

BIOLOGICAL & BIOMEDICAL SCIENCES
GRADUATE PROGRAM

STUDENT HANDBOOK

2014-15

The Cornell University Biological and Biomedical Sciences (BBS) Graduate Program is an interdisciplinary umbrella program consisting of outstanding graduate students conducting state-of-the-art basic, clinical and translational life sciences research, alongside their world-renowned faculty mentors and other research professionals. Housed in the heart of biomedical research at the Cornell-Ithaca campus in the College of Veterinary Medicine, the BBS program takes advantage of outstanding research facilities, the vibrant Cornell undergraduate campus and strong links to the Weill Cornell Medical College campus in New York City. The BBS Program fosters a nurturing, student-centered community of scholars that is accessible, engaging and committed to ensuring that our graduate students reach their full potential in research, teaching and professional development.

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Graduate Education @ Cornell

At Cornell, graduate education is based on the concepts of flexibility, independence and the interdisciplinary nature of learning. The structure of the Graduate School as a unit within the University and the design of its interactions with the rest of campus reflect these principles.

The Graduate School is a separate academic unit within the university. Its membership consists of faculty from various departments/units within the University who are interested in the same general research topic (or Graduate Field). Graduate Fields are defined as voluntary groupings of faculty focused on one general research topic and Field membership spans departments and Colleges.

Since faculty members are, more often than not, interested in numerous areas of research, and since most research areas overlap, faculty members are typically members of a number of different "Fields." Conversely, faculty members within the Fields typically come from a number of different departments and Colleges on the Ithaca campus. As the schematic below indicates, Graduate Fields include faculty from diverse backgrounds.

Within Graduate Fields are concentrations; these represent more specific areas of research within the general Field. (Some Fields do not have more than one concentration.) Upon becoming members of the Graduate Faculty, a faculty person chooses which concentrations most closely fit his or her research; these concentrations become the major or minor that is represented on a graduate student's Special Committee.

Graduate School Requirements: Graduate School requirements for a student's program are kept to a minimum and can be found in the [Code of Legislation](#). Academic authority rests with the administration of the Field and the Special Committee of the graduate student.

Field Administration: The Director of Graduate Studies (DGS) coordinates the establishment of academic priorities of the Field, the quality and well-being of graduate students within the Field, and oversees the admissions process. The Executive Committee of the Field, which is elected from the membership of each particular Field, supports the DGS in these efforts.

Particular Field regulations are decided upon and implemented by the faculty in the Field.

The Office of Graduate Education assists the DGS's in the administration of the Fields and acts as a liaison between the CVM Graduate Education Community, made up of College graduate faculty and graduate students, and the Graduate School.

Biological & Biomedical Sciences Graduate Program: The Graduate Fields in the College of Veterinary Medicine are all members of the Biological & Biomedical Sciences Graduate Program (BBS). This umbrella program was formed as the result of a grassroots initiative by Graduate Faculty in the College who were committed to enhancing graduate education through common

experiences and stable funding for graduate students. The BBS Program is a strong coalition of graduate faculty who are committed to providing excellent education and training experiences for our graduate students since they will become the scientists and educators of future generations.

The BBS Program seeks to recruit the best and brightest to our program through a combined admissions and recruitment process which highlights the strengths of our research and the benefits of Cornell's Graduate Field system. Graduate students who matriculate do so with full funding that is provided by the BBS Program during the first year and is secured by the Special Committee Chair of the student in future years. Graduate students in the Program also benefit from common experiences, such as laboratory rotations and teaching opportunities, which enhance their knowledge and skills. The BBS Program also sponsors a number of academic and social activities throughout the year which provide knowledge and support to our graduate student population.

Graduate Student Program: The Field structure allows for maximum flexibility of students' programs based on their research interest. The student's faculty mentor (Special Committee Chair) must be from the Graduate Field to which the student was admitted. However, minor members can be chosen from among the entire population of Graduate Faculty in all Fields in the university. (Requirements for minors can be found on web sites of particular Fields.)

