LAC in Western North Carolina – Brian Byrd

a) Background
   i) Principal vector – *Ochlerotatus triseriatus*
   ii) Isolated in 1960 in LaCrosse, WI
   iii) Pediatric illness
   iv) Low case mortality
   v) Substantial economic burden
b) LAC hot spots seen in the US – PLoS One study
c) NC data
   i) Clear focus in western part of state
   ii) Hoping to do some additional risk studies
   iii) Increase in cases seen since 1996 with peak in 2005
d) LAC is very under-reported
   i) Szumlas et al. 1996, antibody study
   ii) High risk of transmission
e) Life cycle
   i) Small mammals – amplifying host
   ii) Vertical transmission occurs (transovarial)
   iii) Venereal transmission occurs
   iv) Humans are likely dead-end hosts
   v) Vector Competence
      (1) *Oc triseriatus* most competent (Hughes MT et al. J Med Ent. 2006.43 (4): 757-61)
         (a) Tree hole breeder
         (b) Will breed readily in tires
      (2) Evidence that *Ae albopictus* may be involved in transmission (invasive species)
      (3) *Oc japonicus* is competent in the lab (invasive species)
f) Studies done on WCU Campus
   i) Ovitrap collections
      (1) Show that species in area are primarily invasive species
      (2) Change from historic data
   ii) Morphological studies for ID of damaged adult *Aedes*/*Ochlerotatus* spp
   iii) Molecular methods for identifying container-breeding mosquitoes
g) Future studies
   i) Adult age structure/composition
   ii) Barrier spray effectiveness
   iii) Host seeking patterns and preferences