

## **E3B Ph.D. Program Handbook**

*This handbook, created as a guide for Ph.D. students in the Department of Ecology, Evolution and Environmental Biology (E3B) at Columbia University, is under regular revision.*

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## 1. KEY CONTACTS WITHIN E3B

### **DIRECTOR OF GRADUATE STUDIES (DGS)**

The DGS oversees the progress of all students through the graduate programs. They keep records on student progress, process special requests (e.g. registration for independent study, committee membership), and provide advice on all academic matters. Students should go to the DGS for any academic matters concerning their studentship (e.g. degree requirements, research plans). We expect students to be in regular contact with the DGS (see [HERE](#) for further information).

### **DIRECTOR OF ADMINISTRATION AND FINANCE (DAAF)**

The DAAF is responsible for overseeing the execution of departmental and university policies, including those related to students, and all financial matters. They are the person to see for logistical or administrative matters, but not the person to ask for academic advice.

### **ADMINISTRATIVE COORDINATOR (AC)**

Milestone items are coordinated by the AC in conjunction with the DAAF. Although the first point of contact for logistical and administrative issues should be the DAAF, the AC will help coordinate with the DAAF and DGS. The AC also assists with Directed Research and Reading requests.

### **BUSINESS MANAGER**

The business manager works with Ph.D. students primarily to assist them with grant proposal submission, management, budgeting, spending, and closeout. They also work in coordination with the DAAF on student appointments, payroll, and HR items.

### **FINANCIAL COORDINATOR**

The financial coordinator is responsible for processing Student Research and Conference expense reports, and scheduling use of the department vehicles.

### **DEPARTMENT CHAIR**

The Department Chair is responsible for general management of the department, including hiring of faculty, setting budgetary priorities, and communicating with the departmental faculty at large and the higher-level university administrators. This is the person to come see if there are general departmental issues, such as matters of overall policy or general faculty concern.

### **CONTACTING OFFICE STAFF**

When contacting individual office staff over email, please remember to always copy [E3Badmin@columbia.edu](mailto:E3Badmin@columbia.edu) for administrative issues and [E3Bfinance@columbia.edu](mailto:E3Bfinance@columbia.edu) for financial matters. This will help ensure that your questions or requests do not fall through the cracks.

## 2. E3B PH.D. PROGRAM OVERVIEW

### PROGRAM REQUIREMENTS

The E3B Ph.D. program is designed as a 5-year course of study. A total of 40 science credits are required to complete the program, with the exception of students entering with “advanced standing” (i.e. completed an MA/MS in a related field) who must complete as few as 20 credits and who can petition out of core courses. Core courses, elective courses (including Directed Research and Directed Reading), Thesis Development Seminar, and the Research Seminar (weekly department and student seminars) all count toward the total science credits needed for program completion. In addition to the required credits and courses, all Ph.D. students are required to pass an Oral General Knowledge Exam, a Proposal Defense, and a Dissertation Defense. Requirements for the E3B Ph.D. include:

- 2 Core Courses (Fundamentals of Ecology and Fundamentals of Evolution)
- Thesis Development Seminar
- Elective Courses (to as needed to reach the credit requirement)
- Research Seminar
- Up to 4 Semesters as a Teaching Assistant
- Oral General Knowledge Exam
- Dissertation Proposal Defense
- Dissertation Defense

### TENTATIVE PH.D. TIMELINE

Semester		Year 1	Year 2	Year 3	Year 4	Year 5
Fall	<b>REQUIRED COURSEWORK</b>	Fundamentals of Evolution Research Seminar	Thesis Development Seminar Research Seminar	Research Seminar	-	-
	<b>MILESTONE</b>	-	-	Dissertation Proposal Defense	-	-
	<b>POSSIBLE ACTIVITIES</b>	Research	Research	Research	Research	Research
	<b>POSSIBLE COURSEWORK</b>	Directed Research Directed Reading Elective Course	Directed Research Directed Reading Elective Course	-	-	-
	<b>POSSIBLE TEACHING*</b>	-	Teaching Assistantship	Teaching Assistantship	-	-
Spring	<b>REQUIRED COURSEWORK</b>	Fundamentals of Ecology Research Seminar	Research Seminar	-	-	-
	<b>MILESTONE</b>	-	Oral Exam M.A. Degree	M. Phil. Degree	-	Dissertation Defense Ph.D. Degree
	<b>POSSIBLE ACTIVITIES</b>	Research	Research	Research	Research	Research Thesis presentation
	<b>POSSIBLE COURSEWORK</b>	Directed Research Directed Reading Elective Course	Directed Research Directed Reading Elective Course	-	-	-
	<b>POSSIBLE TEACHING*</b>	Teaching Assistantship	Teaching Assistantship	-	-	-

\* Teaching is typically done in Semesters 2-5

### CORE COURSES

All first-year Ph.D. students are required to take two core courses, Fundamentals of Evolution (EEEB GR6110) in the Fall and Fundamentals of Ecology (EEEB GR6112) in the spring. Students must receive a grade of B or higher to claim successful completion of the core course requirement. Students that do not receive a B or higher in either course are placed on probation with E3B and GSAS, and must complete additional work, or repeat the entire course (which outcome to be decided by the instructors).

### GOOD STANDING VERSUS PROBATION

According to GSAS rules, all Ph.D. students must remain in Good Standing within their academic program (see [HERE](#) for more details). Students that fail maintain Good Standing are placed on Probation within E3B and GSAS. Students that are placed on probation will receive a detailed letter from the DGS that clearly states the criteria that they need to achieve to be taken off probation. Upon receiving a letter of probation, students must sign the letter and return it to the DGS, their Advisor, and the DAAF to acknowledge the probationary terms. Upon successful competition of the terms, the student will receive another letter acknowledging that they are no longer on probation. Students that fail to meet the terms of their probation will be dismissed from the program.

