Most of life is microbial. We rely on microbes to maintain healthy and stable ecosystems, and they are intimately linked to everything from our diet to the global economy, yet they remain understudied.

Microbial eukaryotes such as myxomycete amoebae (plasmodial slime molds) are abundant and important in terrestrial ecosystems. By eating bacteria and other microbes, they aid in the cycling and storage of nutrients. Little about them is known, however, because most cannot be isolated using culture methods and they are not detected by typical sequencing surveys, due to their long, variable marker genes. To overcome this, Dr. Walker designed a myxomycete-specific pipeline for high-throughput environmental sequencing of soil samples. Her dissertation research applied this pipeline with traditional methods to investigate how the myxomycete community is affected by changes in nutrient availability in a tropical forest of Panama. In her current research she works with the cellular slime mold Dictyostelium discoideum using whole genome sequencing to investigate both inter- and intraspecies interactions.

Questions? Contact csagers@asu.edu