Cornell Plant Pathology and Plant-Microbe Biology
Graduate Student Handbook and New Student Guide

Spring 2015

Compiled by the Graduate Students of Plant Pathology and Plant-Microbe Biology
Preamble

Congratulations and welcome to Cornell! As there are only three parts to graduate school - getting in, staying in, and getting out - you are a third of the way done.

This handbook is a compilation of suggestions, ideas, pointers, and need to know information provided by current graduate students in the Section of Plant Pathology and Plant-Microbe Biology. It is an honest summary of information we think you will find helpful. This handbook is not maintained by administrative staff, so comprehensive thoroughness is not guaranteed, but we think it is the best start we can give you. We are also relying upon you as the next class to update this handbook for the next generation of students.

It is long handbook and you need not read through every section right away. However, we highly suggest you first read through Chapter 1-4, which will help you with things you will encounter within your first month of being at Cornell.

Introduction

The Section of Plant Pathology and Plant-Microbe Biology (PPPMB) at Cornell University is comprised of numerous facilities and faculty members housed at several different locations. The concept of a ‘Section’ sounds a little strange from what other schools may have with a Department, but it is not all that different. The organizational structure is as such, from largest to smallest:

- Cornell University
- College of Agriculture and Life Sciences (CALS)
- School of Integrated Plant Sciences (SIPS)
- Section of Plant Pathology and Plant-Microbe Biology

SIPS was first established in 2014 with the hope of fostering cross disciplinary collaboration among it’s various Sections, which include Plant Biology, Horticulture, Plant Genetics and Breeding, and Soil and Crop Science.

It should be noted that as a graduate student, you will also be a member of the Graduate School at Cornell University. The Graduate School is at the same organizational level as the College of Agriculture and Life Sciences.

Faculty in PPPMB may be located at the Ithaca campus (Plant Science building, Bradfield building, or others), the Boyce Thompson Institute (BTI), USDA research facilities on the Ithaca campus, the New York State Agricultural Experiment Station in Geneva (NYSAES), or other experiment stations near Lake Placid, the Hudson Valley, and Long Island. Members from each location frequently interact through in-person visits and also through video conferencing (‘Polycom’).
Chapter 1: Before You Arrive at Cornell

Housing

You are strongly encouraged to arrange housing before you arrive, as it will be difficult to find affordable housing right before the start of the fall semester. Housing is expensive in Ithaca! Even if you know your thesis lab is in Geneva, most first year (and even second year) students live in Ithaca because of the class requirements in the first two years. It is also nice to be near others in your cohort.

While there are some options for living on-campus, the vast majority of graduate students choose to live off-campus. The Housing Office (living.sas.cornell.edu) puts out a Guide to Graduate and Professional Student Living each year with information about on-campus housing and tips for finding off-campus housing. When choosing housing, look for options within the City of Ithaca with off-road parking. Otherwise, you will have to move your car everyday during the winter to make way for the plows (which many people do).

Feel free to contact current PPPMB graduate students (https://pppmb.cals.cornell.edu/people/graduate-students) about where they live and what areas they recommend. Many graduate students live in the Fall Creek neighborhood (down the hill from Cornell), which has lots of large houses divided into rental units. Graduate students tend to avoid Collegetown, which is just south of campus along College Ave.; Collegetown is very expensive, and typically home to noisy undergraduate students. The Ithaca CraigsList is a good source of rental listings. If you are interested in buying property, as some graduate students choose to do, most houses are put on the market in early spring and closing typically takes around 2 months, so plan accordingly!

Transportation

Some people choose to bike to campus, but remember, Ithaca has some steep hills and biking can get tricky in the winter with icy conditions. Car parking on campus for commuters is very expensive and the lots are on the edges of campus, so few students choose to drive to school. Check http://transportation.fs.cornell.edu for more information on commuting to school.

Bus access is provided for your first year at Cornell (starting when classes start in August) and your Cornell ID card serves as your bus pass. All Cornell students can ride for free after 6 pm on weekdays and anytime on weekends. An Omníride pass ($200) is available for purchase through the Cornell Transportation Office for students after their 1st year.

The bus system in Ithaca is very good! Many people use the buses to get to campus from near or far. Check out http://www.tcatbus.com as
you pick where to live so you can see how close your housing is to a bus route. TCAT buses have bike racks on the front of them, so mixing biking and bussing can be a great way to deal with hills and rain/snow.

**When to Arrive**

Some students, such as those doing rotations or those in labs that do fieldwork, arrive during the summer to be able to get a field season in. However, many students choose to start around the beginning of the fall semester. Talk to your advisor or the PI of your first rotation to discuss when is best for you to arrive and funding for the summer. If you are arriving in the summer, you will want to register for summer sessions so that you are able to get a Cornell ID card and get credit for your work.

We recommend giving yourself a little time in Ithaca to get used to the area before starting school. Many leases start at the beginning of August, which gives you time to enjoy how beautiful Ithaca is in the summer, before orientation.

**Graduate School To-Do List**

The Graduate School provides a To-Do list that has incredibly important tasks on it ([http://newstudents.cornell.edu/grad/](http://newstudents.cornell.edu/grad/)). Filling out health forms for insurance, submitting official transcripts, etc. are all necessary for your transition to Cornell to go smoothly. Pay attention to the deadlines, because some are early in the summer, while others are closer to orientation.
Chapter 2: Your First Week

Welcome!

Keys, Passcodes, and Desks

Stop by the main PPPMB office to get a cheat sheet of passcodes for common rooms in Plant Science, and to be assigned a desk. All graduate students will receive a desk in Plant Science for the first year, at least, which will probably be in a passcode-locked room. You should also receive a passcode to the Haustorium (lunch room by the elevator) and mail room (across the hall). You will have a “mail box” that will probably be shared with others and is typically used for intradepartmental papers, such as form copies and test returns.

Depending on which lab/building you are doing research in, you may need to get keys. Talk to your lab manager or advisor about how to obtain keys to the lab and or building.

