

Sample Compact from Laboratory of Dr. Trina McMahon for Graduate Students, University of Wisconsin-Madison

Mentor-Mentee Contract

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 is critical to the advancement of our field. I also value outreach and informal science education, both in the classroom and while engaging with the public. I expect you to participate in this component of our lab mission while you are part of the lab group.

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 two programs on campus
- ▶ Treat your lab mates, lab funds, equipment, and microbes with respect
- ▶ Take advantage of professional development opportunities
- ▶ Obtain your degree
- ▶ Work hard—don't give up!

You will take ownership over your educational experience

- ✓ **Acknowledge that you have the primary responsibility for the successful completion of your degree.** This includes commitment to your work in classrooms and the laboratory. You should maintain a high level of professionalism, self-motivation, engagement, scientific curiosity, and ethical standards.
- ✓ **Ensure that you meet regularly with me and provide me with updates on the progress and results of your activities and experiments.** Make sure that you also use this time to communicate new ideas that you have about your work and challenges that you are facing. Remember: I cannot address or advise about issues that you do not bring to my attention.
- ✓ **Be knowledgeable of the policies, deadlines, and requirements of the graduate program, the graduate school, and the university.** Comply with all institutional policies, including academic program milestones, laboratory practices, and rules related to chemical safety, biosafety, and fieldwork.
- ✓ **Actively cultivate your 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 degree 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.

You will be a team player

- ✓ **Attend and actively participate in all group meetings, as well as seminars that are part of your educational program.** Participation in group meetings does not mean only presenting your own work, but providing support to others in the lab through shared insight. You should refrain from using your computer, Blackberry, or iPhone during research meetings. Even if you are using the device to augment the discussion, it is disrespectful to the larger group to have your attention distracted by the device. Do your part to create a climate of engagement and mutual respect.
- ✓ **Strive to be the very best lab citizen.** Take part in shared laboratory responsibilities and use laboratory resources carefully and frugally. Maintain a safe and clean laboratory space where data and research participant confidentiality are protected. Be respectful, tolerant of, and work collegially with all laboratory colleagues: respect individual differences in values, personalities, work styles, and theoretical perspectives.
- ✓ **Be a good collaborator.** Engage in collaborations within and beyond our lab group. Collaborations are more than just publishing papers together. They demand effective and frequent communication, mutual respect, trust, and shared goals. Effective collaboration is an extremely important component of the mission of our lab.
- ✓ **Leave no trace.** 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.
- ✓ **Acknowledge the efforts of collaborators.** This includes other members of the lab as well as those outside the lab. Don't forget important individuals like Dave Harring at the CFL and Jackie Cooper at CEE.

You will develop strong research skills

- ✓ **Take advantage of your opportunity to work at a world-class university by developing and refining stellar research skills.** I expect that you will learn how to plan, design, and conduct high quality scientific research.
- ✓ **Challenge yourself by presenting your work at meetings and seminars as early as you can and by preparing scientific articles that effectively present your work to others in the field.** The

'currency' in science is published papers, they drive a lot of what we do and because our lab is supported by taxpayer dollars we have an obligation to complete and disseminate our findings. I will push you to publish your research as you move through your training program, not only at the end. 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 be lead author on at least two journal papers submissions, preferably three or four.

- ✓ **Keep up with the literature so that you can have a hand in guiding your own research.** Block at least one hour per week to peruse current tables of contents for journals or do literature searches. Participate in journal clubs. Better yet, organize one!
- ✓ **Maintain detailed, organized, and accurate laboratory records.** Be aware that your notes, records and all tangible research data are my property as the lab director. When you leave the lab, I encourage you to take copies of your data with you. But one full set of all data must stay in the lab, with appropriate and accessible documentation. Regularly backup your computer data to the Bacteriology Elizabeth McCoy server (see the wiki for more instructions).
- ✓ **Be responsive to advice and constructive criticism.** The feedback you get from me, your colleagues, your committee members, and your course instructors is intended to improve your scientific work.

You will work to meet deadlines

- ✓ **Strive to meet deadlines: this is the only way to manage your progress.** Deadlines can be managed in a number of ways, but I expect you to work your best to maintain these goals. We will establish mutually agreed upon deadlines for each phase of your work during one-on-one meetings at the beginning of each term. For graduate students, there is to be a balance between time spent in class and time spent on research and perhaps on outreach or teaching. As long as you are meeting expectations, you can largely set your own schedule. It is your responsibility to talk with me if you are having difficulty completing your work and I will consider your progress unsatisfactory if I need to follow-up with you about completion of your lab or coursework.
- ✓ **Be mindful of the constraints on my time.** When we set a deadline, I will block off time to read and respond to your work. If I do not receive your materials, I will move your project to the end of my queue. Allow a minimum of one week prior to submission deadlines for me to read and respond to short materials such as conference abstracts and three weeks for me to work on manuscripts or grant proposals. Please do not assume I can read materials within a day or two, especially when I am traveling.

