

# THE 19<sup>TH</sup> ARBOVIRUS SURVEILLANCE AND MOSQUITO CONTROL WORKSHOP

IN CONJUNCTION WITH EQUIPMENT / TECHNOLOGY DEMONSTRATION  
AND THE FMCA'S NE REGIONAL MEETING

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

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

MARCH 26<sup>th</sup> – 28<sup>th</sup>, 2024  
[www.amcdsjc.org](http://www.amcdsjc.org)

[Celebration of grand opening of the Disease Vector Education Center and SIT Mass Rearing Facility](#)

## PROGRAM AGENDA (tentative)

### MONDAY, MARCH 25, 2024

2:00 P.M. ANNUAL AMCD'S ADJUNCT/CONSULTING/COLLABORATING MEETING

5:00 P.M. Group Dinner at Ruby Tuesday

### TUESDAY, MARCH 26, 2024 (MEETING WILL BE HELD IN THE HANGAR)

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

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

8:00 A.M. **At Education Center:** Celebration of Disease Vector Education Center and SIT mass rearing facility's grand opening ... Short Speeches by Legislators, CDC/DVBD, USDA, & UF/IFAS

### PANEL SESSION (IN HANGAR):

9:00 A.M. Welcome & Introduction ... Ms. Gayle Gardner, Chairperson, AMCD's Board of Commissioners; Dr. Ken Linthicum, Center Director, USDA/CMAVE, and Mr. Richard Weaver, President of the FMCA.

9:10 A.M. **KEYNOTE SPEAKER:** Insecticide Resistance and Resistance Management for WNV vector *Culex* mosquitoes, Global Challenge... **Dr. Roxanne Connelly, Group Leader, Division of Vector-borne Diseases, CDC, Ft. Collins, CO.**

9:50 A.M. **KEYNOTE SPEAKER:** The World Needs Mosquito Control: Industry plays an important role in the pipeline ... **Dr. John Lyell Clarke, CEO, Clarke Mosquito Control, Chicago, Illinois.**

10:20 A.M. **Guest Speaker:** Overview of the WHO/The Special Program/TDR ... **Dr. Florence Fouque, Scientist, Focal Person for Vectors, WHO, The Special Program/TDR, Geneva, Switzerland**

10:50 A.M. Update on DoD Deployed Warfighter Protection (DWFP) programs ... **Dr. Gabriela Zollner, Armed Forces Pest Management Board, Silver Spring, MD**

11:20 A.M. USDA/CMAVE research programs update... **Dr. Kenneth Linthicum, Center Director, USDA/CMAVE, Gainesville, FL**

11:40 A.M. Overview of the UF/Florida Medical Entomology Laboratory's programs ... **Dr. Jorge Rey, Professor & Director, UF/FMEL, Vero Beach, FL**

12:00 P.M. **LUNCH BREAK (HELICOPTER HANGAR, PROVIDED BY VESERIS & CENTRAL LIFE SCIENCE)**

### PROGRAM SISSION:

MODERATOR: DR. KEN. LINTHICUM, CENTER DIRECTOR, USDA/CMAVE, GAINESVILLE, FL

1:00 P.M. Arbovirus program at UF's Emerging Pathogen Institute... **Dr. Glenn Morris, Professor & Director, UF/EPI, Gainesville, FL**

1:20 P.M. The Florida DACS mosquito control program update ... **Ms. Marah Clark, Environmental Administrator, Entomology and Pest**

Control Section, DACS, Tallahassee, FL

- 1:40 P.M.** DACS/DPI Bureau of Entomological program update ... **Dr. Leroy Whilby, Chief, Bureau of Entomology, Nematology, and Plant Pathology, DACS/DPI, Gainesville, FL**
- 2:00 P.M.** Overview of Navy Entomology Center of Excellence (NECE) ... **Dr. Ian Sutherland, Office in Charge, NECE, Jacksonville, FL**
- 2:20 P.M.** Collaborative Research and Service Opportunities at the Biological Threat Research Laboratory, Texas Tech University ... **Dr. Steven M. Presley, Professor & Director. The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX**
- 2:40 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**
- 3:00 P.M.** Vector and Pathogen Surveillance in the DoD's Global Emerging Infections Surveillance (GEIS) Program... **Dr. Neil F. Milan, LT, USPHS, Lead, Armed Forces Health Surveillance Division, Global Emerging Infections Surveillance Branch, Silver Spring, MD, Email: [neil.f.milan.mil@health.mil](mailto:neil.f.milan.mil@health.mil)**
- 3:20 P.M. BREAK**