Email list serves

As a graduate student it’s important to be receiving all the emails and notifications you should be receiving! The following is a list of the email list serves you should be subscribed to, followed by the person you should contact to place you on the list:

ppath-l@list.cornell.edu (Alicia Caswell, amd33@cornell.edu)
AG-PLP-GRADS@groups.cornell.edu (Max Fishman, mf622@cornell.edu)

Geneva based Plant Path students should be subscribed to:
nysaes-all-l@list.cornell.edu (Amy Anderson, ada10@cornell.edu)
nysaes-pp-all-l@list.cornell.edu (Kate Keagle, kev35@cornell.edu)

BTI based Plant Path students should be subscribed to:
bti-l@list.cornell.edu (Eric Bush, emb387@cornell.edu)
bti-pgs-l@list.cornell.edu (Eric Bush, emb387@cornell.edu) (optional, if you would like to join the BTI’s society for grad students and post-docs)
b tirec-l@list.cornell.edu (Eric Bush, emb387@cornell.edu) (optional, for emails about non-work related items)

Other Useful listserves:
evolgen_seminars-l@list.cornell.edu for seminars in evolutionary biology and related topics
Subscribe by emailing evolgen-seminars-l-request@cornell.edu with “join” in subject line
bigredbarn@cornell.edu (sign up here under “More” tab) for events happening at the BRB
Photos

Early in your first semester at Cornell in the Section of PPPMB, you will have your photo taken for use on the department photo board (both Ithaca and Geneva) and on the PPPMB website. An email will be sent out announcing when the photographer will be coming.

Make Yourself at Home

Coffee - there is free coffee in the Haustorium every morning. Feel free to bring your own mug and take some. If you take the last cup, set another pot to brew.

Manndible - near Mann Library is Manndible Cafe, which serves coffee, baked goods, snacks, and lunch. The food and coffee are good, but be forewarned that they often get very busy!

Printers - you will have access to the following printers and copiers:
- Ithaca main copy room (color)
- Ithaca 423 graduate student office (color)
- Geneva main copy room (color)
- Geneva A133 graduate student office (B&W)
- Multiple around BTI

(http://bti.cornell.edu/intranet/internal-staff-use/information-services/)

Feel free to ask a seasoned student for the IP address for a particular printer you are trying to connect to. Frequently, IP addresses will be posted directly on the printer. Instructions for faxing and emailing documents are also posted near the copiers.

Fun Office Events!

Coffee break - held every Friday morning (10am in Ithaca (during academic year), 9:45am in Geneva), coffee break is an opportunity to scavenge free food and catch up with your peers and faculty. This is a relaxed atmosphere, with ample amounts of good laughs. And cheese. All the cheese.

Cheers with your Peers - This is an event co-hosted between all SIPS sections that invites all faculty, grad students, and of-age undergrads to come share a cold brew together. Held every so often on a Thursday afternoon, these also have a relaxed atmosphere. Small donations are suggested (read: required) if you partake, so as to keep Cheers with your Peers self sustaining.

Muggings - these are more infrequent events, occurring only when a senior student is graduating. During a mugging, everyone gathers, bringing their own coffee mug to share a coffee and slice of cake to wish the new grad congratulations.
The Barn & TGIF - The Big Red Barn is a graduate and professional student only cafe on the Ithaca campus. On Friday afternoons from 4:30 to 7pm, the Barn holds an event called “Tell Grads It’s Friday” in which they have free snacks and sell beer and hard cider. This is always a great time to hang out with your friends after a long week, and has by far the cheapest drinks in town. The BRB also serves beer most other weeknights, and is a great place to study or meet up with friends.
CHAPTER 3 : Orientation, Prescriptive Interview and Other University Matters

Graduate School Orientation

It is highly suggested that new students attend the Cornell Graduate School Orientation session on the day before classes start in the fall (specific information about this orientation session will be emailed to you prior to the start of classes). Here you can check in with the Graduate School, pick up your student ID, information, and get some free trinkets from various groups on campus. Hundreds of graduate students attend this orientation, so lines can get quite long – pack your patience! The Section of Plant Pathology will also hold an orientation session to go over matters concerning the section. This is separate from, but usually on the same day as the Graduate School Orientation.

Tuition

If you have an assistantship, fellowship, or other fully funded model, you do not pay tuition to Cornell. However, you will have to pay the University Activity Fee, which is fairly small. Also, if you would like a gym membership, bus pass, or parking pass, you will also have to pay extra for that. It is a good idea to check to make sure that your tuition has been paid on time via website link. If it is not, contact the Graduate Field Assistant (GFA) for assistance.

Holds

New students who have a hold placed on their bursar statement must clear the hold before being able to register. A hold may have been placed for any of the following:

- Your funding (read: tuition payment) hasn’t cleared official channels. Foreign students should note that any checks drawn from a bank outside the United States will take at least two weeks to clear. Try to arrange for the check’s arrival at Cornell earlier or you will not be able to register. The late registration fee is $200.

- A medical hold may be in effect if you have not provided evidence of receiving the required vaccinations (e.g. measles, mumps, rubella, etc.). The University takes vaccinations very seriously. Additional requirements may be in effect for international students. If the correct documentation cannot be provided or you are missing a vaccine or two, you can get the required shots at Gannett to clear up the hold (additional charge is billed to you).

- A hold may be placed if you have an outstanding balance on your Cornell Card (an on-campus credit card like system). You will need to clear up this balance in order to clear the hold and register. Accounts from the previous semester must be paid in full before you can register for the upcoming semester.
**Prescriptive Interview**

The prescriptive interview is a meeting that is to take place shortly after you arrive and before the first week of classes of your first semester at Cornell. Talk to your advisor or the Director of Graduate Studies (DGS) for the department to set up your prescriptive interview. They will help you form a temporary committee of a few other department faculty that share your interests to help guide you in choosing classes for this first year, before your permanent committee is formed. During the meeting you will discuss your research interests and experience, your educational background, and what classes you may want to or should take while at Cornell.

The interview is designed to determine if you have deficiencies in your background that would require you to take particular courses. Before your meeting, send the committee a list of previous coursework, a short summary about your interests and goals, and some classes that you are interested in taking (see Appendix I for how to search for classes at Cornell and Chapter 4 for advice and instructions on courses). The committee of faculty members will then “prescribe” some courses for you to take during your first year at Cornell. However, discuss their suggestions with other students and faculty, especially if you are not sure if a particular course is right for you. This interview is not meant to assign you courses you must take, but to help you determine the direction you want to go in and supplement your education accordingly.
CHAPTER 4: Courses

“We don’t stop going to school when we graduate.” Carol Burnett

Overview and Guidance

All selections about courses should be made in consultation with your advisor and special committee. For first year students, the prescriptive interview (Chap 6) is a perfect opportunity to discuss classes.

