Pacific Center for
Emerging Infectious Diseases
Research

UNIVERSITY
of HAWAI'I
MĀNOA

Modeling Reservoir, Vector, Spatial and Human Behavioral Risk of Lyme Disease in Fragmented Ecospaces within Built Environments

Ecological factors, such as climate change, increasing animal reservoir populations, fragmentation of ecological spaces, and expansion of suburban and peri-urban human populations, are resulting in the overlap of significant numbers of people and tick populations carrying human pathogens in the Northeastern United States. Our knowledge of the dynamic interaction between infected tick populations and humans in fractured ecospaces within built environments is minimal, and the lack of such knowledge leaves public health authorities and professionals at a disadvantage when addressing the emerging problem of tick-borne disease transmission in high prevalence areas. In upstate New York, prevalence rate of *Borrelia burgdorferi* infection in the primary reservoir host, *Peromyscus leucopus*, is 28%, while the infection rate of the tick vector, *Ixodes scapularis*, is 40%, with a density of infected nymphs of about 25%. Using project data over the past five years, we are building a systems dynamics simulation model within a six-county region of the Upper Susquehanna River Basin to provide a framework for understanding Lyme disease spread, for development of prevention strategies and for potential control of tick population growth.

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Tuesday, August 23, 2016 at 12:00 noon
John A. Burns School of Medicine, Kakaʻako
Medical Education Building Auditorium (Room 315)
For further information, contact (808) 692-1654