UNIVERSITY OF CALIFORNIA
UC RIVERSIDE

Department of Entomology Graduate Student Handbook 2024-2025

DEPARTMENT OF ENTOMOLOGY
University of California, Riverside

Entomology Graduate Student Handbook and Supplementary Information Pamphlet*

These guidelines are meant to assist the student toward the successful completion of the Entomology Graduate program in a timely fashion**. *All forms needed in the program are called out in underlined, italic print*. All forms are available on the Entomology website at https://entomology.ucr.edu/graduate-studies-program#grad-forms or via the RGrad program or on the Graduate Division website at https://graduate.ucr.edu/petitions-and-forms .**

Information on the Administrative Staff duties, contact information, and the organization of the business office can be found at https://entomology.ucr.edu/administrative-staff-2 .

*The requirements and procedures described in this pamphlet are in addition to, and not in lieu of, those available from the Graduate Division or on-line at *http://graduate.ucr.edu*.

Revised: Summer 2024

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I. PhD and MS GENERAL INFORMATION

The faculty of the Department of Entomology study all aspects within the field of Entomology. We are recognized around the world for having exceptional breadth and depth in within the Biological Sciences as they are applied to insects. Our general areas of expertise include, but are not limited to the following areas:

Arthropod Vectors of Human, Animal, and Plant Diseases	Invasive Species and Biological Control
Behavior	Medical and Veterinary Entomology
Biochemistry and Physiology	Molecular Biology, Genetics and Genomics
Chemical Ecology	Nematology
Conservation Biology and Global Change	Neuroscience
Ecology and Evolution	Pesticide Toxicology
Endocrinology and Development	Plant- Herbivore Interactions
Genetics, Genomics, and Molecular Biology	Social Insects and Pollination Biology
Insect Pathology	Systematics
Integrated Pest Management	Urban Entomology

Information on participating individuals and their areas of research may be found on the Department of Entomology Web site (insects.ucr.edu). Suggested courses of study and information on other matters pertinent to all UCR graduate programs are found in the "UCR General Catalog", which may be viewed online at http://catalog.ucr.edu , and online at http://graduate.ucr.edu .

A. Instruction and Student Affairs Committee (ISAC)

The Instruction and Student Affairs Committee (ISAC) is responsible for establishing the policies and procedures pertaining to the academic programs in the Department of Entomology. This committee also reviews applications, forms, and petitions submitted by students. ISAC consists of a Chair, who is the Departmental Representative to the

Graduate Division, a Vice Chair who serves when the Chair is away, the Graduate Advisors, the Undergraduate Advisors, other faculty from the Department, the student services advisor (SSA) (CNAS Graduate Student Services Advisor), and a graduate student representative selected by the Entomology Graduate Student Association (EGSA - see Section L). The SSA office is in the CNAS Graduate Student Affairs Center (1140 Batchelor Hall). During the academic year, ISAC meets at least bi-weekly. Petitions and business that need ISAC attention should be send via e-mail to the ISAC Chair (for 2024-2025, Dr. Kerry Mauck [kerrym@ucr.edu], see Department website for current Chair information) and the SSAs (for 2024-2025, Fidel Rivas [fidelr@exch.ucr.edu] and Evelyn Sullivan (evelyn.sullivan@ucr.edu)) for inclusion on the ISAC agenda.

B. Admission of Graduate Students

Our University requires that all students apply on-line at https://grad.ucr.edu/apply/

When you fill out the application forms online, please carefully read and follow all instructions. Applicants are required to submit (a) Unofficial transcripts from all institutions of higher learning attended (these are uploaded as attachments in the application), (b) Contact information for a minimum of three recommenders who are familiar with the applicant's academic training or research experience (recommenders get a request to complete submission of their letter electronically through an interface), (c) a curriculum-vitae, (d) a statement of purpose describing your research goals, and (e) a personal statement describing how your prior experience has shaped your desire to obtain a graduate degree in Entomology.

All applicants whose first language is not English and who have not earned an advanced degree at an institution where English is the exclusive language of instruction must submit passing current exam scores from the Test of English as a Foreign Language (TOEFL) or Academic Modules of the International English Language Testing System (IELTS). Test Scores submitted may not be borrowed, photocopied, returned to you or sent elsewhere.

C. Minimum Requirements for Graduate Work in Entomology

Campus requirements for M.S. and Ph.D. degrees are given on the Graduate Division website at http://graduate.ucr.edu. For admission to the graduate program, students must have a bachelor's degree with a major in either entomology, a biological science, chemistry, biochemistry, or a suitable equivalent.

Regardless of undergraduate major, students must have strength in life sciences. Recommended (but not required for admission) courses vary depending on research focus and include biochemistry, chemistry and organic chemistry, data sciences, entomology, genetics, physics, statistics and other courses specific to research areas.

D. Required Courses

All PhD and MS graduate students are required to take the following courses: ENTM

201, ENTM 201L, ENTM 202, ENTM 202L, ENTM 203 and ENTM 203L (15 units). Normally, these courses will be taken during the first year at UCR. Students who can demonstrate that they have had equivalent graduate-level courses elsewhere may petition ISAC to waive taking one or more of these courses. In addition, students must satisfy seminar requirements (see section E).

SUGGESTED FIRST-YEAR GRADUATE PROGRAM:

Fall	**Winter**	**Spring**
ENTM 201 (4 units) Core Areas of Entomology I: Subcellular-Cellular Disciplines ENTM 201L (1 unit) Core Laboratory Techniques in Molecular Biology and Insect Morphology	ENTM 202 (4 units) Core Areas of Entomology II: Suborganismal-Organismal Disciplines ENTM 202L (1 unit) Core Laboratory in Insect Biodiversity and Systematics	ENTM 203 (4 units) Core Areas of Entomology III: Supraorganismal Disciplines ENTM 203L (1 unit) Core Areas of Entomology III: Supraorganismal Disciplines
ENTM 100[a] (4 units) General Entomology	Elective	Elective
ENTM 250 (1 unit) Seminar in Entomology	ENTM 250 (1 unit) Seminar in Entomology	ENTM 250 (1 unit) Seminar in Entomology
Research units with Major Professor (297 and 299)	Research units with Major Professor (297 and 299)	Research units with Major Professor (297 and 299)

[a] Only if recommended by major professor or graduate advisor.

Students may also take an ENTM 25X 2-credit seminar in their first year. However, it is not recommended to take this in the first quarter. See Section E for more information on 2-credit seminar requirements.

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E. Financial Support for Graduate Students

Typically, PhD graduate students in the Entomology Department at UCR are supported during their graduate studies. Funds come from a variety of sources classified either as **Salary** or as **Fellowship/Stipend**.

