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# VIBS 681

## Epidemiology Seminar: Impacts of Climate Change on Vector-borne Diseases

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### 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.

Spring 2014; 1 credit hour

Time: TBD

Room 278 Vet Med Research Bldg (VRB)

Instructor: Sarah A. Hamer, MS, PhD, DVM  
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### Materials

Weekly course readings will be distributed via email.

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### 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. An oral exam will be available to students unable to attend at least 11 presentations if absences were excused (<http://student-rules.tamu.edu/rule07>)

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### 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>.

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