GRADUATE STUDENT INFORMATION & EXPECTATIONS – EARLEY LAB

A current graduate handbook is available at http://bsc.ua.edu/forms-for-graduate-students/, complete with: 1) Plan I Masters, Plan II Masters, and PhD timeline and course checklists, 2) qualifying examination guidelines, 3) a list of graduate student awards and funding sources, 4) annual evaluation forms [good to view this so that you understand how you will be evaluated], and 5) instructions on how to transfer credits from graduate level classes taken at other institutions. The aforementioned website also includes *all necessary graduate student forms* (e.g., for committee assembly, comprehensive exams, PhD candidacy, final defense, program outline), *deadlines*, and *course checklists* as well as suggested PhD timelines, guides to comprehensive exams, etc.

The purpose of this document is to elaborate on the graduate handbook and provide expectations for the Earley laboratory specifically. This does not serve as a replacement for all of the other resources you have at your disposal regarding degree timelines, etc. I will work with you to accomplish any and all goals outlined in this document but the onus is on you!

Expectations for both Masters and PhD students in the Earley Lab:

1. Enthusiasm!!
2. Creativity!!
3. Critical thinking and synthesis!!
4. **Independently** completing degree requirements and following degree timelines (see below). Remember, it is *your* responsibility to make sure you are on schedule.
5. Active collaboration (intellectual or experimental) with graduate students, post-docs, and visiting scientists, including help with reviewing peer grants and manuscripts.
6. Independent pursuit of funding opportunities (http://rlearley.people.ua.edu/student-grants.html)
7. Publishing in a timely fashion (e.g., draft manuscript < 6 months after project completion)
8. Active participation in weekly reading group (http://rlearley.people.ua.edu/reading-group.html), which includes submitting PDFs to Dr. Earley for posting on the website, reading the papers carefully, and coming prepared to discuss the papers in detail (i.e., graphs, findings, statistics, or anything that you need clarification on).
9. Assistance with fish feeding and breeding, including weekend maintenance rotations.
10. Willingness to mentor undergraduate assistants on your research projects.
11. Active participation in departmental events such as colloquia and weekly seminars.

Disclaimer about working with you to generate products: Dr. Earley is human! Thus, when you generate products (e.g., grant proposals, conference abstracts, posters, manuscripts, dissertations, theses), you *must* provide me with ample time to review them and provide comments. I will not let you submit grant proposals or attend conferences *or graduate* (!!) if you don't give me enough time to review your work. General rule of thumb is *earlier the better*, and this means *at least* 2 weeks lead time for small products like short grant proposals, conference abstracts; *at least* 3 weeks for medium products like conference posters and presentations and manuscripts; *at least* one month for larger grants, dissertations and theses. This is especially true if many of the Earley lab graduate students are submitting for the same grants and/or attending the same conferences.

Courses that Earley lab students are <u>required</u> to take:

1. Animal Behavior (BSC 548)
2. Statistics; Foundations of Advanced Biostatistics (BSC 695); you should take a starter course if you have no prior experience with stats, e.g. Intro Stats for Biology (BSC 380).

** all other courses should be selected based on your research interests*
** you can find course listings at http://bsc.ua.edu/wp-content/uploads/2013/09/Long-range-for-course-plan-F2013-v2.pdf*

I. Masters Students

There are two options for Masters students – Plan I and Plan II. These plans differ slightly in coursework requirements but primarily in whether the student is required to submit a thesis (Plan I requires a thesis; Plan II does not). Regardless of which plan you select, the Earley laboratory requirements are the same (see below); ultimately, Plan II requires less "red tape" because you do not have to submit a formal thesis to the department (but you do have to submit a written capstone experience). Often, Plan II is used as a transition into the PhD program.

