***Culex pipiens/restuans* Oviposition Study: Determining Nocturnal Flight Activity – Christian Boyer**

a) Paper from Massachusetts – optimum flight activity 2 hours after sunset
b) Needed to repeat study for PA
c) 2007 study
    i) Design
        (1) Establish trapping sites
        (2) Gravid traps
        (3) Total mosquitoes, not species
        (4) Record temp and wind speed
        (5) Collected between June and September
        (6) Collect once an hour
    ii) Results
        (1) Peak activity soon after sunset
        (2) Morning peak also occurred
        (3) Main activity at around 9 PM with a second smaller peak at 6 AM
        (4) More data needed
d) 2008 study
    i) Some variability - a few sites had pre-sunset peak
    ii) Most activity between 8 and 11 PM
e) 2009 study
    i) Questions
        (1) How small is the window?
        (2) Is collecting causing a disturbance?
        (3) Did setting the trap draw in mosquitoes?
        (4) Could the starting time and study length be changed?
    ii) Protocol
        (1) Set trap before sunset
        (2) Start collecting one hour before sunset
        (3) Collect every 15 minutes
        (4) Collect for 3 hours after sunset
        (5) Change entire trap at each collection
        (6) Establish trap sites where high numbers of *Culex* spp were found
        (7) Collect between July 27th and Aug 24th
        (8) Broaden study area
    iii) Results
        (1) Everything except one *Oc triseriatus* were collected just after sunset or later
        (2) Most collected within one hour after sunset
        (3) 10 species caught
        (4) 98% were *Culex* spp
    iv) Conclusions
        (1) Activity limited at 2 hours after sunset
        (2) Sunset correlates strongly with flight/oviposition activity
        (3) *Cx pipiens* were collected earlier than *Cx restuans*
        (4) Bottom line

(a) Start treating at sunset
(b) Treat a shorter time period of time

f) Questions for the future
   i) What happens as the days get cooler?
   ii) What is going on with *Cx pipiens* and *Cx restuans*?