

# **NIAID Mosquito Day Webinar:** **How will climate change impact mosquito biology and mosquito-borne diseases?**



**August 16, 2022, 11am-12:30pm ET**

Register Here: [https://nih.zoomgov.com/webinar/register/WN\\_TBR9Rb2TRyq3zxva-NHgCQ](https://nih.zoomgov.com/webinar/register/WN_TBR9Rb2TRyq3zxva-NHgCQ)

## **Speakers Include:**



**Dr. Matthew Thomas**  
Professor, Invasion Science Research Institute, and Department of Entomology and Nematology, University of Florida.

*Abstract:* The dynamics and distribution of malaria are strongly affected by the environment. For this reason, there is substantial interest in the extent to which climate change could impact future transmission. However, the patterns are potentially complex and uncertain. This is partly because malaria prevalence is determined by a suite of interacting factors and does not depend on environmental conditions alone. In addition, our current understanding of how environmental factors such as temperature affect the various mosquito and parasite life history traits that combine to determine transmission potential is surprisingly incomplete.

Here I will provide an overview of current knowledge and highlight some priorities for future research to improve understanding of mosquito-parasite-temperature interactions and better predict responses to environmental change.



**Dr. Elizabeth McGraw**  
Professor & Biology Department Head, Huck Scholar in Entomology, The Center for Infectious Disease Dynamics (CIDD), The Pennsylvania State University.

*Abstract:* Future distributions for diseases including dengue fever, chikungunya, Zika, and yellow fever will be dependent on changing climate patterns and the intersection of the thermal tolerances of the individual players -Aedes vectors, viruses, and *Wolbachia*. These interactions are also not likely to be static over geographies or time, depending on the genetics of individual populations as well as the adaptive history and potential of

populations. I will review the current state of the field, drawing from the literature, but also from recent work in my laboratory. The punchline is that we are just beginning to understand these complex multi-organism interactions with the environment and the potential for evolution and adaptation in this system. Until we have a better understanding of these basic biologies, we will struggle to make accurate predictions about the role of climate change in disease patterns under a changing climate.

Sign language interpretation and CART services are available upon request. Individuals needing either of these services and/or other reasonable accommodations should contact Venera Barsaku at [Venera.Barsaku@nih.gov](mailto:Venera.Barsaku@nih.gov) or (240) 627-3473. Requests should be made at least five days in advance.