## THESIS DEVELOPMENT SEMINAR

All 2<sup>nd</sup> year Ph.D. students are required to take Thesis Development Seminar (EEEE GR6850) in the Fall. This course helps guide students towards candidacy and is designed to engage students in research early in their academic careers by teaching them the necessary skills to be effective and independent researchers. Students conduct an extensive literature review, write a preliminary dissertation proposal, and present their research ideas to the group. Students learn how to give and receive constructive written and oral feedback on their work. Finally, this course is an important cohort-building opportunity for the 2<sup>nd</sup> year cohort. Instructors use a pass/fail grading system. Students that do not pass the class are placed on probation with E3B and GSAS until they meet the conditions required to pass the course as per the guidelines outlined by the instructor.

## ELECTIVE COURSES

Elective courses provide specialized training in the concepts and methods of evolution, ecology, and/or environmental biology. Students' advisors and committees should advise on the number and content of elective courses. Courses at schools that are part of the inter-university doctoral consortium (CUNY, NYU, Stony Brook, Princeton, AMNH, etc.) can be used as electives. Students will need to consult those universities' websites for information on current course offerings, and complete the appropriate paperwork (available from the GSAS website [HERE](#)).

Students generally fulfill additional credit requirements with courses in Directed Research and/or Directed Reading. These courses give a student the freedom to design their own course of study, within the guidelines of their supervisor for the course. The Directed Research or Directed Reading form must be signed by the supervisor and the DGS, and approved by the AC up to two days before the end of Add Period. Generally, students are expected to devote 3-4 hours of directed studies per week for one credit. See below for more details about these courses.

## RESEARCH SEMINAR

The Research Seminar consists of two parts, a research presentation featuring practicing scientists (Tuesdays 4:00-5:00 PM) and a student presentation featuring E3B Ph.D. and MA students (most Thursdays 2:30-3:30 PM). This series provides an opportunity for students to meet leaders in their field, gain insights into novel techniques and theories, witness proper scientific lectures firsthand, and to present their own research every few years to the E3B community. All 2<sup>nd</sup> and 4<sup>th</sup> year Ph.D. students are expected to present their work to the department during the Thursday seminar. Ph.D. attendance to the seminars is required for the first 3 years (or until candidacy is reached), and expected thereafter. Students are encouraged to meet and have lunch with the research seminar speaker. Coffee and cookies are offered before the talk on Tuesdays, and a reception with food and drink is provided afterward to stimulate conversation among students and the speaker.

## PH.D. COMMITTEES

Students will complete the Ph.D. program under the guidance of several committees whose membership usually overlaps substantially. These committees include:

**Three-Member Advisory Committee.** An entering Ph.D. student has an advisor, and, in consultation with the advisor, develops a 3-member advisory committee by December 1 of the 1<sup>st</sup> year of study (this includes the advisor). If an advisor and student are not able to identify committee members by this time, the DGS and Department Chair will assign members. The 3-member advisory committee meets with the student during the 1<sup>st</sup> year Committee Meeting, typically in the spring of the 1<sup>st</sup> year. This committee gives advice related to course selection, the scheduling of early degree requirements, and early research plans.

**Three-Member Orals Committee.** This committee administers the Oral General Knowledge Exam and consists of three faculty members. It cannot include the student's primary advisor. The members of the orals committee should represent at least two of the [three pillars of the Department](#): (1) ecology; (2) evolution; and (3) environmental biology. A list of which faculty members represent these research areas can be found [HERE](#), though people outside of E3B can also be on the committee. Information on adding members not found on this list can be found [HERE](#).

**Five-Member Dissertation Committee** (same rules for Proposal Defense and Dissertation Defense). By the end of their 2<sup>nd</sup> year, students should have formed their 5-member committee. Other than the Advisor, there may or may not be overlap between 3-member and 5-member committees. The proposal defense and the dissertation defense will both be conducted by a committee that is composed of exactly five members. The dissertation defense committee is often comprised of the same five people as the proposal defense committee, though it is not required that they be identical. The Moderator should be a core E3B tenured faculty member who is not the student's advisor (this is also a GSAS rule), though the advisor may petition the DGS to allow a Dissertation Committee Moderator who is untenured E3B faculty member (though not a lecturer). All committees must be approved by GSAS. At least three of the members of the committee must be from the list of approved Ph.D. sponsors (found [HERE](#)), and at least one of the five must be either:

1. A faculty member, clinician, or practitioner who holds a position at another university or research institution.
2. A full-time CU faculty member, research scientist, or adjunct professor outside the student's own department or program.

When submitting the Dissertation Defense Application, E3B must provide GSAS with evidence of the external examiner's qualifications, usually a curriculum vitae (CV). Final approval of the members of a final defense committee rests with the Dean of the Faculty of the Graduate School of Arts and Sciences.

### FORMING COMMITTEES

Please note that the Advisor, not the student, extends the invitation to faculty to serve on all committees. The Advisor discusses committee membership with the student in advance, but students are not to set up their own committees (this is a GSAS rule). The Advisor also chooses the Moderator of each Committee. Further information on forming committees can be found [HERE](#).

### ANNUAL COMMITTEE MEETINGS

The main purposes of annual committee meetings are twofold: (1) for the student to get feedback from the committee; and (2) for the committee to monitor the progress of the student. Students will meet at minimum once per year with their committees. These annual meetings must be completed by April 1 each year. To meet this deadline, students should have scheduled the meeting by February 15. Once they are scheduled, students must provide the AC with the meeting day. Students should hold an annual meeting with concurrent participation of all their committee members (either in person or via electronic participation). Committee members based in New York City are expected to attend in person. The DGS can help in this process. Proposal defenses and dissertation defenses can double as annual committee meetings if held by April 1.

