

Graduate Student Handbook

Department of Entomology

Entomology Graduate Student Association

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NC STATE UNIVERSITY

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Contents

Welcome from the Department Head	4
Orientation to Graduate Student Life.....	5
Faculty Responsibilities Toward Graduate Students	5
A Students View: Aids Toward Getting a Graduate Degree-Psychological And Practical Tools.....	6
North Carolina State University.....	8
Transportation	8
Parking	9
Student Health Center	10
Carmichael Gym	10
Printing & Binding Resources.....	11
Library Resources	12
Literature Searching	14
Professional Development Seminars.....	14
Teaching Certificate Programs.....	15
Department of Entomology.....	17
Department Locations Map.....	17
Faculty Locations	18
Walking Distances.....	18
Biking Distances	19
Department Activities	19
Linnaean Games	21
North Carolina Entomological Society	22
Tuition & Fees.....	22
Residency	23
International Students.....	24
Payroll & Stipends	26

Personal Reimbursements	26
Travel Authorizations & Reimbursement	27
Example Travel Reimbursement Form	29
Funding Sources.....	30
Fellowships.....	30
Travel Grants.....	32
Entomology Graduate Student Association.....	32
Committees.....	33
Outreach	33
Graduate Courses	36
Entomology Courses	36
Special Topics in Entomology	37
Non-Entomology Courses	39
Master’s Research Credit Hours	40
Ph.D. Research Credit Hours	41
Entomology Degree Requirements	42
Master’s Course Requirements	42
Master’s Student Timeline	42
Master’s Plan of Work Form.....	44
Ph.D. Course Requirements	46
Ph.D. Student Timeline	46
Ph.D. Plan of Work Form	48
Preliminaries: Written & Oral Exam Guidelines	51
Ph.D. Graduate School Representative	51
Committee Meeting Guidelines for All Students.....	52
Scheduling the Final Presentation & Defense.....	52
Changing from a Master’s to a Ph.D. Program.....	53
Continuing from a Master’s to a Ph.D. Program at NCSU	54

Welcome from the Department Head

Entomology at North Carolina State University: Advancing Insect Science to Make the World a Better Place

Welcome to the Department of Entomology at NC State. You have joined one of the top-ranked and largest entomology graduate programs in the US, and we are thrilled to have you join our community of scholars. This Handbook, prepared by your fellow students, provides a summary of administrative procedures and requirements, available resources, and answers questions that you may have as you embark on your graduate career at NC State. Please read the material carefully and keep it handy throughout your tenure as a student. Also, keep in mind that adherence to deadlines for administrative filings (e.g. for obtaining in-state residency, scheduling preliminary and final oral exams) is your responsibility as a student, and the consequences of failure to do so are yours to bear. In this regard, new students who are US citizens but are not officially recognized as NC residents should pay particular attention to the process of obtaining in-state residency, which requires specific procedures to be followed during your first year as a student. Failure to do so can result in denial of in-state residency, with the consequence that you may be required to pay out-of-state tuition during subsequent years.

As a Department of Entomology, our mission is to develop, communicate, and apply knowledge about insects and their relationship with their environment and with humans to enhance the human condition, address problems, and advance science. Because entomology has as its unifying element a focus on insects and related arthropods, we draw heavily on advances in the fundamental scientific disciplines, and contribute significantly to them as we strive to better understand insects and their role in the biosphere and to develop knowledge-based solutions to insect-related problems facing human-kind and the environment. Our graduate program is vital to our ability to fulfill our mission, as are our research, extension and undergraduate teaching programs.

Our faculty, staff and graduate students number well over 100, and represent diverse interests, expertise and backgrounds. They are your colleagues, so interact with them and get to know them. You will find them interested in your projects and willing to share their expertise and lend assistance. Faculty programs in the Department of Entomology provide broad, contemporary capabilities in research, teaching and extension. These programs span the continuum of fundamental, integrative and adaptive research, information dissemination, and implementation of solutions to problems. Moreover, our programs are characterized by extensive collaborations among faculty and students within Entomology and with other programs at NCSU and at other institutions nationally and internationally. Sustaining an environment that encourages and supports such collaborations is a core value of the Department. The opportunity to engage in collaborative projects combined with the scientific diversity and strength of our faculty and their ability to attract extramural funding from government granting agencies, foundations, industry, and commodity associations enhances the array of opportunities and experiences available to our students. These opportunities and

the experiences they lead to are important contributors to the success of our graduates in finding employment in academia, government and the private sector.

Your opportunities as a graduate student at NC State are many. I encourage you to take full advantage of them and to welcome the numerous associated challenges you will face as you grow scientifically, professionally and personally. My door is always open and I welcome the opportunity to visit and interact with you throughout your tenure at NC State.

George G. Kennedy
Department Head

Orientation to Graduate Student Life

Faculty Responsibilities Toward Graduate Students

Adapted from S.H. Kerr, University of Florida

A Graduate Student Has a Right To Expect and Advisors Should Offer:

- 1) A high level of professional knowledge and ability.
- 2) Knowledgeable and helpful academic advisement, including:
 - a) What courses are necessary to take and most useful in preparing for the student's goals.
 - b) Information about and introductions to faculty available to help in various areas.
 - c) Advice and help on problems affecting academic performance.
 - d) Information on where and how to find advisement on bureaucratic and red tape details.
- 3) Skilled supervision of thesis and dissertation research. With the student always providing the initiative, advisors must:
 - a) Help students understand and follow the scientific approach, organize their thoughts, and guide them in developing a research plan.
 - b) Monitor the progress of the research, review the data, and counsel on the advisability of pursuing the options of further research.
 - c) Help provide the facilities, materials, and financial resources for the research.
 - d) Advise on written and oral communication of results; constructively criticize write-ups.
- 4) Security for the student's research. Faculty should not "pirate" or take credit for student research. However, students and faculty frequently publish under joint authorship.
- 5) Willingness to cooperate with students who feel a need to change their research direction- and their supervisory committee.

This proposition is two-sided. The faculty should provide the above. You will get out of your graduate experience only what you put into it. However, you are in your prime years of intellectual and physical vigor, so invest heavily now in your educational opportunities.

Graduate students sometimes complain that they can see some other students doing relatively little in graduate programs compared to their own efforts. Concentrate on getting all you can out of your own graduate experience; worry about your own efforts, not those of other students. Do you really think the dilatory and lackadaisical types will get first rate positions or perhaps any decent professional position at all?

A Students View: Aids Toward Getting a Graduate Degree- Psychological And Practical Tools

From an article by an unnamed graduate student in Biology at Berkeley

- 1) In the first place, premises:
 - a) Always expect and demand the best. Hold a department to its claims.
 - b) Don't rely on the department or your major professor for all that you needs. Don't hesitate to go outside the university for advice and for funds.
 - c) Seek out and collaborate with fellow graduate students. You have a lot in common with them and will learn as much from them as from professors.
 - d) Seek out and collaborate with people who are really excited about their work or who are successful or both. Learn from them.
 - e) Understand that you are in charge of your program; that you create the degree you get. Your major professor can advise you and protect you to an extent from bureaucratic and financial demons, but they cannot and should not tell you what to do.
 - f) In sum, accept that you are on your own. Remember, most professors are quite busy. Go to them for information and help; don't wait for them to come to you.

- 2) Psychological problems: the greatest difficulty.
 - a) Expect them. Everyone is somewhat insecure. Remember that you are undergoing one of the most important transitions in your life; you are changing from someone who reads to someone who is read. Few things are more exciting than that.
 - b) Expect and demand to be treated like a colleague. Act like one and you will be treated like one (neither subservient nor a whining complainer be).
 - c) Value judgments are continually being made about you. You are made to wonder if you are good enough as you go through the initiation rites of obtaining a graduate degree. A practical suggestion is to jump all the explicit hurdles early in the game. Get your course requirements, language exams (if any), and, for the Ph.D., the qualifying exam, out of the way as soon as possible. Not only do you clear the decks for your research, but by successfully jumping the hurdles you convince yourself that maybe you are good enough after all.
 - d) With respect to your research, recognize that you cannot produce a "perfect" dissertation. Settle down to make it as good as you can within the limits of time,

money, encouragement, and thought at your disposal. However, do not let these limitations become excuses for doing anything less than what you are capable of.

- 3) On planning
 - a) Be flexible. Drop a plan if it isn't producing results or if something better comes along.
 - b) When you begin graduate school, read and think widely and exhaustively. Assume what you read is so much bull until the author convinces you it isn't. Be patient. This is where you decide what constitutes an important problem. It is critical that you arrive at the idea independently. Remember, what you do for your Ph.D. will probably shape most of your future work. It's important that your entry into scientific research be well thought out.
- 4) Write a proposal and get it criticized.
 - a) It summarizes your reading and thinking, thus making sure you get something out of it.
 - b) It makes it possible for someone else to help you. What you have in mind is complex and subtle. It has to be put down in a well organized, clearly and concisely written document that can be circulated to 3-5 good minds for criticism.
 - c) Ask professors for copies of their successful grant proposals. Find out why these grants were successful.
 - d) You need the practice writing. We all do.
- 5) The supervisory committee.
 - a) Be very careful about choosing those who will advise you. Most important is their interest in your interests.
 - b) They are there to help you. You can encourage this by practicing reciprocal altruism. If they ask for some help, give it.
 - c) Keep them informed of what you're doing- aware of your presence. But don't bother them. Be an interesting presence, not a pest. At least once a year submit a progress report, on your own. Keep it concise and informative. They'll appreciate it and be impressed.
 - d) Anticipate personality problems. If you don't get along with your major professor or your committee, get them changed. The longer such relationships exist, the more of a problem they become.
- 6) Instruction
 - a) What you need most right now is to learn how to think. And to think, you need large blocks of time, and as much one-on-one interaction as you can get with someone who thinks more clearly than you. Courses can get in the way of this. If you're well motivated, reading is much more efficient and broadening than lectures.
 - b) You must take the required courses, but get them out of the way quickly. There are certain specific skills you must pick up too, like electron microscopy, working with computers, etc.

- c) Take directed reading from outstanding professors or graduate students. Read into the historical development of your field.
 - d) Learn to keep track of the literature in an organized fashion that allows easy access.
 - e) Read the standard journals, but read the non-standard ones as well.
- 7) The publishing game.
- a) Try to get into the game. Get started by co-authoring something with someone who is experienced. Even go to your major professor and offer to do the dirty work if they'll help write it up.
 - b) Don't be embarrassed about writing one or more trivial papers. There are ample precedents. After gaining the benefits of the experience you can obscure or ignore the trivial stuff in later vitae.
- 8) Appearances to the contrary, graduate students need not be oppressed. You actually have as much freedom as you will ever have. Don't be cynical.

North Carolina State University

Transportation

Wolfline

The NCSU Wolfline bus service is free to everyone. You are not required to show any ID upon entering a Wolfline bus. There are several bus routes that serve the campus all the way from Oberlin Road at Hillsborough to the Carter Finley Stadium for the free park & ride service (see the "[Parking](#)" section). Unlike regular bus routes, the Wolfline is mainly unidirectional in a circular pattern, so be sure to plan out your trip carefully. A real-time map of bus locations and bus routes can be found at <http://ncsu.transloc.com/>. More information about the Wolfline in general can be found at <http://www2.acs.ncsu.edu/trans/transportation/wolfline/>.

Triangle, Cat and R-Line Buses

As a student at NCSU you are able to ride all Triangle Transit, CAT and R-Line buses for free. To get your free GoPass visit the NCSU transportation office (see the "[Department Locations Map](#)") and show them your student ID. Just swipe your GoPass on any bus to get free access.

The Triangle Transit buses offer a regional service and can take you to Durham, Chapel Hill, Research Triangle Park (RTP), and to the Raleigh-Durham Airport (RDU). Just catch a bus on Hillsborough Street or Western Boulevard. The CAT line can take you all around Raleigh including Rex Hospital and the Crabtree mall. The R-Line is a downtown circulator. Hybrid-electric buses will take you around downtown, to restaurants, shops, bars and other entertainment. Plus, buses run every 10-15 minutes so you won't have to wait long! Visit <http://www.gotriangle.org/> for more information and to plan your trip.

Bus services aren't the only way to get around town. There are carpool services, bike trails and more information at <http://www2.acs.ncsu.edu/trans/transportation/wolftrails/index.html>.

Motor pool

If you do not have access to a lab vehicle or a personal vehicle for research purposes you may rent a state vehicle from NCSU Fleet Services (AKA Motor Pool). If possible, using a personal vehicle may be a better option depending on the situation since you can get reimbursed by mileage, whereas Motor Pool will charge a standard rental fee (see the "[Travel Authorization & Reimbursement](#)" section for info on personal vehicle use).

Rental fees are based on a minimum of sixty miles per day, or for actual mileage (whichever is greater). Students who are employed by the University and receive a salary or a payroll check may drive vehicles while performing duties within the scope of the job for which they are being paid. Students, such as those on scholarship or fellowship, who are not employed by the University, are not allowed to drive state vehicles.

