



Pacific Center for  
Emerging Infectious Diseases  
Research



UNIVERSITY  
of HAWAII  
MĀNOA

## 2014 COBRE MINI-SYMPOSIUM



### Immunopathogenesis of Fatal Alphavirus Encephalomyelitis

**Diane E. Griffin, M.D., Ph.D.**

Neuro-adapted Sindbis virus (NSV) causes fatal encephalomyelitis in adult C57BL/6 mice. Death of infected neurons is mediated by the immune response, not virus infection per se. Our recent studies show that the onset of fatal disease is associated with CNS infiltration of pathogenic Th17 cells that is exacerbated by deficiency of IL-10.



### Update on Middle East Respiratory Syndrome (MERS): Another Novel Emerging Betacoronavirus Infection

**Kathryn V. Holmes, Ph.D.**

Severe acute respiratory syndrome (SARS), which appeared suddenly in China in 2002, spread to more than 25 countries, sickening ~8,000 people and causing nearly 800 deaths. In 2012, another novel betacoronavirus (MERS-CoV), causing a frequently fatal respiratory syndrome, emerged in the Middle East. This talk will provide an update about MERS.



### Structure of NS1 Reveals Insights into Function

**Richard J. Kuhn, Ph.D.**

We have recently solved the structures of the NS1 proteins of dengue and the West Nile viruses. The NS1 protein is found as a functional dimer with a hydrophobic and hydrophilic face separated by an extended set of beta strands. The hydrophobic face is suggested to play an intimate role in RNA synthesis by directly contacting membrane replication proteins.



### Membrane Fusion and Intercellular Spread by *Burkholderia*

**Jeffrey F. Miller, Ph.D.**

*Burkholderia pseudomallei* and related species invade a variety of cell types, replicate in the cytoplasm, and efficiently spread to adjacent cells. Using genetic dissection and photothermal nanoblade delivery, we have shown that cell-cell spread results from type VI secretion system (T6SS)-mediated membrane fusion. Current studies are clarifying the mechanisms responsible for this unique capability.

**March 25, 2014 at 12:00-3:00 P.M.**  
**Medical Education Building 202, Kaka'ako**  
**For further information, call 692-1654**

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