

With the threat of global climate change, understanding how mosquito life history traits are affected by environmental factors is an important and underrepresented area of vector ecology. Several studies have already shown a relationship between average daily temperatures and several mosquito life history traits; however, in the field, mosquitoes experience temperature fluctuations. How long a vector lives serves as the baseline for whether or not a pathogen can be adequately transmitted. Through previous experiments, I have shown that the malaria vector, *Anopheles stephensi*, experiences significantly different mortality rates when exposed to constant and fluctuating temperature treatments, and that female survival is drastically improved if given equal access to blood and sugar meals. Given that the parasite is transmitted through blood meals and that females in warmer temperatures are able to live through the critical parasite development period, uncovering how mosquitoes are able to metabolize and advantageously manipulate these nutrients is vital. By measuring mosquito metabolic rate and fuel reserves, I will uncover physiological strategies and interactions that are crucial for survival in stressful environments.