Earley lab recommended timeline (assuming Fall admission) – note that this timeline is different from the timeline outlined in the graduate handbook. I expect Masters students to graduate within 2 years. I am a strong proponent of using Masters degrees as a springboard for admission to PhD programs and I think spending more than two years in a Masters program would be pushing it! The timeline below excludes "research" because you are expected to be conducting an experiment for much of the time ☺

1. **August-September of 1st semester** – begin discussing NSF graduate research fellowship application (and identify potential letter writers), which will serve also as the foundation for your Master's research proposal. Information about the NSF GRFP can be found here: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201. If you do not intend to pursue a PhD, a NSF GRFP-style document will still be required!

   October of 1st semester – have your advisory committee established (3 members, including Dr. Earley); fill out the thesis committee form, which can be found at: (http://bsc.ua.edu/forms-for-graduate-students/). Contact committee members to set up a meeting for early-mid January committee meeting/annual review; use a Doodle calendar, WhenisGood, etc. poll but do not put weekends or any times before 8 am or after 5 pm. *Also, once you solidify a date for your committee meeting/annual review, you need to reserve a room for the meeting; do this by contacting the Department of Biological Sciences office staff.*

2. **November of 1st semester** – submit NSF graduate research fellowship application. If you do not intend to pursue a PhD, this is just a great time to have the conceptual framework and design of your Master's thesis research reasonably well worked out. We will continue to tweak into the Spring semester.

3. **Late November – early December of 1st semester** – hold your 1st committee meeting, which is intended to familiarize your committee with who you are, and where you're headed with your research. This will be in the form of an oral presentation with an accompanying powerpoint that is both informative and aesthetically pleasing. See graduate handbook for evaluation benchmarks for your annual review.

4. **January of 2nd semester** – if you've got your research plan pretty well worked out, and it involves "growing up" some animals, this is the prime time to select "moms" and get to collecting eggs!

5. **Early March of 2nd semester** – finalize research proposal, which should be an elaborated version of your NSF graduate research fellowship and/or the Introduction and Methods of the manuscript that will extend from the work.

6. **Mid-May – August (summer following 2nd semester)** – RESEARCH!! This is the absolute best time to conduct research. You may not have a lot of undergraduate researcher assistance but, it's a time to immerse yourself in the science, get ahead of the curve to ensure that you have a publishable manuscript in hand by May of the year you graduate! This is also a time to troubleshoot your experimental design and build your experimental colony of fish without the burden of classes, teaching, or other service responsibilities. So, take advantage of it! Please plan to spend the summer conducting research. This applies the same to all Master's students, irrespective of Plan I vs. Plan II or "regular" vs. AMP.

   Begin researching potential PhD programs, if this is where you're headed next. Establish a list of potential PhD mentors and work with Dr. Earley to develop correspondences that demonstrate your competitiveness! Begin thinking about the application process to PhD programs.

7. **August (summer following 2nd semester) – December of 3rd semester**: RESEARCH!!

8. **October – November of 3rd semester** – contact committee members to set up a meeting for your second committee meeting/annual review (must be held prior to December 15th). See above for Earley lab requirements/suggestions on how to approach your committee meeting. *In addition, you should be very close to (if not completely) finished with your coursework by this point!* Complete the candidacy form (http://bsc.ua.edu/forms-for-graduate-students/).

9. **Before Christmas break after 3rd semester** – are your PhD applications in?? They should be!

10. **First week of January (beginning of 4th semester)** - If you plan to graduate in May, you need to apply for graduation during the first week of January (at the latest); complete the degree application form (http://bsc.ua.edu/forms-for-graduate-students/). *Note: this application will not receive formal approval until you submit a thesis (if you are Plan I).*

11. **Early March of 4th semester** – if you are Plan I, you need to submit a finalized thesis to your advisory committee at least two weeks prior to your oral defense. If you are Plan II, you need to submit a "research experience (capstone) report" at least two weeks prior to your oral defense. *Regardless of which Plan you are enrolled in, Dr. Earley requires the "finalized thesis" or the "research experience report" to be in the format of a manuscript that can be published in a peer-reviewed journal. You must discuss this with Dr. Earley **well** in advance to determine which journal the research will be aimed at and what format the manuscript should take. In addition, you should allow at least two months following the initial "draft" submission of your finalized manuscript for editing and exchange of comments/ideas with Dr. Earley.*

