

# THE 20<sup>TH</sup> ARBOVIRUS SURVEILLANCE AND MOSQUITO CONTROL WORKSHOP

IN CONJUNCTION WITH EQUIPMENT/TECHNOLOGY  
DEMONSTRATION

Organized by AMCD and Sponsored by  
USDA/CMAVE, FMCA, & Gulf South V.E.C.T.O.R.

*AMCD's Complex at:  
120 EOC Drive, St. Augustine, Florida, 32092*

MARCH 25<sup>th</sup> – 27<sup>th</sup>, 2025

[www.amcdsjc.org](http://www.amcdsjc.org)



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## PROGRAM AGENDA (**Tentative**)

### **MONDAY, MARCH 24, 2025**

**2:00 P.M.** ANNUAL AMCD'S ADJUNCT/CONSULTING/COLLABORATING MEETING (AI TECHNOLOGY, E-DNA, SIT/IIT, NEW INSECTICIDES AND REPELLENTS, ATSB)

**5:30 P.M.** Group Dinner at Ruby Tuesday (sponsored by Clarke)

### **TUESDAY, MARCH 25, 2025**

**7:30 A.M.** Registration at Administration build 100 ... AMCD Staff. Welcome to tour of the Disease Vector Education Center, SIT mass-rearing facility, and other facilities during the workshop.

**Moderator: Dr. Rui-De Xue, Executive Director, AMCD, St. Augustine, FL**

#### **PANEL SESSION:**

**8:30 A.M.** Welcome & Introduction ... **Mrs. Trish Becker, Chairperson of AMCD Board of Commissioners, Dr. Jerry Hogsette, Research Entomologist, USDA/CMAVE, and Dr. Jorge Rey, President of the FMCA**

**8:40 A.M.** Keynote Speaker: Resistance and resistant management of Culex mosquitoes: Global challenges for control of vector-borne diseases. ... **Dr. C. Roxanne Connelly, Team Lead, Entomology and Ecology Team, Division of Vector-borne Diseases, CDC/DVBD, Fort Collins, CO**

**9:20 A.M.** Guest Speaker: Urban sugar feeding of mosquitoes, its influence on vector capacity and possible control methods ... **Dr. Gunter C. Muller, Professor, University of Sciences, Techniques, and Technology of Bamako, Mali**

**9:50 A.M.** Update on DoD Deployed Warfighter Protection (DWFP) programs ... **Dr. Judy Scott-Fiorenzano, Armed Forces Pest Management Board, Silver, MD**

**10:10 A.M.** Transitioning Research, Technology & Collaborations from the DoD to a Mosquito Control District ... **Dr. David Hoel, Executive Director, Lee County Mosquito Control District, Ft. Myers, FL**

**10:30 A.M.** USDA/CMAVE Mosquito & Fly Unit research programs update... **Dr. Jerry Hogsette, Research Entomologist, USDA/CMAVE, Gainesville, FL**

**10:50 A.M.** Exploring and discovering novel botanical toxicants and repellents for mosquitoes ... **Dr. Peter Piermarini, Professor & Vice Chair, Department of Entomology, Ohio State University, Columbus, OH**

**11:10 A.M.** Update on the UF/Florida Medical Entomology Laboratory's programs ... **Dr. Jorge Rey, Professor & Director, UF/FMEL, Vero Beach, FL**

**10:30 A.M.** Environmental Health Association related to vector control ... **Dr. David T. Dyjack, Executive Director, NEHA, Denver, CO**

**11:50 A.M.** American Mosquito Control Association's update, 2025 ... **Mr. Robert Cartner, Regional Director of the AMCA**

12:10 P.M. LUNCH BREAK (HELICOPTER HANGAR, *PROVIDED BY VESERIS & CENTRAL LIFE SCIENCE*)

**PROGRAM SESSION:**

**MODERATOR: DR. KENNETH LINTHICUM, CENTER DIRECTOR (RETIRED), USDA/CMAVE, GAINESVILLE, FL**

1:30 P.M. Overview of the UF's Emerging Pathogen Institute... **Dr. Marco Salemi, Professor/Director, UF/EPI, Gainesville, FL**

1:50 P.M. The Florida DACS mosquito control program update & aerial spraying after hurricane Milton in 2024 ... **Ms. Marah Clark, Environmental Administrator, Entomology and Pest Control Section, DACS, Tallahassee, FL**

2:10 P.M. Update on programs of the Bureau of Entomology ... **Dr. Leroy Whilby, Bureau Chief, Division of Plant Industry, DACS, Gainesville, FL**

2:30 P.M. Monitoring and surveillance of malaria vector *Anopheles* mosquitoes in the USA ... **Dr. Audrey E. Lenhart, Chief, Entomology Branch, Division of Parasitic Diseases and Malaria, CDC, Atlanta, GA**

