**Expectations and good habits for undergraduates in the Meyer lab**

Updated April, 2021

Our goal is that doing research in the Meyer laboratory be mutually beneficial for undergraduates and their mentors, who are typically graduate students, postdocs, or research associates. We appreciate the time and effort that you are putting in, and want you to get the most possible out of the experience. To facilitate what we hope will be a great experience, we have created this document. Suggestions are welcome!

Time expectation: Typically, 6-10 hours/week at minimum, but more often 10-15, are needed for several semesters to reach a high level of skill and scientific independence. Working (full time) over a summer is great if at all possible. Typically, undergraduates begin in the laboratory by assisting with laboratory maintenance skills for at least one semester. If this goes well, you may then transition to assisting a more experienced lab member who needs extra “hands,” learning some experimental methodology along the way. Later, some undergraduates carry out their own research, often as part of an independent study or senior thesis. Everyone in the lab helps at some level with maintenance jobs. You are likely to sometimes need to be flexible with your time; biological experiments rarely fit neatly into your schedule, so some evening/weekend work is likely to be necessary if you get to the point of doing experiments.

Respect others’ time. Keep in mind that others in the laboratory are busy, and make best use of time that they give you. For example, important specific behaviors are:

 --Take careful notes when someone is teaching you a method.

--Respond to emails, even when it is just to confirm receipt/agreement, normally within a couple of days (meaning that you should check regularly). Email is an official mode of communication for us.

--Come prepared to meetings. Be ready to explain what you have done, what you are planning to do, and the background for any questions you may have. Keep in mind that people you are working with also have other projects, and may not have all of the details of your project uppermost in their minds at all times.

--Ask for help with as much lead time as possible. Of course, emergencies do occur and you should not feel bad about them; but emergencies should rarely result from poor planning! At the same time, of course, the lab is a very collaborative environment, and people very regularly help each other out. Just be sure that you are offering as much help as you get, and are asking for help reasonably. It is fine to ask others in the lab about these boundaries!

Take responsibility/ownership of your work. This ranges from the small-scale (wash dishes thoroughly!) to the very high level (take the time to read and think deeply and broadly about your project, and talk to people about it!).

--Show up on time and keep busy while at work.

--Be sure you understand what you are doing, and why--well enough to explain these things.

--Understand the purpose of each experiment you do –don’t do experiments blindly. Technical skills are usually easy to achieve. You need to gain a deeper understanding of the reasons for doing an experiment and to develop the analytical skills to interpret its results.

--When in doubt about how to proceed—ask questions! But if the timing is not urgent, make an effort to learn what you can or even answer the question yourself, ahead of time.

--Write down your work: experimental hypotheses and plans, observations, data analysis, etc. Keep a careful and thorough lab notebook.

--Strive to be independent thinker—read the relevant literature, check out website (e.g., wormbase), think, and try to interpret your results and propose next steps. This will be very difficult initially, but is a learnable skill (with practice!).

Take advantage of the lab and extended research community! There are many opportunities.

--Whenever possible, attend lab meetings, lunches, etc. Learn about the lab’s work broadly.

--Take initiative! Show interest in what everyone in the lab is working on.  Ask questions, be curious. Attend seminars, classes, local scientific meetings (once you have your own data, you may also be able to attend international meetings), etc.

--Different people have different styles, strengths, and weaknesses. This is a great chance to learn how to work with a wide range of people.

--There are a number of scientific, career, and inter-personal dynamics resources in Joel’s office—check them out!

--How will you address others in the lab? Feel free to ask! Some of us prefer more or less formality (e.g. I have no preference between “joel” and “Dr. Meyer”).

Our commitment to you.

Some of this is implicit in the above, but to be explicit, we commit to:

Train you in laboratory (including safety) and research skills including literature searches and reading, question formulation, writing, presentation, etc. Encourage your development as an independent researcher (and deciding whether this is something you want).

Meet with you regularly (typically, every week or two) to provide feedback (see one-on-one data reports document) on your progress and plans. This may at times be more frequent, depending on your stage of career.

Work to adapt our management style and preferences to yours (see lab management document).

Be responsive by email to questions, meeting requests, etc. (typically within a day or two). Reasonably promptly respond to requests (e.g., letters of recommendation, feedback on documents, etc.). Typically, a few days to a couple of weeks at the most, depending on the length of the document, and whether you let us know to plan for a time-sensitive request.

When you reach the stage of doing independent research, assist you with networking and learning the “soft skills” of the academic world, for example at local and international scientific meetings.

What will your recommendation look like? Finally, another way to think about this is to remember that if all goes well, Joel will be writing you a letter of recommendation (or many), with input from your lab mentor(s), at the end of this experience. Help them say good things about you! They will certainly comment on your work ethic, dedication, positive attitude, responsibility, independence, creativity, maturity, how you work with others, and more. In addition to the letter, Joel will likely be asked to fill out a form asking for ranking of a series of attributes; an example follows (NOT of a Meyer lab undergrad, fyi—this was from the evaluation of an application to Duke’s PhD program):