12. **Late March-Early April of 4th semester** – if you are Plan I or Plan II, you should convert your publishable manuscript into an engaging powerpoint seminar that you can deliver to both your committee and the department. If you are Plan I, your publishable manuscript needs to be converted into a formal thesis (abiding by university guidelines for thesis format; see Earley lab website: http://rlearley.people.ua.edu/prospective-students.html) and submitted 6 weeks prior to your graduation (which means first week of April if you plan to graduate in May; or middle of the summer if you plan to graduate in August).

13. **TWO WEEKS PRIOR TO ORAL DEFENSE***:* Submit your thesis (Plan I) or "research experience (capstone) report" (Plan II) to the Biology office and reserve a room for your oral defense.

14. **Late April-early May of 4th semester** – deliver your formal powerpoint presentation to the department in partial fulfillment of your degree (this will essentially serve as your thesis defense).

15. **Before leaving the University of Alabama** – you need to provide Dr. Earley with all data, videos, etc. collected during the tenure of your Masters work. This serves two purposes: 1) to provide back-up, and 2) to ensure that we have the data available for future analyses.

In order to graduate with a Masters degree in the Earley lab, you must have a relatively finalized manuscript (i.e., 85-90% ready to submit to a peer-reviewed journal) by the time I need to sign off on your degree! This is non-negotiable because your experiment should be publishable regardless of whether your results support or reject your hypotheses (i.e., because we will work to construct a bulletproof experimental design).

Authorship on Manuscripts for Masters students:

Dr. Earley will consult the Masters student regarding authorship on the manuscript. Typically, undergraduates play a significant role in all projects in the Earley laboratory. Therefore, the Masters student should determine the extent to which undergraduates have contributed and whether they deserve authorship (*general rule*: if you could not have completed your study without the help of an undergraduate, they deserve authorship).

The Masters student will always be first author on manuscripts generated from their thesis unless significant time (> 6 months) passes between completion of the study and manuscript development. In the event that the Masters student does not generate a draft of a publishable manuscript within 6 months of experiment completion, Dr. Earley will either: 1) assume first authorship, or 2) grant first authorship to another student (undergraduate or graduate) who demonstrates the work ethic and/or enthusiasm for converting the research into publishable form.

Dr. Earley will assume last authorship on manuscripts that result from collaborative efforts (intellectual, financial) between he and the Masters student (but see above for exceptions).

Dr. Earley will be the corresponding author on any publications resulting from Masters theses unless the Masters student demonstrates exceptional creativity and ownership of the study (in which case it is only reasonable to give the Masters student corresponding authorship!). This can be discussed informally with Dr. Earley. FYI - it is always *better* for the student to be corresponding author but it carries significant responsibility in the form of submitting and revising the manuscript in a timely fashion!

I. PhD Students

For the following information, refer to the graduate handbook (see link on Page 1 of this document):

- Processing of transfer credits for graduate coursework from undergrad and/or Masters degrees.
- Establishment of residency status

A few things before getting started with University of Alabama requirements:

