**Socio-Ecological Approaches to Mosquito Control: Framing Mosquitoes Within a Broader Public Health Context – Dr. Paul Leisnham**

a) Website - www.enst.umd.edu
b) Mosquitoes are a signature socio-ecological system
    i) Require understanding of biophysical and social dynamics
    ii) Managing container mosquitoes in urban landscapes
c) What is a socio-ecological system?
    i) Processes
    ii) Services
        (1) Provisioning
        (2) Servicing
        (3) Regulating
    iii) Effects
d) Resident-based mosquito management (Study 1)
    i) Dowling et al 2003. EcoHealth 10: 37-47
    ii) Study questions
        (1) Can resident source reduction reduce mosquito infestations
        (2) Effect of demographics
        (3) Source reduction and knowledge, attitudes, and practices
    iii) Various studies on mosquito KAP found mixed results on the effect of education on container source reduction
    iv) Conceptual diagram
        (1) Household demographics
        (2) Knowledge
        (3) Practices
        (4) Attitude
    v) Mosquito - number of containers
    vi) Bite tolerance??
    vii) Procedures
        (1) 240 KAP questionnaires
            (a) Different socio-economic neighborhoods
            (b) Questions to fit the conceptual diagram
        (2) Entomological survey
    viii) Background
        (1) Mosquitoes were a problem
        (2) Situation was residential
    ix) Take home messages
        (1) Knowledge was related to effective practices
        (2) Practices were related to mosquito reduction
        (3) Related to income
e) Study 2
    i) Evaluating the effectiveness of educational materials
        (1) Passive outreach
            (a) Flyer
            (b) Notepad

(c) Magnet
(d) Calendar
(2) Packets handed out to households from study 1
ii) Households resurveyed
(1) KAP - 2010
(2) 2011
(a) Deployed materials (May)
(b) Questionnaire and survey
(3) 2012
(a) Deployed materials
(b) Survey
(c) KAP
iii) Linking education intervention with changes in KAP
(1) Education intervention
(2) Attitude change
(3) Knowledge improvement
(4) Practice change
iv) Measurements
(1) Knowledge improvement = intervention +income+age+baseline knowledge
(a) Higher in those with higher baseline knowledge
(b) No evidence of improvement
(2) Concern = intervention+income+gender+baseline knowledge
(a) Higher in houses not receiving info
(b) No evidence of improvement
(3) Responsibility
(4) Source reduction adoption - education intervention was effective
v) At household level
(1) Questions
(a) Is education intervention related to changes in water-holding containers?
(b) Does this decrease mosquito abundance?
(2) Results -
(a) Appears to be true for larval abundance
(b) Does not hold true for pupal abundance
vi) Types of containers
(1) Dowling et al 2013. J Med Ent 50: 764-772
(2) Socio-economic status has an effect on container type
f) Future studies
i) Urban disamentities and pests
(1) Urban decay leads to greater mosquito exposure
(2) Mosquito problems lead to reduced use, valuation, and care of outdoor environments
ii) Site - Baltimore City, MD