The 1<sup>st</sup> year meeting typically occurs in the spring semester of the 1<sup>st</sup> year (and must be completed by April 1 and before the student can apply for preliminary research funds). By this point the student's adviser, with input from the student, should have formed the 3-member advisory committee (required by December 1), so this meeting consists of the student, the adviser, and two additional faculty members. The meeting typically lasts 1 hour. The student should fill out as much of the committee meeting form as is relevant ahead of time and bring it to the meeting.

Annual committee meetings beyond the 1<sup>st</sup> year typically occur in the spring semester of that year (and must occur before April 1). If the student is defending the proposal that year, the proposal defense can take the place of the annual meeting. Depending on when the 2<sup>nd</sup> year committee meeting occurs, the committee might be the three-person advisory committee, or the student and adviser might have formed the full five-person committee. By the 3<sup>rd</sup> year, the student must have a five-person committee. These meetings typically last up to 1.5 hours. Each student must work with their advisor and committee to complete an annual committee report form and submit it to the AC before April 1<sup>st</sup>. Committee report forms can be downloaded from the E3B website [HERE](#).

**Standard format.** Formats for annual committee meetings are quite similar. At the beginning of the meeting, the student may be asked to leave the room to permit the advisor and committee members to

have a brief discussion about progress toward the degree. Upon their return, the student typically gives a brief presentation (~20 minutes) on progress during the year, including both research and checkpoints, and lays out plans for the following summer and year, including both research and checkpoints. Most people use slides for the presentation. Following and/or during the presentation, the student and the committee discuss the accomplishments and plans, and the committee provides feedback. Topics to cover and discuss include:

## (1) Research:

- Accomplishment and plans for the coming year.
- Mention any relevant fellowships/papers/talks/grants.

## (2) Coursework:

- Performance in courses taken.
- Discuss plans for future coursework.

## (3) Teaching Assistantships:

- Performance in completed TAships
- Plans for future TAships.

## (4) Milestones

- Performance and/or plans for each milestone (Oral General Knowledge Exam, Proposal Defense, Dissertation Defense)

Students should note that the two GSAS-mandated meetings—the proposal defense (which GSAS calls the “prospectus;” [HERE](#)) and the dissertation defense ([HERE](#))—are more formal than the E3B-mandated annual meetings, and have one additional purpose. In addition to the formative assessment (feedback) common to all committee meetings and defenses, the defenses provide a summative assessment (pass or not) of the proposal or the dissertation, as required by GSAS.

Meeting	Year 1	Year 2	Proposal Defense	Year 3	Years 4 and 5	Dissertation Defense
Typical Semester	Spring 1 <sup>st</sup> yr	Spring 2 <sup>nd</sup> yr (unless defending proposal by April 1 of 2 <sup>nd</sup> yr)	Spring 2 <sup>nd</sup> or Fall 3 <sup>rd</sup> yr	Spring 3 <sup>rd</sup> yr (unless defending proposal by April 1 of 3 <sup>rd</sup> yr)	Spring 4 <sup>th</sup> , 5 <sup>th</sup> yr (unless defending by April 1 of 5 <sup>th</sup> yr)	Spring 5 <sup>th</sup> yr
GSAS Deadlines	N/A	N/A	May 31 <sup>st</sup> of 4 <sup>th</sup> year	N/A	N/A	Spring of 7 <sup>th</sup> year
Duration	1-2 hrs	1-3 hrs	3 hrs	1-3 hrs	1-3 hrs	3 hrs
Committee	3-member advisory	3-member advisory or 5-member	5-member	5-member	5-member	5-member
Presentation	~15-20 min, slides common	30 min, slides common	30 min, slides common	30 min, slides common	30 min, slides common	30 min, slides required
Focus	Accomplishments and plans for program checkpoints and research	Accomplishments and plans for program checkpoints and research, timeline for proposal defense	Assessment of proposed research, including preliminary work and timeline	Accomplishments and plans for research, timeline for years 4-5	Accomplishments and plans for research, timeline for defending	Assessment of distributed dissertation
Forms (fill out in advance)	Annual committee meeting (see link from <a href="#">HERE</a> )	Annual committee meeting (see link from <a href="#">HERE</a> )	Annual committee meeting, <a href="#">Prospectus defense</a> , possibly <a href="#">M. Phil.</a>	Annual committee meeting (see link from <a href="#">HERE</a> )	Annual committee meeting (see link from <a href="#">HERE</a> )	<a href="#">Dissertation defense application</a> (work with DAAF to submit); your committee will have additional forms
Outcomes	Feedback	Feedback	Pass/not pass, feedback	Feedback	Feedback, timeline for defending	Accept as Submitted, Approved Pending Revisions, Referred, or Fail
To Prepare	Presentation, form	Presentation, form	Proposal (submit at least 4 weeks in advance), presentation, form	Presentation, form	Presentation, form	Dissertation (distribute at least four weeks in advance), presentation, form

## PRELIMINARY RESEARCH EXPERIENCE

In their 1<sup>st</sup> year, students are expected to develop a preliminary project, from the general concept/design through implementation, the latter often scheduled generally for the summer of their 1<sup>st</sup> year for those doing fieldwork. Students can apply for competitive funding from the department as well as the funds they apply for from outside the university. Proposals for the Preliminary Research Experience (found [HERE](#)) are due by April 15 of the 1<sup>st</sup> year. The proposal must be submitted to a student's Adviser at least two weeks prior to the due date in the department, and it must be signed by the entire 3-member advisory committee prior to submission to the AC. In addition, students must have met with their committee before applying for funding. Those who receive funding from the department are obligated to write the results in

a report. Students can continue to use those funds until the end of their 2<sup>nd</sup> year (August 31); funds cannot be extended beyond this date.