Currently only three courses are required for a major within Plant Path: PLPPM 3010 Plant Pathology, PLPPPM 4010 Microbial Pathogens vs. Plants, and PLPPM 4020 Biology of Plant Pathogens. Certain waivers for these classes may be made if you have taken similar plant pathology courses previously (discuss with your advisor or during your prescriptive interview). You will also need to enroll in the department seminar course and the student seminar course (PLPPM 6810 and PLPPM 6820 respectively) every semester.

Ph.D. students are required to have two minors and masters student is required to have one, so it is a logical idea is to take classes that relate to your minors (See Chapter 6 for more info on minors). In addition, you may want to take classes that fill gaps from your undergraduate or previous education. The online Cornell Course Catalog has course descriptions by field and is a great resource researching classes. The following is a list of other courses that first years have chosen to take, and may provide you with some ideas:

PLBIO 6410 – Lab in Plant Molecular Biology
BTRY 6010 – Statistical Methods I
PLBRG 4030 – Genetic Improvement of Crop Plants
PLPPM 4831 – Concepts and Techniques in Plant Molecular Biology
BIOMG 4000 – Genomics
PLHRT 3500 - Vegetable Production

About three classes (roughly 9-10 hours of courses) is advisable if you also wish to do research during this time. If you are a Geneva-based student, you may wish to take a heavier class load to try and finish taking courses faster. Or you may wish to split your time between Geneva and Ithaca, if you can arrange your schedule to allow you to do so.

Course Registration

Graduate students may register for classes at any time during the first three weeks of classes. This allows you the opportunity to try out a number of courses before committing yourself for the semester. Registration time slots to not open until the week before classes start. This may be a foreign concept to many first year graduate students who may remember from their undergraduate school registering for classes extremely
early and having to approach registration with a battle plan to get the classes you want. We agree, Cornell is a bit strange in this area with their seemingly lackadaisical and late-to-the-party approach.

Once you have been advised about classes, and your enrollment window opens (again, about a week before classes start) you can sign up in Student Center (http://studentcenter.cornell.edu). If you are not sure of when your enrollment window opens, check Student Center or watch for an e-mail announcement. See Appendix I for step by step visuals of how to enroll in a course.

Be sure to sign up for research credits as well! PLPPM 7990 is the current class for pre-A exam graduate students. From the list of instructors, find your thesis advisor (or the DGS if you are doing rotations) and select him or her as the instructor. You will need to account for about 15 credit hours total, so select the appropriate amount of credit hours for PLPPM 7990 to bring you to this total.

If you have registered for classes through Student Center but then decide to change the classes you are taking, you can add, drop, or modify courses online through Student Center (while still within the Add/Drop deadline date). Occasionally, you will have a course that requires the instructor permission to register; you will usually complete this using a paper Add/Drop form which can be attained from and dropped off at the CALS Registrars office in Roberts Hall (you can also email the instructor with any questions concerning adding or dropping classes). Paper Add/Drop forms may require signatures.

Most classes have three grading options: Graded, Sat/Unsat Exclusively, and Audit. Sat/Unsat means that you will be graded strictly pass/fail. Unlike during undergrad, this can be a perfectly acceptable option for many of your classes, as it can allow you to spend less time on the class (and more time on your research). Check with your advisor (and your minor advisor, if the class is a requirement for a minor) if you are interested. The “audit” option is not graded at all, and generally will not count toward your major/minor requirements. You can switch grading options up until the add/drop deadline.

To be registered with the University each semester, you must be registered for at least one class on Student Center. After you have finished taking classes, you can register for research credits to fulfill the University registration requirement. Summer registration is required for all students who will be receiving a stipend over the summer. Summer registration, which consists of registering for summer research credits on Student Center, occurs before the spring semester is over. It is required for use of the Gannett health center and other campus facilities. Also, if you do not register for the summer, your paycheck will be deducted for FICA. While you are in Student Center, set your committee chair by looking at the advisor panel on the main page. If you do not already have a thesis advisor, set the DGS as your chairperson. See the end of Appendix I for detailed instructions. The Graduate School requires you to have a chairperson (even a temporary one) set fairly early in the fall semester.
CHAPTER 5 : Funding

As a contingency of your acceptance into the program, all graduate students in PPPMB are guaranteed funding for at least five years. There are several different forms under which you may earn your funding including Research Assistantships, Extension-Outreach Assistantships, Teaching Assistantships, fellowships, grants, scholarships, and awards.

Assistantships

If you have received a Research Assistantship or an Extension Assistantship, you will be placed on the payroll. You will be paid on the 15th and 30th of every month through direct deposit; you will fill out a direct deposit form on your first day (whether you start in summer or fall) and processing to be placed on the payroll may take a while. Tracy Holdridge (tlk2@cornell.edu) is the Administrative Manager in Ithaca and good contact for questions concerning these Assistantships. International students should consult Tracy Holdridge for proper forms to fill out.

Research assistantships require involvement with a research project of your advisor. This may be related to or different from your thesis research. Typically Research Assistantships require input of 15-20 hours of work a week.

Extension-Outreach Assistantships are similar in that they require involvement with a research project of your advisor or other faculty member, however, this type of Assistantship requires a heavy extension component. Again, they require input of 15-20 hours per week and may be related to or different from your thesis research. If you are funded on either a Research or Extension-Outreach Assistantship, discuss with your advisor; annual or semester reporting is required for both types.

Teaching Assistantships

A Teaching Assistantship is an arrangement where a graduate student teaches a portion of a class, usually a laboratory or discussion section, in exchange for funding. Plant Path students have been TAs for both classes within plant pathology and outside, such as general biology classes. Usually an email will be sent out in early March canvassing interest for teaching assistants. All graduate students in PPPMB are required to complete at least one semester of teaching as part of their masters or PhD requirements. See Chapter 8 for more information about teaching requirements.

Fellowships and Grants

If you have been awarded a Cornell Fellowship, you may need to contact the Fellowship Office in Caldwell Hall when you arrive in Ithaca. Generally fellowship funds are provided as lump sums at the beginning of each semester, rather than on a twice monthly basis, as is the case with Research or Extension Assistantships. Even though you may be supported on Section funds for a semester or two, you are encouraged to apply for external fellowships, grants, and other sources of funding. Discuss which fellowships
and grants to apply for with your advisor; in many cases your advisor will ask for your help in writing a grant or two.