To reserve a state vehicle, current rental rates, and information on services not covered here visit <http://www.ncsu.edu/facilities/fac-ops/mp/index.php>.

Parking

Parking Permits

If you're lucky enough to be based at Dearstyne, the Research Annex, or Method Road Labs- you can skip this section. At NCSU each parking lot has its own pass at its own rate (\$99-\$306/ year). For a parking map, and lot rates go to <http://www2.acs.ncsu.edu/trans/parking/index.html>. You can also view several lots near department buildings on the "Department Locations Map". As graduate students we are still only allowed to park in student lots, but we don't have to meet any credit requirements as listed on the parking website. Also, graduate student permit sales/renewals opens earlier than undergraduate renewal (dates are listed on the parking website).

If you wish to purchase a pass for a particular lot you can do so through MyPack portal by going to the "For Faculty & Staff" tab, then to "Payroll & Compensation" and from there click on "Parking Permit Request". After you enter your student ID, you will be able to select which lot you would like a permit for, and whether you would like the parking fees to be deducted monthly from your paycheck for the same price (that's right, graduate students don't have to pay in full).

Parking permits are good for 1 year, and require renewal by the first day of fall classes, but renewal typically opens at the beginning of July. Booking your permit early does not cost any more, and it ensures that there are enough permits available for purchase. If you have any questions at all about parking permits we recommend you contact David Gregory at (919) 515-1601, or david_gregory@ncsu.edu.

Free Parking

Those who work at Dearstyne, the Research Annex, and Method Road Labs have free parking. For everyone else, free parking is available at some locations if you're willing to walk a bit. If you're going to Gardner during normal business hours, your options are limited. There isn't open parking on campus. You will probably want to park on a side-street perpendicular to Hillsborough Street. Almost all the spaces there are 2-hour only or no parking 8:30am-10:30am, and yes, they do ticket! The one exception is about a block along Gardner St. where there are no parking restrictions, but because it's the best place to park, it often fills up early.

For students who are at Grinnells Laboratory the closest free parking option is at our department shop at 1403 Varsity Road (see the "[Department Locations Map](#)"). From the shop it's about a 10 minute walk to Grinnells.

There are also three park & ride lots operated through the university. Parking is free and a Wolfline Bus shuttles students to campus. Overnight parking is not allowed, and you park at your own risk. Check Wolfline timetables for specific bus departure times, and lot locations on the NCSU transportation website.

Student Health Center

The student health center is located off Cates avenue (see the "[Department Locations Map](#)"). All students have access to a full service health center, and if you didn't waive your student insurance it's already covered! Make an appointment by calling (919) 515-7105, or filling out the online form at https://healthweb.ncsu.edu/login_directory.aspx for general medical appointments. They are usually able to see you within the day depending on the severity of your condition. The health center offers counseling services, a full pharmacy, immunizations, labs and x-rays, physical therapy, and women's health services.

Unfortunately during the summer you must be enrolled in a class and pay student fees in order to utilize the student health center. See the website for more information at http://www.ncsu.edu/student_health/aboutus/index.html.

Carmichael Gym

Students have free access to Carmichael Gym, where they can use the gym facilities, rent equipment, or take classes. Students can choose to enroll in an undergraduate PE class just for fun. One of the many programs offered by the gym is the faculty lunchtime group fitness classes. They run from 12:10 to 1:00 pm, with a different focus (Step and Sculpt, Raise the Bar, Zumba, etc.) each day Monday through Friday. To find out what is offered this semester, go to <http://studentaffairs.ncsu.edu/recreation/> and click on the link for group fitness classes.

Faculty gym classes are offered on a sign-in basis, so you do not have to enroll or have perfect attendance. If you don't get the fitness urge until the end of the semester, don't worry- you're welcome to come!

Unfortunately, for the purposes of gym entry you're considered a student. This means that during the summer, you won't be allowed into the gym unless you are currently enrolled in classes or you pay a fee.

Printing & Binding Resources

Department Poster Printers

The Department maintains 2 large format printers; one at Grinnells Laboratory, the other in Gardner Hall. The printers are available to everyone in the department for preparing posters for meetings and other presentations. The department's policy on operation of the printers is restricted to a group of approved individuals. This reduces the likelihood of unintended damage or unreported problems. The following designated operators will work with you to print your poster: Dan Mott (2309 Gardner Hall, 515-8877), Rick Santangelo (3109 Gardner Hall, 515-1820), Steve Denning (1108 Grinnells Lab, 515-1663), and John Strider (B1104 Grinnells Lab, 515-1665). Dan is the designated primary contact for printing. See detailed poster printing guidelines on our website:

<http://www.cals.ncsu.edu/entomology/poster-printing>.

Posters can be printed to a maximum of 56" length in either 36" or 42" widths. We currently have 42" wide paper loaded on the printer. In order to cover the cost of printer maintenance and supplies, there is a user fee of \$1.00/sq. ft. of printed poster. This translates to \$3.50 per linear foot of 42" wide paper. Users from outside the Entomology department will be charged \$5.00 per linear foot.

The printer is available Monday-Friday 8am – 5pm unless you make special arrangements with one of the designated operators. **Reservations for printing must be made 48 hours in advance.** During peak periods of use, we encourage you to make your reservations at least 72 hours in advance. Please allow two hours for completion of the poster. At this point, only PowerPoint presentations will be accepted for printing. Please bring the following items with you for your appointment:

- Your poster file stored on a USB "thumb drive" or a CD (please test the CD's readability before you bring it over to the facility).
- The FAS account number to which you want the printing costs charged. Billing will be done monthly. NOTE: Some 5-accounts may not allow charges for producing graphics. Please make sure that the account you plan to use can be billed for such charges.
- We recommend you bring rubber bands and a cardboard or plastic storage/ mailing tube or plastic trash bag to protect your finished poster when you take it from the building.

Other Printing Services

CALS large format printing appointments can be made through the CALS Academic and Administrative technology website at <http://harvest.cals.ncsu.edu/caat/>. The printer is located in 1400 Williams Hall. Students are not charged for this service, but you are only allowed two draft prints and one final print.

Anyone who needs specialty printing or lamination beyond the capabilities of these places may look into Kinko's (on Hillsborough Street), Wolf Xpress (the NC State bookstore's print shop), or the Butler Communications Building. Wolf Xpress typically has the most reasonable prices with the widest array of printing services offered, see their

website at <http://www7.acs.ncsu.edu/ncsubookstores/wolfxpress/index.html>. Don't be fooled by the construction, Wolf Xpress is open directly next to the Atrium food court, which is directly west of D.H. Hill Library.

Library Resources

NCSU has an excellent library network. There are currently 3 campus libraries open to all students at NCSU. The main library, D.H. Hill Library, is where you will find yourself most of the time, and is the library with the largest collection. The Natural Resources Library is located at Jordan Hall and houses literature focused mainly on natural resources. The Veterinary School Library houses literature that focuses on veterinary medicine. A new library, the James B. Hunt Library at centennial campus is almost finished with construction and is expected to open fall 2012 and will house materials that cater to the many science departments on centennial campus. The library website provides excellent information and online search tools: <http://www.lib.ncsu.edu/>.

Graduate Student Workshops

Our D.H. Hill Library hosts an extensive list of graduate student workshops designed to make your time at NCSU as a student easier and more impactful. These free workshops are offered year round, and registration is required. See <http://www.lib.ncsu.edu/gradstudents/> to find out more about what our librarians do just for graduate students. Here is a list of graduate student workshops offered through our library:

- 1) Literature Reviews
- 2) Literature Searching
- 3) Citation Management using RefWorks/Zotero
- 4) Finding Information While You Sleep
- 5) Managing Your Research Using The Libraries

Beyond workshops for graduate students, the library hosts an extensive series of workshops for anyone on just about anything you might have a question about. See the full list at <http://go.ncsu.edu/workshops>.

Items for check-out

As graduate students we are not charged for item check-out, and we're allowed unlimited items out at a time. Each book loan is 90 days, and we're allowed 4 renewals. Make sure to bring you campus ID card when checking out materials. Beyond books, the library has many electronic and specialty items free for check out. Laptops, netbooks, digital camcorders, cameras, iPads, iPods, GPS units, eBook readers, OCR pen scanners, graphics tablets, portable DVD players, presentation remotes, scanners, voice recorders, projectors, calculators, headphones, and USB flash drives are the technology materials available. Many of the more expensive items are not allowed outside of the library, or borrowers are required to enter the online waitlist to have specialty items for more than a couple hours. For example, it is

possible to check out an iPad immediately from the circulation desk, but you must return it in 4 hours. Alternatively, by signing up on the online waitlist for an iPad, checkout time is 7 days. A list of technology materials available for lending can be found at <http://www.lib.ncsu.edu/techlending/>.

Study rooms

Graduate students at NC State have exclusive access to two graduate student study rooms: Room 3400 on Floor 3 of the south bookstacks tower, D. H. Hill Library; and Room 4400 on Floor 4 of the south bookstacks tower, D. H. Hill Library. NC State graduate students may show an NC State ID to check out a key for a four-hour period. Check out keys at the main circulation desk. Please note that any materials left in the graduate student study will be re-shelved periodically by library staff.

Tripsaver

Have library resources delivered to you online or to the library location most convenient to you by using Tripsaver. This service allows you to request materials that are not available at the NCSU Libraries. To use Tripsaver, login to My Account from the NCSU Libraries home page, and select the Tripsaver tab. You will be contacted via email when they are ready for download. Books are delivered to the NCSU library you indicate as the one most convenient for you. Articles are posted on our web server.

Citation managers

NCSU subscribes to a citation management system called RefWorks. Because NCSU is a subscriber, it is free to all NCSU students. With RefWorks you can import citations from any website, and organize them in RefWorks with folders. The RefWorks Write-N-Cite tool will insert citations while you write documents in word, and add a literature cited section for you at the end of your document. There are several journal formats to choose from for your citations and literature cited sections to match. Much more information about RefWorks and other free citation management tools are available at <http://www.lib.ncsu.edu/guides/refworks/>. It is highly recommended graduate students attend the library's graduate student workshop "Citation Management using RefWorks/Zotero" (see the "[Graduate Student Workshops](#)" section) to learn how to utilize citation managers.

Literature Searching

Sooner, rather than later, you'll need to find journal articles on a specific topic. Don't completely eliminate Google, because it might turn up some unexpected results, but it probably shouldn't be your first resource. If you just Google things, many articles will be sold for a fee- and, as a student, you shouldn't have to pay.

Once you are an ESA member, you'll be able to access journals published by the ESA for free. That's handy, because NC State doesn't offer 100% of them online, but you can't really search via the ESA website, you basically have to know exactly which article you're looking for.

Your NC State login will allow you to search a vast collection of journal articles online. Many of them are available in online versions; some will require a quick trip to the library. The library website is www.lib.ncsu.edu. You can search effectively just by putting in keywords in the search bar on the homepage, but you might find that your results are better organized if you use the ISI Web of Knowledge search engine. You can type "ISI Web of Knowledge" into the search bar and go right to it; or you can go to "Find" then "Databases" and "Science Citations Index Expanded" under the "S" tab.

If you are interested in an article that the library doesn't have, utilize the Tripsaver system (See the "[Tripsaver](#)" section). Our librarians will use every resource they have available to find you your article. They've even found a farmers' journal from 1828!

Professional Development Seminars

The professional development seminars are put on by the Preparing Future Leaders (PFL) initiative which is intended to establish a foundation for professional development for graduate students and post-docs (see the website at <http://www.ncsu.edu/grad/preparing-future-leaders/index.php>). PFL provides a series of seminars year round that focus on professionally oriented training designed for the real world. To sign up for these free seminars log in at <http://go.ncsu.edu/pflevnts>. Here is a list of just a few seminars that have been offered in the past:

Personal Finance for Life in the Real World

Personal finance for life in the real world is a seminar designed by an accountant that discusses the goals and common financial issues with graduate students after their degree is completed. The seminar covers topics such as taxes, life insurance, credit scores, student loans, and many more issues most graduate students will encounter at some point.

Practical Steps to Completing your Thesis or Dissertation

You may have heard that there are two types of dissertations: a "good" dissertation and a "done" dissertation. If you want your thesis or dissertation to meet both of these descriptions, then this workshop is for you.

Speaking about Science

Speaking about science is an interactive seminar that addresses the core issues of good scientific presentations. The course focuses on major structural elements to ensure that any talk is clear, concise, and engaging. Topics include: identifying the focus and theme, how to create effective visual aids, and how to begin and end a talk.

Interview Skills

Interview Skills is designed to help scientists make a strong impression during a job interview. This seminar will focus on the most common questions that students are likely to be asked and how to formulate the best responses.

Teaching Certificate Programs

Certificate of Accomplishment in Teaching (CoAT)

CoAT is a teaching program offered through the graduate school which is open to all graduate students. CoAT offers students workshops and other resources to provide training in teaching. Workshops range in topics such as: classroom management, lesson planning, effective questioning, and learning styles.

