Overview

Current data suggest that climate variability has a direct influence on the epidemiology of vector-borne diseases. By 2100, average global temperatures are expected to increase by 2.0 – 11.5 °F. A growing body of literature suggests that the greatest effect of climate change on vector-borne disease will occur at the extremes of temperature ranges that support transmission. The degree to which the changing climate will impact vector-borne disease is being explored through disease system-specific empirical and predictive modeling studies. Through discussions of the published literature on dengue, malaria, Lyme disease, mosquito and tick-borne encephalitides, Chagas disease, and more, students will be introduced to the interconnections among ecology, epidemiology, and disease risk in the context of a warming world.

Learning Outcomes

- Understand the circumstances under which a changing climate can impact vector-borne diseases through direct or indirect impacts on pathogens, vectors, or reservoir hosts.
- Identify specific diseases that are emerging due to climate change, and those that are expected to decrease in prevalence due to climate change.
- Understand the social elements that must be considered in the context of disease emergence.
- Critically review published studies that link climate change to disease emergence in the context of data sources and confounding.
- Explain the modeling approaches that have been used to predict the impact of climate change on vector-borne disease risk.
- Synthesize concepts through leading the presentation of two research articles.

Materials

Weekly course readings will be distributed via email.

Evaluation

Your grade for this course will be S/U and will be based on attendance, participation in discussions and presentation of two research articles. The presentations will involve reading the article, preparing and distributing 5-7 questions, and using the questions to facilitate discussion and learning at the meeting.

Students are expected to attend at least 11 discussion periods. A oral exam will be available to students unable to attend at least 11 presentations if absences were excused (http://student-rules.tamu.edu/rule07)

ADA Policy Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu.

Academic Integrity Statement

“An Aggie does not lie, cheat, or steal or tolerate those who do”. Refer to the Aggie Honor System website at http://www.tamu.edu/aggiehonor.