Note that taxes are usually not automatically withheld from fellowship checks they way they are with assistantships - you will owe taxes on this income come April!

**Student Loans**

Student loans are not typically a concern for graduate students because of the provided stipends and guaranteed funding. However, if a loan is need to supplement in some way, graduate students may apply for both federal and private educational loans. Federal loans are limited to those who are U.S. citizens or permanent residents. International students may be eligible to apply for private loans with a U.S. co-signer. Federal loans are generally easier to obtain for graduate students than for undergraduates. FAFSA (Free Application for Federal Student Aid) is shorter and less detailed, and you no longer have to fill out information about your parent’s income.

In general, private loans have higher interest rates than those of federal student loans and interest typically accrues from the date you take the loan. Examples of private loan agencies include:

- CitiAssist
- Grad Achiever
- Grad Access
- Nellie Mae Excel

**Traveling to Professional Meetings**

The Section of PPPMB may provide some funding for students wishing to attend a national or regional professional society meeting. The odds of receiving funding increase if there are more than one student wishing to attend. Contact Tracy Holdridge beforehand to inquire about funding.

The Graduate School also provides funding for students to attend meetings if they are presenting a poster or oral talk. There is a maximum of $675 for travel expenses, lodging, and meals, and the amount awarded is based upon how far away the conference is located: (https://www.gradschool.cornell.edu/costs­and­funding/conference­travel­grant).

Finally, some meetings provide travel grants on a competitive basis. For example, the American Phytopathological Society (APS) provides a limited number of competitive grants for students who plant to present posters or talks at the national meeting. It is best to consult the organization’s website for details on these types of awards. Watch dues dates for these grants very carefully and apply early! Websites have been known to crash the day the grant applications are due.
CHAPTER 6 : Your Program of Study - Rotations, Thesis, and Special Committee, O my!

Rotations

Student who come in on a fellowship offer are typically allowed to do rotations; your acceptance offer should detail whether you have been accepted into a spot in a specific lab or will be rotating and any parameters required of your rotations.

Rotations give students the chance to try out a research program before they sign their soul away to a particular lab. Rotating students will identify two or three labs they have an interest in and spend anywhere from 3 to 12 weeks in each working on a small project the student and faculty member agree upon. For example, some students are interested in molecular aspects of plant pathology, but aren’t sure if they would rather work with fungi, bacteria, viruses, or nematodes. Thus, a rotation is a good way to get a feel for the pros and cons of working with each type of pathogen. Rotations are also a great way to get to know some of the people and faculty members in the department and who you may like working with. Even if you already know which professor you want to work with, you may do a rotation in another lab to broaden your research experience.

Students have up to a year (two semesters) to complete rotations, but should try and choose a lab as soon as possible, due to the new student visits and offers every February. Remember that rotations are largely the students responsibility, so do not be afraid to assert yourself if you felt you have done what you need to do for the rotation. Oftentimes the project is not finished when the time is up, but it is not required for you to stay in the lab longer to complete the project. You do not have to choose one of the professors with whom you did a rotation with as your major professor! Consult with the DGS if you need help finding a lab/program complementary to your interests.

Thesis Project

To complete your graduate degree, you will work on a thesis project. If you have a specific project in mind when you arrive, chances are good that you will have the opportunity to work on that project or a similar one. Most faculty are very interested in what interests you. If your goals are unclear now, your advisor or the Director of Graduate Studies (DGS, a faculty member in the Section that liaisons between the section and the Graduate School) may help guide you into a project, but the choice is ultimately yours. On the other hands, many faculty members recruit students with a particular project in mind and will bring you on as a student with the expectation that you work on that project.

Special Committees

The Special Committee is a panel of faculty members who will advise and guide your thesis research and graduate career. It consists of your major advisor (known as the
committee chairperson) and at least one additional minor committee member for masters degrees and two additional members for PhD degrees. At least one of the additional special committee members must be outside the Section of PPPMB (ex. Horticulture, Plant Biology, Entomology, Microbiology, Plant Breeding, and Genetics are some common selections). Minor committee members may also be outside of Cornell; these are called ad hoc committee member and they may be special collaborators at other institutions. Adding an ad hoc member to your committee requires special paperwork; the DGS will assist you in completing this paperwork.

Since the Special Committee plays such an important role in your graduate career at Cornell, keep in mind some of the following pointers:

Take your time in selecting a committee. You have until the end of your first year to do so, and seek out the advice of other students who work with or have worked with professors that you are considering for your committee. You will want to be sure that potential committee members are willing and able to provide ideas, time, money (for equipment and travel), supplies, and greenhouse/growth chamber space. Ensure that all faculty members on your committee will be able to work together – talk to your advisor and other graduate students to determine if certain personalities will mix well in a committee. Finally, make sure you know what the committee members’ expectations of you will be – good rapport, with both your advisor and research group is a must!

Faculty from other universities (or, more rarely, industry) may also serve as members of your special committee. To add an ad hoc member you must submit a petition to the graduate school (contact the DGS for more info). This can take a month or more to approve, so submit the paperwork as soon as possible.

Until you form a Special Committee, or at least a chairperson, the DGS will serve as your chairperson and will sign all require forms in the mean time. The DGS will also be happy to talk with you about possible research programs and committee members.

**Minors**

Graduate degrees in PPPMB require you to choose minor fields of study, with corresponding minor members for your Special Committee. One minor is required for M.S. students and two are required for M.S./Ph.D. students or Ph.D. students.

Course requirements vary greatly between minors, so check with the department of with your prospective minor committee members to see if there is a list of requirements or suggested courses. You can also check on that Section or Department website.

For PhD students, up to one of your minors may be one of the concentrations within the section of Plant Pathology and Plant Microbe Biology: Fungal and Oomycete Biology, Plant Pathology, or Plant-Microbe Biology
CHAPTER 7: Exams

The A Exam

The A Exam is The Comprehensive Exam. You will take your A Exam at the end of your second year, typically after finishing all classes. You must pass this exam in order to become a “Ph.D. candidate” and proceed with your program. On your A Examination committee will be your Special Committee as well as one “Field Appointed” examiner (for breadth), giving a total of at least four examiners. You may suggest faculty in the department to serve as your field appointed examiner, but they must be from an area of plant pathology not already represented on your committee. It is the student’s responsibility to initiate and set a date for the A Exam, and an official form must be submitted to the Grad School in advance to schedule the A Exam (which can be found on the Grad School website: https://www.gradschool.cornell.edu/forms). You should also discuss with your advisor his or her expectations for a research proposal that you will probably need to submit around the same time you take your A Exam.

