

Example Compact from Laboratory of Dr. Trina McMahon for Graduate Students

Welcome to the McMahon Lab!

The broad goals of my research program

As part of my job as a professor, I am expected to write grants and initiate research that will make tangible contributions to science, the academic community, and to society. You will be helping me carry out this research. It is imperative that we carry out good scientific method, and conduct ourselves in an ethical way. We must always keep in mind that the ultimate goal of our research is publication in scientific journals. Dissemination of the knowledge we gain by conducting experiments is critical to the advancement of our field. It is also important that we present our work at scientific meetings, so that other researchers are aware of our progress.

What I expect from you

Another part of my job as a professor is to train and advise students. I must contribute to your professional development and progress in your degree. I will help you set goals and hopefully achieve them. However, I cannot do the work for you. In general, I expect you to:

- Learn how to plan, design, and conduct high quality scientific research
- Learn how to present and document your scientific findings
- Be honest, ethical, and enthusiastic
- Be engaged within the research group and at least one program on campus
- Work hard – don't give up!
- Treat your lab mates, lab funds, equipment, and microbes with respect
- Take advantage of professional development opportunities
- Obtain your degree

Getting the science done

I expect you to make steady progress towards your research goals at all times. Part of that process includes being active in setting short and medium term goals including milestone dates and deliverables. During the academic semester, performing well in your courses is certainly important, but should not cause a complete lack of productivity. This is your primary responsibility as a research assistant and the following guidelines are intended to support this responsibility.

An important part of conducting scientific research is keeping pace with the work of other scientists. Learning to use the literature review tools to locate relevant articles and then reading those articles will not only provide you with valuable research skills, but will also guide your research to ensure it can be an original contribution. Finally, reading other people's published work will lead to improved writing skills. A goal of reading one publication per month is a good minimum standard. We will periodically run journal clubs to help achieve this goal, but journal club should not be a substitute for reading on your own within your specific area of research.

Communicating your work to others

Journal publications are the most important way to share your knowledge and creativity with the rest of the scientific community. Students pursuing a Masters degree will be expected to author or make

major contributions to at least one journal paper submission. Students pursuing a doctoral degree will be expected to author at least two journal paper submissions.

Conferences are another important venue for sharing your findings with others. Although the availability of travel funding varies over time, I encourage you to submit your work for presentation to at least one conference per year. Travel fellowships are available through the Environmental Engineering program and the University if grant money is not available. I will help you identify and apply for these opportunities.

Collaborations within the group and beyond

As part of our collaborations with the Center for Limnology and other research groups, you will often be using equipment that does not belong to our lab. I ask that you respect this equipment and treat it even more carefully than our own equipment. Always return it as soon as possible in the same condition you found it. If something breaks, tell me right away so that we can arrange to fix or replace it. Don't panic over broken equipment. Mistakes happen. But it is not acceptable to return something broken or damaged without taking the steps necessary to fix it.

I also expect you to respect your fellow students, and the staff in the department. Part of your professional development is to learn how to work with others and resolve conflicts. Again, I can help you with this. If you feel that you have been treated unfairly by another student or a staff member, please come to me to help resolve the conflict.

Obtaining your degree

It is your responsibility to determine the requirements for your individual graduate program. Depending on the program, this information is available in student handbooks, on websites, or through departmental student services staff. I can help you find these resources but you must take the initiative to make sure all requirements are met on time in order to advance in your degree (e.g. for preliminary exams).

Professional development

UW-Madison has outstanding resources in place to support professional development for students. I expect you to take full advantage of these resources, since part of becoming a successful engineer or scientist involves more than just doing academic research. You are expected to make continued progress in your development as a teacher, as an ambassador to the general public representing the University and your discipline with respect to your networking skills, and as an engaged member of broader professional organizations. The Graduate School has a regular seminar series related to professional development. The Delta Program offers formalized training in the integration of research, teaching, and learning. All graduate programs require attendance at a weekly seminar. Various organizations on campus engage in science outreach and informal education activities. Attendance at conferences and workshops will also provide professional development opportunities. When you attend a conference, I expect you to seek out these opportunities to make the most of your attendance. You should become a member of one or more professional societies such as the Water Environment Federation, the American Society for Microbiology, or the American Society for Limnology and Oceanography. For more information about professional development opportunities, check our lab website and talk with me for guidance.

Vacation:

Your research assistant appointment does not include any formal vacation, sick, holiday or other leave. That said, you are permitted to take a reasonable amount of time for all of these purposes. Approximately two weeks of vacation per year is considered reasonable. As a professional, you should consider how much additional vacation time will interrupt your ability to make progress on your research.

What you should expect from me

You should expect me to **be available for regular meetings** (once a week or every other week). At these meetings we will talk about what you have done lately in the lab, or what you have read. I will do my best to answer questions that you have, and help you solve problems that you experience in your research. Research is not easy. There are many pitfalls and many failures. You will quickly learn that most of your experiments will not work. That is perfectly normal. It is my responsibility to be your cheerleader and help keep you excited about your work. Only with perseverance will you generate high quality results.

You should expect me to help you learn to **present your work**. I will probably ask you to prepare a poster or a presentation for at least one scientific meeting while you are in my research group (in reality, this ends up being at least one per year). It will be my responsibility to help you put it together and practice presenting it. Similarly, I will help you learn to write about your research, mainly by providing feedback on drafts of your thesis and papers.

You should expect me to **be your advocate**. If you have a problem, come and see me. I will do the best I can to help you solve it.

My primary role in the lab is to write grants and bring in money so that you can do your research with as much freedom and flexibility as possible. I serve as an **advisor** in your research, offering guidance and advice. Together we will design a research project tailored to your interests and the objectives tied to the funding that is supporting your work (if applicable). I will also support you in your professional development activities.

Yearly evaluation

Each year we will sit down to discuss progress and goals. At that time, you should remember to tell me if you are unhappy with any aspect of your experience as a graduate student here. Remember that I am your advocate as well as your advisor. I will be able to help you with any problems you might have with other students, professors, or staff.

Similarly, we should discuss any concerns that you have with respect to my role as your advisor. If you feel that you need more guidance, if you feel that I am interfering too much with your work, or if you would like to meet with me more often, tell me. At the same time, I will tell you if I am satisfied with your progress and if I think you are on track to graduate by your target date. It will be my responsibility to explain to you any deficiencies so that you can take steps to fix them. This will be a good time for us to take care of any issues before they become major problems.

I look forward to working with you!