

# SEMINAR

**Wed, 3 July 2019 | 11am | DBS Conference Room 1**

Hosted by Prof RM Kini

## Vector-Pathogen-Host Interactions



### *By Erol Fikrig*

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Vector-borne infectious diseases are a distinct group of illnesses of global importance. These microorganisms are transmitted to a vertebrate host when an arthropod takes a blood meal. At that moment, vector saliva, the microbe, and host cells interact. We will discuss how arthropod-borne pathogens use vector proteins to colonize the mammalian host. Tick-borne pathogens will include *Borrelia burgdorferi*, the agent of Lyme disease, and *Anaplasma phagocytophilum*, the agent of human granulocytic anaplasmosis. Mosquito-borne pathogens will include flaviviruses, and *Plasmodium*. Understanding the triangular relationship between arthropod, microbe and host alters the traditional paradigm of microbial infectivity, which is primarily based on pathogen-host interactions. These studies may also lead to using arthropod proteins - rather than pathogen-specific antigens - to elicit protective immunity against microbial infection, changing the general concept of vaccine development.