- ***Salary*** is paid for employment as a Graduate Student Researcher (GSR) funded by their Major Professors' grants, or for employment as a Graduate Teaching Assistant (TA). A graduate student may not be employed more than 50% time (20 hours per week) during an academic quarter. Students are typically employed with an appointment as a GSR (49%), TA (50%), or split TA/GSR (25%/24%). **GSR and TA salaries are paid monthly at the end of each month for the previous month's work** (e.g., paid on Feb. 1st for work performed in January). Note: Students that TA during the fall quarter, will receive their first paycheck on Nov 1st, even though they begin work in September. Summer employment with a GSR appointment is typically provided by the student's Major Professor.

- ***Fellowship/Stipend*** support typically comes from competitive fellowships from the UCR campus, the Department or external sources including state or federal agencies. Fellowship/stipend support is paid **quarterly** as a lump sum at the **beginning of each academic quarter** (on October 1st, January 1st, or April 1st) and must be managed carefully by the student to cover all their expenses for the entire quarter.
    - When transitioning from a quarter paid by fellowship/stipend to a quarter paid by salary (GSR or TA), students will need to stretch their stipend for an additional month (1 quarter + 1 additional month) since they will not receive the first salary payment until the end of the first month of the new quarter.
    - Campus-based fellowship/stipend support is only available to students during academic quarters and cannot be used to support students during the summer months.

- For a few students, financial support may also come from other sources including funding by a student's home country or even by the student themselves (self-funding). Support provided by these other sources will vary by funding source, and students must communicate with the funding source as well as with their Major Professor and the ISAC Vice-Chair (who handles student financial packages) to understand how support from these sources will be provided to the student.
- Payments to students are delivered through either financial aid or payroll and students are encouraged to sign up for direct-deposit from Student Business Service (via R'Web) and through UC PATH. For questions contact the CNAS Graduate Student Services Advisor.

Each student's financial package is unique and should be clearly understood by the student and their Major Professor prior to the student accepting the admissions offer from UCR. Students who wish to be considered for the best funding packages should submit their application for graduate studies no later than January 5 of the year of anticipated enrollment. It is recommended that applicants submit their materials by the deadline posted on the Department website (typically, November 20).

F. Tuition and Fees (assessed Quarterly)

Students employed at least 25% time by UCR (as a GSR or TA) will have their tuition and fees paid as part of their employment. Similarly, tuition and fees are also covered by most fellowships/stipends. In addition, for students that are not residents of California, the non-resident tuition (NRT) fee may be paid by campus as described below. However, students are generally responsible for paying some miscellaneous campus fees each quarter. The various types of campus fees are described below:

- Tuition and Student Services Fee: Mandatory fees for student education at UCR.
- Graduate Student Health Insurance Premium (GSHIP): Fee for the health insurance plan that is mandatory for all graduate students not enrolled in a comparable private health insurance plan.
- Misc. UCR Campus Fees (PAID BY STUDENT): Mandatory fees assessed for various campus facilities and services that support students (e.g., UCR Recreation Center, Graduate Student Association, Student Technology Fee). These fees are paid quarterly by the student and are approx. $300 (for year 2024-2025).
- Non-resident Tuition (NRT): Additional fee for students who are not residents of California.
    - Domestic (U.S.) students: When funds are available, campus will pay NRT fees for domestic non-resident students during their first academic year. Non-resident students must establish California residency during their first year to avoid paying NRT in subsequent years.
    - International students: When funds are available, campus will pay NRT fees for international students through their 7th academic quarter (first quarter of 3rd year) by which time students are expected to have completed their qualifying exams and have advanced to candidacy. International students who fail to advance to candidacy by the end of the 7th academic quarter will be charged NRT each quarter until they successfully advance to candidacy. After advancing to candidacy, international students are not charged NRT for 9 academic quarters (3 years). International students failing to complete their PHD within these 9 quarters after advancing to candidacy will again be charged NRT until completing their degree.

Current costs for all fees are available here: https://registrar.ucr.edu/tuition-fees/quarterly-fees

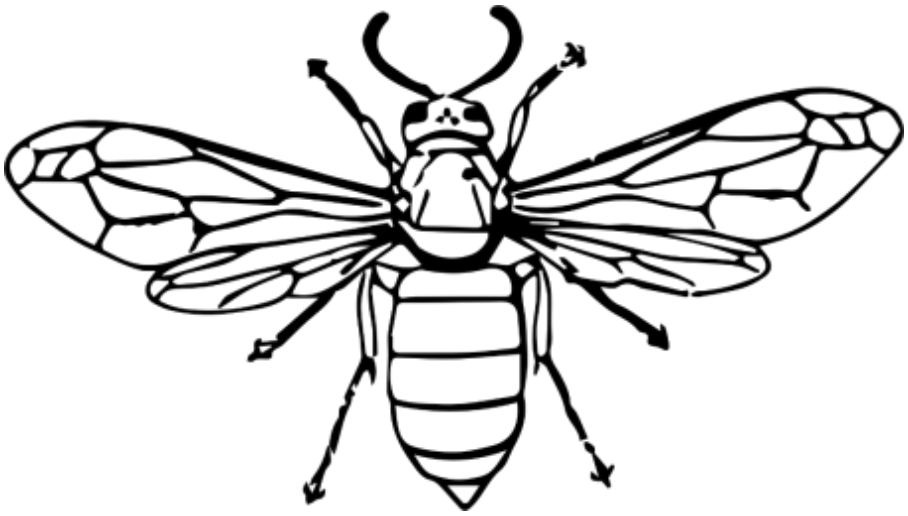
G. Taxes

Students receiving financial support should be aware that part or all of this support might be subject to state and/or federal income tax. *The information provided in this handbook may not apply to all students and should not be interpreted as tax advice; tax obligations can vary for different persons and under different circumstances*. If you are unsure of your tax obligations, it is recommended that you seek advice from a tax professional.

- Salary (GSR or TA) is typically taxed through payroll and amount of tax withheld each month can be seen on monthly pay statements. Salary income is reported to the IRS and is subject to being taxed.

- Fellowship/Stipend may be subject to state and federal tax. However, taxes are typically not automatically withheld from fellowship/stipend payments for domestic students. This can result in larger tax obligations than expected when students file their taxes. More information on tax obligations for fellowship/stipend funds is available from Graduate Division: https://graduate.ucr.edu/regulations-and-procedures#taxes

- International students can find information on employment and taxes through the UCR International Affairs office: https://international.ucr.edu/students/employment-and-taxes



H. Entomology Graduate Student Association (EGSA)

The purpose of the Entomology Graduate Student Association (EGSA) is to serve the needs, welfare, and interests of present and future entomology graduate students at UCR. All registered graduate students in the Entomology program at UCR are members of this organization and are encouraged to participate in EGSA activities, though this is strictly voluntary. All members are responsible for exercising their voting privileges on issues pertinent to EGSA and the Department of Entomology. Members are appointed annually to serve on EGSA committees and as representatives to departmental or campus committees as outlined below.

