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Mutual Expectations for Incoming MS and PhD Students
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This document lays out my view and philosophy for graduate education at the University of Maryland, intended to articulate joint expectations: what is expected of students and what students should expect of their advisor. Each student will have different goals and needs, so that individualization will be needed for each mentee. Despite individual differences, there will be constant elements determined by the organizational culture and degree requirements for the university and the degree-granting program, whether Entomology or Biological Sciences (BEES).

Ideally you will read this at the outset of your graduate experience, to revisit periodically. Please raise questions or suggestions if there are missing elements or points that do not apply to you. This document is not comprehensive, but it is a living document that can be improved as we grow into our shared experience.

A graduate education has important differences from an undergraduate education. An undergraduate education is more structured and less flexible, and a student has the responsibility to learn what is known. For a graduate degree in science, a student must discover the unknown and take leadership on original scholarship. A graduate student has more control in training to be a scientist, learning and communicating new ideas, and developing knowledge as to the workings of nature. The identification of important, tractable questions in need of scientific inquiry requires experience and is a challenging, critical component of the art of science. An MS student will pursue a more limited question, usually receiving more guidance in problem selection and execution. A PhD student is expected take ownership of a topic and to make original contributions to advance the field, in training towards an independent research career.

We strive to be an anti-racist group that respects and holds equal all races and ethnicities, gender identities, ages, physical abilities, socio-economic statuses, and religions or cultural backgrounds. As such, we are accountable and continuously revisiting our actions and practices to better achieve this goal.

Nothing in this Statement of Mutual Expectations supersedes UMD policies, and we subscribe to the Department of Entomology's Code of Conduct. We also follow university guidelines for COVID-19 and other exigencies that may arise.

Responsibilities of Advisor

The advisor (or committee chair) serves a dual role in graduate education. As a mentor, the advisor supports, encourages, and nurtures the development of each student, their research project, and other elements of their training as a professional scientist. As a professor and supervisor, the advisor also holds a student accountable and judges their performance and accomplishments. In this dual role, an advisor advocates for a student's interests but also may challenge the student with constructive criticism that may be uncomfortable. I believe it is important to have high expectations both for the vision and accomplishments of students and for the level of support, resources, and opportunities provided to students. My responsibility continues after you graduate, and I will serve as a reference until you are placed in a career track and beyond. I will:

- Take personal interest in your education, and your goals, abilities, and professional development.
- Create an open and collegial environment, so that learning takes place within a community of scholars that values the individual contributions of all members of the team.
- Challenge you to achieve, encourage independent thought, and provide space for inevitable mistakes and re-dos.
- Provide intellectual guidance and rigor in your educational programs and on specific research projects (e.g., design, troubleshooting, supervision).
- Be your advocate in the graduate program. It is my shared responsibility with the department to provide financial support through assistantships while you are making satisfactory progress on your degree.
- Prioritize timely and constructive feedback on your work: talks, manuscripts, chapters, application documents, etc.
- Offer advice about science communication orally or in writing, analytical approaches, venues for communications (conferences, journals, type of article), and authorship considerations.
- Provide fair, constructive, and professional identification of strengths and suggestions for areas for improvement.
- Prepare you to enter the job market with requisite professional skills, with a range of professional contacts, and with a realistic view of the current state of that market, both within and outside academy.
- At all times, act in accordance with university policies governing nondiscrimination, harassment of all sorts, and normative standards of confidentiality.

General Expectations

You were accepted into the program and the lab because you have a strong background in biology and environmental science. You are motivated and inquisitive. Going forward, I believe that you get out what you put in. That is, you will benefit in proportion to the investment of your curiosity, enthusiasm, and effort in your training and research. Learning happens through the process and through the struggle itself, not with the endpoint of earning your degree. As a graduate student, you will:

- Represent the University, your graduate program and home department, and the laboratory of which you are a part. It is your responsibility to hold yourself to the highest ethical standards and professionalism in these roles.
- Stay informed of regulations and policies governing your graduate program. Complete all required paperwork and other degree obligations in a timely fashion. Provide your advisor(s) with advance notice of deadlines for forms, letters, and other paperwork.
- Participate with departmental events, including weekly Entomology colloquium (or BEES seminar, as applicable) and annual retreats. Attend exit seminars by your peers. Also consider becoming active in the Entomology Student Organization (ESO) or in BEES Student Taskforce (BEESst).
- Participate actively in lab meetings, which will be held while the campus is in session, and through the winter and summer breaks if possible.

- Jointly establish regular 1:1 meeting schedule, either weekly or semi-monthly, and establish benchmarks, plans of work, target dates, and deadlines.
- Proactively schedule yourself to lead a lab meeting at least once per semester, to present your ideas, proposals, manuscripts, practice talks. Additionally, you can introduce a tutorial on a technical skill, or share a publication you find worthy of discussion.
- Become an expert in some aspects of our lab functions. Learn these skills from other students and staff. Share these skills by helping another student, editing or writing up a protocol that will guide those in the future, or by completing common tasks that will benefit all.
- Be a good lab citizen. Keep lab benches and your work spaces tidy. Wash your glassware. Help others and ask others for help when needed.
- Complete safety trainings and stay in compliance, as required, via the lab safety portal: https://umd.scishield.com/
- Routinely read the current literature and develop expertise in your topic(s).
- Develop skills in effective oral and written communication.

Graduate school is a full-time job. It demands your complete attention and focus. Yet you must maintain your personal work-life balance, whatever that looks like. Please communicate what works for you.

