seminar is mandatory for the first two years (i.e. 4 semesters) and highly encouraged after that. The speakers are invited by EEB Faculty, with a graduate student selected invited speaker as part of the roster each year (depending on their availability). Following a visitor's talk, all first- and second-year students meet with the speaker over lunch for an opportunity to discuss in depth the speaker's research and future directions. These

informal discussions encourage students to think broadly and in an interdisciplinary way. For some speakers, a dinner is held at a Faculty member's house, providing another opportunity to interact with the speaker and faculty in a casual setting.

Relevant Courses

In your first year, your Committee may recommend that you enroll in or audit some courses (or do guided or independent reading) to fill gaps in your background. You may also enroll in or audit any course that interests you. Here are some frequented courses offered by Princeton University.

Introduction to Statistics for Biology (EEB 355/MOL 355): This is an introduction to statistical models, methods, and concepts with a particular focus on applications in biology. Real data sets will be analyzed using the R software package in order to gain an understanding of how statistics is used in practice. Topics to be covered include probability, experimental design, point estimation, hypothesis testing, Bayesian statistics, and the extension of these topics to modern biological studies. SPRING

Software Engineering for Scientific Computing (APC 524/MAE 506/AST 506): The goal of this course is to teach basic tools and principles of writing good code, in the context of scientific computing. Specific topics include an overview of relevant compiled and interpreted languages, build tools and source managers, design patterns, design of interfaces, debugging and testing, profiling and improving performance, portability, and an introduction to parallel computing in both shared memory and distributed memory environments. The focus is on writing code that is easy to maintain and share with others. Students will develop these skills through a series of programming assignments and a group project. FALL

Numerical Algorithms for Scientific Computing (APC 523/AST523/MAE 507): A broad introduction to numerical algorithms used in scientific computing. The course begins with a review of the basic principles of numerical analysis, including sources of error, stability, and convergence. The theory and implementation of techniques for linear and nonlinear systems of equations and ordinary and partial differential equations are covered in detail. Examples of the application of these methods to problems in engineering and the sciences permeate the course material. Issues related to the implementation of efficient algorithms on modern high-performance computing systems are discussed. SPRING

Data, Models, and Uncertainty in the Natural Sciences (GEO 422): This course is for those who want to turn observations into models and subsequently evaluate their uniqueness and uncertainty. Three main topics are elementary statistics, heuristic time series analysis, and model parameter estimation via matrix inverse methods. While the instructors and textbook examples will be derived mostly from the geosciences, students are encouraged to bring their own data sets for classroom discussion and in-depth analysis as part of their term papers. Problem sets and computer exercises form integral parts of the course. Contents may be tailored to meet student demands. FALL

Probability and Stochastic Systems (ORF 309/MAT 309): An introduction to probability and its applications. Random variables, expectation, independence. Poisson processes,

Markov chains, and Brownian motion. Stochastic models of queues, population dynamics, and reliability. FALL

Experimental Design and Analysis in Psychological Research (PSY 504): This course will provide students with a broad overview of multivariate statistics. Topics covered will include multiple regression, analysis of covariance, multivariate analysis of variance, discriminant function analysis, logistic regression, principal components analysis, factor analysis, path analysis, and structural equation modeling. SPRING (not offered every year)

Social Statistics (SOC 504): This course provides a thorough examination of linear regression from a data analytic point of view. Sociological applications are strongly emphasized. Topics include: (a) a review of the linear model; (b) regression diagnostics for outliers and collinearity; (c) smoothers; (d) robust regression; and (e) resampling methods. Students taking the course should have completed an introductory course in probability and statistics. SPRING

Quantitative Analysis (Advanced) (WWS 507C): Data analysis techniques, stressing application to public policy. The course includes measurement, descriptive statistics, data collection, probability, exploratory data analysis, hypothesis testing, simple and multiple regression, correlation, and graphical procedures. Some training is offered in the use of computers. No previous training in statistics is required. The course is divided into separate sections according to the student's level of mathematical sophistication. The advanced level assumes a fluency in calculus. (GRADUATE STUDENTS ONLY) FALL

Generalized Linear Statistical Models (WWS 509 / ECO 509): The analysis of survey data using generalized linear statistical models. The course begins with a review of linear models for continuous responses and then considers logistic regression models for binary data and log-linear models for count data, including rates and contingency tables and hazard models for duration data. Attention is given to the logical and mathematical foundations of the techniques, but the main emphasis is on the applications, including computer usage. (GRADUATE STUDENTS ONLY) FALL