2:50 P.M. Gulf South V.E.C.T.O.R. program overview... **Dr. Claudia Riegel, Director, City of New Orleans Mosquito, Termite and Rodent Control Board, New Orleans, LA**

3:10 P.M. Social and ecological predictors of tiger mosquito distribution and management in Maryland... **Dr. Paul T. Leisnham, Professor & Chair, Department of Environmental Science and Technology, University of Maryland, College Park, Maryland**

**3:30 P.M. Break**

**Moderator: Dr. Uli Bernier, Adjunct Senior Chemist, AMCD, Retired National Program Leader from USDA/ARS**

3:40 P.M. Experience and accomplishment of control dengue vector mosquitoes by release of Wolbachia-infected mosquitoes in Singapore in the past 10 years ... **Dr. Wilson Tan, Director, Vector Biology and Control Division, National Environment Health Agency, Singapore**

4:00 P.M. Overview of spatial repellents against vectors... **Dr. Nicole Achee, Professor, University of Notre Dame**

4:20 P.M. Essential oils as active ingredient of the ATSB against adult mosquitoes ... **Dr. Troy D. Anderson, Professor, Department of Entomology, University of Nebraska, Lincoln, NE**

4:40 P.M. Progress on bed netting for malaria control in Africa .... **Dr. Louisa Messenger, Assistant Professor, Environ and Occupation Health, School of Public Health, Univ. of Nevada, Las Vegas, NV**

5:00 P.M. Use of mosquito treatment thresholds to balance service, mitigate arbovirus outbreaks, manage resources, and communicate to the public... **Dr. Kevin A. Caillouet, Director, St. Tammany Parish Mosq Abatement, LA**

5:20 P.M. Mosquito vector management in clean, stagnant, and sewage water ecosystem ... **Dr. Kadarkarai Murugan, Professor (retired), Department of Zoology, Bharathiar University, Coimbatore-641046, Tamil Nadu, India**

5:40 P.M. **DINNER & LECTURE: Overview of the Florida Coordinating Council for Mosquito Control (FCCMC) ... Mrs. Amy Brown, Chief, Bureau of Scientific Evaluation & Technical Assistance, DACS, Tallahassee, FL. AT HANGAR (ALL PARTICIPANTS)**

**WEDNESDAY, MARCH 26, 2025**

**SURVEILLANCE OF DISEASE & VECTORS**

**Moderator: Dr. Michael Turell, Adjunct Senior Arbovirologist at AMCD, US Army Medical Research Institute of Infectious Diseases (retired), Fort Detrick, MD**

- 8:30 A.M.** Mosquito-borne disease activity in Florida, 2024 ... **Dr. Rebecca Zimler, Vector-borne Disease Surveillance Coordinator, Bureau of Epidemiology, DOH, Tallahassee, FL**
- 8:50 A.M.** Untangling Canine Heartworm (*Dirofilaria immitis*) Transmission Dynamics in Duval County... **Dr. Ben Allen, Entomologist, Jacksonville Division of Mosquito Control, Jacksonville, FL**
- 9:10 A.M.** Risk of the introduction of exotic mosquito-borne pathogens into the United States ... **Dr. Michael Turell, Senior Arbovirologist (retired), US Army Medical Research Institute of Infectious Diseases, Fort Detrick, MD**
- 9:30 A.M.** Prediction of Avian Hosts of West Nile Virus and Keetch-Byram Drought Index in Lee County, FL ... **Dr. Alberto A. Condori, Professor & Honors Faculty Fellow, Department of Mathematics, College of Arts and Sciences FGC University, Fort Myers, FL**
- 9:50 A.M.** Outbreak of dengue fever and response in Miami ... **Dr. John-Paul Mutebi, Director, Mosquito Control Division, Miami-Dade County, Miami, FL**
- 10:10 A.M.** Keystone virus and other arbovirus projects at the UF /EPI.... **Dr. Glean Morris, Professor & Former EPI Director, Emergency Pathogen Institute, University of Florida**

**10:30 A.M. BREAK**

**BIOLOGY & ECOLOGY SESSION:**

**Moderator: Dr. Dan Kline, Research Entomologist, USDA/ARS/CMAVE, Gainesville, FL**

- 10:50 A.M.** E-DNA for surveillance of mosquitoes ... **Dr. Louisa Messenger, Assistant Professor, Environmental and Occupational Health, School of Public Health, University of Nevada, Las Vegas, NV**
- 11:10 A.M.** Using trait-based community analyses for data-driven predictions of West Nile virus transmission ... **Dr. Lindsay Campbell, Assistant Professor, UF/IFAS/FMEL, Vero Beach, FL**
- 11:30 A.M.** Interaction between arbovirus and vector host *Culicoides sonorensis* ... **Dr. Dana Nayduch, Research Leader, USDA-ARS, Arthropod-borne Animal Disease Research Unit, Manhattan, KS**
- 11:50 A.M.** Biology and management of Oropouche virus vector biting midges ... **Dr. Bethany L. McGregor, Research Entomologist, USDA-ARS, Arthropod-borne Animal Disease Research Unit, Manhattan, KS**