### TEACHING ASSISTANTSHIPS

Graduate students planning a career in academia often underestimate the importance of teaching experience needed to obtain a job offer. Job candidates for university-level positions are often judged on their potential to fill a particular teaching niche (e.g. “We need a behavioral ecologist”), their potential to teach a variety of courses (e.g. “We need a teacher in behavioral ecology, vertebrate morphology, biometry, and introductory biology”), and the quality of their teaching (judged from student evaluations, letters of reference etc.). Most job applications require a statement on their teaching experience, objectives, style, and goals. The University offers a number of training programs to develop and improve students’ teaching skills (see GSAS resources [HERE](#) and CTL offerings [HERE](#)).

**Teaching Assistantship Requirements.** With these job-related pedagogical expectations in mind and as part of their multi-year support package, all Ph.D. students are required to teach up to 4 semesters as student officers of instruction. Teaching duties normally fall between the 1<sup>st</sup> year and 3<sup>rd</sup> year of study. In exceptional circumstances (e.g. because of fieldwork) a student may be able to postpone one semester of teaching up to and including Year 4. Any such plan must be discussed early on with the DGS.

**Teaching Assistantship Assignments.** The DGS and DAAF will assign teaching assistantships. Students and faculty will be asked by the DAAF and the AC to submit preferences for TAing particular courses (during Spring semester) and efforts will be made to match the TA to the course that they desire. However, a perfect match is not always possible. In making TA assignments, we take into account student and faculty preferences, special skills, previous assignments and the needs of the student’s educational program and the department’s instructional program. The number of TAs assigned to a course is based on anticipated enrollment, demands of the course and teaching style of the instructor. TAs and instructors will be notified of assignments at the end of the spring semester for the following academic year. It is the student’s responsibility to reach out to the instructor once they are notified of the assignment in order to discuss duties and expectations prior to the semester start. Please note that students cannot (1) TA for a course for which the department has not officially allocated a TA position, nor (2) enroll in a course for which you are the TA.

### LIMITATIONS ON HOURS

Students appointed as student officers of instruction (e.g. Teaching Assistants) or student officers of research (e.g. Graduate Research Assistants) may not spend more than 20 hours per week in the discharge of the responsibilities associated with their appointment and those associated with any other activity within or outside Columbia for which they are compensated. In the case of students appointed as Graduate Research Assistants (GRAs), any additional work that is separate and distinct from their GRA responsibilities may not exceed 8 hours per week. Work toward the student’s dissertation and time spent as students in their own classes or on their own coursework are not included in the work that is part of the appointment. Students holding fellowships without a service requirement (such as first-year fellowships) may spend up to 10 hours per week on non-fellowship activities. Further information regarding the funding categories for doctoral students and the limitations on hours is available on the GSAS website [HERE](#).

Bottom line—any consideration of work outside of E3B must be discussed with the advisor, the DGS, and the DAAF before beginning any position. Failure to have these discussions and notify the advisor, DGS, and DAAF could jeopardize a student’s [Good Standing](#) in the Ph.D. program.

### EXAMS AND DEFENSES

**Oral General Knowledge Exam.** All E3B Ph.D. students must pass an Oral General Knowledge Exam as one of the requirements to advance to candidacy. The exam is designed to test students’ knowledge in ecology, evolution, and environmental biology as well as their ability to think critically, as detailed in the [Oral Exam rubric](#). It will consist of a 3-hour oral examination by an Orals Committee consisting of three examiners. The Orals Committee is taxed with engaging students in an active dialogue about a broad range of relevant issues during the exam. Students should meet with each member of their orals



committee at least once prior to the examination to discuss expectations and develop a list of readings. During the exam, the committee is free to ask any questions that they deem relevant.

Students are expected to take and pass the Oral General Knowledge Exam by the end of their 2<sup>nd</sup> year. To meet this deadline, it is strongly recommended that students take their oral general knowledge exam before spring break (roughly March 15), so that in the event that they must take it a second time that semester, they have sufficient time to do so.

Passing the Oral General Knowledge Exam will require students to achieve proficiency level averages of “Adequate” or higher in each of the two categories on the rubric. If a student does not pass the exam on the first attempt, they will be allowed to retake the exam by the last day of the semester in which it was taken. If a student does not pass the exam on the second attempt, they will be dismissed from the program.

**Dissertation Proposal Defense.** Upon successful completion of the core courses and Oral General Knowledge Exam, Ph.D. students will prepare and defend a proposal for their dissertation research (more information from GSAS can be found [HERE](#)). The proposal defense is expected to take place by the end of the 5<sup>th</sup> semester (fall of 3<sup>rd</sup> year). The goal should be to complete the defense and all of the other required coursework and TAing to be able to reach candidacy by the end of your 5<sup>th</sup> semester, but no later than the end of the 6<sup>th</sup> semester in the program. The proposal defense fulfills the requirement for an annual committee meeting (i.e. it can take the place of the 3<sup>rd</sup> year meeting) as long as it takes place prior to April 1<sup>st</sup>.

The parameters of the actual dissertation proposal should be discussed with the Advisor AND Committee Moderator in advance of submission to the 5-member Dissertation Committee. In general, proposals should be no longer than 15 pages of text (including figures but not references), unless the committee asks for something more extensive. The defense should be scheduled for the Fall semester of the student's 3<sup>rd</sup> year. As with the Oral General Knowledge Exam, it is strongly recommended that the Proposal Defense is scheduled early in the semester to allow for any necessary rescheduling. It is the job of the Advisor and/or the Committee Moderator to discuss committee expectations with other members, particularly those from outside of Columbia.

