

Teaching Statement: Chad E. Niederhuth

I never originally set out to be a scientist, but through great mentorship realized where my desires lay. Thanks to those mentors, I have been able to achieve my goals. I think education encompasses all of what we do in life, and extends beyond the classroom. In the military, I learned skills in unconventional “classrooms”, that would later save my life. I believe there to be a broader vision than of what an education is. As a scientist and an educator, I have three main missions. First, I am there to help students identify their goals and help them develop the skills necessary to achieve those goals. Second, I have an obligation in training capable and prepared scientists who will go on to advance science and benefit society. Finally, I have a mission in helping the general public to understand science and how it impacts their lives.

Mentoring students in the lab has been one of the joys of being a scientist. As both a graduate student and a postdoctoral fellow, I have been involved in the mentorship of multiple undergraduates students. Some of those I helped mentor as a graduate student have now gone on to become graduate students themselves. As I was the first person who started working in the Schmitz Lab, I have also witnessed first hand what it is like to build a lab from scratch and the challenges this entails. A lab is most effective when students, postdocs, and technicians have the freedom they need to become effective scientists capable of identifying problems and how solve them. One of my primary goals when teaching in the lab, is to recognize that making mistakes is part of both the learning and scientific process and this principle also extends to classrooms. I think science is most exciting when there is an air of collaboration and energy in the lab and I would encourage the members of my lab to work with each other and also develop collaborative work with those outside the lab. I will remain flexible in mentorship, seeking input from members of my lab as to their needs. Developing as a scientist is more than just doing the research. It is my goal to mentor students and postdocs not only in research; but also communication, networking, peer review, and the multitude of skills necessary to succeed.

I am ready to take on teaching in the classroom and am well suited to teach undergraduate courses in genetics, genomics, molecular biology, and plant biology. I was teacher’s assistant for Plant Systematics as a graduate student at the University of Missouri, independently teaching the lab course. As a postdoctoral fellow, I was a co-instructor for the Plant Breeding Genetics and Genomics Communication Seminar. This seminar instructs graduate students in the skills they need to communicate their research to both professional and lay audiences. The ability to effectively communicate science to not only our peers, but the public is an essential part of being a scientist. I think that my field of epigenomics and epigenetics is an opportunity to teach not only the science, but also the challenges in the public understanding of science. It is much discussed, as evidenced by recent high-profile articles in popular press like The New Yorker, however it remains largely misunderstood. I would like to design an upper level undergraduate/graduate level course that incorporates epigenetics, but with a strong emphasis on communication. I would also like to find ways of helping students and postdocs engage the public and become involved in scientific communication. As part of this, I would like to develop or participate in existing outreach programs, particularly those that help to foster diversity and inclusion of underrepresented groups within science.

Science and education are integral to each other, as both are about discovery. I am excited by the opportunity to contribute not only to the advancement of science, but the advancement and development of students and future scientists.