Workshops themselves are open to anyone, however, to receive a Certificate there are several additional requirements. Two semesters of teaching and six CoAT approved workshops must be attended in order to receive a transcript notation of CoAT completion. Details can be found at <http://www.ncsu.edu/grad/preparing-future-leaders/teaching-programs/coat/index.php>, or contact the Director of Graduate Programs, Dr. Barbi Honeycutt at barbi_honeycutt@ncsu.edu. A concentration in the Life Sciences is available, which specializes in instruction of science labs and classes. For more information contact Dr. Miriam Ferzli at Miriam_Ferzli@ncsu.edu.

Preparing the Professoriate

Preparing the Professoriate (PTP) is a program that fosters a mentoring relationship between a fellow (student) and a mentor of his or her choosing. The fellow is the instructor-of-record for a course and lasts one academic year. Typically, the fellow will observe their mentor's class for the fall semester and teach in the spring semester (there are cases where the fellow may teach in the fall). In addition to teaching the course, fellows attend monthly teaching seminars held by the PTP program. At the end of this experience, fellows prepare a teaching portfolio.

The application process is competitive and requires the applicant to select their mentor, develop a teaching philosophy, and propose the course they want to teach. Applications are submitted in the spring semester (typically March) for the following academic year. Up to 20 fellows are selected to participate in the program each year.

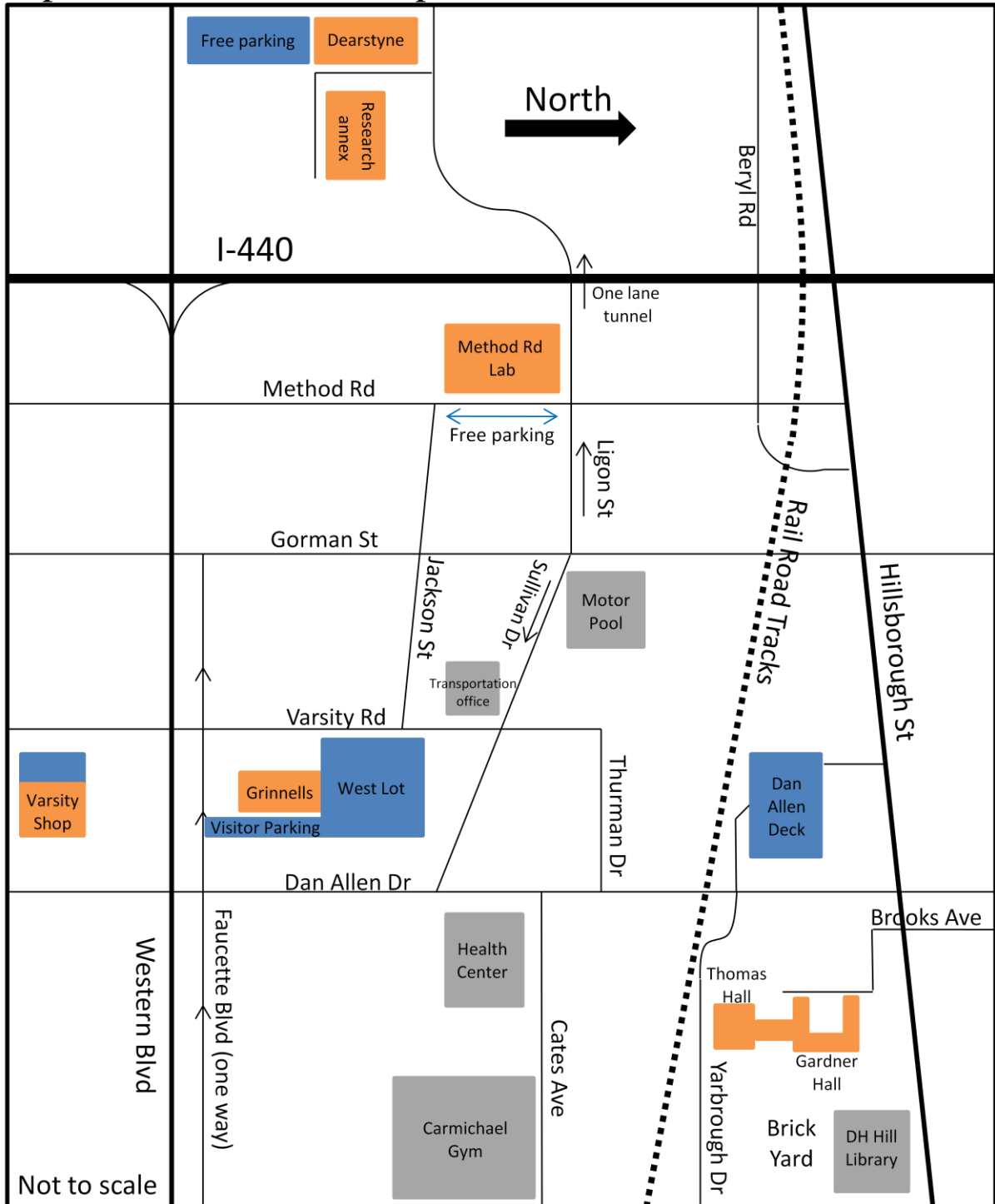
All applicants must be Ph.D. candidates, preferably towards the end of their degree program. In addition to a wonderful experience, PTP fellows may get a \$1000 stipend (dependent of funding) and a notation on their transcript. More PTP information can be found here: <http://www.ncsu.edu/grad/preparing-future-leaders/teaching-programs/ptp/index.php>



Illustration by Chen Zha, an incoming (fall 2011) Master's student from China who will be working with Dr. Allen Cohen

Department of Entomology

Department Locations Map



Faculty Locations

Dearstyne

Roe, R. Michael
Charles, Apperson

Gardner Hall

Bachelor, Jack S.
Brandenburg, Rick
Cardoza, Yasmin J.
Deans, Andy R.
Frank, Steven D.
Kennedy, George G.
Meyer, John R.
Schal, Coby
Silverman, Jules
Sorenson, Clyde
Vargo, Ed L.
Waldvogel, Michael G.
Wiegmann, Brian
Stephan, David
Toth, Stephen J.
Harper, James

Grinnells

Hain, Fred
Orr, David
Watson, D. Wes

Method Road Lab

Cohen, Allen C.

Research Annex

Abney, Mark
Burrack, Hannah J. (Moving to Method)
Kennedy, George

Thomas Hall

Lorenzen, Marcé
Tarpy, David R.
Gould, Fred

Faculty not pictured on the map:

The Vernon James Research & Extension Center Plymouth, NC
Reisig, Dominic

Mountain Horticulture Research and Extension Station Mills River, NC
Walgenbach, Jim

Walking Distances

Gardner to Annex/Dearstyne: 25-35 min
Gardner to Grinnells: 12-15 min
Gardner to Method lab: 20-25 min
Annex/Dearstyne to Method lab: 5-10 min
Annex/Dearstyne to Grinnells: 25-30 min
Grinnells to Method lab: 20-25 min

Biking Distances

Gardner to Annex/Dearstyne: 8-12 min

Gardner to Grinnells: 5 min

Gardner to Method lab: 5-10 min

Annex/Dearstyne to Method lab: 2 min

Annex/Dearstyne to Grinnells: 5-10 min

Grinnells to Method lab: 5 min

Department Activities

Weekly Seminar

Every Monday during the school year, the entomology department hosts a seminar with either a guest speaker or a graduate student's final presentation prior to their defense (see the "[Scheduling the Final Presentation and Defense](#)" section). The seminars are held in 3505 Thomas Hall from 11:15 am- 12:15 pm. Cookies and coffee are provided at 11:00 am. Seminars are optional, but students are highly encouraged to attend when possible. See <http://www.cals.ncsu.edu/entomology/about/seminar-schedule> for the seminar schedule.

Fall Welcome Back BBQ

The EGSA hosts a welcome back BBQ at the beginning of each fall semester to introduce new students to the current student body. The BBQ usually takes place at the Lake Wheeler Turfgrass Field Lab. Look for emails at the beginning of the semester and come join us for hot dogs, hamburgers, and drinks!

Oktoberfest

The entomology department welcomes new students to campus in the form of an Oktoberfest celebration with beer, brats, hot dogs, veggie burgers, and soda. The event is typically held at the University Club Pavilion near the vet school off of Hillsborough Street. Look for emails from Fred Hain at the beginning of the school year.

BugFest

BugFest is the largest festival of its kind, attracting an estimated 30,000 people. It is hosted by the NC Museum of Natural Sciences in downtown Raleigh and takes place in the middle of September (Sept. 17th, 2011). It has games, food, crafts, entertainment, and educational talks and displays all relating to our favorite topic: insects! The EGSA hosts a booth at BugFest every year. We give the public a chance to see and touch some of our exotic insects, and we try to raise funds. Fundraisers include homemade lip balm made from NC State beeswax, t-shirts, insect photo-ops, and children's activity books. Everyone who can is asked to volunteer for at least some part of the day. Then be sure and walk around to see what everyone else has to offer! For volunteering, you'll get a free t-shirt.

Chili Cook-off

Every fall when the weather begins to grow cooler, the Entomology Staff Association hosts their annual chili competition. Open to everyone in the department this event has demonstrated that there is no shortage of creative, skilled cooks in the department. Ranging from mild to meteoric, chili is a dish as diverse as the people who cook it and in true democratic fashion, everyone gets to vote for their favorite. In the end, there can be only one and prizes and bragging rights go to the top vote getter. If you have some cherished secret family recipe or a screwball mélange of crazy ingredients, this is the arena to try them out!

Holiday Party

Near the end of the fall semester, the department's annual holiday social is held at the Unitarian Universalist Fellowship of Raleigh's Fellowship Hall (3313 Wade Avenue). There is a social hour with light snacks and beverages to begin with, then a traditional holiday feast followed by a short program of entertainment provided by the EGSA. All members of the department are invited along with spouses and children at only the cost of a side dish. Look for email invitations in November.

Spring Welcome Activity

Like the Fall Welcome Back BBQ, the EGSA sponsors a spring activity to acquaint the new students with current students. Look for emails at the beginning of the spring semester.

Graduate Student Symposium

The students of entomology come together each year to host a Graduate Student Symposium. Typically in February, this symposium is comprised of 12 minute presentations for the entomology students to showcase their research at whatever stage they may be. Students are highly encouraged to present any research findings, or future research plans to give the whole department an idea of our academic variety. This is also an event many prospective students are invited to in order to expose them to the many different sciences within entomology.

Magic Wings Festival

The Magic Wings Festival is the Durham Museum of Life and Science's answer to BugFest. It takes place in late May. Historically, the department hasn't had a large presence there, but we're looking to change that in the future. This past year (2010), the department had 2 separate booths and those who attended had a great time.

Vince Parman Memorial Lecture Series

This lecture series was established in memory of Vince Parman, a graduate student who passed away in 2007 while in the final stages of completing his Ph.D. degree in Entomology at NC State. Vince had a B.S. and M.S. in Entomology from Purdue University. He spent 26 years in pest management research and development. At the time of his death, Vince was Senior Research Scientist in Field Research and Development with Bayer Environmental Sciences, where he provided development and technical support in the area of urban pest management. To pursue his life-long passion for entomology and to deliver ever stronger scientific support for the pest management industry, Vince entered the Ph.D. program in Entomology in 2001. The many important results he generated during his doctoral research will continue to

impact both the scientific and pest management communities for years to come. Bayer Environmental Sciences has generously sponsored this annual lecture series to honor Vince's memory and to inspire future generations of urban entomologists committed to scientifically sound urban pest management.

Department Linnaean Games Tournament

Before the ESA- Southeastern Branch meeting every year, the NCSU Linnaean team members each assemble their own team to compete in the Department Linnaean Game Tournament (see "[Linnaean Games](#)"). This tournament isn't just for the team members competing at the SEB meeting; anyone can make their own team of 4 to compete against students, faculty, staff, and post-docs. The prize is a coveted rotating-trophy and serious bragging rights for the rest of the year. Look for emails from the Linnaean team coach, Dr. Hannah Burrack.

Mike Duke Memorial Seminar

Entomology graduate students sponsor a special annual seminar, the Mike Duke Memorial Seminar, typically near the end of the spring semester. This seminar series was established in 1988 in honor of Michael E. Duke, a graduate student in entomology who died tragically shortly after he received his Master's degree from NCSU. This seminar series serves as a focal point with which we honor not only the contributions of graduate students to entomology but also as a reminder of the potential for excellence that exists within every individual. Each year the graduate students in the department invite a distinguished speaker who has made substantial achievements and represents the standards of excellence. As hosts of the speaker, students have the opportunity to interact with and learn from an outstanding scientist. This interaction allows students to gain insight into their own research and offers a model with which to base their own future careers in entomology. Students are invited to lunch with the speaker the day before the seminar. After the seminar all members of the department are invited to dinner usually at a faculty member's house to further interact with the speaker. A list of past speakers can be found at:

<http://www.cals.ncsu.edu/entomology/about/special-seminars>

Summerfest

To celebrate the beginning of the academic summer, the Faculty of the Department of Entomology sponsor an annual Summerfest. Typically held at the University Club Pavilion with volleyball, brats, hot dogs, vegetarian hamburgers, soft drinks, beer, and other food items served with your family and friends welcome to join. Look for emails from Fred Hain at the beginning of the summer.