**12:10 P.M. LUNCH BREAK (PROVIDED BY Leading Edge, Envu, and Target)**

**USDA/CMAVE Session: Moderator: Dr. Jerry Hogsette, Lead Scientist & Research Entomologist, USDA/CMAVE, Gainesville, FL**

- 1:00 P.M.** Evaluation of chemicals with prospective attractant and repellent properties against stable flies, *Stomoxys calcitrans* (L.) ... **Dr. Jerry Hogsette, USDA/CMAVE, Gainesville, FL**
- 1:15 P.M.** Essential oil repellents as protection technologies against mosquitoes in a North Florida forest ... **Robert L. Aldridge, Jediah Kline, Barbara E. Bayer, Haley Dabbs, Kenneth J. Linthicum, Daniel L. Kline, Edmund J. Norris, and Seth Gibson, USDA/CMAVE, Gainesville, FL**
- 1:30 P.M.** A revised model to predict Rift Valley fever virus transmission risk for livestock ... **Lory Willard, Heidi Tubbs, Karlyn Harrod, Bhaskar Bishnoi, Stephanie Schollaert Uz, Claudia Pittiglio, Wassila Thiaw, Kevin Taylor, Assaf Anyamba, and Seth Gibson, USDA/CMAVE, Gainesville, FL**
- 1:45 P.M.** Effects of chilling temperature and duration on male *Aedes aegypti* survivorship and mating efficacy for use in SIT control programs ... **Frances V. Golden, Barbara E. Bayer, Robert L. Aldridge, Seth Gibson, USDA/CMAVE, Gainesville, FL**

- 2:00 P.M.** Vapor-Active Compounds as Mosquitocides, Repellents, and Synergists ... **Dr. Edmund Norris & Dr. Jeff Bloomquist, USDA/CMAVE and UF/EPI**
- 2:15 P.M.** Evaluation of a novel mode-of-action botanical spatial repellent derived from *Pogostemon cablin* oil ... **Edmund Norris, JD Kline, Dan Kline, Adam Bowman, Shawn Culley, Zhilin Li, Jeff Bloomquist**
- 2:30 P.M.** The potential for lactalbumin as a blood-meal alternative in large-scale mosquito rearing ... **JD Kline, USDA/CMAVE, Gainesville, FL**
- 2:45 P.M.** Assessing Mosquito Repellent Effectiveness in Star-Shaped Devices: Linear Scaling of Application Rate with Size ... **Adam Bowman and Daniel Kline, USDA/CMAVE, Gainesville, FL**
- 3:00 P.M.** *Psorophora ferox*: the challenge in establishing a new colony... **Dr. Dan Kline, Mr. Adam Bowman, and Dr. Bob Aldrich, USDA/CMAVE, Gainesville, FL**

**3:15 P.M. BREAK**

**Moderator: Dr. Barry Alto, Associate Professor, University of Florida/FMEL, Vero Beach, FL**

- 3:30 P.M.** Optimizing Larval Nutrition for Scalable Mass Rearing of *Aedes aegypti*... **Dr. Vindya Aryaprema, Biologist, AMCD, St. Augustine, FL**
- 3:45 P.M.** Update on nanoparticle formulation against mosquitoes... **Mr. Kai Blore, Lab Manager/UF Ph.D. Student, St. Augustine, FL**
- 4:00 P.M.** The Attractive Toxic Sugar Baits (ATSB) in the Intermountain West... **Dr. Chris Bibbs, Lab Manager, Salt Lake City Mosquito Abatement, Salt Lake City, UT**
- 4:15 P.M.** New Attractive Toxic Sugar Baits with capillary alginate gel biomaterials ... **Dr. Brady Willenberg, Assistant Professor, University of Central Florida, Orlando, FL**
- 4:30 P.M.** ATSB and IGRs ....**Dr. Barry Alto, Associate Professor, University of Florida/FMEL, Vero Beach, FL**
- 4:45 P.M.** Evaluation of commercial fruit juices as the attraction of ATSB against 3 species of mosquitoes ... **Dr. G. Kumar, Dr. M. Farooq, AMCD, St. Augustine, FL**
- 5:00 P.M.** Gizmos, gadgets, and things that go in Brevard County: mastering mosquito machinery...**Steven Whitt, James Curry, Michael Buono, Jonathan Koagel, Keith Minner, Brevard County Mosquito Control Department, Titusville, FL**
- 5:15 P.M.** Fulfilling Brevard County's public health mission as a certified mosquito control district within the purview of the local county government ... **Joseph Faella, Michael Buono, Jonathan Koagel, Jonathan Linder, Maxwell Reynolds, Bridget Coffey-Picco, and Shannon Maginnis, Brevard Mosquito Control District, Titusville, FL**