Measures to meet the needs of current graduate students include:

- encouraging social interactions between students and departmental faculty and staff (Social Committee)
- facilitating professional interactions between students and faculty from other universities (Seminar & Special Lectures Committee)
- teaching members of the public what entomology is and why it is important (Displays, Exhibits & Outreach Committee)
- providing a computer lab and software to students (Technology & Social Media Committee)
- coordinating with the Entomology Research Museum (Entomology Research Museum Committee)
- representing the students to the governing bodies of the Entomology Department, the Graduate Student Association (GSA), and UCR as a whole (GSA Representative and EGSA President)

In addition, one student serves as a representative to ISAC, with attendance and voting privileges when ISAC is considering the interpretation, modification, or additions to the graduate instructional program, as outlined in this supplemental guide. This individual is also available to ISAC and the Department Chair for consultation as needed.

Meeting the needs of future graduate students is done by:

- interacting with prospective students on their campus visits (Hospitality Committee)
- maintaining the EGSA website (Website & Newsletter Committee) and UCR Entomology social media accounts (Technology & Social Media Committee)
- seeking visibility in Riverside and the surrounding area (Displays, Exhibits & Outreach Committee).

Many of these activities would be impossible without funding, and EGSA is fortunate to be able to organize fundraising events (Fundraising & Events Committee) and sell merchandise (Merchandise Committee). EGSA also receives funding from the GSA.

For more information, visit the EGSA website at egsa.ucr.edu.

SUPPLEMENTARY REQUIREMENTS AND PROCEDURES FOR THE DEGREE OF MASTER OF SCIENCE

A. Major Professor

Generally, students have identified their Major Professor upon admission to the M.S. program. The Major Professor directs the student's research project and serves as Chair of the M.S. Guidance Committee.

B. M. S. Guidance Committee

Once the student has selected a Major Professor, a M.S. Guidance Committee is formed. This committee consists of the Major Professor and at least 2 other faculty members. Although it is common to choose these members from the UCR Entomology Department faculty, UCR faculty outside of the Department also may serve without any additional approvals. If the student and major professor would like a faculty member from outside of UCR to be a member of the committee, they must submit a general petition to ISAC explaining why it is necessary for the selected individual to be added as a committee member, with the faculty member's CV appended. ISAC will vote on the petition and report the result to the student and major professor. The major professor and student are responsible for ensuring the non-UCR committee member is apprised of all procedures and committee service requirements. Regardless of whether a non-Department committee member is from UCR or outside of UCR, the overall majority of the members must be from the UCR Entomology Department.

Upon selection of the committee members, the student completes the *M.S. Guidance Committee Form*, secures the initials of committee members, and returns it to the CNAS Graduate Student Services Advisor who will forward it to ISAC for approval. This form must be completed by the end of the **second quarter**.

The M.S. Guidance Committee will meet with the student at least annually, during the **spring quarter**. Prior to the meeting the student is required to complete the Individual Development Plan as part of their *Student Annual Progress Report form*. Following this meeting, the M.S. Guidance Committee provides a candid evaluation of the student's progress on the *Annual Progress Report Form to be filled out by Major Professor*. These forms are available on the department's website: https://entomology.ucr.edu/graduate-studies-program#grad-forms. The progress reports serve as a permanent record of each student's progress, and the SSA submits a copy to the Graduate Division.

C. Program of Academic Study

Each student, with the advice of their M.S. Guidance Committee, will select courses that will complement their research program. These courses must be submitted to ISAC for approval on the *MS Program of Academic Study Form*, no later than the end of the **third quarter** at UCR. The Program of Academic Study will be binding upon approval by ISAC, and the student is expected to take all of the courses listed as "required" prior

to advancement to candidacy.

There is a minimum of 36 units required for all M.S. students. This consists of a minimum of 24 units of graduate coursework. In addition to the required graduate coursework in General Section D and E, students may include 12 units of Entomology Research (ENTM 297) and/or Entomology Thesis (ENTM 299). The remaining 12 unit may be from graduate level or upper division undergraduate coursework (100 level classes).

Students may check their degree progress at any time by accessing their Degree Works application in R'web.

D. Advancement to Candidacy

Master's students must apply for candidacy *before* the first day of instruction of their last quarter of enrollment. Students must complete the *Application for Candidacy for the Master's Degree* available in the R'Grad application found in R'web.

E. Final Oral Examination

A minimum of 30 days is required between submission of the thesis to the M.S. Committee and the Final Oral Examination (defense). This period should be sufficient for the Committee to read and provide comments on the thesis, and for the student to complete revisions and return the thesis for approval by the M.S. Committee prior to the Final Oral Examination. The Thesis will generally include an Abstract, Introduction, Data chapter(s) and Summary/Conclusions.

The Final Oral Examination will deal primarily with the relation of the thesis to the general field in which the subject lies. This examination will be given by the M.S. Committee. The Major Professor, chair of the M.S. Committee, is responsible for scheduling the time and place of the examination. **The student must inform the CNAS Graduate Student Services Advisor of when and where the exam will be administered**. A seminar open to the academic community will be required as part of the Final Oral Examination for all M.S. students. Following the examination, the Major Professor is responsible for transmitting the result to the CNAS Graduate Student Services Advisor, who then forwards the results of the examination to the Graduate Division. To report the results, the Major Professor initiates a petition in R'grad (accessed via R'space), which is then electronically forwarded to each committee member after initiation and signing by the Major Professor. **It is the responsibility of the Major Professor to initiate this petition in R'grad immediately following the defense.**

In-person is the default modality for final exams. If unforeseen circumstances arise and the exam committee chair approves, a hybrid exam will be allowed. If a hybrid exam is approved, committee members not based at the UC Riverside campus may attend remotely but the majority of committee members must be physically present (e.g. 2 out of 3 for the final exam). The exam committee chair and the student are required to be physically present.

F. Thesis

Details concerning formatting and submission of the thesis are available at http://graduate.ucr.edu. After the written thesis has been approved by all committee members, the student will complete and submit Signature Approval Page (Dissertation or Thesis) form via R'Grad.

G. Normative Time

All requirements for the M.S. degree should be completed within two years (six academic quarters) following entry into the graduate program at UCR. Should a student require more than six quarters to complete the M.S. program, the Graduate Adviser will consult with the Major Professor to determine the need for a revised timetable of completion. The student will then submit a revised individual development plan (IDP) through the designated Google form for annual IDP submissions.