It is possible to fail this exam, but this does not happen often. To prepare, review everything that may be even remotely related to plant pathology, your specialization in plant pathology, and your minor(s), before you take the exam. Talk to all committee members before the exam to get an idea of their expectations. Some faculty will even tell you the types of questions they routinely ask. Also, talk to other older students for advice and strategies for preparing.

The A Exam will be challenging, as you are expected to be conversant and analytical. However, you will probably not be able to answer every question. There is variation in the format of each student’s A Exam depending on their Special Committee (again, discuss with your Committee members), but PPPMB guidelines currently suggest starting with a 10-15 minute presentation by the student about their proposed research. Graduate students of Plant Pathology and Plant-Microbe Biology keep an informal collection of previous A exam questions from various professors. These currently reside in a bright orange 3-ring binder that frequently circulates between the Ithaca and Geneva campus.

Once you have completed your A exam, do future grad students a favor and add as many questions as you remember to the notebook. Periodically, material is swapped between the two campuses, but it’s a good idea to check with the other campus when you are starting to prepare for your A exam to see if there’s any new material you can add to the notebook you’re studying from.

Be prepared to give an oral presentation of your thesis research thus far to inform the examiners who are not part of your committee. Additionally, bring a written list of course work completed thus far, as well as paperwork to be signed by the examiners (the “results of A exam” form can be found with other forms on the Grad School website:
Finally, bring sacrificial offerings in the form of beverages (coffee, juice) and baked goods.

**If you are graduating with a Master’s Degree**

If you are working towards a Master’s Degree, there will be no A Exam - just a defense of your Master’s Thesis, which will likely be similar in format to the B Exam for a PhD (see below). Again, check the Grad School website for forms required to schedule the exam and record the results of the exam.

**The B Exam**

The B Exam is also called the ‘PhD Defense’ and is (almost) the final hurdle between you and a PhD. (The actual last step is correctly formatting your dissertation, submitting it to the Graduate School and receiving both their approval and the approval of your committee.) Ideally, you have had an excellent working relationship with your major advisor, and he or she will work with you to determine what you need to accomplish in order to be ready for the B Exam. Basically, you will present the research you have accomplished, your committee will ask you some questions (more about the interpretation of your research and how it relates to other published research than about basic knowledge of plant pathology), and they will decide if you deserve a PhD.

The B Exam should (in theory) be less stressful than your A Exam, mainly because you will be able to prepare for it more easily and thoroughly than for the A Exam. In general, the B Exam takes roughly three hours and the student is usually expected to provide snacks and coffee for the examiners, which will include your committee and possibly additional appointed members.

Because the B Exam itself is closed doors, directly prior to the formal B Exam, students are expected to give a final Exit Seminar for department members and general public. The Exit Seminar is a summary of the student’s thesis research and give the audience a change to ask questions. Email announcements for the Exit Seminar and B Exam will be sent out to the department beforehand. Similar to the A Exam, there is an official form that must be filed with the Grad School to schedule your B Exam, and there is an official “Results of Exam” form that must be signed by all members of your committee after you complete the exam. Both can be found online: http://gradschool.cornell.edu/forms.
CHAPTER 8 : Teaching Requirements

For obtaining a degree, PPPMB requires that each student teach. One semester of teaching is required for each M.S., M.S./Ph.D., or Ph.D. degree. Additional semesters of teaching may be completed if you have a special interest in teaching and your major advisor agrees. Being a teaching assistant provides the student with hands on teaching experience, an experience that is highly important if you would like to teach in the future.

The department does not offer full TAships, meaning the department does not offer full, multi-year support to students through teaching. However, there are a few classes within the department that students have been TAs for, including PLPPM 3010 (Plant Pathology) and PLPPM 2010 (Magical Mushrooms). Additionally, several students have been supported for a few semesters through a TAship from another department, such as the Biology Department. When other departments (such as Biology and Molecular Biology & Genetics) open their TAship applications, you should receive an e-mail calling for applications and outlining the courses needing TAs. Remember that TA stipends are typically 9-month stipends and do not include summer payment. Teaching is rewarding but it can also be a lot of work. The advertised time commitment is 15-20 hours a week, but older students will relate that they frequently spent more than this.

Teaching assignments within the section are typically assigned to students based upon the Section’s needed and your funding needs. Contact will usually be made via email during the middle of Spring semester. However, if there is a particular class you are interested in serving as a TA, discuss this with the Section Chair (Gary Bergstrom, gcb3@cornell.edu). It is also a good idea to discuss TAships and classes with older grad students, as they can give you a good idea of what to expect. Once the teaching assignments have been made, it is a good idea to contact the professor of the class soon to discuss your responsibilities and expectations.

Cornell offers several resources for TAs, including a three day workshop for teaching assistants before the beginning of each semester (NAME??). It is suggested to take the workshop the same semester you are planning to teach so you can gain the most. The workshop includes learning about grading exams, papers, leading discussions, lecturing, how to make a teaching portfolio for your resume or CV and information about other teaching resources at Cornell.

Students should enroll in PLPPM 7980 (Graduate Student Teaching Experience) to obtain credit for their teaching experience.
CHAPTER 9: Facilities

The Section of Plant Pathology has numerous facilities that graduate students may use for their research.

Lab Space

The amount of laboratory space available to you depends on your major professor and the space assigned to him or her. Some professors have very crowded labs with many students, lab technicians, and undergraduates working in the lab. Others have very spacious labs with few people around. There are benefits and drawbacks to each situation and this may be something to consider when choosing your professor!

Growth Chambers

Growth chambers are frequently housed in one location within a building and are maintained by building staff. They are rented out to professors and lab programs on an as needed basis.

Discuss with your major professor to make the necessary arrangements; you’ll need an idea of how much space needed, how long you’ll need it, and particulars required for your experiment, such as temperature and lighting. Discuss with the growth chamber manager beforehand if you will be introducing any pathogens or insects to the chamber and who is responsible for spraying the chamber for control of unwanted pathogens or insects.

