

TIPS FOR SUCCESS IN THE ERVIN LAB AND BEYOND

Members of the Ervin lab who are making satisfactory progress in their studies have the right to expect that I will provide all the necessary resources for successful completion of their work towards an advanced degree. This includes but is not limited to: research support (logistic, financial, and advisory support), assistance with travel to conferences, assistance in publishing research results, advocacy in support of the student outside the lab, and letters of support for grants, scholarships, fellowships, awards, and future employment.

Graduate school is a difficult endeavor, under the best of conditions, and successful completion requires a high degree of dedication and years of hard work. The following information is meant to provide some insight on characteristics and actions that will increase your likelihood of success and put you in the best possible position for achieving your goals beyond graduate school. Previous lab members who have followed these guidelines have benefitted in such ways as:

- Awards for presenting their research at symposia and scientific conferences: Undergraduate and graduate students in my lab have been recognized with student presentation awards.
- Awards for their work as Graduate Research Assistants: Many of the students who have completed graduate degrees in my lab have won departmental and university TA and RA awards.
- Regular attendance at regional to national scientific conferences: I try to send all students to relevant scientific conferences to present research they conduct while in my lab.
- Publication of their research: Students who earned degrees from my lab have published from one to more than a dozen peer-reviewed scientific journals each based on their work here.
- Employment after completing graduate studies: Students completing their degrees in my lab have gone on to positions with The Nature Conservancy, the US Forest Service, doctoral programs at other universities, university faculty positions, and other professional employment related to their studies.

Develop a plan and timeline for earning your degree.

Graduate school is the first stage in your professional development where you are expected to take full responsibility for your degree and your actions. Be proactive. Read all materials regarding the graduate program at MSU **and the Departmental Grad Student handbook**. Use these to map out your course of study as early as possible. Then, do your best to stay on track as you progress through your studies.

Work hard and spend your time wisely.

Being a graduate student is a full-time effort, and rarely will students excel on a part-time work schedule. If you aren't studying, working on teaching responsibilities, or collecting data, you can use available time to analyze and interpret your data, keep lab and field notebooks up-to-date, or review the scientific literature (that related to your work specifically, and other published work in the broader field of ecology/biology). A firm grasp of the literature will help you in publishing your work in peer-reviewed journals and will enable you to sail through the comprehensive exams associated with completing your graduate degree.

You should make an effort to be accessible during MSU business hours, when the most resources and personnel are available. However, I generally do not set strict rules for when students must be present in the lab. My philosophy is that students should set their own work hours such that they can progress as effectively as possible through their research and coursework.

Be a good lab member and colleague.

Each student brings a unique set of skills and knowledge to the program, and conversations with fellow graduate students and faculty are an important part of your training (and theirs). You should make an effort to communicate with your lab partners and the members of other labs in the Department on a regular basis, to share ideas, develop potential collaborations, and gain/share experiences on being a graduate student.

Join professional organizations and attend scientific conferences.

Regardless of your area of interest within ecology, there is at least one professional society/organization you can (and should) join as part of your professional development and networking. Membership in these organizations helps to identify you within a disciplinary area, provides opportunities for getting to know other ecologists with similar interests, provides potential opportunities for funding and publication, and provides an outlet for presenting your research at their annual conferences.

Along those lines, scientific conferences themselves provide valuable opportunities to obtain feedback on your results and allow you to establish yourself within the scientific community. Both of these are important for future employment, potential future funding, and publishing your work later. Because of this, you should work as early as possible towards completing and presenting pieces of your research at regional, national or international conferences. Regional conferences also often hold student presentation competitions that may provide monetary assistance for attending national conferences (along with official recognition of the quality of your work!).

Apply for funding.

You should search for funding opportunities and to apply for relevant grants whenever possible to support your research and travel to meetings. In addition to potentially funding the research component of your graduate studies, this will give you excellent writing practice, which is important for completing graduate school and will continue to be important after you have earned your degree. Conference organizers sometimes also offer opportunities for students to receive reduced registration costs in exchange for helping in the operation of the conference (e.g., running projector systems, staffing information kiosks, etc.).

Let me know how I can help.

If you have problems, questions, or concerns, you should communicate those to me as early as possible. Because graduate school is about developing independence, I tend towards permitting students to work independently, seeking out my advice when it is needed. Sometimes, students need a greater level of interaction, especially during the early stages of their graduate programs. If this is the case, you simply need to let me know the amount of assistance that will best facilitate your success.

You may communicate with me by email, by telephone or text, or by scheduling a meeting to talk in person. Most of the time, you also are welcome to drop by my office unannounced, but longer visits should be scheduled in advance to ensure I have time available when you visit. Email is by far the best means to contact me for anything that is not urgent.