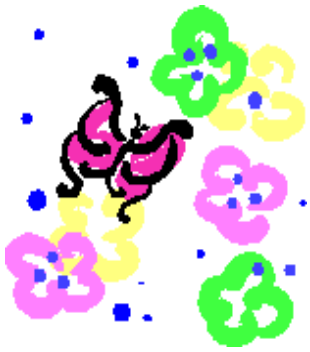
H. M.S. Student Advancement to the Ph.D. Program

Students who are enrolled in the M.S. degree program and have nearly completed the requirements for this degree at UCR may petition ISAC if they wish to enroll in the Ph.D. program. Transfer to the Ph.D. program is not automatic. It usually is contingent upon completion of the M.S. requirements and requires clear evidence of promise in the Ph.D. program. The student completes a *Petition for Change in Degree Objective* (available at http://graduate.ucr.edu) accompanied by the following: 1) a letter of evaluation from each member of the M.S. Committee, and 2) a letter from the prospective Ph.D. Major Professor expressing a willingness to serve in this capacity, addressing the question of financial support, and providing an estimated timeline for completion.

I. M.S. Timeline

Quarter	Milestone	Action
2 (Year 1 Winter)	Select guidance committee	Submit M.S. guidance committee form
3 (Spring)	Guidance committee meeting	Submit annual progress report forms
3 (Spring)	Guidance committee recommends coursework	Submit program of academic study form
6 (Year 2 Spring)	M.S. thesis	Submit written thesis 30 days or more before the scheduled date for the Final Oral Examination.
6 (Year 2 Spring)	Final Oral Examination	Submit Report on Final Defense for Master's Degree

III. SUPPLEMENTARY REQUIREMENTS AND PROCEDURES FOR THE DEGREE OF DOCTOR OF PHILOSOPHY



A. Major Professor

Students identify their Major Professor upon admission to the Ph.D. program. In addition to directing the student's research project, the Major Professor serves as Chair of the Ph.D. Guidance Committee and the Ph.D. Dissertation Committee. The Major Professor does not serve on the Qualifying Committee.

B. Ph.D. Guidance Committee

Once the student has selected a Major Professor, a Ph.D. Guidance Committee is formed. This committee consists of the Major Professor, and at least two more members from the Entomology Department (hereafter, “internal” committee members). A member from outside the Department serves as a fourth member (hereafter, “external” committee member). The student completes the *Ph.D. Guidance Committee Form* with the names of the committee members, and returns it to the CNAS Graduate Student Services Advisor who will forward it to ISAC for approval. This form must be completed by the end of the **second quarter**.

Typically, faculty from other Entomology departments outside of UCR would be considered an “outside member” on the guidance committee. If the student and major professor would like a faculty member from outside of UCR to be considered as an “internal” member of the committee, they must submit a general petition to ISAC explaining why it is necessary for the selected individual to be considered an “internal” member (one paragraph) along with the faculty member’s CV appended. ISAC will vote on the petition and report the result to the student and major professor. The major professor and student are responsible for ensuring the non-UCR committee member is apprised of all procedures and committee service requirements.

The Ph.D. Guidance Committee will meet with the student at least annually, during the **spring quarter**. Prior to the meeting the student is required to complete the Individual Development Plan part of the form. Following this meeting, the Ph.D. Guidance Committee provides a candid evaluation of the student's progress on the *Annual Progress Report Form to be filled out by Major Professor*.. A link to this form is sent to the students and Major Professors by the CNAS Graduate Student Services Advisor or the Department Graduate Advisors early in the spring quarter. The progress reports serve as a permanent record of each student's progress, and a copy is forwarded to the Graduate Division.

C. Program of Academic Study

Each student, with the advice of their Ph.D. Guidance Committee, will select courses that complement their research program and help the student prepare for the qualifying

examination. These courses must be submitted on the *PhD Program of Academic Study Form*, no later than the end of the **third quarter** at UCR. This program of academic study will be binding upon approval by ISAC, and the student is expected to take the courses listed as "required" prior to the end of the seventh quarter, when the qualifying examination is given.

Required courses are explained in General Sections D&E. Students come to UCR with diverse interests, varying degrees of prior training, and numerous career objectives, thus there are no specific course requirements for the various fields of specialization. Students should work closely with the Guidance Committee to develop an appropriate course plan to complete prior to advancement.

Students may check their degree progress at any time by accessing their Degree Works application in R'web.

D. Dissertation Proposal

The written Dissertation Proposal serves as the formal guide for the student's dissertation research. A well written proposal is vital for a successful graduate program, second in importance only to the actual dissertation. As such, the creation of the Dissertation Proposal is a process that starts with the early ideas of the project, through reviews by the Major Professor and the Ph.D Guidance Committee, until the final proposal is ready for submission to the Qualifying Committee.

Each student will submit a **draft** of their Dissertation Proposal to the Ph.D. Guidance Committee by the end of their **fourth academic quarter** (usually Fall of year two). This proposal should include the following sections: Introduction (that includes background/summary of prior relevant research and justification), objectives, and methodology for reaching the objectives. **Possible styles could include those used for NSF, USDA, or NIH proposals, but the ultimate format is determined by the guidance committee.** *The research proposal (initial and final drafts) should not exceed 15 pages of text and figures, with references considered as separate.* From this original submission, the proposal will evolve with the input of the Major Professor and Guidance Committee through the **sixth quarter**, when the final proposal is approved by the Major Professor for distribution to the Qualifying Committee (see Section E). This approval is required before the student can submit names for their Qualifying Exam Committee. The proposal must be distributed to the Qualifying Committee members at least 4 weeks before the Qualifying Exams commence.

E. Qualifying Committee

By the end of the **sixth quarter**, the student, in consultation with the Ph.D. Guidance Committee, will select three faculty members to serve on the Qualifying Committee (Part I). The Major Professor may not serve on the Qualifying Committee. The three members will consist of the Chair, one other faculty member from Entomology, and one faculty member from outside of Entomology. These three names are submitted to ISAC via the departmental *PhD Qualifying Exam Committee Form*. Typically, these three faculty members have also served on the Ph.D. Guidance Committee, but this is not

required.

Faculty from other Entomology departments outside of UCR can serve on the committee and are normally considered an “outside member.” If the student and major professor would like a faculty member from outside of UCR to be considered as an “internal” member of the committee, they must submit a general petition to ISAC (as outlined in section III.B above) when they submit the *PhD Qualifying Exam Committee Form*.

Upon approval of the three submitted names, ISAC will suggest three additional names for service on the Qualifying Committee by adding these names to the ISAC Qualifying Exam Committee Form and returning it to the student. The student chooses two from this list of three, then completes the *Nomination of Qualifying Exam Committee Form* in R’Grad to the Graduate Division (**this must be done PRIOR TO YOUR WRITTEN EXAM**), who confers final appointment.