Recognizing that students come from a variety of backgrounds and that requirements for their programs are often as unique as the students themselves, the Graduate School sets no course (or credit hour) requirements. All course requirements are set by the student in conjunction with the faculty membership on their Special Committee. Courses selection should be designed to provide the student with a solid background in the area of research and, more specifically, to support the student's research project.

Graduate Students

Graduate Education at Cornell is as varied and unique as its graduate students. Based on the principles of individualized and independent study, degree programs are tailored to the research interest of the student. Individualization and flexibility entail a level of responsibility; as the architect of your own program, you are responsible for not only the design but the implementation as well.

The Office of Graduate Education is a resource and a support for you. Our mission is to provide you with information, tools and encouragement that will enable you to reduce the stress of graduate student life. Whether you need information or guidance about administrative aspects of your graduate program or graduate student life in general, our door is always open.

Our graduate students form the backbone of the research being conducted at the College. Upon graduation, you will join the ranks of scientific researchers and teachers in academia, industry or government, depending on your chosen career path. We want to make your experience at Cornell one that is fulfilling while you are here and will continue to serve you well in your life after graduation.

Graduate Program of Study

The Graduate School has minimal requirements for the specifics of your program of study. As the College that will award your degree, the Graduate School monitors your progress toward your degree and records benchmarks in that progress.

The requirements of the Biological & Biomedical Sciences Graduate Program (BBS) and its member Graduate Fields have a more immediate effect on your program. Your rotations and teaching experience are requirements of the BBS Program and the rules guiding the make-up of your Special Committee and the format of your exams fall under the purview of the Graduate Fields of Study. On a day-to-day basis, your research project and academic progress will be most closely monitored and directed by your faculty mentor and your Special Committee.

In this section of the handbook, we have attempted to condense the requirements of the University (the Graduate School) and the College (the BBS Program and the Graduate Fields of study administered here). It is our hope that by providing you with this guideline to your program, we will clearly explain the process of getting a PhD at Cornell and provide you with a resource that will allow you to spend more time concentrating on your research and academic pursuits.

Graduate Fields

Cornell Graduate Education is based on Graduate Fields. Graduate Fields are defined as voluntary groupings of faculty around a research area. As a graduate student, you are a member of the Biological & Biomedical Science Graduate Field that admitted you, but you have access to all the other Fields at Cornell University through minor membership on your Committee.

Concentrations are specific research areas within the Graduate Field. Some fields have only one concentration; others have several. In Fields with more than one concentration, faculty members have chosen the concentrations that most closely match their research.

Faculty members are often members of more than one Graduate Field. The Graduate School provides a [search engine for all Graduate Faculty](#) that will tell you all the Fields of which a particular faculty is a member. The Field and concentration they represent should be the one that most closely corresponds to their role in your project.

Graduate Fields in BBS Umbrella Program	Official Research Concentrations
Comparative Biomedical Sciences (CBS)	Cellular & molecular medicine; developmental & reproductive biology; infectious diseases; population medicine & epidemiology; structural & functional biology
Immunology & Infectious Disease	Cellular immunology; immunochemistry; Immunogenetics; immunopathology; infection & immunity
Molecular & Integrative Physiology (MIP)	Behavioral physiology; cardiovascular & respiratory physiology; endocrinology; environmental & comparative physiology; gastrointestinal & metabolic physiology; membrane & epithelial physiology; molecular & cellular physiology; neural & sensory physiology; physiological genomics; reproductive physiology
Pharmacology	Pharmacology
Zoology & Wildlife Conservation (ZWC)	Animal cytology; comparative & functional anatomy; developmental biology; ecology; histology; wildlife conservation

Graduate Student Funding

An applicant to the Biological & Biomedical Sciences Graduate Program is automatically considered for funding. Admission to the BBS Program means that you are guaranteed funding for the duration of your program, contingent upon satisfactory performance/progress toward your degree. Funding, in this context, is defined as full tuition and student health insurance payments and a living stipend. Stipend levels are set by the BBS Program on an annual basis; the stipend level for 2014-15 is \$31,033/12 months.

In an effort to further its mission of advancing translational medicine and clinical research, the College of Veterinary Medicine has instituted a separate stipend rate for DVMs (or equivalent) who are seeking PhD degrees. This stipend level is set according to your education level and relevant experience. If you are a DVM, you are encouraged to apply for the Cornell Research Fellowship, which includes funds reserved to support DVMs in a PhD degree program at the College.

