

## Lessons Learned from a Novel Tick-Borne Bunyavirus – Patricia Aguilar

- a) Severe Fever with Thrombocytopenia Syndrome (SFTSV)
  - 1) Isolated in China in 2009
  - 2) Yu et al New England Journal of Medicine 2011)
  - 3) Virus
    - (i) Bunyaviridae
      - (a) Phlebovirus genus
      - (b) Novel virus
    - (ii) Enveloped virus
      - (a) Negative sense RNA virus
      - (b) 3 genomic segments
    - (iii) Tick-borne (*Haemaphysalis longicornis*)
    - (iv) Closely related to Heartland virus
  - 4) Clinical symptoms
    - (a) Non-specific
    - (b) Mortality rate 20-30% or higher
- b) Public Health risk
  - 1) Wide geographic distribution of vector
  - 2) Variety of animals have detectable antibodies
  - 3) Human-human transmission
  - 4) No treatment
  - 5) No vaccine
- c) Virulence factors
  - 1) Nonstructural protein NSs
    - (i) Studies done with mosquito-borne viruses
    - (ii) Would it be the same for tick-borne viruses?
  - 2) Type I Interferon (IFN) has a key role in innate antiviral immunity
  - 3) SFTSV NSs, but not NP, inhibits the induction of the Type I IFN response