F. Qualifying Examination

The student is expected to complete all required courses in the Program of Academic Study (see page 15) prior to taking the Qualifying Examination. We recommend taking the exam either in the **sixth or seventh quarter**. Failure to take the qualifying examination by the end of the seventh quarter will be viewed as a departure from normal progress and must be justified by the student and his or her Major Professor. Students should submit a general petition to ISAC to request an extension to the timeline for taking the qualifying exam.

The qualifying examination consists of a written portion and an oral portion. The Chair of the Qualifying Committee is responsible for scheduling the time and place of both portions of the examination. The student must inform the CNAS Graduate Student Services Advisor of when and where the examination will be administered. Each member of the Qualifying Committee submits questions for the written examination to the Chair, who determines the order in which questions are given to the student. Assuming the student passes the written portion of the exam, an oral qualifying examination is scheduled to follow shortly thereafter.

In-person is the default modality for qualifying exams. If unforeseen circumstances arise and the exam committee chair approves, a hybrid exam will be allowed. If a hybrid exam is approved, committee members not based at the UC Riverside campus may attend remotely but the majority of committee members must be physically present (e.g. 3 out of 5 for the qualifying exam). The exam committee chair and the student are required to be physically present.

The Committee may meet once prior to the written examination to discuss the student's progress, the dissertation proposal, or other issues related to the student's program, and to coordinate the examination procedure. The Major Professor, though not a member of the Qualifying Committee, may submit questions to the Qualifying Committee for consideration of inclusion in the written examination. The Major

Professor may attend the oral examination at the student's request and provide information as needed or requested, but may not attend or take part in the deliberations following the examination. After the vote is taken and recorded, the Qualifying Committee Chair will verbally summarize the Committee's assessment of the student's performance on the qualifying examination for the student and Major Professor. The Chair of the Qualifying Committee also is responsible for transmitting the result of the examination to the CNAS Graduate Student Services Advisor, who then forwards this information to the Graduate Division. Possible grades are pass, fail with the option to retake the exam, or fail.

Students who fail the qualifying examination and who are eligible, must retake it within six months, but not sooner than three months, with the approval of the Graduate Division. If the exam is failed a second time, the student will be subject to dismissal from the Ph.D. program. Passing the qualifying examination along with fulfillment of all course requirements normally qualifies the student for Advancement to Candidacy. Within 48 hours of the Oral Qualifying Exam, the student must submit the Report of the Oral Qualifying Examination via R'Grad. Successful students will also nominate their Dissertation Committee in this form.

G. The Dissertation Committee and Final Oral Examination

The Dissertation Committee consists of the Major Professor and at least two other faculty members, and is submitted to Grad Division as noted above. Because the Ph.D. Guidance Committee has become familiar with the student's research, the members of the Ph.D. Guidance Committee often are selected to serve on the Dissertation Committee, but this is not required. The Dissertation Committee is responsible for guidance, editing, and approval of the dissertation. This Committee also administers the Final Oral Examination (defense). Changes to this committee can be made at any time using the Committee Change (Dissertation or Thesis) form via R'Grad.

A minimum of 30 days is required between submission of the written dissertation to the Dissertation Committee and the Final Oral Examination. This period should be sufficient for the Committee to read and provide comments on the dissertation, and for the student to complete revisions and return the dissertation for approval by the Dissertation Committee prior to the Final Oral Examination.

A seminar, open to the academic community and the public, will be required as part of the Final Oral Examination. **The student is responsible for notifying the CNAS Graduate Student Services Advisor of when and where the Final Oral Exam will take place.** After the defense, the **Major Professor will report the results** of the *Final Defense Ph.D.* via R'Grad, which signed by the Major Professor and Dissertation Committee. The CNAS Graduate Student Services Advisor then forwards the results of the examination to the Graduate Division. Once the dissertation committee has approved the written dissertation, **the student** will submit the *Signature Approval Page (Dissertation or Thesis) form* via R'Grad.

In-person is the default modality for final exams. If unforeseen circumstances arise and the exam committee chair approves, a hybrid exam will be allowed. If a hybrid exam is

approved, committee members not based at the UC Riverside campus may attend remotely but the majority of committee members must be physically present (e.g. 2 out of 3 for the final exam). The exam committee chair and the student are required to be physically present.

H. Ph. D. Dissertation

Details concerning formatting and submission of the dissertation are available at https://graduate.ucr.edu/dissertation-and-thesis-submission

I. Teaching requirements

Each student in the Ph.D. program is required to serve as a teaching assistant (50% appointment) for three quarters. During teaching assistant appointments, students are encouraged to enroll in ENTM 301 or ENTM 302 (with the course instructor of record) to gain additional structured training in college teaching. Students may petition to waive teaching requirements by submitting a general petition to ISAC explaining how they have achieved or plan to achieve equivalent training in instructional methods. Students interested in teaching at the college level beyond graduate school are further encouraged to access other teaching resources available through the Teaching Assistant Development Program, including various workshops and the University Teaching Certificate program.

J. Normative Time

Students entering the Ph.D. program with either a B.S. or M.S. in Entomology or a related field should complete all requirements for the Ph.D. degree within 17 quarters. Should a student require more than 17 quarters to complete the Ph.D. program, the Graduate Adviser will consult with the Major Professor to determine the need for a revised timetable of completion. A memo then will be sent to Graduate Division notifying the Division of the revised timetable.

K. Ph.D. Timeline

Note that this timeline is based on normative time. While most of the action items are required to be done in concordance with this timeline, some students will, for example, take the qualifying exam before quarter 7. Students may take fewer than 17 quarters to defend. If more than 17 quarters are required, the timetable will be revised and this revision will be sent to Graduate Division.

Year	Summer	Fall	Winter	Spring
1	• Introduction to Lab • Assist lab with lab/field work if arriving in summer.	• Apply for NSF GRFP • ***Begin Research Proposal*** • Identify members of Guidance Committee	• File Guidance Committee Form	• Meet with Guidance Committee ○ Program of Academic Study ○ Annual Progress Report & IDP
2		• Student Seminar Day (presentation) • TADP Training (September) • Apply for NSF GRFP if did not in Year 1 • ***Proposal to Guidance Committee***		• ***Submit Qualifying Exam Committee Form to ISAC (by week 1)*** • **Proposal to Exam Committee if taking quals in spring (30 days before exam)†** • **Qualifying Exam** (PHD) • Meet with Guidance Committee ○ Annual Progress Report & IDP
3	• ***Proposal to Exam Committee if taking quals in Fall††***	• Student Seminar Day (poster) • Grad Div. Research Grant • ***Qualifying Exam*** (**PHD**) if did not in Yr 2	• Apply for Research Fellowships ○ NIFA Pre-doctoral ○ ENTM and CNAS Scholarships	• Meet with Dissertation Committee ○ Annual Progress Report & IDP
4		• Student Seminar Day (presentation) • ***Set target date for PHD defense*** ○ *https://graduate.ucr.edu/filing-resources*	• Apply for Research Fellowships ○ NIFA Pre-doctoral ○ NIFA Post-doctoral ○ ENTM and CNAS Scholarships	• Meet with Dissertation Committee ○ Annual Progress Report & IDP
5	*Kick it into gear!!!*	• Student Seminar Day (poster) • *Finish up dissertation* • Apply for Research Fellowships (NIFA Post-doctoral or NSF Postdoctoral)	• *Finish up dissertation* • Apply for Research Fellowships and positions	• *Finish up dissertation, defend and make plans for next stage of career*

Table adapted from materials for new graduate students prepared by Dr. Alec Gerry

† Completing your proposal early and progressing to quals in quarter 6 provides you with the best opportunity for feedback and input before you get too far down the line. This is when feedback can be the most useful and productive.