As a graduate student, you are always encouraged to seek outside funding. Filling out fellowship and/or grant applications is a great exercise for future success in science. An awarded grant not only provides a fantastic opportunity for your graduate program, but also serves as a real advantage in the job market after graduation.

The Cornell University Graduate School has an [interactive fellowship database](#) for graduate students. The College of Veterinary Medicine Office of Research and Graduate Education is also a resource when you are looking for grant opportunities and/or writing and submitting grants. In the past, CVM graduate students have been successful in obtaining funding from:

- National Institutes of Health (NIH) - <http://grants.nih.gov/grants/oer.htm>
- American Heart Association (AHA) - <http://americanheart.org/presenter.jhtml?identifier=3055923>
- United States Department of Agriculture (USDA) <http://www.usda.gov/wps/portal/usdahome>
- Morris Animal Foundation - <http://www.morrisanimalfoundation.org/scientists>

Rotations

As an incoming graduate student, you will spend your first year rotating in three faculty labs. These rotations are designed to:

- provide a range of research experiences that will give you a broad knowledge of methodologies and techniques;
- provide you with the opportunity for more substantial contact with various faculty (and faculty with you) in order for both to make an informed decision about your thesis laboratory and Special Committee membership;
- provide you with the opportunity to demonstrate your scientific abilities and enthusiasm for research to various faculty, with the ultimate goal of finding a mentor who is willing to accept you into the lab and provide your funding for the duration of your research project.

It is not necessary to have all three rotations set at the beginning of the academic year. Students generally set up the first rotation with the help of the Director of Graduate Studies during the Orientation period. Subsequent rotations may be set with the additional assistance of your current rotation supervisor. Be sure to keep the Office of Graduate Education informed about which laboratories you are rotating in and the time frame of each rotation.

The duration of the lab rotations are generally between one to four months; this is dependent on the rotation supervisor and the activities of the lab.

It is strongly suggested that you go over the expectations of each rotation supervisor prior to the rotation. The Rotation Evaluation Form can be used as a template for this conversation. A clear idea of what is expected in each faculty laboratory will make your experience more rewarding for you and your rotation supervisor. Keep in mind that a rotation not only provides you with the opportunity to assess whether or not the lab is a good fit for you, but it is also an opportunity for the faculty mentor to assess whether you are a good fit for the lab. You should think of the rotation as an extended interview; your performance in the laboratory will be the basis of the faculty's decision whether to accept you into the lab or not.

At the end of each rotation, faculty supervisors should go over the Rotation Evaluation Form with you before submitting it to the Office of Graduate Education. The purpose of this form is to provide you with constructive feedback which will help you to be a successful graduate student and researcher. It also provides a means by which the Director of Graduate Studies (DGS) can evaluate your performance in order to award Registration Units for each semester; these are the index of your progress towards your degree during your first year.

By the end of the third rotation, you should have identified a faculty mentor. (Additional rotations, if required, must be approved by the Director of Graduate Studies and completed by

the twelve-month anniversary of your start date.) Once you have identified a mentor, you should complete your submit Special Committee Chair online, via [Student Service Center](#).

Selecting your Special Committee

Your PhD program is developed and supervised by your Special Committee. You, with the advice and assistance of your faculty mentor, will choose the members of your Committee. Your full Special Committee must be formed by the end of your third semester of registration as a graduate student. It is to your advantage to establish your Committee as soon as possible after your rotations so that you can be informed of their expectations for your program. Once you have spoken to faculty who you want to include on your Special Committee, you should go to your Student Service Center and request committee or advisor changes from there.

The Graduate School requires that a PhD Committee be composed of at least three faculty members, as detailed below. Some Fields also assign a Field-Appointed Member, chosen by the Director of Graduate Studies.