The Advisor and Committee Moderator must receive the proposal four weeks before the defense. If, after reading the written proposal, the Advisor and Moderator have reservations about the student's ability to pass the defense, they should notify the student, the AC, the DAAF, the DGS, and the rest of the committee prior to two weeks before the scheduled defense. The defense can be postponed for this reason one time (but must be retaken in the same semester); it cannot be postponed a second time. If the proposal is deemed acceptable, it must be given to the remaining committee members at least two weeks before the planned defense.

The proposal defense must be scheduled for a 3-hour time slot. The student should bring forms for both the proposal defense and the annual committee meeting, filling out as much of both forms as is relevant ahead of time. If you have completed all the requirements for the M. Phil. (all required coursework, 20-40 points depending on advances standing, M.A., 6 RUs, oral exam, at least 2 of the 3 TAs, and proposal defense), students should also file the M. Phil. Application (found [HERE](#)) after the proposal defense. If not, then file it when all the requirements are complete. Typically, people have completed all the requirements when they defend their proposal with the exception of the 6 RUs.

It is expected that all Dissertation Committee members are present in person at the proposal defense, something that should be communicated by the Advisor and/or the Committee Moderator. Members living outside of New York may participate remotely with permission of the DGS and GSAS. Although the committee will determine the best proposal defense format, students are expected to present their research ideas (30 min) and their committee will ask questions (typically consisting of one round) to help focus the research. The student must be able to demonstrate to the committee not only that they understand the research that they are proposing, but they must also demonstrate that the work is feasible and that the student has the means and ability to carry it out.



Following a successful defense, an electronic copy of the proposal and appropriate forms must be submitted to the AC. After the Ph.D. student successfully defends the proposal and has completed all other necessary requirements (including core courses, science credits, and the Oral General Knowledge Exam), the student then advances to candidacy and receives their M. Phil. degree. Forms for advancement to candidacy are signed by each committee member after the proposal defense and subsequently submitted by the student to the AC. Students are generally expected to have completed all TA-ships before advancing to candidacy. However, under special circumstances, a student may postpone one TA-ship until after advancing to candidacy.

If a student does not pass the proposal defense, they face two options. First, they may be dismissed from the program. Second, they may be put on probation and given a second chance to defend later that semester. Which option is given will depend on the student's prior standing within E3B and GSAS, their performance in prior courses and exams, and their overall progress in the program to date. This decision will only be made in discussion after the defense with the DGS, the Department Chair, the advisor, the Dissertation Committee Moderator in consultation with GSAS.

**Dissertation Defense.** The dissertation defense is expected to take place by the end of the 5<sup>th</sup> year. The exact timing of the defense depends on the student's progress and the adviser's and committee's determination of whether the student is ready. The dissertation defense fulfills the requirement for an annual committee meeting as long as it occurs prior to April 1.

Students writing their dissertation normally circulate drafts of individual chapters to their committee members well in advance of the dissertation defense. The Advisor should read all drafts, sometimes several times if needed, while arrangements with other committee members reflect discussions with the student, advisor, and other committee members. As these preliminary readings and revisions suggest that the dissertation is reaching its final state, the student finds a date that suits all committee members.

Once the committee has decided on a date and time, students must notify the AC of a final confirmation from all members that they will be present at the defense. Please note that the Advisor and Committee Moderator must attend the defense in person, and no more than two members can participate remotely (further information from GSAS can be found [HERE](#)). The final confirmation must occur at least one month before the defense date. The application for the defense will NOT be submitted to the Dissertation Office until all committee members have confirmed that the date is acceptable.

All committee members must receive a copy of the defendable dissertation at least one month before the planned defense. Two E3B members of the committee must vouch to the AC that the dissertation is indeed defendable at least two weeks before the planned defense. It is only with these two vouchers that the AC can schedule the defense and formally notify the GSAS.

Please note that students must be registered for Extended Residency through the semester that their dissertation is distributed. If the defense is held the subsequent semester, the student does not pay further registration fees as long as the dissertation is distributed to the committee before the first day of classes that semester. A confirmation email must be sent to the DAAF. For students on visas, please see the DAAF for information on contacting ISSO and to discuss options for correct registration status. Further information can be found [HERE](#).

The defense is coordinated by the Committee Moderator, and must be scheduled for a 3-hour timeslot. Students should discuss the format of their defense with the Moderator in advance.

Once everyone is present and settled, the Moderator will ask the student to leave the room while the committee touches base. When the student is invited back in, the student gives a presentation on the dissertation (with slides). The purposes of this presentation are to remind the committee what was in the dissertation (which they will have read, but might not have looked at recently), to provide any updates on data, analyses, publication status, or conclusions since the written proposal was distributed, and to provide visuals for the entire group to reference during the discussion. The presentation should take 30

minutes. Extra slides with figures/tables from the dissertation that aren't part of the presentation but might be useful to reference during the discussion are often helpful. Typically, the committee holds substantive questions until after the presentation, although they might ask clarifying questions if something is unclear. After the presentation, each committee member will lead a round of questioning, typically for 15-20 minutes. During this time other committee members might jump in with follow-up questions on the same topics. The questions typically focus on the research, related topics, or big picture questions. After the five rounds of questions, the Moderator typically asks if there are any final questions. Once the question period is over, the student is asked to step out while the committee deliberates. When the committee has reached a decision and prepared feedback, the student is invited back in and the decision and feedback are shared with the student. The committee will decide whether parts or the entire dissertation need to be seen again by any or all of its members before filing. Timing of revisions follows GSAS guidelines.

Possible official decisions for the dissertation defense are "Approved as Submitted," which gives the student 1 month to make minor modifications and deposit, "Approved Pending Revisions," which gives the student 6 months to revise the dissertation and deposit, "Referred," which gives the student 1 year to make major revisions and deposit, and "Fail," which results in dismissal from the program without a Ph.D. Revisions following either "Approved as Submitted" and "Approved Pending Revisions" need to be approved by the adviser, whereas a three-member subcommittee (including the adviser) must approve of revisions for a "Referred" decision.

