Mosquito BEACONS Year (2022 – 2023)

Meeting 3 – The 2nd Mosquito BEACONS Annual meeting minutes

Date time: January 18th, 1-3pm.
Location: Zoom
Meeting ID: 915 1007 2342

Members Present (29):

Yoosook Lee	University of Florida	Rosmarie Kelly	Georgia Department of Public Health
Benjamin Allen	City of Jacksonville Mosquito Control Division	Dan Killingsworth	Environmental Security Pest and Lawn
Raiza Alvarado	Puerto Rico Vector Control Unit	Leighanne Lawton	Texas Department of State Health Services
Amy Bauer	University of Florida	Teahna Ratliff	South Walton Co. Mosquito Control District
Jessica Ber	Florida Department of Agriculture and Consumer Services	Stephanie Richards	East Carolina University
Grayson Brown	Puerto Rico Vector Control Unit	Mike Riles	Central Life Sciences
Brian Byrd	Western Carolina University	Cristhian Sanchez	Puerto Rico Vector Control Unit
Lindsay Campbell	University of Florida	Sonja Swiger	Texas A&M AgriLife Extension
Eric Caragata	University of Florida	Panpim Thongsripong	University of Florida
Ryan Carney	University of South Florida	Yasmin Tavares	University of Florida
Victor del Amo	UTHealth Houston	Miranda Tressler	Volusia County Mosquito Control
Sandra Fisher-Grainger	Hernando County Mosquito Control; President-Elect, FMCA	Johnny Uelmen	University of South Florida
Ryan Harrison	Forsyth County Department of Public Health	Sarah Zohdy	CDC

Note takers: Ana Romero-Weaver, Xiaodi Wang, Valerie Nguyen

Meeting Minutes:

1. Introduction by Yoosook
    a. Restated the purpose of the BEACONS meeting: discuss the research and extension priorities, foster collaborations.
    b. Program updates
        i. Overview of the in-person workshop in Atlanta
            1. Special thanks to Dr. Zohdy for the CDC tour
        ii. The 3rd year continuing grant is approved!

1. A related note: FMEL faculties are applying for the CDC training grants. The board of directors is participating.

iii. Survey paper is published (https://doi.org/10.2987/22-7107).
1. Data from the survey not included in the submitted manuscripts will be analyzed for a possible second manuscript. Authors will be contacted later this year regarding converting data that haven't been analyzed into the other manuscript.

iv. Awards/ Recognition
1. Board of Directors received the Friend of IPM Award 2022.

v. Conference Attendance
1. Bryan and a few others from the board of directors presented in the FMCA meeting.
2. Ben presented at the Mid-Atlantic mosquito control association meeting last week.
3. Booth at the American mosquito control association meeting. People are welcome to check out the booth and say hi.
4. Dan will be at the Alabama vector management society meeting at the end of the month.

2. Program introductions from various states
a. Speaker: **Grayson Brown** – Puerto Rico Vector Control Unit (PRVCU), PR (Executive Director) https://prvectorcontrol.org/
i. **Title**: An Introduction to the Puerto Rico Vector Control Unit
ii. Highlights/Brief summary of the talk:
1. Current situation: Puerto Rico has an outsized problem with vector-borne disease (VBD) and lacks usual tools due to insecticide resistance.
2. PRVCU is a non-profit organization, it was created by a governor executive order in 2016 and is funded by the CDC. Almost all members have a college degree, 1/3 have a graduate degree.
3. PRVCU's mission is to protect the people of PR from the mosquito *Aedes aegypti*, while educating and empowering everyone to dramatically and sustainably reduce mosquito population across the island. Its vision is to strive together for a PR free from mosquito-borne disease. Its core programs involve vector surveillance, community mobilization and activation, and vector control.
4. PRVCU has leading-edge information technology and recently launched the Puerto Rico Vector Management Association.