- **Chair:** Your Chairperson represents the concentration chosen as the major subject in the Field, usually directs your thesis research and is responsible for your funding.
- **Minors:** You need at least two members representing one or two other minor concentrations. True to the spirit of Cornell's individualized program, these may be any graduate faculty from the more than 90 Graduate Fields in the University who you feel would contribute to your particular research project. You should refer to the Field pages to determine your Field rules about formation of a Special Committee. You can include more than two minor members if you so choose. Remember, however, that all members of your committee will be required to participate in all exams and Committee meetings.
- **Field Appointed:** A Field-Appointed Member is chosen by the Director of Graduate Studies and/or the Executive Committee of the Field soon after your Special Committee is formed. The Field-Appointed Member is a permanent member of your Committee and is charged with ensuring that Field standards and requirements are upheld and serves as an advocate for you.

Changing your Special Committee: You can change the members of your Special Committee (with the exception of the Field-Appointed Member) if the circumstances warrant it. Any change you make in your Committee will require you to update online via Student Service Center. If you wish to make a change in the Special Committee after the A-Exam (Admission to Candidacy), you will have to consult with the Office of Graduate Education and the Graduate School to obtain the necessary paperwork (a General Petition will be required).

Communication is Key: Since your Special Committee directs your program, decides whether you are making satisfactory progress toward your degree, conducts exams and approves your thesis, frequent communication is essential. Once you have chosen the members of your Special

Committee, you should schedule a meeting with your entire Committee to create a plan for your research project and degree completion. This plan can be oral or written, depending on field requirements. However, a written document would provide a concrete record of the plan and faculty expectations.

Your Special Committees meets on an annual basis (at the end of the spring semester or early summer). An online annual report needs to be completed by all BBS PhD students before July 1st of their 2nd year and beyond. The purpose of the annual report is to empower students to be more proactive, provide a forum for regular feedback, and to assess learning goals and objectives. You can also call additional meetings of your Special Committee at other times during the year as you feel it is necessary.

The student is required to complete an online student annual report two weeks prior to their annual committee meeting. Once submitted, the Office of Graduate Education will share this report with the committee members. The student's faculty mentor will complete the online mentor annual report which will be shared with special committee members only. At your annual committee meeting a third form is to be completed by a minor member or your field appointed member (printable PDF available online).

These forms will be placed in your permanent student file as evidence of progress in your program for that year. If a student fails to meet this requirement a registration unit may not be awarded for the spring semester. Please contact your DGS or the Office of Graduate Education if you are unable to fulfill this requirement.

Enrollment & Registration

Registration: Registration takes place three times per year – in Fall, Spring and summer. Pre-enrollment for continuing students takes place in late spring for the following Fall and in mid-winter for the following Spring. Summer registration is required of all graduate students who expect to receive a stipend and/or use campus facilities such as libraries and laboratories during the summer months. Students who register for summer enroll in the Graduate School's Dissertation Research course (GRAD 9001).

Enrollment in courses takes place on-line at your Student Center (*log-in required*). Your Student Center also provides you on-line access to your academic information (i.e. class enrollment, registration status, and grades), financial information (bills and payments) and your personal information (home address and emergency contacts).

As a registered Cornell graduate student, you are automatically assumed to be a full-time student. The Graduate School sets limits on the number of hours that a graduate student can work, either on- or off-campus. The Office of Graduate Education discourages our graduate

students from taking on additional responsibilities; since you are receiving funding in the form of tuition, health insurance and a stipend, you should not need to do other work which may hinder progress toward your degree. If you have a hardship or a specific need which requires you to work, you should consult with the Office of Graduate Education for assistance; this way you can be sure to be in compliance with Graduate School rules.

Registration Hold: A hold may be placed on your account which may prevent you from registering as the result of unpaid bills, unreturned library books, unmet academic or health requirements. Take care of any holds as soon as possible to prevent a gap in your registration. If you have a question about a Hold on your account, contact the Cornell University Bursar Office or the Office of Graduate Education.

Registration Units: Progress toward a graduate degree at Cornell is measured in Registration Units, or RUs. A Registration Unit represents satisfactory completion of one semester of full-time research and study. RUs are awarded for Fall and Spring; although registration is required for all students in the summer, no RUs are awarded.

