

At northern (MA) and southern (NC) sites...

1) Collect full-sib larvae from 50 colonies

2) Randomize larvae into common garden colonies in lab (host queen unrelated to all)

3) Measure thermal tolerance traits

5) Estimate heritability of thermal tolerance using standard qgen

$$H^2 = V_g / V_p$$

4) Genotype to identify sibs in each common garden colony

6) Predict maximum response to climate change

$$R = H^2 \times S$$

