



# Carley Jane Kratz

**Graduate Institution:** Michigan Technological University

**Graduate Discipline:** Forest Science

**Hometown:** Manchester, MI

**Relevant SC Research:** Biological and Environmental Research

## Research Interest:

My research focuses on how soil microbial communities impact carbon and nutrient cycling. I am interested in the functional role that soil microorganisms have in decomposition, and how that role may be altered as the climate changes. One goal of my research is to link microbial function to the composition of the microbial community. I am currently working with soils from the Ford Forestry Center climate change manipulation experiment in northern Michigan. This experiment has both warming and moisture addition treatments, which reflect current climate predictions for the region over the next century. I use a wide variety of methods to understand how the microbial community is impacted by these climate change treatments. These include enzyme assays, several different estimates of microbial biomass, and molecular approaches with ribonucleic acids (RNA). I am also interested in using stable isotopes to track the movement of carbon and nitrogen into different pools, such as microbial biomass, mineral soil, and the atmosphere. I am currently starting a soil incubation experiment to track the movement of carbon derived from glucose and lignin into these pools.

## About Me:

I am currently a doctoral candidate at Michigan Technological University. I am a member of the Ecological Society of America and present my research at

the annual meetings of the society. I teach portions of the Global Change Teachers Institute, which is an intensive course in climate change science for K-12 teachers. My workshops focus on increases in global temperature and invasive species. The goal of the course is to help teachers to develop lesson plans related to global change. This allows the teachers to bring the science that they learn back to the classroom in ways that capture the imaginations of future scientists. I have fun teaching and mentoring undergraduate students in soil science. In my free time I enjoy hiking, gardening and identifying plants and fungi. You will often find me with dirty boots and hands. I would like to work at a national laboratory doing post-doctorate research. I aspire to become a researcher or professor in microbial ecology or soil science.



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science