You will communicate clearly

- ✓ **Remember that all of us are "new" at various points in our careers.** If you feel uncertain, overwhelmed, or want additional support, please overtly ask for it. I welcome these conversations and view them as necessary.
- ✓ **Let me know the style of communication or schedule of meetings that you prefer.** If there is something about my mentoring style that is proving difficult for you, please tell me so that you give me an opportunity to find an approach that works for you. No single style works for everyone; no one style is expected to work all the time. Do not cancel meetings with me if you feel that you have not made adequate progress on your research; these might be the most critical times to meet with a mentor.

- ✓ **Be prompt.** Respond promptly (in most cases, within 48 hours) to emails from anyone in our lab group and show up on time and prepared for meetings. If you need time to gather information in response to an email, please acknowledge receipt of the message and indicate when you will be able to provide the requested information.
- ✓ **Discuss policies on work hours, sick leave and vacation with me directly.** Consult with me and notify fellow lab members in advance of any planned absences. Graduate students can expect to work an average of 50 hours per week in the lab; post-docs and staff at least 40 hours per week. I expect that most lab members will not exceed two weeks of personal travel away from the lab in any given year. Most research participants are available during University holidays, so all travel plans, even at the major holidays, must be approved by me before any firm plans are made. I believe that work-life balance and vacation time are essential for creative thinking and good health and encourage you to take regular vacations. Be aware, however, that there will necessarily be epochs—especially early in your training—when more effort will need to be devoted to work and it may not be ideal to schedule time away. This includes the field season, for students/post-docs working on the lakes.
- ✓ **Discuss policies on authorship and attendance at professional meetings with me before beginning any projects to ensure that we are in agreement.** I expect you to submit relevant research results in a timely manner. Barring unusual circumstances, it is my policy that students are first-author on all work for which they took the lead on data collection and preparation of the initial draft of the manuscript.
- ✓ **Help other students with their projects and mentor/train other students.** This is a valuable experience! Undergraduates working in the lab should be encouraged to contribute to the writing of manuscripts. If you wish to add other individuals as authors to your papers, please discuss this with me early on and before discussing the situation with the potential co-authors.

What you should expect from me

- ✓ **I will work tirelessly** for the good of the lab group; the success of every member of our group is my top priority, no matter their personal strengths and weaknesses, or career goals.
- ✓ **I will be available for regular meeting and informal conversations.** My busy schedule requires that we plan in advance for meetings to discuss your research and any professional or personal concerns you have. Although I will try to be available as much as possible for “drop in business”, keep in mind that I am often running to teach a class or to a faculty meeting and will have limited time.
- ✓ **I will help you navigate your graduate program of study.** As stated above, you are responsible for keeping up with deadlines and being knowledgeable about requirements for your specific program. However, I am available to help interpret these requirements, select appropriate coursework, and select committee members for your oral exams.
- ✓ **I will discuss data ownership and authorship policies regarding papers with you.** These can create unnecessary conflict within the lab and among collaborators. It is important that we communicate openly and regularly about them. Do not hesitate to voice concerns when you have them.
- ✓ **I will be your advocate.** If you have a problem, come and see me. I will do my best to help you solve it.
- ✓ **I am committed to mentoring you, even after you leave my lab.** I am committed to your education and training while you are in my lab, and to advising and guiding your career development—to the degree you wish—long after you leave. I will provide honest letters of evaluation for you when you request them.

- ✓ **I will lead by example and facilitate your training in complementary skills needed to be a successful scientist, such as oral and written communication skills, grant writing, lab management, mentoring, and scientific professionalism.** I will encourage you to seek opportunities in teaching, even if not required for your degree program. I will also strongly encourage you to gain practice in mentoring undergraduate and/or high school students, and to seek formal training in this activity through the Delta program.
- ✓ **I will encourage you to attend scientific/professional meetings and will make an effort to fund such activities.** I will not be able to cover all requests but you can generally expect to attend at least one major conference per year, when you have material to present. Please use conferences as an opportunity to further your education, and not as a vacation. If you register for a conference, I expect you to attend the scientific sessions and participate in conference activities during the time you are there. Travel fellowships are available through the Environmental Engineering program, the Bacteriology Department, and the University if grant money is not available. I will help you identify and apply for these opportunities.
- ✓ **I will strive to be supportive, equitable, accessible, encouraging, and respectful. I will try my best to understand your unique situation, and mentor you accordingly.** I am mindful that each student comes from a different background and has different professional goals. It will help if you keep me informed about your experiences and remember that graduate school is a job with very high expectations. I view my role as fostering your professional confidence and encouraging your critical thinking, skepticism, and creativity. If my attempts to do this are not effective for you, I am open to talking with you about other ways to achieve these goals.

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, tell me. If you feel that I am interfering too much with your work, tell me. 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.

Additional Activities (if time allows):***Objective 1; Activity #4***

Have mentors create a list of the things they believe their mentees expect from them and then discuss how they can determine if these expectations are reasonable and how well they are meeting them. You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 2; Activity #5

Mentors discuss how to elicit mentees' learning goals and incorporate them into individualized compacts. (See comment about Individual Development Plans on page 31.) You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 3; Activity #6

Have mentors develop strategies to identify their own expectations, those of their mentee, and align the two. You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 4; Activity #7

Have mentors discuss the challenges that mentees may face when working with multiple mentors and then brainstorm solutions to these challenges. You may want to record the ideas generated in this discussion on a white board or flip chart.