An electronic copy of the dissertation and deposit card must be presented to the DAAF and AC prior to depositing to the Dissertation Office.

### **PROGRESS REPORTS/ACADEMIC REVIEW**

Students are required to submit two progress the annual committee report to the AC, DAAF, and DGS by April 1st of each year. This form can be downloaded from the department website [HERE](#).

The purpose of the report is to keep our records up to date on your coursework, committee membership, research planning and progress, internships and funding. This information allows the faculty to assess a student's progress at regular intervals, and to intervene for both the student's and the graduate program's benefit when conflicts or problems arise. Students should hold an annual meeting with concurrent participation of all committee members (either in person or via electronic participation). Sequential meetings with individual committee members cannot take the place of annual committee meetings.

### **FUNDING AND REGISTRATION STATUS**

Arrangements for student funding vary widely. Typically, students are admitted with 5 years of guaranteed funding from Columbia. Funding covers tuition for the first 2 years plus stipend and matriculation fees for the 5 years. Summer funding is also guaranteed for up to 5 summers (following Years 1 through 4, with the expectation that students finish before the summer of their 5<sup>th</sup> year; if a student does not finish in 5 years, they are guaranteed one additional summer of funding). Further information is provided by GSAS [HERE](#).

Students must be funded to remain in the program beyond 5 years, but no funding is guaranteed beyond the end of the 5<sup>th</sup> year. It is the responsibility of the student and their committee to ensure the timely completion of a Ph.D. If a student has not secured funds for any year beyond Columbia's commitment, their advisor must devise a funding solution for the student. Neither GSAS nor E3B can be expected to provide funding beyond the 5<sup>th</sup> year.

Students are expected to work with their advisor to obtain funds for their research throughout the duration of the program. A number of students obtain external funds from government (e.g. NSF, NIH, NASA) and NGOs. Students who obtain external funding should consult with the DGS, DAAF, and their advisor concerning effective distribution of resources.

## HIGH PERFORMANCE COMPUTING

Because students often require access to computing resources for their dissertation research, E3B has purchased access to Columbia's High Performance Computing (HPC) cluster. To gain access to the cluster, students should contact the DAAF. Information on the HPC can be found [HERE](#).

## TIME-OFF POLICY FOR PH.D. STUDENTS

Time-off policies are established by GSAS. Information can be found [HERE](#). Additionally, GSAS policy on parental leave can be found [HERE](#).

## SUMMARY OF GRADUATE DEGREES

- (1) The sequential M.A. degree is awarded to Ph.D. students who have completed two full years in the program (if they do not already have an M.A. degree).
- (2) The M. Phil. degree is awarded upon successful completion of all the Ph.D. requirements, other than defense of the dissertation (see above).
- (3) The Ph.D. degree is earned after the defense and final deposition of the dissertation.

## GRANTS, FELLOWSHIPS AND AWARDS

Applying for grants is important for your career. The more you apply for, the more you are likely to receive. The more you have received, the easier it will be to receive additional grants. Students are expected both by GSAS and E3B to apply for funding to support their education (tuition, etc.) as well as their research. In this context, it is important to understand the difference between outside- and inside-CU support.

**Outside Funds.** Outside funds are those where the decision of who gets the funding is made outside the university – this kind of funding would include NSF, NIH, and NASA Graduate Fellowships or research grants from professional societies or other non-Columbia entities. Students should work with their advisors to apply to these awards, and alert the DAAF about any applications.

**Internal Funds.** Inside funds are administered within Columbia – these would include various fellowships and awards that GSAS controls. For internal applications, students should coordinate with both DGS DAAF before applying. In addition, if applying for the [Teaching Scholars Program](#), students should work with their advisor and the curriculum committee to develop the course well in advance of the deadline, including submitting a completed syllabus to the curriculum committee at least 3 weeks before the fellowship deadline for additional feedback.

### ***The Conference/Research Financial Assistance Package for Ph.D. Students***

(1) A maximum of \$1,000 in travel funds per conference (approved by the advisor and DGS) to cover travel expenses, lodging and registration fees. These funds may also be used for workshops or courses, with DGS approval. Funds can only be used for one conference per *academic* year. Students can apply for the funds four times during their career in E3B. All funds must be used by the end of a given academic year (August 31), and unused funds do not roll over to another year. Funds in Year 1 can be used to attend a conference without giving a presentation. Payments to students are in the form of reimbursements after you return from the conference. To receive reimbursement from conferences you will need to submit a completed expense report with individual PDFs of all receipts and credit card statements within 10 days of return from the conference with proof that you presented (e.g. an abstract or program page). Without appropriate documentation, the reimbursement will not be processed.

GSAS provides \$350 in Matching Conference Travel Funds in Years 2-5, but not Year 1 (see [HERE](#)).

(2) Up to \$4,000.00 for preliminary research in Years 1-2 (any preliminary research funds granted must be used fully by August 31<sup>st</sup> of the 2<sup>nd</sup> year). To apply for these funds, students must submit a written application that specifies the scope of work you will undertake, specifies how the work relates to your developing dissertation project, and provides a detailed justified budget and purchasing plan and project timeline. The application for the funds is to be submitted by April 15 for summer research, and can only be done so if the student has completed their annual committee meeting by that date. These funds

cannot be used for computers or related equipment, or large equipment (this should come out of research grants). Funds will be accessed by submitting an expense report with individual PDFs of all receipts after research has concluded, in consultation with the DAAF, Business Manager and AC.

Student must inform themselves in advance about the kinds of expenses that can be covered, how to purchase them (i.e. request for the office to generate a PO), and how to prepare an expense report to get a reimbursement. If established policies are not followed, students may not be eligible for reimbursement. Remember to always keep all your original receipts, as they are essential for reimbursement. See the [E3B Ph.D. Resources Folder](#) for details about how to submit for reimbursement.