Expectations and Milestones for MS and PhD level students

An MS degree can be an endpoint or it may be a stepping stone for a PhD. An MS degree should develop for you a solid understanding of the background, theory, problems, and impediments in your area of interest. You will understand sampling procedures, statistical analyses, analytical methods, and the preparation of a scientific manuscript. A Master's degree candidate should:

- Develop a plan for coursework by the end of the first semester;
- Develop a research plan before the first summer (end of second semester);
- Make steady progress in writing and research;
- Maintain shared directory of data, metadata, and code;
- Submit at least one substantial paper by the time of graduation.

A PhD student is expected to conceive, plan, implement, and complete a substantial body of original research, in the process becoming an expert in the research specialty. A PhD student will develop a broader understanding of the philosophy, history, and current state of science. A PhD degree candidate should:

- Develop a plan for coursework by the end of the first semester;
- Develop an initial research plan before the first summer (end of second semester);
- Develop a dissertation proposal before the second summer (end of fourth semester);
- Form a committee, and convene a committee meeting annually, beginning no later than fourth semester;
- Convene oral qualifying exam and proposal defense in fifth semester;
- Make steady progress in writing and research;
- Maintain shared directory of data, metadata, and code;

- Submit at least one substantial paper by 3rd or 4th year, with two more manuscripts suitable for publication at time of graduation

Again, you are expected to publish your science. It is my responsibility to help you do this. If you are not on track to publish your thesis within one year (MS) or two years (PhD) following graduation, you forfeit guaranteed first authorship on the work if substantial effort from another person is necessary to publish the work.

Specific Procedures and Best Practices

- Lab doors may not be propped open when the labs are unoccupied.
- Students and lab personnel will flush eyewash stations weekly.
- Observe data best practices: duplication of raw data for storage, QAQC, redundant backups, data hygiene for shared use and eventually public use. Storage and sharing on: https://umd.app.box.com
- Use scripts (e.g., R) for analyses and preparation of datasets and metadata for eventual public, open access.
- Lab benches in PLS 4164 and 4149, and any other spaces, shall be kept clean and tidy when not in use.
- Spills and debris should be handled by the responsible party according to Chemical Safety training and to any Material Safety Data Sheets that apply.
- Glassware and other equipment shall be cleaned and returned to storage by the responsible party.
- Use communal supplies and equipment judiciously and with care.
- Any samples must be labeled, dated, and stored appropriate to its contents.
- Chemicals must be labeled and stored appropriately, according to the MSDS for those chemicals.

General Professional Development

The following guidance for professional development is intended to improve your preparation and competitiveness for your career in science. Good job openings in any field will be competitive. Different jobs have different emphases, but many will judge your qualifications by the quality and number of publications, fellowships and grants, awards, teaching experience, the breadth and depth of your scientific experience and expertise, and your ability to communicate your science orally and in writing.

- Writing should be an ongoing practice. Schedule the time to record your ideas, methods, and results as you go. Do not wait for mythical Big Blocks of Time or save it until the end!
- Your work effectively does not exist until it is published in a peer-reviewed journal or book. This should be your goal even for 'negative' results. Publishing before you graduate will make your defense easier and more fun, and you will be more competitive for future opportunities.
- Your ideas are your own intellectual property. However, while employed by the University of Maryland and/or funded by taxpayers (e.g., NSF), the data products are not your own. Keep orderly records, document your data and workflows, enroll with automatic backups, share your data with your advisor and/or the lab (e.g., on Box), and prepare to publish your data in a public repository.

- Development of skills for computational programming and statistical analyses should be an ongoing effort. External workshops may be needed to supplement coursework or to provide specialized training.
- Attend and present talks or posters at professional meetings – after the first year, this should occur annually at a regional meeting at minimum, although national meetings are preferred (e.g., Ecological Society of America, Entomological Society of America). Take advantage of on-campus opportunities (GRID, Bioscience day, etc.).
- Develop professional networks on campus, in the region, and within societies in your field. Seek out other mentors and peers.
- Apply for grants and fellowships to support your own research and travel. Apply for outside fellowships (GRFP, SI, CIC, Ford, USDA NIFA, etc) and internal fellowships (Wylie, etc) for stipend support. Apply for small to mid-size grants to support research (Sigma Xi, Explorer's Club, Cosmos club, National Geographic, etc), and for travel funds for meetings (BISI, ENTM, societies). Here is a partial list of potential opportunities.
- Take advantage of outside resources or planning tools, for example: Individual Development Plan (IDP) tool offered by AAAS

Miscellaneous

I aim to respond promptly to emails, but sometimes get behind, in particular with the emails that demand more care and attention. Feel free to ping me again (or text or slack) if something has slipped for too long. I will often catch up on emails during off hours, but you are not obligated to read and respond to emails immediately, in particular on evenings and weekends. Provide advance notice if you expect to be away or taking personal time; I will do the same.

Above all, lets maintain open lines of communication. As this is a document for mutual expectations, please make it clear if you do not understand or wish to add or change anything.

Student Name _____ Semester Enrolled _____

Signature _____ Date _____

Daniel S Gruner _____ Date _____

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Graduate School @ University of Maryland

University of Maryland Graduate School Policies
Department of Entomology MS Requirements
Department of Entomology PhD Requirements
Biological Sciences Graduate Program Resources and Requirements

University of Maryland, Useful Resources

Words of Engagement Intergroup Dialogue Program: Student Resources
Student Resources and Services, School of Public Health
Supporting the Whole Student, Teaching & Learning Transformation Center
Counseling Center
Department of Environmental Safety
Accessibility & Disability Support Services
Research Compliance Office (includes IRB, IACUC, RCR)

Assorted Key References

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