If your progress has been less than satisfactory, you may be awarded a fraction of an RU (.75 or .5). Examples of unsatisfactory progress include such things as a GPA or grade in a course that falls below a B-, unsatisfactory work in the lab or in your teaching experience. It is important to communicate with your faculty mentor, the DGS of your Field and/or the Office of Graduate Education immediately if you are experiencing academic problems or problems that affect your academic performance or progress. All of these individuals are committed to your success and can offer assistance and, in some cases, solutions.

In order to get a PhD at Cornell, you must have at least six (6) RUs. Two of these have to be earned after your A-exam. RUs are awarded by your faculty advisor. During your first year, this role is filled by the Director of Graduate Studies (DGS). RUs indicate progress toward graduation but also serve as the basis for benchmarks toward your graduation; you need to have at least two RUs before you can take your A-Exam and you have to earn two RUs between your A-Exam and B-Exam.

Although the minimum number of RUs is six, most graduate students do not graduate in three years. On average, graduate students in our program earn their PhD in five years. The longevity of your graduate student career is based on your research project.

Graduate Student Courses

In keeping with Cornell's philosophy of independent and individual research projects as the basis for graduate education, the Graduate School does not require any coursework. Graduate Fields may require courses which serve to further your basic knowledge of the Field and maintain the integrity of the graduate degree.

Your courses are chosen by you and your Special Committee. These choices should be designed to not only give you a basic knowledge of scientific research in your area, but also to give you the knowledge and tools that you will need to complete your research project and become a successful scientist or academician. You should consult with the Field webpages and also the faculty person on your Committee who represents each Field to make sure that you complete all course requirements. Keep in mind that some courses are only offered every-other year; you should plan accordingly.

All graduate students must course enroll. It does not matter how many credit hours of courses you enroll in, as a registered Cornell graduate student you are automatically considered to be a full-time student. If you are done with all your coursework, you are required to register in Dissertation Research in order to maintain your registration status.

As a Cornell graduate student, you are entitled to enroll in any course given at Cornell University. If a course you would like to take does not relate to your research project, you should first talk to your faculty mentor about it. Some courses, such as Physical Education classes, have fees in addition to tuition that you will be personally responsible to pay.

Student Statuses

Other than regular student registration, there are two options for graduate students who will not be on the Cornell campus. If special circumstances arise and you will have to leave the Ithaca area, consult promptly with your Special Committee Chair and the Office of Graduate Education to determine which status works best for your particular situation.

In Absentia: If you are going to be leaving the Ithaca area for a lengthy period of time in order to do research or pursue other training opportunities related to your dissertation, "In Absentia" (IA) status is most likely your best choice.

You ***must be*** leaving Ithaca and the surrounding area to do research or work related to your dissertation. The Graduate School will require you to submit the In Absentia form as well as an outline of the work that you will be doing and a plan for accomplishing it.

In Absentia status allows you to retain your student status and thus,

- have remote access to facilities such as the Cornell Library system
- continue to be paid as a graduate student (this should be negotiated with your Special Committee Chair with the assistance of the Office of Graduate Education)
- retain student health insurance
- receive Registration Units for the work that you do while In Absentia (You cannot earn more than two RUs toward the six required RUs during In Absentia status.)

A \$200/semester charge will apply for each semester of In Absentia.

Leave of Absence: If health or other personal matters require that you be away from your studies for a period of time during which you will not be engaging in academic pursuits, a Leave of Absence is probably appropriate. Medical leave is regulated by different rules than those regulating personal leave. It is important to inform the Office of Graduate Education and your Special Committee Chair promptly as situations arise that may require you to take a Leave. This way, a means for your return can be negotiated in order to make your transition from the Leave to regular student status a smooth one.

- During a Leave (LOA), you will not retain student status.
- LOA status is only awarded one year at a time; if you will be away longer, you must file a LOA form each year or you will be considered to have withdrawn from the program.
- You may be on personal Leave of Absence for a maximum of four years.

Withdraw: Should you decide that you do not wish to continue in your program, you can voluntarily withdraw from the program. Please note that the Graduate School considers that any interruption of registration is a “withdraw”. If you withdraw and later decide to return, you would have to apply for re-admission.