Linnaean Games

Linnaean Games is an entomological quiz-bowl competition between teams of university students. The team is comprised of four competitors and an alternate, and competes each spring against teams from other universities in the Southeastern Branch of the Entomological Society of America. These other teams are from Auburn University, Clemson University, Louisiana State University, Mississippi State University, The University of Arkansas, The University of Florida, The University of Georgia, and The University of

Tennessee. Teams earn points by answering toss-up questions and then are given the opportunity to answer a bonus question if they get the toss-up right. Questions are on topics such as Apiculture, Behavior, Biological Control, Famous Entomologists and History, Morphology, Physiology, Systematics, Economic, Medical and Veterinary, and Urban Entomology. The top two teams from each branch go on to compete at the annual national ESA meeting that is held in the fall. If you decide to become a part of this event, you will join a long legacy of fun and achievement. NCSU has won the branch competition 12 of the 28 times it has been held to date (the most of any school in the branch), and has placed 1st or 2nd at the national competition multiple times. Our team coach, Dr. Hannah Burrack frequently advertises team practices. Everyone is welcome to join in on the practice sessions, the more the merrier- even if you're not on the team.

North Carolina Entomological Society

The North Carolina Entomological Society (NCES) was established in 1956 to promote entomological accomplishment and to cultivate a closer relationship among its members by encouraging:

- The preparation, presentation, and publication of papers;
- The association and free discussions among professional and amateur entomologists;
- The dissemination of entomological information to the general public.

Membership is open to all individuals interested in Entomology, whether professional or amateur (see <http://cipm.ncsu.edu/ent/ncentsoc/homepage.htm>). Annual membership costs only \$10 for students, and each fall the NCES hosts a banquet with a student poster competition. With affordable dues and the ability to win awards and even travel grants (see the "[Travel Grants](#)" section) there really is no reason to not join NCES.

Tuition & Fees

Most entomology graduate student's tuition is covered under the Graduate Student Support Program (GSSP). Student fees, however, are the personal responsibility of all students unless there's a second sponsor specifically for fees. Tuition rates and fees change frequently, the most up to date amounts can be found at <http://www.fis.ncsu.edu/cashier/tuition/>. Account payments are only accepted electronically via Mypack Portal, under the "For Students" tab, in "Cashier's Office", in "Account Summary". From there you can make a payment with an electronic check, or a credit card.

Students have the option of enrolling in a payment plan that divides each semester into 5 monthly payments. Fall semester payments begin the June prior to the fall semester and end with the last payment in October. Spring semester payments begin the November before the spring semester, and end in March. Payments are due the first of each month and can be automatically deducted. The payment plan system is operated by a third party called Tuition Management Systems (TMS). The cost for enrolling is \$40 each semester. You can enroll in TMS by going to www.afford.com.

Some research grants do not cover tuition for graduate students. In these special cases, sometimes a stipend increase can be arranged by the PI on the grant and the student is

left responsible for making tuition payments. There are also several general funding sources outlined in the “Funding Sources” section that students can apply for to help cover the cost of tuition.

Out-of-state tuition is paid by the department for students who receive assistantships and are not residents of North Carolina, providing they are making satisfactory progress. Funds to cover this cost are allocated to each department and the entomology department covers the cost as long as funds are sufficient to do so, but real dollars are spent. Therefore, when a student drops out of school during a semester after refunds are possible (usually about 1 week after classes start), the student not only loses the tuition for which he or she is responsible (the in-state portion) but is responsible also for paying back a pro-rated portion of the amount the department pays. Out-of-state students should be aware that they need to get started on their residency status AS SOON AS THEY ARRIVE, in order to be approved for in-state residency for tuition purposes the following year (see the “[Residency](#)” section).

Residency

U.S. Citizens that arrive at NCSU for a degree program must begin establishing residency immediately upon arrival (international students- see the “[International Student](#)” section). The NCSU tuition for residency purposes website covers your options much more exhaustively (<http://www.ncsu.edu/grad/tuition-residency/>). Here we assume that you are from out-of-state and need to establish residency to get the in-state tuition rate after your first 12 months of attending NCSU. The most basic things to accomplish upon arrival are:

1. Establish a NC address where you receive mail and are physically present for 12 months. You can move to another location as long as you remain in NC for the 12 month minimum requirement.
2. Get a NC driver’s license. For this you are going to need your Social Security card, something that proves your address is real (like a water bill addressed to you), possibly a birth certificate, proof of auto insurance (even if you don’t have a car), and you’ll have to bring and relinquish your out-of-state driver’s license. See <http://www.ncdot.org/dmv/driver/license/#documents> for a more comprehensive list of required documents.
3. Register to vote. This can be done conveniently at the DMV while you apply for your new NC driver’s license (you already will have all the documents you need if you’re going on the same trip). The only requirements here are that you’re a US citizen, you **will** have been a resident of NC for 30 days before an election, you are not registered nor will you vote in any other state. See the voter registration website for ways to register other than at the DMV <http://www.sboe.state.nc.us/items.aspx?id=1&s=1>.
4. If you have a car and if your name is the **only name on the title** you’re going to have to register the vehicle and get new NC plates. To do so you’ll need to bring the correct forms (many of which overlap with #2 above). To see specifically what you’ll need and where to find a Vehicle and License Plate office (different from where you get your license) go to <http://www.ncdot.org/dmv/vehicle/title/>.

The order in which you do the above tasks may be tricky. First thing in every scenario: change your insurance information to reflect that the vehicle is now in NC. Some insurance companies aren't licensed to insure vehicles in NC. In this case you will have to get an entire new policy with a company that is licensed for NC.

If you don't have a car, you can still get insurance from any insurance company that is specific to the driver and not a vehicle. From there you can get the driver's license, then with your new license you can register your vehicle. You could get your vehicle registered prior to getting the driver's license- in that case you would use your out-of-state ID.

Flash forward 12 months: you've done everything listed above, and maybe even more. If you started your program in the fall semester, then the very long, exhaustive, and personal residency application is open for you to start filling out on June 1st, and closes on the 10th day of classes in the fall semester. If your program started in the spring semester, your application window opens October 1st, and closes on the 10th day of classes of the spring semester. **Remember, you shouldn't fill out the form until 12 months after you began to complete the residency requirements.** That's why it's so important that you begin checking off those residency requirements upon arrival.

You can find a link to the application on the tuition & residency website listed above. Be prepared to spend a few hours to a few days on this form. There is an essay portion where you will explain why you're a North Carolina resident and why you plan on staying in NC. You may have to have your parents fill out a separate form certifying that you're financially independent of them. If so, your parents will have to notarize the form and mail it. Even more reasons why you shouldn't put-off this whole ordeal- just get it done! Even after all of this, your application for residency may be denied:

“Evidence of North Carolina domicile for tuition purposes includes actions that would normally be characteristic and expected of any permanent resident. A variety of evidence is considered when evaluating requests for instate tuition status; however, no single factor or combination of factors may be considered conclusive evidence of domicile.”

International Students

Even though international students don't need to worry about establishing NC residency, there are still a few tasks that should be completed upon arrival. A very helpful workshop is offered every year for new international students by the Office of International Services (OIS) typically near the end of August (you will get an email requesting that you register for the workshop). The workshop helps you through the following tasks:

1. Getting a social security card. For this you will need:
 - a. Your passport with your Visa
 - b. The I-20 form
 - c. The I-94 card
 - d. A contract letter proving your job status with a signature from the department head. Make sure it is an original - not a copy – that includes your job title, start date, work location, and salary.
 - e. And a social security application form

2. Getting auto insurance. Even if you don't have a car, you might be required to drive a state vehicle at some point. Insurance companies offer driver insurance which covers the driver and not a particular vehicle.
3. With your new insurance, you can now get a NC driver's license. It is much easier to use a NC driver's license for ID purposes than a passport. For this you are going to need your new social security card, something that proves your address is real (like a water bill addressed to you), possibly a birth certificate, and proof of the auto insurance you just purchased. See <http://www.ncdot.org/dmv/driver/license/#documents> for a more comprehensive list of required documents.

If you are an international student and you're planning your arrival, make sure to go to <http://www.ncsu.edu/ois/orientation/airportpickup.php>. The OIS will arrange airport pick-up and temporary housing for you. The deadline for requesting these services is July 20th, so make sure to do this ASAP. See the OIS webpage at <http://www.ncsu.edu/ois/> for any other activities offered for international students, and any other questions you may have.

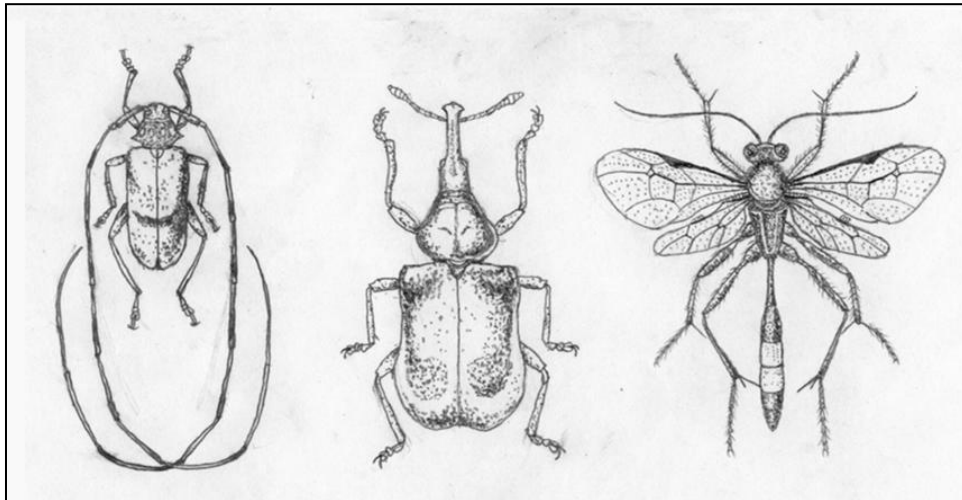


Illustration by Chen Zha

Payroll & Stipends

Paychecks are direct deposited into checking accounts every other Friday. To set up or change your direct deposit account sign into Mypack Portal, click the “For Faculty &

Pay Period Begin Date	Pay Period End Date	Pay Day
Jun 11 2011	Jun 24 2011	Jul 8 2011
Jun 25	Jul 8	Jul 22
Jul 9	Jul 22	Aug 5
Jul 23	Aug 5	Aug 19
Aug 6	Aug 19	Sep 2
Aug 20	Sep 2	Sep 16
Sep 3	Sep 16	Sep 30
Sep 17	Sep 30	Oct 14
Oct 1	Oct 14	Oct 28
Oct 15	Oct 28	Nov 11
Oct 29	Nov 11	Nov 23
Nov 12	Nov 25	Dec 9
Nov 26	Dec 9	Dec 23
Dec 10	Dec 23	Jan 6 2012
Dec 24	Jan 6 2012	Jan 20
Jan 7 2012	Jan 20	Feb 3
Jan 21	Feb 03	Feb 17
Feb 4	Feb 17	Mar 2
Feb 18	Mar 2	Mar 16
Mar 3	Mar 16	Mar 30
Mar 17	Mar 30	Apr 13
Mar 31	Apr 13	Apr 27
Apr 14	Apr 27	May 11
Apr 20	May 11	May 25
May 12	May 25	Jun 8
May 26	Jun 8	Jun 22

Staff” tab, select “Payroll and Compensation”, select “Direct Deposit Enroll/Update”. The “Payroll and Compensation” page is also where you can make changes to your state and federal allowances/ withholdings, view past and current paychecks, and where you can print W-2 forms. To the left is the Bi-weekly pay schedule for the 2011-2012 school year.

Personal Reimbursements

Any personal money spent on teaching or research supplies will be reimbursed to you if you:

1. Have an itemized receipt (i.e. not just the credit card receipt that shows only the total amount), and
2. Get approval from the PI or supervisor on the account and the department head (signature lines are on the form).

The personal expense reimbursement form can be downloaded in excel or PDF format at the “Administrative Links” page on our entomology website homepage. A separate form should be filled out for each account the reimbursement is coming from. Turn in the form along with any receipts (attached to a blank sheet of paper) to entomology bookkeeping at 2313 Gardner Hall.