iii. Other notes/Q&A:
1. Welcome people to come down here and write grant proposals together.
2. Support training and education for members.
3. Welcome to follow them on Facebook/Instagram/Twitter @prvectorcontrol
4. PRVCU will host the 2025 AMCA conference

b. Speaker: **Sonja Swiger** – Texas A&M AgriLife Extension, TX (Professor/Extension Entomologist)
    i. **Title**: Texas A&M AgriLife & Western Gulf Center of Excellence Outreach
    ii. Highlights/Brief summary of the talk:
        1. Dr. Swiger works in extension providing vector education. She introduced her West Nile Virus education programs, and her records of workshops and trainings from 2017 – 2021.
        2. Conducts 1-day program provides CEUs for pest control but also for sanitation. Funding allows to provide this program for free. It includes mosquito vector ID and biology, mosquito vector borne diseases, Integrated mosquito vector maintenance and surveillance.
        3. Conducts a 3-day workshop which provides more in-depth education, hands-on demonstration and experiences, for example, they bring traps, place them, and the next day find out what they catch.
        4. Also provides a 2-day pesticide applicator training with testing.
    iii. Other notes/Q&A:
        1. Q: Any plans on doing online training series?
        2. A: We had to do CEU classes online during covid, which was really tough. In the future, we hope to get another person who will work with me on these, and we can come up with some type of online services.
c. Speaker: **Rosmarie Kelly** - Georgia Department of Public Health, GA (Entomologist); and "Tiffany" Thuy-Vi Thi Nguyen (Entomologist)
    i. **Title**: Georgia's Vector Surveillance Program – Program Review
    ii. Highlights/Brief summary of the talk: She introduced her mosquito and arbovirus surveillance work in Georgia.
        1. The program depends on grants.
        2. Prior to 2012 there was some testing done but then surveillance diminished due to lack of funds. Since 2016 there has been more funding, 5 vector surveillance coordinators have been hired allowing to do surveillance in every county
            a. Limited tick testing. Veterinarians are provided with kits to collect ticks.
            b. Provide education on bed bugs, lice, scabies, and other arthropods.
            c. Summarized arbovirus and mosquito data available every month; final arbovirus summary every year since 2002
    iii. Other notes/Q&A:
        1. Arbovirus summary, mosquito surveillance summary and tick surveillance summary (yearly, 2005-2019, 2020, 2021) are available either online or upon request. Please send her email at Rosmarie.Kelly@dph.ga.gov
        2. Q: Can others enter data in your websites? A: No

d. Speaker: **Sandra Fisher-Grainger** – FMCA, FL

i. Topic:

ii. Highlights/Brief summary of the talk: She is the manager of Hernando Country Mosquito Control. EEE, St. Louis Encephalitis, West Nile Virus are among the major concerns for her county. She is also starting her role as the President of the Florida Mosquito Control Association for 2023.

1. Hernando Mosquito Control has few staff.
2. They have alliances with Public Health APP, App/core chemical handling, Aquatic Weed, Naturals Areas, etc.
3. They have found dengue, zika and chikungunya from travelers.
4. Their Mission is to reduce nuisance and eliminate arbovirus diseases.
5. They have a tire program for people to return their unused tires.
6. They have Several collaborations, including with Eva Buckner from FMEL and Elden Estep from USDA

iii. Other notes/Q&A:

1. Inflatable mosquito – the kids' lover, costs a couple thousand dollars. Sandra can share the buying info with the group if anyone is interested.

e. Speaker: **Jessica Ber** – FDACS, FL

i. **Topic**: An Introduction to Florida Department of Agriculture and Consumer Services. She works in the Biology of Science Evaluation and Technical Assistance of the Agricultural Services

ii. Highlights/Brief summary of the talk: Introduced the areas of focus that are relevant to BEACONS program. She noted that FDACS supports research and extension on termites, bed bugs, pollinator, pest control education and outreach, mosquito control support, and outreach.

1. Mosquito control outreach is divided by regions.
2. They provide assistance with regulations.
3. They provide ID courses and webinars and a hurricane response which was implemented during Hurricane Ian.
4. They have a web information map for outreach.

iii. Other notes/Q&A: None.

f. Speaker: **Stephanie Richards** - East Carolina University, NC (Professor and Graduate Program Director, Environmental Health Science Program, Department of Health Education and Promotion, College of Health and Human Performance)

i. **Title**: Mosquito Research and Environmental Health Training

ii. Highlights/Brief summary of the talk:

1. She is a professor at MSEH graduate program at East Carolina University and works with bachelor students on research projects.
2. She educates workers about the risk of using clothes treated with permethrin.
3. She assists the North Carolina Mosquito and Vector Control

iii. Other notes/Q&A:

1. Q: How many cases of La Crosse do you have?
2. A: It is a major concern (https://www.cdc.gov/lac/statistics/index.html)

g. Speaker: **Lindsay Campbell** – University of Florida
   i. **Title**: BEACONS Dashboard Map
   ii. Highlights/Brief summary of the talk: Dr. Campbell introduced the invasive mosquito species dashboard she developed and seeks our invasive mosquito surveillance data that can be shared through her dashboard. Single-instance reporting can be done through the website. However, we need to figure out how to easily format data to submit to the dashboard.
   iii. Other notes/Q&A: Rosmarie Kelly at GDPH and Jessica Ber at FDACS expressed interest in sharing their surveillance data for the dashboard.
      1. Data for dashboard should be sent to lcampbell2@ufl.edu

h. Speaker: **Brian Byrd** – Western Carolina University, NC (PI)
   i. **Topic**: An Introduction to the Mosquito and Vector-borne Infectious Disease Laboratory
   ii. Highlights/Brief summary of the talk: La Crosse Encephalitis is of particular concern for North Carolina state. He introduced his undergraduate Environmental Health Program and research interest in invasive *Aedes* biology.
      1. Between 2010 to 2020 there were 370 cases of dengue. Between 2003 to 2019 there were 1,281 cases of La Crosse.
      2. The main vector is *Aedes triseriatus*, but they are looking for the virus in *Ae. japonicus.*
      3. He works with students to produce publications and with undergrads investigating better trapping methods.
      4. He is working with clinicians to bring awareness about La Crosse.
   iii. Other notes/Q&A:

i. Speaker: **Víctor López del Amo** – UTHealth Science Center, Houston; Center for Infectious Diseases. He is a recent BEACONS member
   i. **Title**: CRISPR-based Technologies for Population Engineering
   ii. Highlights/Brief summary of the talk: He is a new faculty at UTHealth and developing his program on *Culex* mosquitoes. He is aimed at developing gene drive technology for controlling West Nile Virus vector.
   iii. Other notes/Q&A:

j. Speaker: **Eric Caragata** – University of Florida
   i. **Topic**: An Introduction to Caragata Lab at UF/FMEL
   ii. Highlights/Brief summary of the talk:
      1. Understand three-way interactions between mosquitoes, arboviruses, and the microbiota.
      2. Research program: understand host-microbe-virus interactions in mosquitoes; understand how the environment impacts the mosquito microbiota; understand how Wolbachia impacts mosquito biology and arbovirus infection; explore the mosquito microbiota to find novel anti-pathogen and mosquitocidal microbes

3. Extension program: Convey essential information about Next Generation Mosquito Control programs to stakeholders (What and Why); Teach stakeholders fundamental scientific practices underlying Next Generation Mosquito Control programs (How); Teach stakeholders key molecular techniques underlying mosquito control and surveillance.

iii. Other notes/Q&A: None.

k. Speaker: **Sarah Zohdy** – CDC
   i. **Title**: Marine cargo trade and introduction of invasive mosquito vectors (*Anopheles stephensi* and *Aedes aegypti* and *Ae. albopictus*)
   ii. Highlights/Brief summary of the talk:
      1. Background of the speaker: Sarah's early works in Auburn University looked at *Aedes* surveillance in Alabama, which made her interested in studying potential ports of introduction especially with container mosquitoes.
      2. She shared her latest work on modeling the invasive species introduction risk involving maritime trades both for international (*An. stephensi*) and domestic ports.
   iii. Other notes/Q&A:
      1. Manuscripts from this study:
         a. The pre-print is here: https://www.biorxiv.org/content/biorxiv/early/2022/09/01/2022.08.29.505734.full.pdf
         b. The *An. stephensi* manuscript can be found here: https://www.nature.com/articles/s41598-023-27439-0#MOESM2

l. Speaker: **Yoosook Lee** – University of Florida
   i. **Title**: Case study of using genomics for mosquito control: Evidence of Local Extinction and Reintroduction of *Aedes aegypti* in Exeter, California
   ii. Highlights/Brief summary of the talk: Dr. Lee presented the application of population genomic approach for mosquito control and presented a case study of California *Aedes aegypti* where she was able to prove the case of local elimination and reinduction in the city of Exeter, CA.
   iii. Other notes/Q&A:

3. Finishing remarks by Yoosook
   a. If people have questions, feel free to reach out to speakers by email. Email addresses can be found in Yoosook's invitation email (or contact Yoosook).
4. After-meeting discussion about data submission step in the BEACONS Dashboard.
   a. Yoosook will discuss with Lindsay to come up with a list of minimum requirements of information that we need. Later this list can be circulated to the members for suggestions.