Teaching Experience

All graduate students are required to complete a one-semester teaching experience. You should do this in your second or third year. Each year the Office of Graduate Education contacts the instructors in the College to determine the number and nature of teaching experiences available. This list is distributed to all students who need to fulfill this requirement; students choose the teaching experience that best suits their experience, expertise and area of interest.

The teaching experience is designed to give you practice in aspects of teaching at a College level. Your faculty advisor will release you from the lab to fulfill this teaching commitment. Your responsibilities for the exercise will be no more than 10-15 hours per week.

Waiver: If you have had extensive teaching experience at previous institution(s), you may have the teaching experience waived. In order to do this, you will have to request a waiver from the Biological & Biomedical Sciences Program detailing your previous experience and indicating why an additional experience should be unnecessary. Your request should be submitted to the Office of Graduate Education. The BBS Oversight Committee will approve or deny your request.

Additional Teaching Experiences

BBS Graduate Research and Teaching Fellowship Program: This Graduate Research and Teaching Fellowship Program (GRTFP), in conjunction with a university-wide effort led by the Center for Teaching Excellence (CTE), provides graduate students a unique opportunity to learn more about the art and science of teaching in higher education, with an eye toward better preparing our graduate trainees for careers that include university/college teaching. The overall idea is that the university-wide program will offer overarching administration and programming in pedagogy and course design, while the BBS component will provide complementary discipline-oriented teaching experiences.

The program is designed to be completed in parallel with doctoral studies starting upon successful completion of the A-exam (typically in the fall of the 3rd year). The program is not intended to interfere with or supersede doctoral studies in any way, but rather enhance PhD training such that graduate students are not only prepared to engage in biomedical research, but they are also prepared to meet the challenges of university/college teaching in their future careers. To be eligible, in addition to passing the A-exam, students must be in good academic standing in their graduate studies/research and their Special Committee must approve. Eligible students must apply for admission to the GRTFP through the Office of Graduate Education.

Graduate students participating in the program will identify and work closely with a Faculty Teaching Mentor (somewhat analogous to the Special Committee Chair). The mentor should typically be a faculty member other than the students' primary research mentor. Mentors will provide overall supervision and guidance throughout the program, but will be especially engaged in assisting the student with their 'research on teaching' project, selecting the most appropriate teaching practicum, and guiding development of the teaching portfolio. Successful completion of the program will result in a certificate of completion from the university-wide Graduate Research and Teaching Fellowship Program, and will have noted an "area of distinction", e.g. "Physiology", "Anatomy", etc. as determined by the student and her/his Faculty Teaching Mentor.

If you would like to learn more about teaching at a college level, Cornell University's Center for Teaching Excellence is a great resource. They offer programs for Teaching Assistants, as well as certificate programs for graduate students which will give you more instruction and experience in college-level teaching. If academia is your career goal, you should consider participating in their programs.

Exams & Dissertation

The Cornell Graduate School requires all PhD candidates to take two exams. Passing the A-exam admits you to doctoral candidacy; the B-exam is a defense of your dissertation. The timing of these exams is legislated by the Graduate School.

These exams must be announced to all Field faculty members. (In theory, all Field faculty members are invited to exams, but it is rare for anyone other than your Special Committee to attend). Scheduling requirements are:

- A completed Schedule of Exam Form must be brought to the Office of Graduate Education 14 days (two weeks) prior to the date of the exam. Notice of the exam will be placed on the Achievements & Accolades webpage an announcement and flyer will be sent out a week prior to the exam.
- You must turn in the completed Results of Exam within three days after the exam.

If you do not adhere to these deadlines, your exam may be invalidated and you will have to retake it.

Admission to Candidacy: The A-Exam

The “Admission to Candidacy Exam” is called the A-Exam. The Graduate School requires that a student take the exam between the end of your first year and the end of your third year (after receiving 2 RUs and before your seventh semester of study). Most students take the exam at the end of their second year or beginning of the third. As with time to degree, the timing depends on the requirements of your Special Committee and the rate at which your research project progresses.

As with every other part of your program, communication is the key. You can greatly decrease your stress level by planning ahead. It takes about a semester to prepare for your A-exam. Additionally, there must be one year (two RUs) between your A-exam and your B-exam. The following tips on preparation and exam were compiled based on the input of one of our former graduate students (who is now a PhD).

