

BCH 252 Seminar Series



**Breanna Jones, BCMB Graduate
Student Researcher, UC Riverside**

**Seminar Title: "The Role of RNA Binding
Proteins in Mosquito Oogenesis and
Embryonic Development"**

Abstract: While mosquitoes are most commonly thought of as a mere nuisance, these insects are actually considered one of the most dangerous organisms in the world. This is because of their ability to act as an effective vector for diseases such as Malaria, Zika, Yellow Fever, Dengue Fever, and Chikungunya. My project focuses on finding RNA binding proteins (RBPs) involved in mosquito development, particularly that of the oocyte and embryo. Little is known about these processes besides broad knowledge of the critical role RBPs play in them, making this an exciting opportunity to expand our knowledge of this field. This research could also prove useful for those experimenting with gene drives, which aim to curb disease vector populations using a self-perpetuating Clustered Regularly Interspaced Palindromic Repeat (CRISPR/Cas9) knock-out of critical genes in development. I will be using the CRISPR/Cas9 gene editing system to knock-out genes in *Aedes aegypti* that would produce sterile or inviable progeny, either by mutating a maternal RBP involved in oocyte maturation or an embryonic RBP crucial for proper development and patterning. Alongside CRISPR knock-outs in embryos, RNAi will also be used to knock-down RBP transcripts in adults where immature ovarian phenotypes may be observed. The information gleaned from these experiments will help us better understand mosquito development and genetics as well as promote life-saving research to eliminate deadly diseases caused by these organisms.

Tuesday, April 30th, 2024 12:00 p.m. - 12:50 p.m. PST

In-Person: Genomics Auditorium 1102A

Host: Dr. Maria Ninova