Greenhouse Space

Greenhouse space is usually rented to a professor on a monthly basis. Some professors have their own allotted space, however don’t be afraid to make temporary deals with those who have space. Much of the greenhouse space in Ithaca is located in the Virology/Nematology and Dimock facilities. In Geneva, extensive and modern greenhouses are located right next to Barton Lab.

Greenhouse services include watering, fertilizing, pesticide application, and general housekeeping and maintenance. Greenhouse staff are happy to help with almost any request if you discuss with them in advance. Weekly pesticide applications are made in the greenhouses to control unwanted pathogens and are usually done on Tuesdays and Fridays at the end of the work day; all personnel must be out of the greenhouse when these applications are made, so be sure to plan your greenhouse work accordingly.

Other Equipment

Within the Section, there is an overall feeling of camaraderie and a good deal of sharing of equipment. Most faculty members are very generous in allowing students not in their program to utilize equipment in the lab, providing that a student in the home lab is not
using it at the time. Be courteous, ask before using, and return borrowed items promptly so others may use them.

**Computing**

Many of the research labs are equipped with computers, which may be available to students working in those programs. Many of these lab computers have specialized software used frequently in that lab. Discuss with your advisor which computers and software programs are available to you. Workshops and mini-courses are held frequently on the Ithaca campus to introduce and familiarize you with the systems available to you. Additionally, the library system at both campuses have computer stations available for students to use.
For more information:
http://www.biotech.cornell.edu/brc/bio-it-facility

**Statistics**

Cornell University offers a free statistical consulting service staffed by statistics faculty and graduate students. Visit [https://www.cscu.cornell.edu/](https://www.cscu.cornell.edu/) for more information on this service. Students from any program are welcome to make an appointment with the consulting unit to help in the design of an experiment and/or the analysis of your data. If you would like to discuss your experimental design with a plant pathologist, ask around to find someone who can help. Most people are very happy to pass on names or advice. In Geneva, Kerik Cox knows his stuff. They are willing to help in the design or analysis of an experiment, however, it can’t be stressed enough that you should consult them or another statistician before you conduct the experiment if you have concerns about the statistical validity of your design.
CHAPTER 10a : Geneva Experiment Station

The New York State Agricultural Experiment Station (NYSAES), also known as the Geneva Experiment Station or just “The Station”, is located in quaint town of Geneva, NY, about an hour drive north of Ithaca. The Plant Pathology and Plant Microbe Biology Section in Geneva is the same section as the Plant Pathology and Plant Microbe Biology Section in Ithaca, however, each location has separate administrative and support personnel. The Station houses the department of Entomology and section of Horticulture in addition to Plant Pathology. Nearly 800 faculty, staff, students, and support personnel work at the Station. Officially there are no classes taught at the Station, with all course work taking place in Ithaca. However, special seminars and select classes are frequently Polycomed between the two campuses.

Students with advisors at the Station will be doing most of their thesis research in Geneva. The research facilities are well equipped with extensive lab space, greenhouses, and growth chambers. Another feature of the Station is the abundant field research sites within just a few miles of the Geneva campus. The Station has numerous vineyards, orchards, and vegetable fields, as well has close collaborative ties with nearby commercial growers for additional on-farm research sites. The library system at the Station is readily accessible and library materials may be easily ordered from the main campus via interlibrary loan.

At the Station, greenhouse space is assigned by request to a professor’s program. It is possible to negotiate additional space to meet experimental needs. Growth chambers are assigned by request. Requests for greenhouse space and growth chamber space should be made to the Geneva facilities coordinator. Sharing equipment between labs is common and routine at the Station.

Doing research in Geneva is a unique situation. Because you will spend your first one to two years taking classes in Ithaca, completing research may be difficult. (But then, heavy class loads give Ithaca-based students the same challenge.) Geneva students often load up on classes the first two years of their program, completing all necessary course work while doing research in the summer, before being able to do research full time at the Station.

Ithaca laboratory and greenhouse facilities may be made available for Geneva based students to conduct research during the first few semesters while the student is taking classes and/or in Ithaca; discuss your research plans with your advisor to determine if this is feasible.

**Ithaca to Geneva Commute**

For Geneva based students, commuting between the Geneva and Ithaca campuses is a fact of life. PPPMB has arranged a contract with a commercial charter bus service (Fitzgerald Brothers LLC.) to provide a shuttle that goes back and forth between each
campus. “The Shuttle” makes two round trips daily, one in the morning (leaving Ithaca campus at 7:00am and Cass Park at 7:15) and one in the afternoon/evening (leaving Geneva at 5pm, 4pm on Fridays). See below for details of where the Shuttle picks up and drops off in and around Ithaca.

**Geneva-Ithaca Intercampus Shuttle**

<table>
<thead>
<tr>
<th>Day</th>
<th>Northbound Cornell Campus</th>
<th>Ithaca Cass Park</th>
<th>Geneva Campus</th>
<th>Southbound Geneva Campus</th>
<th>Ithaca Cass Park</th>
<th>Cornell Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-F</td>
<td>7:00</td>
<td>7:15</td>
<td>8:15</td>
<td>8:20</td>
<td>5:00</td>
<td>6:15</td>
</tr>
<tr>
<td>M-Th</td>
<td>3:45</td>
<td>4:45</td>
<td></td>
<td>5:00</td>
<td>6:00</td>
<td>6:15</td>
</tr>
<tr>
<td>F</td>
<td>2:45</td>
<td>3:45</td>
<td></td>
<td>4:00</td>
<td>5:00</td>
<td>5:15</td>
</tr>
</tbody>
</table>

*No service on University Holidays. *Italic* = pm; *italics* = am.

Mail is on the morning trip to Ithaca, and the afternoon trip to Geneva.

At this time, there is no cost to riders from the Cornell community.

**Station contact**

Gemma Osborne
gro2@cornell.edu
315-787-2248
607-227-9137 (cell)
A PPPMB Section owned commuter vehicle is also made available to students that may be used for travel if the Shuttle times do not fit your schedule. The student car however must be signed out in advance; see Jackie Armstrong (jra7@cornell.edu) in Ithaca for information about signing out the student car. Because the Section can only supply one of these student vehicles, carpooling is highly suggested. Usually at the beginning of every semester the students interested in commuting develop a driving schedule convenient to everyone’s schedules. The student vehicle parks on the Cornell campus, close to the Plant Sciences building.