Timeline/Milestones for Ervin Lab Students
(aligned with 2020 BIO Grad Student handbook)

First semester

Establish advisory committee
Begin developing Program of Study
Begin developing research project and proposal

Second semester

File Program of Study and Committee Request, usu. with a committee meeting

M.S. students

- > First complete proposal draft should be completed before mid-semester
- > Proposal should be successfully defended by the end of the semester

Ph.D. students

> Development of proposal should be initiated before the end of the semester
Begin collection of data for research project, realizing that direction of project may have to shift following proposal defense (regular communication with committee members can reduce the likelihood of this)

Third semester

Continue with coursework and data collection
Attend or plan to attend conference(s)

Fourth semester and beyond

Ph.D. students

- > Successfully defend their proposal by the end of the fourth semester
- > Begin plans for the comprehensive exams

Students will submit regular research progress reports (formal and informal)

These progress reports may take the form of formal documentation, periodic informal updates on progress, development of manuscripts for potential publication as journal articles, and/or presentation of research at scientific conferences. The objective here is that the student show continued progress towards completion of the thesis or dissertation research.

Students also may be asked to contribute to grant reporting, collaborative research papers with others in the lab, or development of grant proposals

Master's students should consider beginning thesis document development as early as possible during their third semester, after approval of the proposal. Think along the lines of one to three journal articles as the content of a Master's thesis.

Doctoral students should consider completing their comprehensive exams during their third year, before the end of the sixth semester. This timeline is somewhat flexible, but completion of the exams is a requisite for advancing to candidacy, and candidacy is required for some funding opportunities. The dissertation research should result in at least two to four journal articles.

Defense of the thesis or dissertation should only be scheduled once the document has been completed and is ready for submission to the advisory committee. The work also should be developed into manuscript format for journal submission as the thesis/dissertation document is produced. This will greatly facilitate publication of the research.

Code of Ethics
(modified from the Ecological Society of America Code of Ethics)

General: All members of the lab should observe the following principles in the conduct of their work at MSU.

- a. Strive to accurately represent ecological understanding and knowledge and to avoid and discourage dissemination of erroneous, biased, or exaggerated statements.
- b. Lab members will not plagiarize in verbal or written communication, but will give full and proper credit to the works and ideas of others, and make every effort to avoid misrepresentation of either the originality of their own work or the information contained in works of others.
- c. Lab members will not fabricate, falsify, or suppress results, deliberately misrepresent research findings, or otherwise commit scientific fraud.
- d. Lab members should conduct their research so as to avoid or minimize adverse environmental effects of their presence and activities, and in compliance with legal requirements for protection of researchers, human subjects, or research organisms and systems.
- e. In communications, lab members should clearly differentiate facts, opinions, and hypotheses.

Publication: The following principles of ethical conduct apply to lab members writing, reviewing, editing, or publishing grant proposals or papers in the professional literature.

- a. Lab members will claim authorship of a paper only if they have made a significant intellectual contribution to the final manuscript. Authorship may legitimately be claimed if individuals performed two of the following ([a, b, or c] and d):
 - a. conceived the ideas or experimental design for a study, or
 - b. participated actively in execution of the study, beyond simply collecting data, or
 - c. analyzed *and* interpreted the data within the context of the study,

and

 - d. wrote or critically edited the manuscript (i.e., edited for scientific and/or intellectual content).
- b. Lab members will not include as coauthor(s) any individual who has not agreed to the content of the final version of the manuscript.
- c. Lab members will not add or delete authors from a manuscript submitted for publication without consent of those authors.
- d. Lab members will not submit for publication any manuscript containing data they are not authorized to use.
- e. Lab members will not represent research results as new if they have been published or submitted elsewhere, or submit a manuscript for publication while it is under review for possible publication elsewhere.
- f. Lab members will treat manuscripts under review as confidential, recognizing them as intellectual property of the author(s).
- g. When using ideas or results of others in manuscripts submitted for publication, lab members will give full attribution of sources. If the ideas or results have not been published, they may not be used without permission of the original researcher. Illustrations or tables from other publications or manuscripts may be used only with permission of the copyright owner.
- h. Lab members should not serve as editors or reviewers of manuscripts if present or past connections with the author or the author's institution may prevent objective evaluation of the work.
- i. Lab members should not purposefully delay publication of another person's manuscript to gain advantage over that person.
- j. Lab members submitting manuscripts for publication will promptly report to editors any errors in research results or interpretations discovered after submission or publication.
- k. Lab members should document all floristic surveys and field identifications with vouchers of species collected and the taxonomic sources used in specimen identification.