**5:30 P.M. END OF THE SESSION**

**THURSDAY, MARCH 27, 2025**

**OTHER PROGRAM:**

**Moderator: Dr. David Hoel, Executive Director, Lee County Mosquito Control District, Lehigh Acres, FL**

- 8:00 A.M.** International BEACONS working group: discussion on the African invasive mosquito *Anopheles stephensi* in November 2024 ... **Dr. Yoosook Lee, Assistant Professor, UF/IFAS/FMEL, Vero Beach, FL**
- 8:15 A.M.** Aerial spraying and its impact on non-targets at Salt Lake City Mosquito Abatement District ... **Dr. Christopher Bibbs, Lab Manager, Salt Lake City Mosquito Abatement, Salt Lake City, UT**

- 8:30 A.M.** Insecticide resistance detection in adult mosquitoes in St. Johns County, Florida... **Mr. Connor Kuppe, Biotechnician, AMCD, St. Augustine, FL**
- 8:45 A.M.** Effects of mosquito larvicides and adulticides applied via truck-mounted and aerial spraying on honey bees (*Apis mellifera*) in Florida". **Dr. Lena Barascou, Post doctor, University of Florida, Gainesville, FL**
- 9:00 A.M.** Aerial spray by contractor VDCI for control of mosquito population in St. Johns County, FL ... **Dr. Whitney Qualls, Assist Director, AMCD, St. Augustine, FL**
- 9:15 A.M.** Behavior and control of malaria vector Anopheles mosquitoes... **Dr. Doug Norris, Professor, John Hopkins University, Baltimore, MD**
- 9:30 A.M.** The Relevance of Mathematical Epidemiology in Mosquito-transmitted Diseases ...**Dr. Peyman Ghaffari, Professor, Chair of IMAAC & Center for Research and Development in Mathematics and Applications, University of Aveiro, Portugal**
- 9:45 A.M.** Wolbachia education and promotion for dengue vector control in Singapore in the past 10 years .. **Ms. Li T. Soh. Environmental Health Institute, National Environmental Agency, Singapore**

**10:00 A.M.** **BREAK**

**OTHER PROGRAM:**

**Moderator: Dr. Chris Bibbs, Lab Manager, Salt Lake City Mosquito and Vector Control Abatement**

- 10:20 A.M.** Biology and control response to biting midges in Lee County ... **Dr. Aaron Lloyd, Assistant Director, Lee County Mosquito Control District, Lehigh Acres, FL**
- 10:35 A.M.** Overview of SIT for operational mosquito control... **Dr. Daniel Hahn, Professor & Vice Chair, Department of Entomology and Nematology, University of Florida, Gainesville, FL**
- 10:50 A.M.** Sex SEPARATOR and next-generation SIT are novel tools for safe and efficacious mosquito control... **Dr. Nikolay Kandul, Visiting Scientist, University of California, CEO, Synvect Inc., San Diego, CA**
- 11:10 A.M.** Overview of AMCD applied for research programs... **Dr. Joe Diclaro, Sci Manager, AMCD, St. Augustine, FL**
- 11:25 A.M.** Establishing discriminating doses of pyrethroids in the laboratory test populations of *Aedes* and *Anopheles* mosquitoes for physiological resistance monitoring in Thailand ... **Mr. John Nobelza, Department of Entomology, Kasetsart University, Bangkok, Thailand**
- 11:40 A.M.** Standardization of the WHO tunnel assay system in the study of mosquito-repellent fabrics using the membrane feeding technique ... **Mr. Hassan Niyomdecha, Department of Entomology, Kasetsart University, Bangkok, Thailand**
- 11:55 A.M.** ATSB and application in malaria epidemic area in Mali ... **Dr. Mohamed M. Traore, Assistant Professor, University of Sciences, Techniques, and Technology of Bamako, Mali**
- 12:20 P.M.** Updated mosquito larvicides and Sumilarv ... **Mr. Garrett Potvin, Entomologist, MGK, MN**

**12:30 P.M.** **LUNCH BREAK (provided by MGK)**

**1:30 P.M.** End of the workshop and welcome to take a tour of the AMCD facility

Updated on Feb 7.

**Welcome to the 21<sup>th</sup> workshop, St. Augustine, FL, April 13-15, 2026.**