Keep in mind that the drive from Ithaca to Geneva is 50 miles and takes 1 hour. Heads up, State Troopers are frequently seen patrolling the route.

Office Space

Most graduate student offices at the Station are located on the first floor of Barton Lab. Desks, office chairs, Internet, and adequate shelving and filing space is supplied. One thing students working in Barton Lab quickly find out is that cell phone reception in the building is very spotty - you will frequently need to go to the lobby or outside to place a call or send a text message.

Housing

Station-owned housing is available for graduate students to rent and is located just down the street from laboratory buildings. There is a waiting list for station housing, so it is suggested that interested students sign up early with the coordinator. There are other housing options in Geneva, and the prices tend to be significantly less expensive than in Ithaca, however, options for housing are not as numerous as in Ithaca.

Summer Scholars Program

Another program unique to the Station is the Cornell Summer Scholars Program. This is a nine week summer research internship for undergraduates. The Summer Scholars Program is held only at the Station, however the department of Entomology and the sections of Plant Pathology and Horticulture participate. Undergraduates from schools across the United States and the world apply to the program, and if accepted, are matched to work in a particular faculty member’s program to conduct a research project. As a graduate student in Geneva, your faculty advisor may ask you to work closely with and mentor an intern. This is a fun time and a great opportunity to build your mentoring and organizational skills!
CHAPTER 10b: Boyce Thompson Institute (BTI)

The Boyce Thompson Institute (BTI) is an independent, non-profit institution affiliated with Cornell and located on the main campus in Ithaca. It was founded by William Boyce Thompson in 1924 as a location for basic plant research. Over 100 researchers work at BTI, with a wide variety of types of research; BTI is unique in that several departments are represented, including PPPMB, Plant Biology, Molecular Biology and Genetics, and Chemical Biology. Many graduate students also call BTI home.

Facilities and Summer Programs

BTI has well equipped laboratories and facilities, including the BTI Mass Spectrometry Facility, the Plant Cell Imaging Center, and greenhouse space. BTI also facilitates a 10 week Research Experience for Undergraduates (REU) each summer that pairs undergraduates from schools around the country with faculty and labs to conduct summer research. Graduate students based at BTI will often have the chance to mentor an REU student.
CHAPTER 11: Forms and Obtaining Help

Both the GFA and DGS can help with all questions concerning graduate student studies and should be consulted if issues arise. As you proceed through your graduate program, there are a number of forms that you’ll need to submit to the Graduate School in a timely fashion. These forms generally require signatures of your special committee chair and the DGS.

Below is a checklist of forms that you may require during your time at Cornell. All of these forms require the signature of the DGS. These forms must be submitted to the DGS at least three days before they are due at the Graduate School.

Only give forms to the DGS or to the GFA! In you cannot find one of them, leave the forms on one of their desks or in on of their mailboxes and send an e-mail to confirm. Forms submitted at the last minute ma not be signed in time for submission to the Graduate School.

All forms may be obtained from the Section of Plant Pathology webpage at:
https://pppmb.cals.cornell.edu/graduate/forms
Additional forms are located at the website other than those described here.

Special Committee Selection and Change Forms

Adding or removing committee members is completely done online through Student Center now. See Appendix I for detailed information about how to do this.

Ad Hoc Committee Member Request Form

This form should be completed if you would like to add an ad hoc member to your committee. This process requires the completed form, a letter of petition from the student, a letter of support from the ad hoc member, a letter of petition from your major advisor, and a C.V. from the ad hoc member. The DGS will help you assemble all of these materials for submission to the Vice Provost and Dean of the Graduate School. Adding an ad hoc member can take some time; it is suggested that you start early.

Student Self Assessment Form and Student Evaluation Form

These are two forms to be completed at every committee meeting and submitted to the DGS and GFA. The Student Self Assessment Form should be completed by the student and emailed to the committee members prior to the meeting. There are locations for both the student and the committee members to sign this form. The Student Evaluation Form is to be completed by the committee members after the meeting; each member should complete their own Student Evaluation form. Both the Self Assessment Form and the
Student Evaluation form should be submitted to the DGS and Field Assistant no later than one week after the meeting has taken place.

**General Petition Form**

If you have received a letter from the graduate school stating that you need to complete a petition form by a certain date in order to be permitted to register for the next semester, please have your form in Jackie's office 3 days before it is required at the graduate school. We also have copies of these letters and know when the due date is.

**Schedule of Examination Form**

This form notifies the Graduate School that you are planning to take your A-Exam or B-Exam and is due to the Graduate School 7 days before the exam is to take place. This requires the form to be submitted to the Field Assistant 10 days prior to the exam. Make sure the Field Assistant has a copy of this form once all signatures are obtained and before it goes to the graduate school.

**Results of Examination Form**

This form notifies the Graduate School that your committee members have reached a consensus on the results of the A-Exam. The DGS does not need to sign this form, but a copy should be given to the GFA after all signatures are obtained and before it is submitted to the Graduate School. This form must be submitted within 3 business days post A-exam.
CHAPTER 12 : Plant Pathology Graduate Student Association

As a graduate student in Plant Pathology at Cornell, regardless of whether you are based in Ithaca or Geneva, you will automatically become a member of the Plant Pathology Graduate Student Association, frequently referred to as the ‘GSA.’ This organization exists to “represent and promote the professional activities of graduate students and to facilitate communication among students and between students and faculty of the Section of Plant Pathology and Plant-Microbe Biology at Cornell University,” as is stated in the GSA constitution. Unlike other organizations you may be apart of, the GSA does not collect dues from students, so there is no excuse not to get involved!

The GSA plans many activities for graduate students throughout the year, including the New Student Welcome Picnic and Halloween Party, among others. The GSA also serves as a grievance board for students of the Section and is actively involved in improving the conditions for graduate study within the Section. The GSA is governed by five elected officers: President, Vice President, Treasurer, Secretary, and Representative to the Graduate and Professional Student Association (GPSA, the graduate student association at the Cornell Graduate School level). There are also several committees, including Social, Colloquium, Prospective Student, and New Student Committees. Additional information on each officer position and committee responsibility is listed below. Elections for GSA members occur late in the Spring semester, for terms for the following academic year. Each member is eligible for re-election if the member will not be graduating in the coming academic year.