A check or a direct deposit from NCSU will arrive 4-6 weeks after submitting the personal reimbursement form. You can enroll in direct deposit for reimbursements by logging into Mypack Portal, clicking on the “For Students” tab, selecting “Cashier’s Office”, then “Account Summary”, and “Direct Deposit for Refunds”. Enrollment in direct deposit for refunds is separate from your payroll direct deposit; otherwise you will receive all reimbursement checks in the mail.

Travel Authorizations & Reimbursement

Prior to purchasing any research-related travel expenses (i.e. registration fees, flights, hotel), you must submit an electronic travel authorization. It is best to research and itemize the expenses associated with your future travel before filing out this form. To access the travel authorization: login to Mypack Portal, click the “For Faculty & Staff” tab, select “Travel Authorizations” under the Employee Self Service section, and click “New Authorization”. From here you will enter travel dates, the account number the reimbursement will come from, as well as your predicted expenses for travel, hotel, food, meeting registration, etc.

Keep in mind your prediction does not have to exactly match the future reimbursement amount, it is meant to give the PI and department head an idea of the cost, and to make sure there is enough money in the account before you spend it. Within a few days you will receive an email notifying you of your travel authorization. Once you have completed the travel authorization, you can begin travel spending. Save any and all receipts (except food and gasoline, which is automatically calculated), and make sure that upon check-out hotel invoices have a zero balance with your name on the invoice.

It might not always be possible for students to pay for travel expenses up front. There is an alternative way to book a flight without paying out-of-pocket by booking through World Travel Services in Cary (919-645-2547). You can research flight numbers ahead of time or have them search a flight for you. This service will add \$29 per person, which should be calculated into the travel authorization.

- 1) The travel agency will ask for contact information, give them our bookkeeper’s (Michele Sabatelli and Delbis Perez) email addresses, which they should have on file.
- 2) Email Michele and Delbis which account number will pay for the flight, and that World Travel will be contacting them.
- 3) The bookkeepers will be contacted by the travel agency and give them a voucher to pay for the flight. If this is not done within 24 hours of you calling the travel agency, they will release the hold on your flight and it will not be booked (it is also possible that prices increased since you first called). Therefore, it is a good idea to follow up and get confirmation from the travel agency and/or bookkeepers.

Travel Reimbursements

Once you have returned from your trip, you have to fill out a travel reimbursement form found under the “Administrative Links” page on our website. The excel spreadsheet will calculate totals for you, but you will have to manually calculate your meal rates (rates are at the bottom of the form). Compensation for meals is only allowable if there is an overnight stay, or your work day was extended by 2-3 hours (depending on the particular meal). Meal Hours for departure/arrival days:

- To receive breakfast reimbursement you must depart prior to 6 am
- To receive lunch reimbursement you must depart prior to 12 pm, or return after 2 pm
- To receive dinner reimbursement you must depart prior to 5 pm, or return after 8pm

If you used a personal vehicle to travel, you need to enter in your mileage on the travel reimbursement form to get reimbursed for gasoline. The new 2011 rates for gasoline are:

- The lower rate, \$0.30 per mile is used when your trip is over 100 miles
- The higher rate, \$0.555 per mile can be claimed if your trip is less than 100 miles, or if you have a memo from Motor Pool that states no vehicle is available for the date, time and purpose you need.

Once the form is completed and signed, attach all receipts from the trip you are claiming a refund for (except meals and gasoline) and turn in to entomology bookkeeping at 2313 Gardner Hall. A check or direct deposit will arrive in 4-6 weeks (see the “[Personal Reimbursements](#)” section to set up a reimbursement direct deposit)

See the next page for an example of a completed travel reimbursement form.

Funding Sources

Fellowships

There are several fellowships available for graduate students. Not only does landing a fellowship provide financial stability:

1. Fellowships pay more than stipends, don't come with outside requirements in addition to your research, and are not dependent on department or PI support
2. It looks great on a CV
3. Forces you to clearly articulate your research goals at the beginning of your degree program
4. Provides an external review of your proposed research before you get started
5. Allows you to explore research questions beyond your PI's interest and/or funding

Here is a non-exhaustive list from the fall 2010 grant writing special topics course with Dr. Hannah Burrack (see the "[Special Topics](#)" section). If you are interested in applying for a fellowship it is highly recommended that you take this course. You will receive excellent peer and faculty review before submitting and you will develop your writing skills.

National Science Foundation Graduate Research Fellowship

Eligible applicants include US citizens pursuing a research based Master's or doctoral degree in science, technology, engineering, or mathematics (STEM). Applicants should be early career graduate students: A graduating senior; have completed a B.S./B.A. degree in a STEM field; or are in their 1st year or the first semester of their 2nd year in graduate school. The fellowship lasts 3 years. Applications require 3 separate essays. <http://www.nsfgrfp.org/>

National Institute of Food and Agriculture Fellowship Grants Program

Applicants must have advanced to candidacy (pre doc) or completed degree within 3 years (post doc). Also, projects must be multidisciplinary research, education, extension, and integrated projects. Funding is provided for 2 years. <http://www.csrees.usda.gov/fo/afrinifafellowshipsgrantprogram.cfm>

National Institutes of Health National Research Service Awards

This fellowship is appropriate for US citizens & legal residents pursuing a health related Ph.D. aligned with an NIH center's mission. The financial support may last up to 5 years. http://grants.nih.gov/training/F_files_nrsa.htm

Environmental Protection Agency Science to Achieve Results

Applicants should be US citizens & legal residents pursuing an MS or Ph.D. Funding lasts 2 years for a Master's student, and 3 for a Ph.D. Applying requires a personal statement and a work proposal. <http://www.epa.gov/ncer/fellow/>

Graduate Women in Science

For women in science pursuing a MS or Ph.D. Funding lasts for 1 year. Applications include a 4 page proposal and a \$25 fee.

<http://www.gwis.org/programs.html#guidelines>

Paul and Daisy Soros Fellowships for New Americans

This fellowship is for individuals under 30 years old who (1) are a resident aliens, i.e., hold a Green Card; or, (2) have been naturalized as a US citizen, or (3) are children of a US naturalized parent (other parent cannot be US born). Apply if you are a graduating undergraduate or in your first 2 years of graduate study (MS or Ph.D). The fellowship lasts 2 years and requires 2 essays. <http://www.pdsoros.org/forms/>

The Ford Foundation Predoctoral, Dissertation, and Postdoctoral Fellowships

For US citizens & legal residents pursuing a Ph.D. Diversity criteria is viewed as a positive factor. Predoctoral students receive 3 years of funding, while postdoctoral and dissertation students receive 1 year of funding. The application requires 3 essays.

http://sites.nationalacademies.org/PGA/FordFellowships/PGA_048203

American Association of University Women Dissertation Fellowship

Applicants should be women US citizens & legal residents pursuing a Ph.D. who have advanced to candidacy. There are also international fellowships available. Funding is provided for 1 year, and the application requires a budget and \$40 fee.

http://www.aauw.org/learn/fellowships_grants/american.cfm

Department of Defense National Defense Science & Engineering Graduate Fellowship

Research must be of interest to one of the branches of the military (i.e. vector biology/control). This fellowship is for early career graduate students: A graduating senior; have completed a B.S./B.A. degree in a STEM field; or are in their 1st year or the first semester of their 2nd year in graduate school. Fellowship funding lasts 3 years. <http://ndseg.asee.org/>

Sigma Xi Grants in Aid of Research Program

The program awards grants of up to \$1,000 to students from all areas of the sciences and engineering. Students from any country may apply. While membership in Sigma Xi is not a requirement, approximately 75% of funds are restricted for use by dues paying student members of Sigma Xi or students whose project advisor is a dues paying member of Sigma Xi. <http://www.sigmaxi.org/programs/giar/index.shtml>

Travel Grants

The Department of Entomology

Our department can partially fund students to attend conferences (MS students may be funded once and Ph.D. students twice). You must present a poster or oral presentation to be eligible for department funding. Members of the Linnaean Games team will get department support (if funding is available). Linnaean team funding is separate from department funding. To receive departmental grants, you must notify Michele Sabatelli (mmsabate@ncsu.edu) of your trip in advance.

University Graduate Student Association

The UGSA will provide up to \$250 funding once during your degree program. To get funding, you must submit a travel application at least 2 weeks prior to your trip (http://ugsa.ncsu.edu/?page_id=55). Next, you e-mail the form to the Travel and Thesis Fund Administrator at ugsa_tta@ncsu.edu. If approved, you will be awarded up to \$250 in travel reimbursement. After you return from the conference, you turn in the UGSA Travel Reimbursement Voucher and attach materials showing your expenses and that you attended and contributed to the conference. The reimbursement will occur via an interdepartmental transfer (IDT). You must let the bookkeepers know, as they will be handling the IDT and your reimbursement.

North Carolina Entomological Society

If you are a member of North Carolina Entomological Society (NCES), you may submit an application for a Travel Award. You must be a member for at least a year and students can request the amount they need, the maximum is \$300-\$500. Information can be found here: <http://cipm.ncsu.edu/ent/ncentsoc/>

Entomology Graduate Student Association

The EGSA may also award the Excellence in Extension and Outreach Award to attend the ESA annual meeting. Award is dependent on funds available. Entomology students will receive an email when the award is open for application.

Entomology Graduate Student Association

Every graduate student in our department is automatically a voting member of the EGSA, although anyone with an interest in entomology may join. Our goal in EGSA is to provide members an opportunity to organize seminars, meetings, social events, outreaches, field trips and other functions. Our meetings take place the second Monday of every month at 12:30 pm immediately following the department seminar. We meet in the conference room on the first floor of Gardner Hall (room 2321). Upcoming meeting times are posted on our EGSA website (<http://www.cals.ncsu.edu/entomology/egsa>) where you can also find meeting minutes, our constitution and by-laws, and any upcoming events. EGSA also has a Google calendar with meetings, and upcoming events listed.

Most of our EGSA funds are generated from the University Graduate Student Association (UGSA). In order to receive this funding, our organization must have a presence at the monthly UGSA meetings. Currently the UGSA representative duties are assigned to the EGSA secretary. Any other funds we need to operate as an organization are obtained from fundraising events.

Committees

An up-to-date list of committee members and chairs can be found at <https://docs.google.com/a/ncsu.edu/document/d/17YkZ4NRxq0L3g5X1jqMjreV8irDuQUQ0w3F-Qn9QQ84/edit?hl=en> (Gmail sign-in required). This Google document also allows you to sign up for committees.

Fundraising Committee

Fundraising committee is in charge of determining the EGSA fundraising tasks for the year and will help coordinate student efforts to successfully raise funds. The committee also helps coordinate the plant sale.

Social Committee

Social committee is in charge of determining when the EGSA will have social functions and help coordinate student efforts to plan and execute the event. The main focus of the social committee is organizing the entertainment portion of the Department Holiday Party, the Fall Welcome Back BBQ and the Spring Welcome Activity every year. Outside of regular events, activities are initiated when members express interest in a social event, like an insect-collection retreat.

Hospitality Coordinator

This person (rotated each meeting) is in charge of bringing snacks to the EGSA monthly meetings. Funds will be provided by EGSA (\$10/meeting). The committee also works with the social committee to help with coordinating food for social events.

Community Service Committee

This committee is in charge of coordinating EGSA's fall (BugFest) and spring community service events. They also coordinate a holiday volunteer activity.

Outreach Committee

Outreach committee is in charge of determining what sort of activities need to be created for outreaches and coordinate efforts to create those activities. A new student workshop is coordinated each year to demonstrate how to conduct an outreach.

Seminar Committee

This committee plans, coordinates, and executes all Mike Duke Seminar activities in conjunction with the Mike Duke Coordinators. It is also in charge of communication with CALS, fundraising, and running the Mike Duke Seminar.

Outreach

We have a stellar outreach program which not only offers the public with the opportunity to see why insects are the most incredible organisms on our planet, but also provides the graduate students with the ability to share their passion and realize their potential to shape the future through science education. With over two dozen outreaches

every semester, there are opportunities to educate kids up through seniors in a wide variety of settings including classrooms, festivals, labs, and natural sites. We have extensive resources including access to over thirty arthropods, as well as games, posters, PowerPoints, and crafts. However, our most significant resource is found within our people. Even if you are nervous doing an outreach, you will find it easy to join up with experienced veterans who will teach you skills in interacting with the public and provide you with a wealth of knowledge about entomology. It is strongly encouraged that you do one outreach a semester, and if you find yourself thirsty for more, you can also join the outreach committee, which leads the way in developing innovative activities for future outreaches.

Why outreach?

- It's fun!
- It's a break from all the hard work you do in the lab, the field, and in class.
- No matter what your career goals, you will probably end up teaching or interacting with the public in some context. This is a great, low-pressure way to train.
- The office keeps a record of all the outreaches we do. This helps to show what good things the department does for the community.
- It's amazing how much people enjoy it when we do outreaches.

When do I outreach?

Outreach is volunteer-based. Your outreach coordinators will periodically send out emails to the students' listserv with all unfilled outreach requests. Pick one that you think you will like and let your coordinator know. Then s/he will put you in contact with the person that is running the event.