†† If you have not advanced in Yr 2, you will want to take your quals in Qtr 7. For some students (e.g., international students), non-resident tuition (NRT) will need to be paid if have not advanced by Qtr 7.

** You should expect to attend one professional meeting each year following your Qualifying Exam (discuss options with your advisor). Seek travel funds through UCR GSA, through professional society travel awards, and through the Earle C. Anthony Travel Award (Graduate Division).

MS Students – complete 36 units (12 units of 200 level courses, 12 units of ENTM 297/299, and 12 units of any 100-200 level courses.
PHD students – complete courses indicated on Program of Academic Study, complete four 2-unit seminar courses, TA for 3 quarters.

SUPPLEMENTARY REQUIREMENTS AND PROCEDURES FOR THE COMBINED B.S.+M.S. PROGRAM

IN ENTOMOLOGY

A. Major Professor

Students must have identified their Major Professor upon admission to the combined B.S.+M.S. program and during the submission of the Statement of Interest and Eligibility during their junior year. The Major Professor directs the student's research project and serves as Chair of the M.S. Guidance Committee. All forms can be found on the graduate program forms website: https://entomology.ucr.edu/graduate-studies-program.

B. M. S. Guidance Committee

In the senior year, thesis research will be conducted. During the first quarter of the senior year, the student will work with their Major Professor to complete the M.S. Guidance Committee form. This committee consists of the Major Professor and at least 2 other faculty members. Although it is common to choose these members from the Entomology Department faculty, faculty outside of the Department also may serve. The majority of the members must be from Entomology. Upon selection of the committee members, the student meets with the committee and Major Professor to complete the *B.S.+M.S. Program of Academic Study Form*, secures the initials of committee members, and returns it to the CNAS Graduate Student Services Advisor who will forward it to ISAC for approval. This form must be completed by the end of the **first quarter of senior year**. The Program of Academic Study will be binding upon approval by ISAC, and the student is expected to take all of the courses listed as “required” prior to advancement to candidacy.

The M.S. Guidance Committee will meet with the student at least annually, during the **spring quarter of both the senior and MS years**. If the student remains in good standing at the end of their senior year, the B.S.+M.S. Faculty Advisor will contact the student with directions to submit their application to the M.S. program via Slate. Students must upload their UCR transcript, statement of personal history, statement of purpose, signed B.S.+M.S. Program of Academic Study Form, and 3 names for reference letters (which must include the Major Professor and the B.S.+M.S. Faculty Advisor).

C. M.S. Course Requirements

A minimum of 36 units of total coursework is required for the Master's portion of the program. As is the case for all Entomology graduate programs, the departmental seminar, ENTM 250, is required during all quarters of the M.S. portion of the program. 24 units must be 200-level, and no more than 12 units may come from 297 or 299 research units. No more than 12 units earned prior to matriculation to graduate status (including ENTM 19X) can be applied toward the M.S. degree requirements. 3 units must be ENTM 250 and the remaining 200-level courses can be taken from this list of courses: ENTM 201, ENTM 201L, ENTM 202, ENTM 202L, ENTM 203, ENTM 203L, ENTM 209, ENTM 210, ENTM 212, ENTM 219, ENTM 227, ENTM 229, ENTM 230, ENTM 240, ENTM 241, ENTM 242, ENTM 249, ENTM 251, ENTM 252, ENTM 253,

ENTM 254, ENTM 255, ENTM 256, ENTM 257, ENTM 258, ENTM 259, ENTM 260, ENTM 262, ENTM 289, ENTM 290, BPSC 230, BPSC 234, BPSC 246, BPSC 247, EEOB 215, EEOB 217, EEOB 230, EEOB 282, EEOB 283, STAT 231A, STAT 231B. Students may check their degree progress at any time by accessing their Degree Works application in R'web.

D. Advancement to Candidacy

Master's students need to apply for candidacy before the first day of instruction of the completion quarter. Students can access the *Application for Candidacy for the Master's Degree* in the R'Grad application found in R'web.

E. Final Oral Examination

A minimum of 30 days is required between submission of the thesis to the M.S. Committee and the Final Oral Examination (defense). This period should be sufficient for the Committee to read and provide comments on the thesis, and for the student to complete revisions and return the thesis for approval by the M.S. Committee prior to the Final Oral Examination. The Thesis typically includes an Abstract, Introduction, Data chapter(s) and Summary/Conclusions.

The student and the Major Professor, chair of the M.S. Committee, are responsible for scheduling the time and place of the oral examination (defense). The student must inform the CNAS Graduate Student Services Advisor of when and where the defense will be administered. Following the examination, the student will report the results of the *Final Defense of the Master's thesis* via R'Grad. The CNAS Graduate Student Services Advisor will then forward the results of the examination to the Graduate Division.

F. Thesis

Details concerning formatting and submission of the thesis are available at http://graduate.ucr.edu. After the written thesis has been approved by all committee members, the student will complete and submit Signature Approval Page (Dissertation or Thesis) form via R'Grad.

G. Normative Time

All requirements for the combined B.S.+M.S. program should be completed within two years (six academic quarters) following entry into the B.S.+M.S. program, which is three quarters after entering the M.S. portion of the program. Should a student require more than six quarters to complete the program, the B.S.+M.S. Faculty Advisor and Graduate Adviser will consult with the Major Professor to determine the need for a revised timetable of completion.

V. APPENDICES

The following materials were adapted from new graduate student advisory materials created by Dr. Alec Gerry. They are intended to provide guidance on various procedures and milestones. Please consult your Major Professor for specific suggestions.

Appendix A. General expectations of graduate students

Congratulations on your acceptance as a graduate student in the Department of Entomology at UC Riverside! Your major goal is to develop and complete novel research leading to sharing your findings through the publication of scientific papers. While it is expected that you will also perform well in your academic coursework (maintain GPA $\geq$ 3.2), academic success alone will not lead to a graduate research degree.