1. I expect PhD students to seek their own funding because there is no substitute for the experience of submitting grants (and getting both rejections and acceptances!). I have created a website (http://rlearley.people.ua.edu/student-grants.html) that alerts you to a number of grant resources; there are bound to be more! You absolutely need to fine-tune your grant-writing talents if you plan to have a successful career in the biological sciences. So, I will work with you (e.g., recommendation letters, reviewing of your grants) on all applications provided that you give me adequate notice (typically this is at **least** a couple of weeks for a small grant; and at **least** a month or two for larger grants or fellowship applications).
2. I expect PhD students to attend and present at national and international conferences at least once annually. The following mechanisms can be used for financial support: 1) departmental funds, 2) travel grants available through many of the societies that sponsor conferences, 3) travel funds from Dr. Earley's grants. Meetings that we typically attend are *Society for Integrative and Comparative Biology, Animal Behavior, International Behavioral Ecology, Society for Behavioral Neuroendocrinology, and Evolution (not an exhaustive list!).*
3. I expect PhD students to "publish as they go". This means that you should prepare publications for peer-reviewed journals shortly after (less than 6 months) completing your experiments. This will increase your visibility in the scientific community and make you more competitive for post-doctoral fellowships. At the very least, I expect **3 first-authored publications from my PhD students**. To be seriously competitive, you will probably need more! Hence…
4. I expect PhD students to collaborate: 1) with each other, 2) with visiting scientists that routinely come to the laboratory, 3) with researchers outside of the laboratory. This will enhance your research productivity and your networking skills. **If you plan to conduct collaborative research outside of the Earley laboratory, you must alert me to your intentions and related time (and financial) commitments. Ultimately, I reserve the right to approve or reject outside collaborations based on the progress you are making on your PhD projects so, you have to convince me that an outside collaboration will be lucrative for your career (especially if it involves space or financial commitments)!**

Earley lab recommended timeline and benchmarks (assuming Fall admission) – note that this timeline is different from the timeline outlined in the graduate handbook. I expect PhD students to graduate within five years. The timeline below excludes "research" because you are expected to be conducting experiments throughout your tenure as a PhD student ☺

If you are entering the PhD program directly from your undergraduate, you are **required** to submit a National Science Foundation Graduate Research Fellowship or its equivalent from other funding agencies (see #'s 1-5 under the I. Masters Students section on Page 1 of this document). *Students entering from a Masters program are ineligible for this award.* To accomplish this goal, you should work with Dr. Earley either immediately upon arriving to the University of Alabama (or, ideally, before officially arriving on campus) to get started with the application procedure.

1. **October of 1st semester** – have your internal PhD Advisory committee established (Dr. Earley plus 3 additional UA Biology faculty members), and discuss with Dr. Earley some folks from outside of UA who might serve as your external advisory committee member (*it is best to find someone relatively close to UA who has research interests that parallel your own*).

2. **Mid-Late November of 1st semester** – Generate a *Plan of Study* with Dr. Earley using the form available here (http://bsc.ua.edu/forms-for-graduate-students/). Also, at this point, you should have a general idea about the *direction* of your PhD research, which you can begin to parlay into a basic proposal outline.

3. **Late November – early December of 1st semester** – contact committee members to set up a meeting for early-mid January committee meeting/annual review; use a Doodle calendar (www.doodle.com).

4. **December of 1st semester** – finalize a *draft* dissertation research proposal for committee review. Basically, this should include a conceptual backdrop for the *direction* of your planned PhD research and some thoughts on interesting questions, hypotheses plus some general ideas of experimental design.

   *This committee meeting needs to include a **formal** presentation of your progress to date including grants submitted, teaching responsibilities, coursework plan, research directions, and planned avenues for publication of your results. You absolutely need to generate: 1) a powerpoint presentation, 2) a draft dissertation research proposal, 3) hard copies of both the powerpoint and the proposal (and any additional information that you deem pertinent), and 4) your Plan of Study. All of these materials should be submitted to Dr. Earley prior to sending them to your committee (e.g., plan for at least 1 month prior to the committee meeting to ensure that we have at least 1 week to work out the kinks before submitting to your committee). The materials should then be sent to each member of your committee at least 3 weeks prior to your meeting. Also, once you solidify a date for your committee meeting/annual review, you need to reserve a room for the meeting; do this by contacting the Department of Biological Sciences office staff.*

5. **January of 2nd semester** – hold your committee meeting. See graduate handbook for evaluation benchmarks for your annual review (in the Earley lab we aim for at the very least a score of 3.0-4.0).