Scheduling & Format of the A-Exam

- Hold a Special Committee meeting at the beginning of your last semester of coursework to discuss format and date of the exam. This way, you will not have to scramble at the last minute because of a scheduling conflict or miss taking a course that one of your faculty advisors wants you to complete before the exam.
- ALL members of your Special Committee (including the Field-appointed member) must be present at your exam. If it is impossible for one of your minor members to be there,

they can appoint a proxy from the same Field and concentration to attend the exam for them.

- Give the Committee a couple of dates and times to see which fits everyone the best. You will need to schedule a 3 hour block of time.
- It is very important to finalize the format of your exam at this meeting; there are no Graduate School regulations that control the format of the A-exam. The format and content of the exam are up to the Graduate Field to which you belong and, ultimately, to your Special Committee. The format of your exam will impact what you do for months leading up to the exam.

Studying and Preparing for the A-Exam

It will take at least 2-3 months of solid work to prepare for your A-exam. Planning and preparation will help you make the best use of this time.

- Meet individually with the members of your Special Committee (including the Field-appointed member if you have one) to find out what they expect you to know for the exam.
- Draw up a list of review topics based on the advice of your Special Committee members, topics you feel are important and the material that will be covered in your thesis proposal (if this proposal will serve as the format of the exam).
- Know in great detail all the techniques you work on and how they function, as well as other techniques commonly used in the Field.
- Get solid background knowledge of your research area.
 - Use textbooks to get general information on your major and minor areas of study and to explore concepts that you are unclear about.
 - Do a literature search on topics and read papers that are seminal to research in the Field and relevant to your research project.
- Know your Committee.
 - It is a good idea to have at least a basic knowledge of what all your Committee members are researching; this may help you anticipate the type of questions they will ask you. Read review articles that they have written.
 - Know your faculty advisor's papers in detail.
- Review all your coursework to ensure that you have a good basic understanding of what was covered. This is especially important if you have taken a course with a member of your Committee.
- Talk to other graduate students in the Field to get their input on their exams. Your colleagues are an important source of support, which is particularly important if you have common committee members.

Two to Three Months Before Your A-exam

- Contact the person in your Department who is in charge of room schedules. Reserve a room that will comfortably seat your Committee. Reserve the room for at least four (4) hours, allowing for set-up, the exam and the clean-up afterwards.
- If you need projectors or computer equipment, be sure to reserve them.
- Make sure to back-up any files that you need for your presentation.
- Fill out a Schedule of Exam Form, obtain the necessary signatures and bring it to the Office of Graduate Education. This must be done 14 days prior to the exam.
- It is a good idea to send a few e-mail reminders to your Committee, especially the day before the exam, to remind them of the date, time and location.

The Day of the Exam

- Get a good night's sleep the night before the exam.
- Arrive at the room early, in order to make sure it is set up and all your equipment is working.
- Bring a glass of water because you will be talking for 2-3 hours. (Some people bring refreshments for their Committee. This is not necessary, but is a nice touch if you have the time and motivation to do so).
- The duration of the exam as well as the type of questions you can expect varies with every exam. You should expect specific questions about the techniques you use and also alternate approaches to your research. Some faculty members ask theoretical questions or philosophical questions about unsolved mysteries in the area. You should expect questions about the design of your experiment as well as problem solving questions.
- You will be asked questions that you may not know the answer to. It is important to admit that you don't know something when you don't know it. **Do not** try to bluff your way out of a question or make something up. Many faculty want to see how you react to a question when you do not know the answer; they may be unforgiving if you try to fake your way through it. "I don't know" or "I am not sure but it may be similar to [something that you know]" are perfectly valid responses and are essential if you simply do not know. In addition, attempting to manufacture an answer saps energy that is best used on questions that you do know the answers to.
- Make sure that your entire Special Committee signs the Results of Exam Form before they leave the room. There is nothing worse than being done with an exam and having to track down faculty for their signature. This form must be turned in within three (3) days after your exam. Bring the form to the Office of Graduate Education and they will PDF the final version to the Graduate School.