Advanced Econometrics: Time Series Models (ECO 513): Concepts and methods of time series analysis and their applications to economics. Time series models to be studied include simultaneous stochastic equations, VAR, ARIMA, and state-space models. Methods to analyze trends, second-moment properties via the auto covariance function and the spectral density function, methods of estimation and hypothesis testing and of model selection will be presented. Kalman filter and applications as well as unit roots, cointegration, ARCH, and structural breaks models are also studied. FALL

Regression and Applied Time Series (ORF 405): Statistical Analysis of financial data: Density estimation, heavy tail distributions and dependence. Regression: linear, nonlinear, nonparametric. Time series analysis: classical models (AR, MA, ARMA, ..), state space systems and filtering, and stochastic volatility models (ARCH, GARCH,). FALL

Modern Regression and Time Series (ORF 505/FIN 505): Linear and mixed effect models. Nonlinear regression. Nonparametric regression and classification. Time series analysis: stationarity and classical linear models (AR, MA, ARMA, ..). Nonlinear and

nonstationary time series models. State space systems, hidden Markov models and filtering. SPRING (not offered every year)

Rutgers Courses

There is a Princeton-Rutgers Graduate Student Cooperative Exchange program where respective graduate students can enroll in courses at Princeton University or Rutgers University at no additional cost (<https://gradschool.princeton.edu/academics/partnerships-exchanges-and-cross-registration/rutgers-exchange-program>). There are many courses offered at Rutgers. Often, many EEB students consider Statistics courses at Rutgers. For more details on Rutgers's Statistics courses, please visit the Graduate Course Catalog and the Undergraduate Course Catalog.

Online Short Courses

Through your princeton.edu email address, you have access to LinkedIn Learning (<https://linkedinlearning.princeton.edu>). If you previously used Lynda, your course lists and progress have now been migrated to a LinkedIn Learning account. LinkedIn Learning offers short online courses (often 5-10 hours in length) on learning new software such as R, Python, SQL, GIS and new skill sets such as saving projects using github, machine learning models, neural nets. These courses offer the benefit of quickly learning new techniques and approaches to data collection and analysis that can be applied to your thesis work.

Vacation time

As set forth by the Graduate School, graduate students are allowed no more than four weeks of vacation per year. This includes "any days taken during regular University holidays and scheduled recesses," such as Summer and Winter Breaks. See the relevant section on the Graduate School website for more information.

Appendix I: Important websites

- Generals Exam: <https://gradschool.princeton.edu/academics/degree-requirements/phd-advising-and-requirements/general-examination>
- Dissertation and FPO: <https://gradschool.princeton.edu/academics/degree-requirements/phd-advising-and-requirements/dissertation-and-fpo>
- Advanced Degree Application Process: <https://gradschool.princeton.edu/academics/degree-requirements/phd-advising-and-requirements/dissertation-and-fpo/advanced-degree>
- Princeton Environmental Institute Program in Science, Technology, and Environmental Policy (PEI-STEP): <https://environment.princeton.edu/grads/step/>
- Princeton-Rutgers Exchange Program: <https://gradschool.princeton.edu/academics/partnerships-exchanges-and-cross-registration/rutgers-exchange-program>
- EEB's field sites: <https://eeb.princeton.edu/about-us/field-stations>
- TigerHub: <https://registrar.princeton.edu/tigerhub/>
- Canvas: <https://canvas.princeton.edu/>
- Lewis Library: <http://library.princeton.edu/lewis>
- EEB Research Guide: <https://libguides.princeton.edu/eeb>
- Public Events at Princeton: <https://www.princeton.edu/events>
- Tax information: <https://gradschool.princeton.edu/costs-funding/tax-information>
- Concur: <https://princeton.edu/concur>
- **Funding: General** - https://pivot.cos.com/funding_main; **Princeton-specific** - <https://studentfunding.princeton.edu/>
- Enroll My Trip - [Travel Registry \(princeton.edu\)](#)

Physical Health, Mental Health and Family Resources

Here are some additional resources that you may find useful for supporting your physical and mental health and your family and for seeking other support you may need during your time at Princeton:

- [Counseling and Psychological Services](#) at [McCosh Health Center](#)
- [Medical Expense and Health Plan Assistance Programs](#) for graduate students
- [Health and Wellness programs](#) for graduate students (including some links to services already provided, as well as additional medical care funds for students)
- [Student leave of absence policy](#) for graduate students (including medical LOA)
- [SHARE](#) (Sexual Harassment/Assault Advising Resources and Education)
- [Office of Disability Services](#) (see specifically the [Student Services](#) section)
- [Graduate payment advance](#) policy
- [Veterans' benefits](#) for graduate students
- [Local child-care centers](#) (some are discounted for Princeton affiliates)
- [Parental leave policy](#) for graduate students (childbirth and adoption)
- [Family initiatives](#) for graduate students (useful links page)