To help you be successful, please be mindful of the following expectations for research:

1. **Presence in the lab/office** – most Major Professors expect you to be in the laboratory for a full workday M-F unless you are otherwise engaged in field research, teaching or other activity outside the lab approved by me.

2. **Regular communication** – Most Major Professors have an open-door policy and are generally available most days to discuss research progress or challenges that you are having. Your Major Professors will expect regular updates on your research progress so be prepared to give these regularly.

3. **Peer-to-peer learning in the lab and department** – Some of the most impactful learning will come from interacting with other students and post-doctoral researchers in the department. Your Major Professor will expect you to communicate and collaborate with others so that you learn research techniques and methods of analyses that may be useful to you.

4. **Reading and reviewing relevant literature** – it is important to keep up with the literature in your field. You will want to be regularly reading new papers in the field relevant to your project.

5. **Maintaining a laboratory notebook and data records** – Each lab will have different protocols for best practices of data collection and backing up. In most cases, you will record your daily research activities in a physical notebook. Data should be recorded into a computer database with data analyses performed as data are recorded so that you will learn from each experiment. *[You will want to talk to your major professor to determine the preferred mechanism of sharing and backing up data, for example, regularly uploading to in a shared Google drive.]*

6. **Safe workplace in the lab and/or field** – follow campus and laboratory safety guidelines. Complete all mandatory safety training prior to initiating research in the laboratory or field. Review all standard operating procedures (SOPs) for your lab. Know

how to dispose of hazardous materials. Understand the risks of biological or chemical materials that you are working with. If you are unsure of the risk, ask your Major Professor or others in the lab who regularly work with these materials. Review or work with your Major Professor to create the relevant field safety plan before conducting any fieldwork.

7. **Have fun**! – graduate school is challenging. You will devote the next few years to becoming an expert on your project and achieving your research goals. However, you should also enjoy your experience at UCR. Take advantage of the opportunities to engage with other students, faculty, and staff. Some of your favorite collaborative projects may come out of ideas developed while chatting over coffee.

Appendix B. Guidance Committee Meeting: Expectations and Important Points to Include

Your Guidance Committee will support your academic and research development through your Thesis Exam (MS students) or your Qualifying Examination (PhD students). Typically, you will have this Committee during your first two years of graduate school.

You will want to select two ENTM faculty to serve on this committee in addition to your major professor. We recommend selecting folks who have experience or expertise that will be relevant to your thesis project. Also, PhD students will need to select one outside member (not in ENTM nor a cooperating member), who will provide a different perspective and whose expertise is also relevant to your project. **Remember it is vital to talk to your major professor about what their expectations for your meeting are and to be on the same page.** We intend this example to help start the conversation with your Major Professor and to help guide your preparation for your guidance committee meeting.

It is the responsibility of each graduate student to organize and prepare for their Guidance Committee Meeting. You set the date, time and location in consultation with your Committee Members. You prepare the documents needed for signature by the Committee (these forms can be found on the Graduate Forms section of the Entomology Graduate Studies page). You present your academic and research goals, progress to date, and your expectations for the coming year. Make sure to complete your IDP and annual progress report (also found under Graduate Forms) before the meeting. Use the framework below to organize your meeting.

What is this meeting: The annual committee meeting is a time to update your committee on what you have accomplished to date and what you plan to do next. This is a great opportunity to get feedback on your experimental design and ideas *before* you jump in and scale up your projects. Plan on this meeting lasting 1-1.5 hrs.

What should you include in your presentation for your annual meeting:
YEAR 1 Annual Meeting
Personal Academic Background
Briefly mention your undergraduate background. Where did you get your BS/BA? What major? Research projects that you participated in? Any publications or presentations?

Academic Progress
Discuss your proposed Program of Academic Study (what classes you've taken and what you plan to take)

Professional Activities (this will likely be short in year 1)
Briefly describe meetings attended, presentations given, or grants applied to during past year
List service activities (outreach activities)
List planned workshops/short courses/professional development activities

Research Projects (this should be the bulk of the presentation)
Project the overall conceptual design – include background, rationale (year 1)
Outline your plans for three thesis chapters

- Prepare a research presentation to describe to your Committee your project goals, objectives, brief methodology and progress to date on these goals. Present any preliminary results you may have. Discuss challenges or problems that you have encountered. (*This is where we want to elicit feedback from the committee*)

Timeline for research projects for summer through next spring

*Committee members will then need to sign your Program of Academic Study Form (Yr 1 only unless you make revisions) and sign your Progress Report Form (google form), which is initiated by your major professor after your annual meeting***.**

YEAR 2 Annual Meeting
Academic Progress
Review your Program of Academic Study (year 2)
Any waivers being requested?
Review your expected PHD Qualifying Exam date

Teaching
Present your teaching activities, including TA positions in past year.

Professional Activities
Describe meetings attended and presentations given during past year
List service activities (committees served on; outreach)
Any professional article reviews or other professional service?
List planned workshops/short courses/professional development activities

Publications
Provide a short synopsis of any publications from the past year, including the stage of publication (in preparation, in press, published)

Research Projects (this is the bulk of the presentation)
Discuss Project Proposal (year 2)

- Prepare a research presentation to describe to your Committee your project goals and progress to date on these goals. Should clearly describe your thesis chapters and illustrate how to fit together under a unifying theme. (Using a

conceptual diagram can help with this)
- Present any preliminary results you may have. Discuss challenges or problems that you have encountered.

Each year, committee members will need to sign your Progress Report Form (google form) which is initiated by your major professor after your annual meeting.

Appendix C. Dissertation Committee Meeting: Expectations and Important Points to Include

Your Dissertation Committee supports your research development through your Dissertation Defense (Ph.D. only). You will have this Committee after successful completion of your Qualifying Exam (in spring of year 2 or fall of year 3).

You will nominate this committee when you submit your report of your qualifying exam via R'Grad. Your major professor will serve as chair and you need at least two more faculty to serve on this committee. More than half of this committee needs to be from ENTM or be cooperating faculty in ENTM. While only 3 members are required, you can have additional members if that makes sense for your project, as long as the majority of your committee are associated with ENTM.

It is the responsibility of each graduate student to organize and prepare for their Dissertation Committee Meeting. You set the date, time and location in consultation with your Committee Members. You prepare the documents needed for signature by the Committee (these forms can be found on the Graduate Forms section of the Entomology Graduate Studies page). You present your research goals, progress to date, and your expectations for the coming year. ***You will want to talk with your major professor to discuss specifics as to their expectations; here is a sample framework to help start that conversation about organizing your meeting.***

What should you include in your presentation for your annual meeting (post-quals):

Professional and Teaching Activities

Describe meetings attended and presentations given during past year
List service activities (e.g., Department or professional committees served on)
Any professional article reviews or other professional service?
Describe your teaching activities, including TA positions in past year.