How do I outreach?

You'll probably want to buddy up with someone for your first outreach or two. As long as you're helping, you don't really need any prior knowledge- just your enthusiasm! Let your coordinator know if you'd prefer to be paired with someone. Some outreachers prefer to work in groups even if they are quite experienced, and that's fine too.

The most basic outreaches are one of two things:

- In a classroom setting, the volunteer chats with kids about insect-related topics and then shows some live specimens. Many of the specimens are OK for kids to touch and hold.
- In a festival setting, the volunteer hosts a booth with a poster and live specimens. Passersby walk up to ask questions and touch live insects.

It's really as simple as that! If you like to add a little variety, we have lots of materials available including PowerPoints, posters, games, and craft materials that you can use. Sometimes we get requests that are more unusual (kids that want questions answered for class reports, classes aimed at adults, special-needs groups, Skype requests, Boy Scouts going for their merit badge, groups that are interested in specific topics, etc.) and you can choose those if you would like a more challenging outreach.

Where do I get these materials?

There is a complete list of what's available on the website, https://docs.google.com/document/d/1hCsDQeY0kHyHsZ1GtDiBxeBDJOHzWMEH-M7MEK0f2xo/edit?hl=en_US&authkey=CLHPxrEB (Requires gmail sign-in). The list is also available as a link that should appear in your outreach emails.

The outreach coordinators have a stash of materials available. The task of rearing live specimens is spread out among several volunteers. Right now, we also have access to many additional exotics which we may borrow short-term from the Museum of Life Sciences in Durham. The outreach coordinators will take care of getting you what you need. But it's important that they know a week in advance what you want. Otherwise, we may not have planned a trip to the museum or we may have loaned the insects you want to someone else.

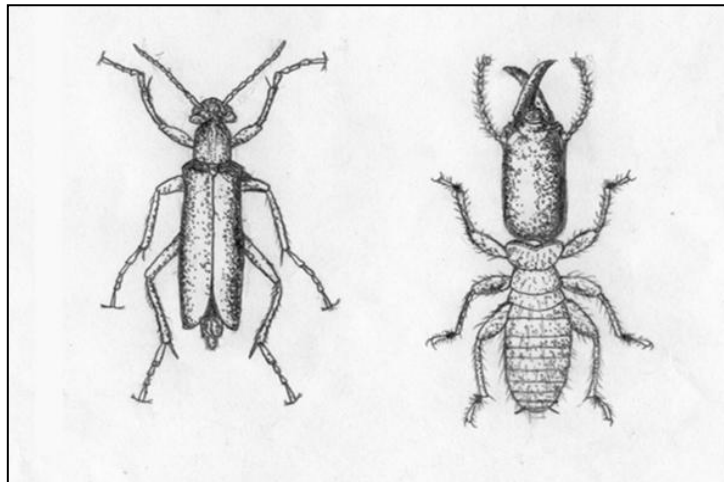


Illustration by Chen Zha

Graduate Courses

Entomology Courses

For course descriptions see <http://www.cals.ncsu.edu/entomology/academics/entomology-graduate-courses>

Course ID	Title	Schedule	Credit Hours
ENT 502	Insect Diversity	Every fall	4
ENT 503**	Insect Morphology & Physiology	Every spring	3
ENT 509	Ecology of Stream Invertebrates	Spring of odd years	4
ENT 520	Insect Behavior	Spring of even years	3
ENT 525	Entomology for Educators	Every spring	3
ENT 550	Fundamentals of Insect Control	Every fall	3
ENT 582	Medical & Veterinary Entomology	Spring of even years	3
ENT 601/801*†	Master's/ Doctoral Seminar	Every spring and fall	1
ENT 604/804	Insect Natural History and Field Ecology	Every "fall" (registration in the fall semester, it takes place the week before fall classes begin)	1
ENT 641/841	Agricultural Entomology Practicum	Every summer session I of odd years	3
ENT 726	Biological Control of Insects and Weeds	Fall of odd years	3
ENT 731	Insect Ecology	Fall of even years	3
ENT 762	Insect Pest Management in Agricultural Crops	Spring of odd years	3

* Indicates a required course

† Course IDs with both 600 and 800 levels mean that a Master's student should register for the 600 level, and a Ph.D. for the 800 level. Special topics courses are 500/700.

§ **Special note** about changes to ENT 503: This course is no longer 4 credits, but 3 credits which will consist of: 2 hours of lecture each week and 3 hours of lab each week; it will be team taught.

Special Topics in Entomology

There are several special topics courses offered in our department. The scheduling of these classes, however, is inconsistent. The most up-to-date list of special topics courses are listed at <http://www.cals.ncsu.edu/entomology/academics/entomology-graduate-courses> under the ENT 591/791 entry. The online list will only reflect the courses offered for a single semester. Professors often circulate email flyers for upcoming special topics courses to encourage enrollment. Here is a list of special topics courses taught within the last 5 years:

Techniques in Molecular Ecology organized by Dr. Ed Vargo

The study of genetic variation from individuals to higher taxonomic levels can provide important insights into many biological processes, such as reproductive success, breeding systems, migration, population size and natural selection, as well as historical events like speciation and genetic bottlenecks. There is a wide array of molecular genetic markers which provide powerful tools for quantifying genetic variation and for making inferences about population and evolutionary processes. This is a laboratory-intensive course providing hands-on experience in the application of several commonly used techniques in the context of case studies from the primary literature. By the end of the course, students should be comfortable with both the theory and application of molecular markers in studies of ecology and evolution, and should be able to incorporate one or more techniques into their thesis research.

Organic Agriculture with Dr. David Orr

This course covers the fundamental conceptual and practical aspects of organic agriculture, as well as current issues and controversies in this field. This course will give students an appreciation for the complexity and integrated nature of organic crop management. Students are also provided the basic conceptual tools and resources for continued learning in this field.

Insect Population Biology with Dr. Fred Gould

Insect Population Biology will be offered in the spring of 2013 as a 3 credit course that will cover the basic principles of insect population dynamics and genetics. As such, the focus of the course will be on conceptual, graphical, and mathematical models and the data needed to explore these models. The course will be taught in an inverted design. The lectures will all be provided on the web for students to watch. The students will then come to class to discuss questions that they have about information in the lectures and more specific or advanced issues.

Molecular Systematics with Dr. Brian Wiegmann

No information provided.

Genetic Pest Management with Dr. Fred Gould

Genetic Pest Management will be taught in the Fall of 2012 as a 4 credit course that covers approaches for genetically manipulating pest species in ways that decrease their population densities or decrease their damage potential by making them incapable of transmitting diseases. The course will cover genetic, ecological, economic, social, and ethical aspects of genetic pest management. The course will be co-taught by instructors from CALS, CHASS, and PAMS.

Molecular Entomology with Dr. Marce Lorenzen

This course is an introduction to the fields of molecular biology, genetics and genomics from an entomological perspective. Topics include DNA, genes & gene structure, genomic browsers & blast, genomics, transcriptomics, and proteomics, genome sequencing, insect transgenesis, RNA- interference, and qRT-PCR.

Systematic Biology with Dr. Andy Deans

This course is a 1-credit seminar that focuses on contemporary issues in systematics, with discussions about current papers that span from theoretical to empirical. It will likely only be involved unofficially in the future.

Professional Development organized by Dr. Mike Roe

The objective of this course is to prepare students for a career in Entomology by providing them information about the professional responsibilities of their discipline. This objective will be achieved with lectures from members of the Entomology Faculty and other campus and off-campus professionals with relevant expertise on a variety of topics: responsibilities in extension, teaching (mentoring), and research in academia, government and industry; research misconduct (fabrication, falsification and plagiarism), professional writing; grantsmanship; patents (data management and ownership) and technology transfer; the peer review process; ethical considerations in human, animal and transgenic research; administration and conflict of interest; safety in the work place; job applications; future trends in entomology; international programs; and diversity. The other objective of this course is to provide students with the opportunity to interact with as many faculty from different disciplines as possible in Entomology for the exchange of ideas; this will be accomplished by the presentation of information and the encouragement of discussion. The goal is to stimulate student thinking about what is required besides the science of our discipline for a career in entomology.

Basic Principles in Insect Structure and Function with Dr. Mike Roe

Coming in spring 2012, this will be a 2 h course, with a 1 hour lecture each week and a 3 hour lab each week; the course will meet on Wednesday only and will be limited to 6 students. This course is aimed at teaching students Dr. Roe's expertise about structure and function and providing them the practical tools to work in a physiology, biochemistry and molecular biology laboratory like his.

Insect Rearing with Dr. Allen Cohen

In this course, we explore insect rearing from the perspective that successful rearing systems must provide all the needs of our target insects. Therefore, we investigate means of knowing our insect thoroughly, including their morphology, physiology, behavior, and other aspects of their biology—all in an ecological context. We study rearing systems from the perspective that good rearing practices require competence with multiple disciplines (food science, genetics, engineering, microbiology and many other fields). In this course, we study rearing systems for insects with diverse biologies and feeding habits. The intended outcome of this course is that students will have a better appreciation of how existing rearing systems were developed and how they can better rear high quality specimens of the insects, which are the subjects of the students' research.

Grant Writing with Dr. Hannah Burrack

This class is 2 credits, graded with approximately 3 in-class assignments in addition to proposal writing and reviewing. The bulk of the class will consist of peer review and guest lectures from faculty on grant writing.

Non-Entomology Courses

Several students take classes outside of the entomology department. Here is a list of courses entomology students have found helpful:

BIT 510- Core technologies in molecular and cellular biology
BIT 562- Gene expression: Microarrays
BIT 564- Protein purification
BIT 565- Real-time PCR techniques
BIT 567- PCR and DNA fingerprinting
BIT 568- Genome Mapping
BIT 569- RNA purification and analysis
BIT 571- RNA interference and model organisms
CS 590- Applied experimental design and analysis for plant sciences (sp. topics)
ENG 626- Advanced writing for empirical research
FOR 501- Dendrology
FOR 503- Tree Physiology
FOR 507- Silviculture mini course
FOR 513- Silviculture for intensively managed plantations
GN 701- Molecular Genetics
MB 705- Biological scanning electron microscopy
MB 710- Biological transmission electron microscopy
MB 791- Digital imaging
PP 501- Biology of plant pathogens
ST 505- Applied nonparametric statistics
ST 511- Statistics for the biological sciences I
ST 512- Statistics for the biological sciences II
ST 524- Statistics for Plant Sciences
TOX 701- Fundamentals of toxicology
TOX 722- Insecticide toxicology

Master's Research Credit Hours

ID	Title	When to Register	Schedule	Credit Hours
ENT 685	Master's Supervised Teaching	Teaching experience under the mentorship of faculty who assist the student in planning for a teaching assignment, observing and providing feedback to the student during the teaching assignment, and evaluating the student upon completion of the assignment.	Every semester	1-3
ENT 688	Non-Thesis Master's Continuous Registration - Half Time	For students in non-thesis Master's programs who have completed all credit hour requirements for their degree but need to maintain half-time continuous registration to complete grades, projects, the final Master's exam, etc.	Every semester	1
ENT 689	Non-Thesis Master's Continuous Registration - Full Time	Same as ENT 688, but for full time registration	Every semester	3
ENT 690	Master's Examination	For students in non-thesis Master's programs who have completed all other requirements of the degree except preparing for and taking the final Master's exam.	Every semester	1-9
ENT 693	Master's Supervised Research	Instruction in research of a special project under the mentorship of a member of the Graduate Faculty other than the student's advisor.	Every semester	1-9
ENT 695*	Master's Thesis Research	Thesis Research- This is what should make up most of the 6 credit hr research requirement (see the " Master's Course Requirements " section).	Every semester	1-9
ENT 696	Master's Summer Research	For graduate students whose programs of work specify no formal course work during a summer session and who will devote full time to thesis research. – keep in mind registering for summer courses includes paying student fees	Summer session I	1
ENT 699	Master's Thesis Preparation	For students who have completed all credit hour requirements (see the " Master's Course Requirements " section) and are writing and defending their theses. Students in their 5 th semester done with course work should not register for more than 3 credit hours. If you are still fulfilling coursework requirements during your last semester, you won't register for ENT 699, but for ENT 695.	Every fall and spring	1-3

* Indicates a required course

Ph.D. Research Credit Hours

Course ID	Title	When to Register	Schedule	Credit Hours
ENT 885	Doctoral Supervised Teaching	Teaching experience under the mentorship of faculty who assist the student in planning for the teaching assignment, observing and providing feedback to the student during the teaching assignment, and evaluating the student upon completion of the assignment	Every semester	1-3
ENT 890	Doctoral Preliminary Examination	For students who are preparing for and taking written and/or oral preliminary exams	Every semester	1-9
ENT 893	Doctoral Supervised Research	Instruction in research of a special project under the mentorship of a member of the Graduate Faculty other than the student's advisor	Every semester	1-9
ENT 895	Doctoral Dissertation Research	Dissertation Research- this should be the majority of your research credit hours	Every semester	1-9
ENT 896	Summer Dissertation Research	For graduate students whose programs of work specify no formal course work during a summer session and who will devote full time to thesis research – keep in mind registering for summer courses includes paying student fees	Summer session I	1
ENT 899	Doctoral Dissertation Preparation	For students who have completed all credit hour requirements and full-time enrollment, preliminary examination, and residency requirements for the doctoral degree, and are writing and defending their dissertations. If you are still fulfilling coursework requirements during your last semester, you won't register for ENT 899, but for ENT 895.	Every fall and spring	1-3

Entomology Degree Requirements

Master's Course Requirements

There are no specific course titles that students are required to take in order to graduate; however, ENT 502 (Insect Diversity) and ENT 503 (Insect Morphology & Physiology) are both recommended for students who haven't taken a course equivalent. Also, ENT 550 (Fundamentals of Insect Control) is highly recommended. Whether you should take these courses is ultimately decided by your advisor and committee.

