Temperature Tolerance in *Aphaenogaster picea*

The purpose of this study is to determine if there is any hereditary component to temperature tolerance in ants. To evaluate this, we are performing a study to evaluate the extent to which thermal tolerance is heritable in a common ant specles and how that temperature tolerance relates back to ants' response to global warming. Heritability is the differences observed in a population due to genetic differences. A challenge with working with ants is that it is not possible to estimate heritabillity using common garden approaches as with plants and other sessile organims. To overcome this, we are using a novel approach that determines the relationship between the samples based on their genotypes. We are determining their genotypes using double-digest restriction associated digestion (ddRAD) sequencing. ddRADseq is a technique, involving restriction enzymes, used to prepare DNA for analysis. We will use the genotype data in combination with the original temperature tolerance data to determine the heritability of thermal tolerance. For this work, we are using the common ant species *Aphaenogaster picea,* which is a key woodland species involved in seed dispersal and nutrient recycling. The results of this study, and similar studies, will be of interest to scientists in the climate change field because it is important to look at how climate change is going to affect different key species in a given environment.