Publications

Provide a short synopsis of any publications from the past year, including the stage of publication (in preparation, in press, published)

Progress of Research Projects (this should be the bulk of the presentation)

Prepare research update to describe:
- Progress during the past year
- Research outcomes and data analysis
- Interpretation and discussion of new results

- Challenges encountered and your response to these challenges
    - Committee members (and your Major Professor of course) should be consulted throughout the year as challenges arise. The Committee meeting is not the place to solve all your research problems!
- Anticipated research activities during the coming year

Funding and Grantsmanship

Discuss grants/fellowships applied for. Were you successful?
Discuss funding opportunities for the coming year.

Timeline to Completion of Graduate Studies

Describe professional activities expected during the coming year
Discuss expected graduation date (be more specific as you near the end!)

Each year, committee members will need to sign your Progress Report Form (google form) which is initiated by your major professor after your annual meeting.

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*Remember, before you defend, you should check in with your committee to make sure they agree that you are ready and that they will be available during the timeframe that you plan to defend (e.g., are they on sabbatical or in the field?). You will need to submit your entire formatted thesis to the committee at least **30 days** before the defense. One way to minimize your stress and simplify the dissertation writing process is to publish as you go. As you finish a project, submit the manuscript to your committee for comment and approval BEFORE you submit for publication. This gives your committee a chance to provide comments early on and provides you with friendly, constructive criticism which will result in a stronger manuscript for you to submit. They may pick up on things that the reviewers would have as well, so this friendly review process can help decrease the amount of time your paper is in review or revision. Having one or more chapters published or in review by the time you are preparing to defend makes the dissertation and defense preparation process smoother and less stressful for you.*

Appendix D. Thesis/Dissertation Proposal SAMPLE Template

In general, proposals do not exceed 15 total pages of text and figures. References and supporting attachments are not considered in this page limitation. You will later use this proposal to help develop your written thesis or dissertation. This is an example of a standard dissertation proposal. ***You will need to discuss with your major professor if they have specific expectations or a different template to follow (e.g., some faculty prefer this to be organized like an NSF or USDA proposal).***

(Title Page)

Thesis/Dissertation Title

M.S. Thesis Proposal or Ph.D. Dissertation Proposal
Department of Entomology
University of California at Riverside

Student Name:

Committee Chair:
Committee Members:

Project Summary: *(~1/2 page)*
Provide concise background that provides context for proposal objectives. In 1-2 paragraphs describe what you hope to learn from the overall studies that you will perform as part of your thesis/dissertation? What are the problems to be addressed, and what will you accomplish? Provide a bulleted list of your proposal objectives.

Introduction and Literature Review: *(~3-5 pages)*
Discuss the current knowledge and knowledge gaps related to your **overall** research project topic (which you discovered from your literature search). Why is it important to address these knowledge gaps? Use figures and tables where available to support your background discussion. Place figures directly into the proposal and be sure to include figure legends. Use subtitle headers as appropriate for ease of reading. Cite appropriate research papers or other sources using in-text citations and make sure all cited work has a full bibliographic entry in your References section.

Finish with a summary paragraph describing the important knowledge gaps that you will address with your research and what impact this research is anticipated to have (e.g., on animal health, on pest management, to expanding basic knowledge, etc…). Many students will use this section of their proposal to form the backbone of the Introduction chapter to their dissertation.

RESEARCH OBJECTIVES *(the bulk of the proposal)*
Chapter 1: Title of objective
Research Question 1: A research question may be exploratory in nature. What are you setting out to answer and what is the NEW knowledge that you will generate.

Hypotheses: Hypotheses should be clear, specific, and testable… think about how you would DISPROVE each hypothesis as you consider your research methods (i.e., what is the null hypothesis?). *You can have multiple hypotheses related to same research question…list as hypothesis 1a, 1b, 1c, etc.* ***Remember a hypothesis is your explanation about how variables are related or how systems work, while your prediction is what you expect to happen if your hypothesis is correct.***

Experimental Procedures: Provide adequately explained procedures to address the research question or hypothesis. If these methods are standard for the field or if you are using the methods from another published study, make sure to include the relevant citations. Organize by tasks in sequence (Task1 → Task 2 → Task 3 → …). Clearly identify what data you will be collecting. Explain and justify statistical analyses to be used (particularly important for hypothesis-driven objectives).

(Preliminary) Data and Results to Date: You may or may not have an y preliminary data, but if you do, here is the perfect place to describe what you have done to date and what you have found. Most students have data and results for at least one chapter at the time of their qualifying exam. If you have no results yet, you may want to include a section of expected results.

Pitfalls and Limitations: Briefly discuss where your study might go wrong. For example, are there undeveloped or untested methods, uncontrollable field or environmental conditions, lack

of resources for study, time requirements, etc. Initially, you may have a long list here, but you will address these problems by refining your experimental procedures in later revisions of your proposal. In the end, there are likely to still be some potential pitfalls that you cannot address sufficiently by adjusting your procedures – these will remain indicated here.

Chapter 2: Repeat above for as many chapters as you have (typically, M.S. students have 1-2 chapters in addition to the introduction/conclusion, and Ph.D. students have 3 chapters in addition to the intro/conclusion, but make sure you have no more than 5!)

TIMELINE: *(< 1 page)*
Provide a timeline that includes at least the following: Literature review, develop research methods, pilot study if appropriate, select guidance committee, write research proposal, initiate research studies (identify by objective), Qualification exam (for PhD students), complete research studies (by objective), data analyses (by objective), write manuscripts (by objective), thesis/dissertation defense. (*Many students find a GANTT chart* is *easiest to present this information as shown below*)

Activity	**YR 1**				**YR 2**				**YR 3**				**YR 4**				**YR 5**		
	F	W	S	S	F	W	S	S	F	W	S	S	F	W	S	S	F	W	S
Initiate literature review	X																		
Develop research methods	X	X																	
Draft research proposal	X	X	X																
Select Guidance committee		X																	
Submit proposal to committee				X	X														
Obj 1																			
Research		X	X	X	X	X	X	X	X	X	X								
Analysis							X	X	X	X	X								
Write up, publish ms									X	X	X	X							
Obj 2																			
Research					X	X	X	X	X	X	X	X							
Analysis										X	X	X							
Write up, publish ms													X	X					
Obj 3																			
Research							X	X	X	X	X	X	X	X					
Analysis														X	X	X			
Write up, publish ms																X	X	X	
Submit dissertation																			X
Defend																			X

REFERENCES: *(does not count toward your 15 page limit)*
You will want to include full citations for referenced works. Use a format that is relevant for your field, e.g. following the formatting for *Annual Review of Entomology.*