### 3. GENERAL ACADEMIC INFORMATION AT COLUMBIA

#### RESIDENCY AND EXTENDED RESIDENCE

A minimum length of “Residence status” is required to obtain a graduate degree at Columbia. One Residence Unit (RU) is equal to one semester of full-time registration. Six RUs are required for the E3B Ph.D. degree, and four RUs are required for E3B Ph.D. students entering with advanced standing. RUs are a measure of tuition dollars and do not necessarily equal certain number of credits or courses. However, the accepted measure is 9-12 credits are equal to 1 RU. Students may sign up for more than 12 credits if they can do the work.

Continuous registration is required for all graduate degrees. For special circumstances for leaves of absence please refer to the GSAS Bulletin. Students must register for Extended Residence in any semester in which they hold a University appointment (e.g. as a TA or fellow) or are completing work towards a degree requirement (e.g. submitting a literature review, taking qualifying exams, doing a proposal defense, etc.). Registration for Matriculation and Facilities Fees is required during semesters when students are in the field or conducting research. The DAAF coordinates all of this.

Per [GSAS policy](#), registered (i.e. not on leave) Ph.D. students are expected to be in residence at Columbia during the academic year. Exceptions are made for field work or other academic reasons. Students need approval from their Dissertation Committee to leave campus for field work, and from the Advisor, the DGS, and GSAS to not be on campus for non-academic reasons (which will only be granted under special circumstances).

#### ADVANCED STANDING AND RESIDENCE UNITS

Advanced standing is available to Ph.D. students who have already completed an M.A. degree in a related field, international equivalent, or equivalent professional degree. On the basis of such work, a maximum of two Residence Units and 30 credits may be awarded for credit toward the Ph.D. degree. Students granted advanced standing are *not* eligible to receive the sequential M.A. degree from Columbia. Students who have not completed an M.A. degree (or equivalent) are ineligible for advanced standing. Information from GSAS can be found [HERE](#).

Upon admission, the graduate school will forward students eligible for advanced standing to E3B. The DGS will then decide how many credits to grant, depending on the extent prior work. Qualified students must accept advanced standing status if awarded. Requests are then processed by the AC.

#### REGISTRATION PROCEDURES

An up-to-date course schedule and call numbers for registration is located [HERE](#). Information on how to register for courses can be found [HERE](#). Students may register during the pre-registration period. This is the best option for those who know they will be away in the field during the registration period. First year Ph.D. students must register in the pre-registration period to receive their first stipend payment in a timely manner.

Students should activate their registration, even if they are not certain about their course schedule, to avoid a late registration fee. To do so, students may register for one class. If students are unsure about registration status, please speak to the DAAF and AC.

All Ph.D. students in their first and 2<sup>nd</sup> years should register for one Residence Unit in each semester. Third-year Ph.D. students also register for one Residence Unit (RU) in each semester if they do not have advanced standing. Thus, most students will register for 6 residence units over the course of 3 years; students with advanced standing will register for only 4 or 5. In the semesters after completing their residence units, students will register for Extended Residence (ER). If they are fulfilling a degree requirement (such as taking classes or qualifying exams, turning in a literature review, or defending a proposal), they will need to register for Extended Residence.

Students cannot drop a course without the approval of their advisor and/or committee (once the class has started). To approve dropping a course, a student's advisor should e-mail the DGS, DAAF, and AC to indicate that you are allowed to drop a specific course.

### **DIRECTED RESEARCH AND DIRECTED READING**

Registering for Directed Research (Fall GR9501, Spring GR9502, Summer GR9503) or Directed Reading (GR9509) allows Ph.D. students to receive academic credit for a one semester research project or to delve into a specific topic one-on-one with a professor or affiliate, respectively.

#### **How to register for Directed Research/Reading:**

1. Download the "Directed Research/Reading" form from the E3B website [HERE](#).
2. Fill out the form. Consult with your advisor about the content, extent, and required activities of the course, and ask for their signature (an electronic signature is acceptable) before proceeding with the next step.
3. Submit *signed* form to the AC.
4. Register for the correct section and the correct number of points as instructed by the AC.
5. Register for the course officially through the Registrar and check that the course successfully shows up in your schedule before the add/drop period ends.

Directed Research/Reading forms should be submitted to the AC two days before the end of the 'add/drop' period at the beginning of the semester -- Columbia's Academic Calendar can be found [HERE](#).

To ensure submission of a grade for Directed Research, Directed Research supervisors should submit Grades via web (directions [HERE](#)). Please ensure that your research supervisor knows this, and please take responsibility for reminding him/her of the date by which the grade needs to reach the correct person. If the grade is not submitted on time, you will receive a grade of CP that will have to be removed by the submission of the grade.

### **SUBMITTING DEGREE APPLICATIONS**

Ph.D. degree Conferrals are held in October, February, and May. Specific dates can be found [HERE](#). Applications must be submitted to the DAAF and AC who will forward all applications to the Registrar's office. The application procedure for dissertation defense set by the dissertation office, 107 Low, must be carefully followed. The dissertation must be deposited by 5:00 pm on the Friday before the conferral dates. Please work closely with the DAAF and AC to ensure that your paperwork is processed correctly.



## 4. GRADUATE STUDENT LIFE

### GRADUATE STUDENT MEETINGS

The Department Chair and the DGS are available to meet with graduate students as issues arise and will schedule periodic group meetings. Students should also meet regularly with their advisors and committee members.