Additional Master's Degree requirements:

1. 2 hours of ENT 601- see the seminar schedule:
<http://www.cals.ncsu.edu/entomology/ent601-801>
2. 14 hours of graded ENT courses (no S/U or P/F courses)
3. 6 hours of Thesis Research (ENT 695)

Total hours required to graduate: 30 hours (excluding ENT 699-Thesis Preparation)

Note: All course requirements listed above also apply to non-thesis Master's students

Master's Student Timeline

Required Action	Deadline	Who Initiates	Submit to
Submit Graduate School application along with all supporting documents.	http://www.grad.ncsu.edu/calendar/scripts/appdead3.asp	Prospective student	The Graduate School
Sign and return letter of offer sent by department head following admission.	ASAP upon receipt	Prospective student	Dr. Kennedy (Department Head)
Upon arrival, fill out W-4, Selective Service, I-9, and Patent Agreement form , (see Christiana Boyle in front office).	ASAP upon arrival at NCSU (before classes start)	Student	Christiana Boyle (Front Office)
Visit Office of International Services.	ASAP upon arrival at NCSU (before classes start)	International students only	
Complete residency requirements (but do not fill out residency requirement form until end of second semester; see the " Residency " section).	IMPORTANT! Within the first 10 days of classes	Students who are U.S. Citizens or have permanent resident status	After completing the requirements, contact Carolyn Krystoff (Residency_Officer@ncsu.edu 513-1287) within 10 days of classes to ensure your application will be accepted

Students whose previous degree programs were not complete at the time of application are required to submit official transcripts showing degree(s) awarded and date(s).	Before the end of first semester of registration	Student	Demond Medlin (Front Office)
Submit <u>Plan of Work</u> form	Before end of second semester of coursework	Student and advisor	Demond Medlin (Front Office)
Submit annual <u>Progress Report Form</u>	May 31 of every year of enrollment	Student	Demond Medlin (Front Office)
Submit North Carolina Residency application.	IMPORTANT! Between 14 and 75 days prior to the beginning of the student's third semester of classes	Student	Graduate School
Submit "Request to Graduate" (MyPack Portal)	Deadlines by semester	Student	Demond Medlin (Front Office)
Schedule final oral exam with committee members, Lecture Series Committee Head, and Demond Medlin	Semester of expected graduation, at least 10 working days prior to proposed exam date	Student	Demond Medlin (Front Office)
Electronically submit draft of thesis for review	Within 24 hours of passing the final oral exam	Student	Erica Braman Cutchins thesis_editor@ncsu.edu 515-4497
Submit thesis to The Graduate School	After final oral exam is successfully completed and thesis has been reviewed by thesis editor. Must be submitted at least 4 weeks prior to last day of class	Student	The Graduate School
Schedule exit interview with Dr. Kennedy (Department Head)	Prior to end of final semester	Student	Christiana Boyle

Master's Plan of Work Form

The Plan of Work form (POW) is due at the end of your second semester. It can be downloaded from the administrative links page on our entomology website. The first page should consist of (in order) the courses you've already taken and the courses you plan to take. Your committee may want to make changes to your future coursework, so be sure to discuss that with them before they sign the POW, and make any changes that are necessary before turning the POW in to Joyce at the front office in Gardner Hall. If your course work diverges from the POW you'll have to turn in a new POW form.

The second page can be a little more confusing. Total hours taken (excluding thesis preparation) includes courses outside of entomology, and entomology courses. You should not include seminars, or research hours including ENT 699. If you're confused about when or why to take ENT 699 refer to the "Master's Research Credit Hours" Section.

The "Total hours in Thesis Research" refers to ENT 695. The "Required" column indicates Max=6 because even if you take more than 6 hours of ENT 695 (which is fine), you can't list any more than 6 credits on the second page of the POW.

NC STATE UNIVERSITY

Department of Entomology - Graduate Plan of Work - MS Degree

Student Name Future Master Wuf

Sem. & Year	Course department (e.g. ENT), number, name	Credit Hours	Credits/Sem. Required*
1 Sem. - Year <u>Spr 10</u> Summer**	1) <u>ENT 503 Insect Morphology & Physiology</u>	<u>4</u>	9
	2) <u>ENT 582 Medical & Veterinary Entomology</u>	<u>3</u>	
	3) <u>ENT 601 Seminar- Insect Pathogens</u>	<u>1</u>	
	4) <u>ENT 695 Master's Thesis Research</u>	<u>1</u>	
2 Sem. - Year <u>Fall 10</u> Summer**	1) <u>ENT 502 Insect Diversity</u>	<u>4</u>	9
	2) <u>ENT 604 Insect Natural History and Field Ecology</u>	<u>1</u>	
	3) <u>ENT 791 Special Topics- Professional Development</u>	<u>1</u>	
	4) <u>ST 511 Experimental Statistics for the Biological Sciences I</u>	<u>3</u>	
3 Sem. - Year <u>Spr 11</u> Summer**	1) <u>ENT 591 Special Topics- Techniques in Molecular Ecol. and Evol.</u>	<u>3</u>	9
	2) <u>ENT 695 Master's Thesis Research</u>	<u>3</u>	
	3) <u>ST 512 Experimental Statistics for the Biological Sciences II</u>	<u>3</u>	
	4) _____	_____	
4 Sem. - Year <u>Fall 11</u> Summer**	1) <u>ENT 550 Fundamentals of Insect Control</u>	<u>3</u>	3***
	2) <u>ENT 601 Teaching Techniques Seminar</u>	<u>1</u>	
	3) <u>ENT 695 Master's Thesis Research</u>	<u>5</u>	
	4) _____	_____	
If you register for a 5th (or more) semester and have an assistantship, you must register for 3 credit hours (usually thesis preparation). Note: any more than 3 credit hours cost your advisor and are not required.			

Department of Entomology - Graduate Plan of Work - M.S. Degree

Credit Summary	Required	Taken
Total hours (Excluding thesis preparation)	30	36
Total hours in Entomology Courses****	14	18
Total hours of thesis research	Max. credits = 6	6
Total hours of thesis preparation	Max. credits = 0	0
Total hours of Entomology seminar	2	2
Total hours in minor (hours determined by minor advisor)		
Total hours in other departments	N/A	6
Total class hours in degree program (Excluding thesis preparation)		36

NOTES:

- * If you have an assistantship, you must take no more and no less than 9 hrs./semester. Exceptions: 1/4 time assistantships can take 12 hrs; if not on an assistantship - can register for as little as 1-3 hrs.
- ** No credit hours need be listed for summer sessions unless for a regular course which is only held during the summer (e.g., ENT 641 - Agricultural Entomology Practicum; ENT 604 - Insect Natural History and Field Ecology)
- *** DO NOT LIST ENT 699 MASTER'S THESIS PREPARATION ON THE PLAN OF WORK FORM
- **** A-B-C graded courses only (Excludes - S/U and P/F courses)

Thesis Topic: Characterization of Honey Bee (*Apis mellifera*) Behavioral Response to Disturbance by Honey-Seeking Canines

Student	Future Master Wuf	
	Name	Signature
Advisor/Co-Advisor	Dr. Jackal	
	Name	Signature
Co-Advisor/Comm. Member		
	Name	Signature
Committee Member	Dr. Hound	
	Name	Signature
Committee Member	Dr. Coyote	
	Name	Signature
Minor Committee Member		
	Name	Signature

The next row, “Total hours of thesis preparation” is the only place you can indicate that you registered for ENT 699. These hours can’t even be included in the last row where “Total class hours in degree program” is listed. The reason for this is because ENT 699 cannot fulfill any part of the 6 credit hours of research requirement.

There is a discrepancy on the form that seems to confuse a lot of people. The 4th semester “Credits/Sem. Required” box should indicate 9 hours, not 3 hours- which is why we included an example form that shows the correct way to fill it out. The 3*** should be on the 5th semester of coursework (if one were listed), not the 4th. The reason for this is because the Graduate School requires Master’s programs to be only 4 semesters, but our department’s policy is to allow 5 semesters to give a Master’s student 2 field seasons worth of data. So if you were to take advantage of the 5th semester, you could register for **no more than 3 hours** of ENT 699. NOTE: Any more than 3 hours in your 5th or more semester costs your advisor money.

Ph.D. Course Requirements

There are no specific courses titles that students are required to take in order to graduate; however, ENT 502 (Insect Systematics) and ENT 503 (Insect Morphology & Physiology) are both recommended for students who haven't taken a course equivalent. Also, ENT 550 (Fundamentals of Insect Control) is highly recommended. Whether you should take these courses is ultimately decided by your advisor and committee.

Additional Doctoral Degree requirements:

1. 3 hours of ENT 801- see the seminar schedule:
<http://www.cals.ncsu.edu/entomology/ent601-801>
2. 17 hours of graded ENT courses (excludes S/U or P/F courses)

Total hours required to graduate: 72 hours (excluding ENT 899-Doctoral Preparation)

- A Ph.D. student with a Master's degree from another institution can transfer 18 credit hours toward the 72 hours required to graduate.
- A Ph.D. student with a Master's degree from NCSU with no break between programs may transfer 36 credit hours toward the 72 hours required to graduate. As it stands now, a student in this situation must still complete the 17 ENT credit hours as indicated above. These 17 ENT requirements cannot be transfer credits from the previous Master's program.
- A Ph.D. bypass student has no credits to transfer, and must complete all 72 hours of coursework at NCSU.

Ph.D. Student Timeline

Required Action	Deadline	Who Initiates	Submit to
Submit Graduate School application along with all supporting documents.	http://www.grad.ncsu.edu/calendar/scripts/appdead3.asp	Prospective student	The Graduate School
Sign and return letter of offer sent by department head following admission.	ASAP upon receipt	Prospective student	Dr. Kennedy (Department Head)
Upon arrival, fill out W-4, Selective Service, I-9, and Patent Agreement form	ASAP upon arrival at NCSU (before classes start)	Student	Christiana Boyle (Front Office)
Visit Office of International Services.	ASAP upon arrival at NCSU (before classes start)	International students only	

Complete residency requirements (but do not fill out residency application)	<p style="text-align: center;">IMPORTANT!</p> <p style="text-align: center;">ASAP</p> <p style="text-align: center;">AFTER ARRIVAL</p>	U.S. Citizens or students with permanent resident status	After completing these requirements, contact Carolyn Krystoff (Residency_Officer@ncsu.edu 513-1287) within 10 days of classes to ensure your application will be accepted
Students whose previous degree programs were not complete at the time of application are required to submit official transcripts showing degree(s) awarded and date(s).	Before the end of first semester of registration	Student	Demond Medlin (Front Office)
Submit <u>Plan of Work form</u>	Before end of second semester of coursework	Student and advisor	Demond Medlin (Front Office)
Submit annual <u>Progress Report Form</u>	May 31 of every year of enrollment	Student	Demond Medlin (Front Office)
Submit North Carolina residency application.	<p style="text-align: center;">IMPORTANT!</p> <p style="text-align: center;">Between 14 and 75 days prior to the beginning of the student's third semester of classes.</p>	Student	Graduate School
Schedule preliminary exam (" <u>request for approval to schedule doctoral oral examination</u> " form)	At least 1 semester prior to your final oral exam. Request to schedule must be received at least 2 weeks prior to proposed exam date	Student	Demond Medlin (Front Office)
Submit "Request to Graduate" (MyPack Portal)	Deadlines by semester	Student	Demond Medlin (Front Office)
Schedule final exam ("Request for Approval to Schedule Doctoral Oral Examination" form)	Semester of expected graduation, at least 3 weeks prior to proposed exam date.	Student	Demond Medlin (Front Office)
Schedule final oral exam with committee members, Lecture Series Committee Head, and Demond Medlin	Semester of expected graduation, at least 3 weeks prior to proposed exam date.	Student	Demond Medlin (Front Office)

Electronically submit draft of dissertation for review	Within 24 hours of passing the final oral exam.	Student	Erica Braman Cutchins thesis_editor@ncsu.edu u 515-4497
Submit Dissertation to The Graduate School	After final oral exam is successfully completed and dissertation has been reviewed by the thesis editor. Must be submitted at least 4 weeks prior to last day of class in semester of graduation.	Student	The Graduate School
Schedule exit interview with Dr. Kennedy (Department Head)	Prior to end of final semester	Student	Christiana Boyle

Ph.D. Plan of Work Form

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The second page can be a little more confusing. "Total hours taken (excluding dissertation preparation)" includes courses outside of entomology, and entomology courses. You should not include seminars, or research hours including ENT 899. If you're confused about when or why to take ENT 899 refer to the "Ph.D. Research Credit Hours" Section.