Meetings

GSA meetings are usually held once a semester to discuss a wide variety of issues (food is of course provided). All graduate students are strongly encouraged to attend these meetings, especially if they want to have an input into departmental activities. Meetings are usually Polycomed between the two campuses so all students can participate.

Activities

Sundry activities are sponsored by the GSA or in conjunction with the Section or SIPS throughout the semester. Past activities have included movie nights, bowling, potlucks, parties, and weekly coffee breaks. The GSA is always open to suggestions about new and fun things to plan, so be sure to attend the meetings and voice ideas!

Colloquium
Each spring semester, the GSA and plant pathology graduate students sponsor a colloquium for the Section. The graduate students nominate potential speakers, vote on their favorite, and then invite the selected speaker to present a special seminar on his or her research that is of special interest to plant pathologists. This event is entirely organized by the GSA and past colloquia have proved a great success. Members of the department are encouraged to meet with the speaker individually or in small groups. Often, the graduate students are invited to a special lunch to spend time with and get to know the speaker better.

**Descriptions of GSA Offices (As dictated by the GSA Constitution and personal experience)**

**President**
- Serves as the main GSA contact for students and faculty
- Schedules and presides over GSA meetings
- Registers the GSA with the Student Activities Office (http://www.sao.cornell.edu/so/)
- Encourages involvement in GSA and its associated activities as well as delegating responsibility to other members

**Vice President**
Works with the President and the Treasurer to:
- Plan and submit the annual budget
- Organize graduate student meetings on a regular basis (or as needs arise)
- Contact faculty or others to address concerns of the plant pathology graduate students
- Keep in touch with other student committee members, such as the Colloquium and Social Committee members, in order to ensure that members are serving in their roles and keeping deadlines, etc

**Secretary**
- Records meeting minutes
- Conducts elections

**Treasurer**
- Records all financial transactions
- Coordinates all funds and fund-raising activities of the GSA
- Assists the Colloquium Committee in preparing and submitting a colloquium budget to the Graduate and Professional Student Assembly Finance Commission (GPSAFC) and keeping track of cash flow before, during and after the Colloquium.

**Prospective Student Committee**
- Inform Plant Pathology graduate students of dates when prospective students will be visiting (as advised by the DGS)
● Coordinate lunch and informal group meetings between the prospective students and the graduate students and/or faculty in the department (individual meetings between faculty and prospective students is arranged by the DGS)

NOTE: Prospective students may come any time and may come individually or as a large group in the spring, so the coordinators need to be prepared to spend anywhere from a day to a week planning.

New Student Committee
● Plan a New Student Welcome Picnic before classes begin in the Fall
● Meet with new students individually or as small groups as they arrive in Ithaca
● Assist new students in registering with the Graduate School

Graduate and Professional Student Association (GPSA) Representative
● Represents the Plant Pathology GSA at the GPSA meetings by voicing the concerns, suggestions and questions of the GSA
● Keeps the GSA informed of the activities of the GPSA

NOTE: The Plant Pathology GSA and SAGES each have a separate representative to the GPSA.

Colloquium Committee:
● Research speakers, compose a ballot, facilitate voting, formally invite the selected speaker and make travel and accommodation arrangements
● If the speaker is able and willing to give a seminar in Ithaca and Geneva, coordinate with committee members at both campuses to schedule and post seminar times and places
● Provide refreshments at the seminar
● Schedule individual meetings between faculty and the visiting scientist
● Coordinate a dinner with the invited speaker at one of Ithaca’s many fine eating establishments

Special Section of Plant Pathology Committees
Although serving on a committee within the Section is not required of students, you may be asked to serve on one at some time during your career at Cornell. Examples of committees on which students have served are the Teaching Committee, the Computer Committee, the Greenhouse Committee, and the Seminar Committee. These are small groups of faculty, students, and staff which meet as often as needed to achieve goals in these particular areas. As a student you may have a large contribution to make in these areas, and you are certainly urged to get involved. If you are interested in joining a committee, talk to the GSA chairperson or DGS to find out how.
CHAPTER 13 : Contacts

Contacts

This section is to be updated every year in May to account for changes in personnel and titles.

*PPPMB Section Chair* - Gary Bergstrom; 316 Plant Science; 
gcb3@cornell.edu; (607) 255-7849

*Administrative Assistant for PPPMB* - Jackie Armstrong; 334 Plant Science; 
jra7@cornell.edu; (607) 255-3246

*Graduate Field Assistant (GFA) and Assistant to the Chair* - Alicia Caswell; 334 Plant Science 
amd33@cornell.edu; (607) 255-3245

*Director of Graduate Studies (DGS)* - Adam Bogdanove; 360 Plant Science 
ajb7@cornell.edu; (607) 255-7831

*Assistant to the Associate Chair (Geneva)* - Kate Keagle; 104 Barton Laboratory; 
kev35@cornell.edu; (315) 787-2331

GSA Officers 2015-2016:
*President* - Max Fishman; 408 Plant Science; mf622@cornell.edu
*Vice President* - Mariko Alexander; mma98@cornell.edu
*Treasurer* - Morgan Carter; 423 Plant Science; mec342@cornell.edu
*Secretary* - Larissa Osterbaan; lj029@cornell.edu

CONCLUSION

This concludes the Cornell Plant Pathology and Plant-Microbe Biology Graduate Student Handbook. Revisit sections as needed. As you move through your graduate school career, remember not to stress to much and enjoy your time here at Cornell!

May the odds be ever in your favor.
Index I: Enrolling in classes on Student Center: A Visual Guide

1. In Student Center*, click search for classes

2. Choose term and change the subject (field/department) and course number to narrow down the courses you will see. Click Search.
3. Scroll through results and click "select class" for the one you would like to add.

4. Here you can change instructors, wait list, credit hours, and grading scheme if necessary. Click next when all the settings are right.
5. Repeat these steps to add more classes to your cart by modifying or doing new searches. Once you have the classes you want to add, click Shopping Cart.

6. Click the Select box next to each class and click enroll.
*Changing your Committee: Click on Graduate Committee Selection on the homepage of student center. It will take you to a screen to pick a chairperson and other members of your committee. Once you have added who you want to add, click “Submit Committee Request” to finalize the selections.