### STUDENT-FACULTY REPRESENTATIVE WITHIN E3B

Ph.D. students may elect a representative to attend E3B faculty meetings. They coordinate their own election process. This gives students the opportunity to be aware of decisions, issues, and opportunities discussed during faculty meetings. The representative is there as an observer. If students wish to raise issues, they should first do so at student meetings and with the DGS. The student representative is welcome to Faculty Meetings during which general issues are discussed. The student representative will be asked to leave for any part of the meeting during which confidential items are discussed, including the progress of individual students and financial matters.

### GRADUATE RESOURCE ASSOCIATION OF STUDENT SCIENTISTS (GRASS)

E3B has its own graduate association. Information can be found [HERE](#).

### ARTS AND SCIENCES GRADUATE COUNCIL (ASGC)

ASGC is a student government organization for GSAS students (see [HERE](#)). Membership consists of student-elected departmental representatives from the Ph.D. and M.A. programs of the Graduate School of Arts and Sciences. ASGC has two critical roles. First, they facilitate communication between graduate students and administrators. Second, they sponsor social, cultural, and academic events, as well as workshops to improve the quality of life for graduate students. ASGC's events offer students from different departments the chance to socialize and learn from each other. An ASGC Rep from E3B is to be elected every year in May. Candidates can be re-elected. Students should notify the DAAF of the election results, so that the name can be reported to GSAS. Keep in mind that this person is not only representing you, but E3B as well. ASGC will show funding priority for departmental events and student group initiatives to those Ph.D. programs with active ASGC representatives.

### GRADES AND SATISFACTORY PROGRESS

E3B expects all students to maintain good academic standing. Failing to maintain good academic standing may result in a variety of consequences ranging from re-taking exams, to teacher intervention, to being put on academic probation. It is best to consult your teacher immediately if you are in danger of receiving a low grade so you might address the situation as soon as possible. Further information from GSAS can be found [HERE](#).

Letter grades range from A+ to F. A grades are 'excellent', B grades are 'very good', C grades are 'fair', D grades are 'poor', and F is failing. For P/F classes, P means 'pass' and F means 'fail.' Fundamentals courses must be taken for a grade, but Thesis Development Seminar, the Research Seminar, and elective courses may be taken either for a grade or P/F; either option counts towards the degree. The minimally acceptable grades are B for courses taken for a grade and P for courses taken P/F. Understanding grading is the student's responsibility and students must be proactive. The earlier in the semester you understand the grading policy in a class; the easier it will be to address low grades should they arise. Courses taken for R credit do not count toward the degree. If you have questions regarding grades, speak to the DGS.

For required courses, only a grade of B or higher qualifies toward the degree. For elective courses, students receiving less than a B will get credit for the course, unless they receive an F. All credits count towards your degree, but students need to maintain a 3.00 GPA each semester. Students with a GPA below 3.00 in a semester will be placed on academic probation with E3B and GSAS, and are given one semester to meet the requirements of probation

**Incomplete.** In consultation with the instructor, students may receive a temporary grade of Incomplete if they have not completed the course requirements by the end of the semester. When Incomplete is assigned, the student and instructor should come to an understanding about deadlines for completing the

work, normally sometime in the Spring semester for Fall courses, or by the end of the summer for Spring courses. The graduate school automatically turns grades of Incomplete into R-credit (no letter grade) after 12 months; this change cannot be reversed. Courses with R-credit do not count toward the point-totals required for each degree. This GSAS policy (see [HERE](#)) and should incite students to resolve Incompletes promptly.

**Credit Pending.** You should be aware of another type of grade that can be used for unfinished work. The grade of “CP” (credit pending) can be given when a student plans in advance to continue work in a registered course beyond the semester of registration. In such a case, the student can get a temporary grade of CP until the work is completed. The grade of CP is appropriate for research type courses only; it would not apply to lecture or seminar type courses. It is also likely to apply only rarely to research courses, since usually one designs a Directed Research or Directed Reading course to fit into one semester.

### **GRANT PROPOSALS**

University policy requires graduate students to submit their external research grant proposals through Columbia’s Office of Sponsored Projects Administration (SPA). SPA’s review ensures that research by University scholars is appropriately reviewed by institutional review boards (e.g. Animal Subjects Review Committee, see below). In addition, submission of grant proposals through SPA relieves individual scholars of the tax liability that would accrue if grants were given to individuals, rather than the institution. SPA uses **Rascal**, Columbia’s Research Compliance and Administration System, which can be accessed online [HERE](#). Please note that to submit a proposal through Rascal, the student’s advisor must be the Principal Investigator (PI) of record. Submission of the proposal in Rascal is required for SPA to review a grant proposal prior to submission, as well as to set up a grant once awarded. SPA requests that proposal submissions are submitted one week prior to submission deadline in order for them to review. Please work with your advisor to initiate a Rascal and to upload all proposal documents (Scope of Work, Budget, Budget Justification, etc.)

Rascal is home to several services containing administrative data required by SPA. It culminates with approval by the PI, Department Chair, and DAAF. The PI is required to answer conflict of interest questions pertinent to their specific research as well as to provide other information about the proposal. In most cases, a student’s advisor is the PI on their grant proposals and students are “Student Investigators”.

If you are working with vertebrate animals, you will need approval of an animal protocol by the IACUC Animal Subject Review Committee (this is critically important –you need this even if you are not seeking funding). The Rascal homepage will direct you to Compliance and Animal Care Protocols.

Please provide the DAAF and Business Manager with a copy of all grant proposals submitted to Rascal.

### **VERTEBRATE AND HUMAN RESEARCH APPROVALS**

Columbia students working with vertebrates or humans, even if they do so completely non-invasively, are responsible for getting IACUC or IRB approval if needed. Information on IACUC can be found [HERE](#). Information on IRB can be found [HERE](#). Students should work with their advisors to make sure all research meets the requirements.

Any federal or international requirements for research clearance or export of samples are the responsibility of individual students and their advisors.