The "Total Hours in Dissertation Research" refers to ENT 895. The "Required" column indicates no maximum because there is no Ph.D. research credit requirement.

The next row, "Total Hours of Dissertation Preparation" is the only place you can indicate that you registered for ENT 899. These hours can't even be included in the last row where "Total Class Hours in Degree Program" are listed.

There is a discrepancy on the form that seems to confuse a lot of people. The 6th semester "Credits/Sem. Required" box should indicate 9 hours, not 3 hours- which is why we included an example form that shows the correct way to fill it out. The 3*** should be on the 7th semester of coursework (if one were listed), not the 6th. The reason there is a discrepancy is because the Graduate School requires Ph.D. programs to be only 6 semesters, but our department's policy is to allow 7 semesters to give a Ph.D. student 3 field seasons worth of data. So if you were to take advantage of the 7th semester, you could register for no more than 3 hours of ENT 899. NOTE: Any more than 3 hours in your 7th or more semester costs you advisor money.

Student Name Future Doctor Wuf

Sem. & Year	Course department (e.g. ENT), number, name	Credit Hours	Credits/Sem. Required*
1 Sem. - Year <u>Fall 09</u> Summer**	1) <u>ENT 726 Biological Control of Insects and Weeds</u> 2) <u>ENT 801 Seminar - Chemical Ecology</u> 3) <u>ENT 895 Doctoral Dissertation Research</u> 4) <u>BIT 510 Core Techniques</u>	<u>3</u> <u>1</u> <u>1</u> <u>4</u>	9
2 Sem. - Year <u>Spr 10</u> Summer**	1) <u>ENT 791 Special Topics - Insect Rearing</u> 2) <u>ENT 895 Doctoral Dissertation Research</u> 3) <u>MB 705 Biological Scanning Electron Microscopy</u> 4) <u>ST 505 Applied Nonparametric Statistics</u>	<u>3</u> <u>1</u> <u>2</u> <u>3</u>	9
3 Sem. - Year <u>Fall 10</u> Summer**	1) <u>ENT 791 Special Topics - Professional Development</u> 2) <u>ENT 801 Seminar - Invasive Insects</u> 3) <u>ENT 895 Doctoral Dissertation Research</u> 4) <u>BIT 567 PCR & DNA Fingerprinting</u>	<u>1</u> <u>1</u> <u>5</u> <u>2</u>	9
4 Sem. - Year <u>Spr 11</u> Summer**	1) <u>ENT 509 Ecology of Stream Invertebrates</u> 2) <u>ENT 791 Insect Population Biology</u> 3) <u>ENT 895 Doctoral Dissertation Research</u> 4) _____	<u>4</u> <u>3</u> <u>2</u> _____	9
5 Sem. - Year <u>Fall 11</u> Summer**	1) <u>ENT 550 Fundamentals of Insect Control</u> 2) <u>ENT 801 Seminar - Teaching Techniques</u> 3) <u>ENT 895 Doctoral Dissertation Research</u> 4) _____	<u>3</u> <u>1</u> <u>5</u> _____	9
6 Sem. - Year <u>Spr 12</u> Summer**	1) <u>ENT 895 Doctoral Dissertation Research</u> 2) _____ 3) _____ 4) _____	<u>9</u> _____ _____ _____	3***
	If you register for a 7th (or more) semester and have an assistantship, you must register for 3 credit hours (usually thesis preparation). Note: any more than 3 credit hours cost your advisor and are not required.		

Ph.D. Plan of Work Form Continued

Department of Entomology - Graduate Plan of Work - Ph.D. Degree

Credit Summary	Required	Taken
Credit for M.S. Degree (Excl. thesis preparation)	18	18
Total Hours	72	
Total hours in Entomology Courses****	17	17
Total Hours of Dissertation Research	No Maximum	23
Total Hours of Dissertation Preparation	Max. credit = 0	3
Total Hours of Entomology Seminar	3	3
Total Hours in Minor (hours det. by minor advisor)		
Total Hours in Other Departments	N/A	11
Total Class Hours in Degree Program (Excl. dissert. preparation)		72

NOTES:

- * If you have an assistantship you must take no more and no less than 9 hrs per semester. Exceptions: 1) 1/4-time assistantships can take 12 hrs; 2) if not on an assistantship, can register for as little as 1-3 hrs
- ** No credit hours need be listed for summer sessions unless for a regular course which is only held during the summer (e.g., ENT 841 - Agricultural Entomology Practicum; ENT 804 - Insect Natural History and Field Ecology)
- *** DO NOT LIST ENT 899 DISSERTATION PREPARATION ON THE PLAN OF WORK FORM
- **** A-B-C graded courses only (Excludes - S/U and P/F courses)

Dissert. Topic: Nutritional Value of the Dog Day Cicada (Hemiptera:Auchernorrhyncha) to Canis wuffus

Student	Future Doctor Wuf	
	Name	Signature
Advisor/Co-Advisor	Dr. Hound	
	Name	Signature
Co-Advisor/Comm. Member	Dr. Coyote	
	Name	Signature
Committee Member	Dr. Jackal	
	Name	Signature
Committee Member	Dr. Wolf	
	Name	Signature
Minor Committee Member		
	Name	Signature

Preliminaries: Written & Oral Exam Guidelines

Ph.D. students are required to complete both written and oral preliminary exams prior to graduating. These exams are coordinated with your committee and the format will vary with each committee. For the written exam, some students are asked to write a review article to submit for publication. Others are given a “take home test” consisting of a set of questions assembled by their committee to be answered within an allotted period of time without any literature or note consultation. The oral exam will most likely be similar- but not limited to- any written assignments received during the written exam. Many Ph.D. students spend months reviewing material to prepare for both the written and oral exam. Although each student’s exam experience will be quite different, here is a set of guidelines to help you understand the process:

1. Both the written and oral exam must be completed the semester before you plan to graduate. Students are encouraged to complete this earlier than the deadline if possible.
2. The oral exam should be scheduled 3 weeks after the written exam.
 - a. Fill out the “Request to Schedule Oral Exam” which can be found at <http://www.ncsu.edu/grad/faculty-and-staff/docs/forms/doc-or-exam.pdf>. This must be done 2 weeks before the proposed oral exam date.
3. Completion and passing of your prelims puts you into Ph.D. candidacy.

A note about Ph.D. candidacy and NSF fellowships: Many NSF fellowships for Ph.D. candidates are worth 2 years of funding. If you procrastinate to complete your prelims, the NSF fellowship may not be awarded if you’re less than 2 years from graduating.

Ph.D. Graduate School Representative

All Ph.D. students are required to have a Graduate School Representative at all preliminary and final exams in order to ensure fairness and represent you in case of any discrepancies. The representative may be any member of the student's graduate advisory committee from a department other than Entomology who feels that they can be an unbiased representative of the Graduate School, the student, and programs may fulfill the role as Graduate School Representative if agreed upon by the student and the student's graduate advisory committee.

If the student and/or the graduate advisory committee requests that the graduate school representative be someone other than a committee member or the committee member representing a department other than Entomology wishes to rescue him/herself from this responsibility, the student and the committee may identify a faculty member from a department other than Entomology to fulfill this role. This decision should be made at the time the Plan of Work form is filed to allow the graduate school time to appoint a representative. Currently enrolled students who have filed a Plan of Work but have not yet scheduled their oral exams, with the approval of their graduate advisory committee, may opt to have an external member of their committee serve as the graduate school representative.

Committee Meeting Guidelines for All Students

The following are only guidelines to help students. Keep in mind that completing any of these responsibilities early is encouraged if the student shows such ambition.

1. Identify your committee by the end of your first semester. Invite faculty members onto your committee by contacting them and arranging a meeting with them to discuss your research project. If they accept, keep them informed of your research, and seek their advice.
2. Have your first committee meeting by the end of your second semester. This is also when your Plan of Work form is due, so make sure to bring a filled out copy for each of your committee members to sign, and an extra copy for each member to keep for their records.
 - a. Your committee should receive some form of a research proposal. Some advisors prefer their student to submit a written proposal. Others have their student prepare a PowerPoint presentation for the committee at the time of the meeting. Either way your advisor should be involved in the process, and be well aware of the details of your proposal before the meeting. If you prepare a written proposal, make sure to give your committee at least a week to review the material before the meeting.
3. Have *at least* one committee meeting a year. These meetings should update your committee on your progress and give you insight for future research project directions. Some students have up to 4 committee meetings a year.

Scheduling the Final Presentation & Defense

All Ph.D. students are now required to complete their final presentation during the weekly seminar time slot (Mondays 11:15am). Master's students are highly encouraged to do the same. If there are limited seminars available for the semester you plan to graduate, you do not have to defend the same day. In this regard, you could defend after presenting during seminar and potentially defend revised or new material because of the time difference. If there are no seminar time slots available during the semester you plan on graduating then you should contact Demond Medlin in the front office to pick a different time and location.

The first step towards your defense is to contact the current head of the department lecture series committee (fall 2011, David Tarp; and spring 2012, Ed Vargo) for seminar schedule openings the semester you plan to graduate. It can be very difficult to get your entire committee in one place at one time, so it is best to start looking months in advance. Remember, Ph.D. students need to have their graduate school representative present for the defense (see the "[Preliminaries](#)" section). Make sure to include the representative in scheduling matters.

The new final presentation scheduling is in effect because in the past presentations were announced last minute because of paperwork timelines, and presentation attendance was very poor. Now, whether you're defending or not, you will have good attendance.

Before your defense, it is important to familiarize yourself with the Electronic Thesis and Dissertation (ETD) website. This website is how every student in the graduate school submits his/her final thesis/dissertation. Workshops are available and highly recommended to

aid you with formatting your paper, finding your deadlines based on your graduation date, and electronically submitting your final paper. More information can be found at: <http://www.ncsu.edu/grad/etd/>.

Once you pass your defense, a draft of your thesis/dissertation may be turned into the Thesis Editor. The Thesis Editor solely edits the formatting of your paper, thus changes to content can still be made. The more quickly the Thesis Editor gets your paper, the faster it can be returned, which is important when you have a tight deadline for graduation. **Be aware of your deadlines!** Templates are available on the ETD website to help prevent formatting errors, and are highly recommended by the Thesis Editor.

The Thesis Editor will return your draft in with all formatting corrections. You must incorporate all of these edits into your final draft. Again, any contextual changes can still be made after the Thesis Editor has returned your draft. The final draft must be turned in to the Thesis Editor error free before the deadline pertaining to your semester of graduation. Once the final paper is submitted, no additional changes may be made before it is published. Every thesis and dissertation from NCSU is available to the public via the library's website.

Changing from a Master's to a Ph.D. Program

A graduate student may be permitted to work toward a Ph.D. degree without completing the requirement for the Master's degree in clearly defined, exceptional cases, governed by the following guidelines:

1. The student has completed at least 2 semesters of coursework in a Master's degree program at NCSU including at least 12 hours of formal coursework in which letter grades were given with a GPA of at least 3.75.
2. The student has demonstrated exceptional aptitude for research as indicated by a written detailed proposed research plan for the Ph.D. dissertation including a literature review, and detailed report or manuscript for publication on the research accomplished to date.
3. The student has approval from all members of the student's graduate advisory committee.

Once the student has met all of the above requirements, their committee submits its written recommendation requesting permission for the student to by-pass the Master's degree to the department head within one month of the end of the semester, with supporting documentation covering the guidelines 1 and 2 given above. The department head may reject the request or refer the request and supporting documents for further evaluation to the Graduate Student Affairs Committee (GSAC) for its recommendation. The GSAC will schedule a meeting where the student will make an oral presentation of hi/her research plan and progress to date. Within a week after the oral presentation, the GSAF will make its recommendation to the department head who will make the final decision and recommendation to the Dean of the Graduate School.

Continuing from a Master's to a Ph.D. Program at NCSU

Students who have received a Master's degree from NCSU are required to apply for permission to continue toward a Ph.D. degree. The student's advisory committee makes its recommendation to the Graduate Student Affairs Committee, which is responsible for making a recommendation to the department head for submission to the dean of the graduate school. This process typically takes place once the student has already found a Ph.D. advisor and funding for their Ph.D. research. For information on how credits transfer in this situation see the "[Ph.D. Course Requirements](#)" section.