6. **January of 2nd semester through summer** – continue working on your dissertation research proposal and have it ready to go by the August following your first year. *Submit the dissertation research proposal to your committee members for review, and ask to receive feedback.*

7. **October – November of 3rd semester** – contact committee members to set up a meeting for your second committee meeting/annual review (must be held prior to December 15th) ; use a Doodle calendar (www.doodle.com).

   The same guidelines apply as in #4 above. However, you should also revise your dissertation research proposal based on comments received from Dr. Earley and your committee members.

The finalized version of your dissertation research proposal should be submitted to your committee at least 3 weeks prior to your second annual review committee meeting.

8. **December of 3rd semester** – hold your second annual committee meeting.

   You should be prepared to justify and defend (e.g., using a powerpoint presentation) your dissertation research proposal – this means you should be ready to discuss the methodology, hypotheses and most importantly the "big picture", conceptual backdrop of your dissertation research plan.

   During this committee meeting, you should establish a general date for your comprehensive examinations. In addition, you should either inquire about examination format during the meeting and/or set up meetings with your committee members to determine their expectations for the comprehensive exams (including reading material, topics to be covered, etc.). Make sure your Plan of Study (coursework) will be complete before you schedule your comprehensive examinations!

9. **Summer after your 4th semester** – begin thinking about submitting a National Science Foundation Doctoral Dissertation Improvement Grant (DDIG), which you are eligible for after you reach PhD candidacy status (after you pass the preliminary exams). Link to NSF DDIG is: http://www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=5234&ods_key=nsf08564.

10. **Summer after 4th semester** - prepare materials to study for your comprehensive (preliminary) examinations; in reality, you should be "studying" all along by immersing yourself in material related to your research.

11. **Late summer after your 4th semester (at the latest, September of 5th semester)** – take your comprehensive (preliminary) examinations, and begin taking dissertation credits (BSC 699)

12. **October of 5th semester** – submit your NSF DDIG proposal

13. **October – November for ALL years hereafter -** contact committee members to set up a meeting for early-mid January committee meeting/annual review

    Follow links on the Earley lab website (http://rlearley.people.ua.edu/prospective-students.html) and the graduate handbook for graduation application, dissertation submission, and formal departmental seminar deadlines/guidelines.

Authorship on Manuscripts for PhD students:

Dr. Earley will consult the PhD student regarding authorship on the manuscript. Typically, undergraduates and Masters students play a significant role in all projects in the Earley laboratory. Therefore, the PhD student should determine the extent to which undergraduates and/or Masters students have contributed and whether they deserve authorship (*general rule*: if you could not have completed your study without the help of someone, they deserve authorship).

The PhD student will always be first author on manuscripts generated from their dissertation **unless** significant time (> 6 months) passes between completion of the study and manuscript development. In the event that the PhD student does not generate a draft of a publishable manuscript within 6 months of

experiment completion, Dr. Earley will either: 1) assume first authorship, or 2) grant first authorship to another student (undergraduate or graduate) who demonstrates the work ethic and/or enthusiasm for converting the research into publishable form.

Dr. Earley will assume last authorship on manuscripts that result from collaborative efforts (intellectual, financial) between he and the PhD student (but see above for exceptions).

Dr. Earley assumes that PhD students plan to pursue a career in academics or a related field. With that said, the PhD student should be the corresponding author on any publications resulting from their dissertation work. Being the corresponding author means that the PhD student assumes the responsibility of: 1) submitting the manuscript while paying **very close attention** to journal formats and guidelines, 2) dealing with manuscript revisions *in a timely fashion*, and 3) potentially discussing the research with media outlets in clear and convincing fashion. If the PhD student is not comfortable with doing an exceptional job with any of these three responsibilities, Dr. Earley will assume corresponding authorship. This can be discussed informally with Dr. Earley. FYI - it is always *better* for the student to be corresponding author but it carries significant responsibility that should not be underestimated!