Hi, I’m Hannah,

I’m from John Jay College of Criminal Justice in NYC.

This summer, as part of the University of Florida’s Summer Undergraduate Research at Florida program, I was able to study how insects respond to extreme temperatures on a behavioral and molecular level in Dr. Daniel Hahn’s lab in the Dept. of Entomology and Nematology.

Climate change poses a major threat because temperature shifts are expected to change conditions from which organisms currently operate under. This is particularly true for cold-blooded insects and are expected to cope with the gradual and rapid temperature increases. Ask the question or state the interest that you’re interested in how ecold blooded insects respond to temperature shifts

Populations can be resilient if they can adapt, acclimate or they can be susceptible if they die

Whether they can adapt depends on the genetic variation in a population.

To understand whether population have sufficient genetic variation, we measured how synthetic ppulatios of fruit flies cope with gradual and rapid increases in temperature. The fruit flies we tested were genetically bred to represent the worldwide genetic variation.

We found that the fruit flies that are resilient to temperature increase in one respect are susceptible to temperature increases in the other. For example, the flies that were able to cope well with a gradual increase in temperature, coped poorly with a rapid increase in temperature.

We also found that male flies were more resilient to temperature increases compared to female flies. Since females are limits to reproduction, their susceptibility to high temperatures suggest that population growth will slow down or decline in the face of climate change.

Further goals of this research aim to determine the protein unfolding patterns of flies that coped well with temperature increases. By understanding these patterns we can potentially predict which insects will survive and adapt to the rapid climate change.