Outcomes of the Exam

- **Pass:** The vast majority of graduate students pass their A-exam on the first try. In this case, you move on to do your experiments, write your thesis, take your B-exam and graduate.
- **Conditional Pass:** If you are awarded a “Conditional Pass,” you will have to meet some stipulations put forward by your Committee; usually this involves an area in which they thought you needed more knowledge. The conditions must be written on the form and a time-line for meeting them should also be indicated. Make sure that you and your Special Committee members are all clear on what the conditions are and when the conditions should be met by before you leave the room. Once you have met the requirements of your Committee and the Office of Graduate Education is informed, your “Conditional Pass” will be changed to a “Pass.”
- **Fail:** This is the rarest of outcomes. If you fail your A-exam, chances are that you knew you would before you stepped into the room or you completely panicked and were unable to recuperate. If your Special Committee agrees, you can retake the test in three months. If your Special Committee does not allow re-examination, you will not be able to continue your program at Cornell.

B-Exam & Dissertation

The B-exam is also known as the Dissertation Defense. The Graduate School requirements for the B-exam are that it be taken two Registration Units (essentially two semesters) after the A-exam, but no earlier than one month before the completion of the minimum Registration Unit requirement. The B-exam usually follows the Thesis Seminar, which is public and open to the College Community. It is an oral examination based on your dissertation.

Preparation for the B-Exam

It cannot be said enough: communication is key. You should discuss with your Special Committee, particularly the Chair, the timing of your B-exam and what is expected of you in order to be considered ready to schedule and take the exam. Thesis and Dissertation requirements are available online at the Graduate School Website.

- As with the A-exam, it would be a good idea to hold a Special Committee meeting as soon as possible after you and your Chair decide the time is appropriate for you to take the B-exam. This way, your entire Committee can be on the same page in regard to your progress and projections for finishing your graduate career.
 - ALL members of your Special Committee (including the Field-appointed member) must be present at your exam. If it is impossible for one of your minor members to be there, they can appoint a proxy from the same Field and concentration to attend the exam for them.

- Give the Committee a couple of dates and times to see which fits everyone the best. You will need a block of 2-3 hours for the exam and one hour for the seminar.
- Reserve venues for your seminar and your exam; also reserve any computer equipment that either would require. You should also get the name(s) and phone number(s) of the people in charge of the equipment in the facilities so you know who to call if there is a problem on the day of the seminar/exam.
 - Your seminar will be open to the Cornell Community and will be the topic of your dissertation research. This seminar usually lasts one hour and is held in a Lecture Hall or Auditorium.
 - Your B-Exam usually takes place immediately after the seminar. It is held in a smaller room, which makes the exam more personal but also gives you the chance for a short walk between your seminar and your defense.
- Fill out the Schedule of Exam Form, obtain the necessary signatures and take it to the Office of Graduate Education at least two weeks before the exam. The OGE will announce your seminar and exam to the CVM Graduate Community.
- At least six weeks prior to the exam, unless your Special Committee decides otherwise, you must submit a complete draft of your dissertation to all members of your Special Committee. They will edit it and provide their input to you.
- At least five days before your B-exam, you should give each member of your Special Committee a copy of your dissertation that is “complete in all respects and editorially acceptable for final approval.”

The Day of the B-Exam You should feel more comfortable at this stage than you did before your A-Exam. At least one former graduate student characterized his thesis seminar and B-Exam as “fun.” However, you should not be complacent so that you are not well-prepared.

- Make sure that you get a good night’s sleep the night before your seminar and exam.
- Get to the seminar room early to set up and make sure all needed equipment is there and working.
- Bring a bottle of water to the seminar and the exam.
- Have your entire Special Committee sign the Results of Exam Form before they leave the room.
- Immediately after obtaining the signature of the Director of Graduate Studies for your Field, bring the form to the Office of Graduate Education. The signature of the Graduate Field Assistant is also required on the form. This form must be at the Graduate School within business three business days of your exam.

Once your B-exam is over and your Results form turned in, you can concentrate on editing your dissertation to comply with your Special Committee's direction and formatting it according the University's specifications. Consult the Graduation Manager (online at Graduate School Website) for further requirements and commencement information.