



MartenLab Undergraduate Student and Faculty Research Agreement

OVERALL GOAL: The overarching goal in the Marten Lab is to develop students by helping them mature in the process of personal, spiritual transformation. Spiritual here means “all that is not physical.” This includes emotional and social, but there is a particular focus on the intellectual. In particular, students should increase in their ability to think critically about research problems and to grow in the capacity to solve these problems. There’s also an emphasis on cooperation and coordination. There are many skills regarding cooperation, coordination, personal organization and time management that are required to be successful. These objectives are achieved through our study of biology and engineering. In particular, we focus on filamentous fungi and strive to better understand fundamental cellular process, which have broad application (e.g., in the bioprocess industry or in the design of novel antifungal agents).

SPECIFIC GOAL: The primary mechanism we use to achieve personal growth is peer-reviewed publication. Through the research, thinking, and interpersonal interaction required to write peer reviewed publications students grow, learn and mature. Thus all the work you do is eventually headed toward publication. Early in your career you will learn how to use the tools we employ, how to define problems, how to design experiments and how to interpret and document what you’ve found. But all of this is with the eventual goal of writing a publication. This is because peer-reviewed publication is the ultimate scientific vehicle for communicating one’s scientific work.

UNDERGRADUATE RESEARCH: Research is fundamentally different than nearly every other academic activity in which you’ve ever participated. This is because, by definition, research involves developing understanding of *novel* problems. Novel means “different from anything seen or known before” (Websters.com). Because it’s never been done before, it may not be possible to do it at all! This is in contrast to every homework or test problem you’ve every solved – they all have known answers. The implication is that to be successful requires a concentrated amount of time and energy. And a large investment in training on the part of the current members of the MartenLab.

UNDERGRADUATE REQUIREMENTS FOR SUCCESSFUL RESEARCH: Because current members of the MartenLab are going to make a large investment in you, we have a reasonable expectation that you will demonstrate two things: (1) **Ability** and (2) **Motivation**. **Ability** means that you’re able to think and to carry out: experiments, analysis, presentations, etc. that are necessary. You’ve been invited to participate in the Lab based on “ability” you’ve already demonstrated through your course work. **Motivation** means you’re enthusiastic about, and committed to, your project. I like the word “ownership.” Owners take responsibility for making things better, for making things happen. Owners think creatively and consistently about what they own. Motivation or ownership will typically manifest itself by you making lab work a reasonable priority in your schedule, by coming to meetings and by spending consistent and significant amounts of time in the lab.

Both faculty supervisor and student have read and agreed upon the following research conditions:

1. Supervisor Responsibilities. Dr. Marten, along with senior lab personnel (undergrads, grads, and postdocs), will provide (i) mentorship student, (ii) access to adequate resources, and (iii) training to conduct his/her research. Training will include information on how to use the experimental tools, how to design experiments and how to interpret the results, and present your findings. You can also expect to work on cutting edge (i.e., novel) research, that will make a real difference in the world. You can expect Dr. Marten will pay for all the supplies associated with your project and we may at times even be able to pay you for your time. You can expect to work on problems that are important to us, so that we will provide consistent encouragement to make progress and to be successful. You can also expect Marten to do all he can to help you be successful for the rest of your career (e.g., help write scholarship proposals, reference letters, find great jobs, etc.).

2. Student responsibilities. Scientific research is a labor-intensive enterprise that demands a high level of personal commitment, time, effort and collegial participation in the functioning of the lab. The student promises to dedicate the necessary time and effort to complete this project. Students are normally expected to work in the lab approximately 10 hours per week during the semester and full time during Jan and the summer. Students agree to submit written material that requires feedback no later than 14 days before a deadline. Students should conduct themselves in an appropriate and ethical manner at all times when dealing with other students, employees, faculty, and research participants.

3. Meetings. Student agrees to attend weekly MartenLab meetings. In addition, student and supervisor agree to meet once a month for an individual meeting, at a time convenient to both parties. Email will also be a means for communication and questions, but should not replace in-person meetings.

4. Reports & Presentations. Student agrees to write a weekly report to be posted on the MartenLab site prior to each week's lab meeting. Report will be well written, will include data from the prior week's experiments, and an accounting of hours spent that week on lab related work. Presentation of data should be done with excellence. This means graphs and figures are labeled, schematics are clear, slides are well done, etc. Students will present their research at lab meetings.

5. Research Proprietary. All research data (e.g., questionnaires, data files, records, observations) collected and analyzed from the project are the property of UMBC. Dr. Marten will determine the circumstances that the student and others may have future access to data. Student agrees to sign a non-disclosure agreement regarding intellectual property.

6. Safety. Student agrees that safety is the number one priority in the MartenLab. As such, student agrees to complete the on-line safety training every year, and to wear appropriate clothing (long pants), close-toed shoes, and safety glasses in the laboratory *AT ALL TIMES*.

7. Responsible Conduct of Research. Student commits to never lying or misrepresenting him/herself or data. Student further agrees to keep a comprehensive and legible laboratory notebook, which is the property of the Marten Lab. And each year student will complete on-line Responsible Conduct of Research training.

8. Time. For the period academic year 2021-22, student agrees to work an average of 10 h/wk. Dr. Marten agrees to pay student for this period if funds become available.

Student:

Signature: _____

Name: _____

Date: _____

Dr. Mark R. Marten

Date: _____