**INTERNATIONAL SESSION:**

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

- 3:40 P.M.** Distribution and diversity of mosquito species and their population dynamics in Beijing Milu Park ... **Dr. Jing-Jing Zhang, Assistant Research Fellow, Milu Ecological Research Center, Beijing, China**
- 4:00 P.M.** Attraction distance to blood and sugar sources: improved methods and results ... **Dr. Gunter Muller, Professor, Malaria Research & Training Center, University of Bamako, Mali**
- 4:20 P.M.** Surveillance and control of container-inhabiting mosquitoes in Albania ... **Dr. Elton Rogozi, Medical Entomologist, Department of Epidemiology & Control of Infectious Diseases, Institute of Public Health, Tirana, Albania**
- 4:40 P.M.** Research on mosquito and vector program in Taiwan ... **Dr. Kok-Boon Neoh, Associate Professor, Department of Entomology, National Chung Hsing University, Taichung, Taiwan**
- 5:00 P.M.** Operation control of mosquitoes in Germany ... **Ms. Sabine Moreno, Visiting Scientist, AMCD**
- 5:20 P.M.** Anti-dengue activity of andrographolide compound against dengue vector, *Aedes aegypti* and dengue virus .. **Dr. K. Kovendan, Assistant Professor, Department of Zoology, Annamalai University, Tamil Nadu, Indian**
- 5:40 P.M.** Repellents for uniform and clothing treatment ... **Dr. Ulrich Bernier, Research Scientist (retired), USDA/ARS/CMAVE, Gainesville, FL**
- 6:00 P.M.** **DINNER & LECTURE** (Overview of University of Florida' honey bee laboratory and mosquito control ... **Dr. James Ellis, Professor, Department of Entomology & Nematology, Gainesville, FL. AT HANGAR (ALL PARTICIPANTS)**

**WEDNESDAY, MARCH 27, 2024**

**SURVEILLANCE OF DISEASE & VECTORS (IN HANGAR):**

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

- 8:00 A.M.** Florida mosquito-borne disease surveillance report, 2023 ... **Dr. Andrea Morrison, Vector-borne Disease Surveillance Coordinator, Bureau of Epidemiology, DOH, Tallahassee, FL**
- 8:20 A.M.** Leveraging mosquito sugar feeding for rapid arbovirus detection...**Dr. Nathan Burkett-Cadena, Dongmin Kim, Terry DeBriere, Barry Alto, Ozlem Yaren, Steven Benner. University of Florida/FMEL, Vero Beach, FL**
- 8:40 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**
- 9:00 A.M.** Arbovirus surveillance in St. Johns County, Florida in 2023.**Dr. Steve Peper, Molecular Entomologist, AMCD, St. Augustine, FL**
- 9:15 A.M.** Using trait-based community analyses for data driven predictions of West Nile virus transmission ...**Dr. Amely Bauer, Post**

Doctor & Dr. Lindsay O. Campbell, Assistant Professor, UF/IFAS/FMEL, Vero Beach, FL

- 9:30 A.M.** Passive and Active Surveillance of Vector-Borne Pathogens: Lessons Learned and Future Directions... **Dr. Mohammed Sallam, Assistant Professor, Uniformed Service University of the Health Sciences, Washington DC**
- 9:45 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**

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

### **BIOLOGY & ECOLOGY SESSION:**

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

- 10:20 A.M.** *Aedes aegypti* Vs. *albopictus*: 3 years of *Aedes* Surveillance in Crystal River, FL. – Ms. Tarolyn Frisbie, Citrus County Mosquito Control District.
- 10:35 A.M.** Advances in A.I. to support vector surveillance programs ... **Mr. Tristan Ford, CEO, VectTech, Inc., Baltimore, MD**
- 10:50 A.M.** A One Health approach to WN virus surveillance in West Texas ... **Dr. Cynthia Webb, Texas Tech University, Lubbock, TX**
- 11:00 A.M.** Behavioral and biological effects of arbovirus infection on *Culicoides sonorensis* ... **Dr. Dana Nayduch, Research Leader, USDA-ARS, Arthropod-borne Animal Disease Research Unit, Manhattan, KS**
- 11:15 A.M.** Ecological considerations in the control of *Culicoides* biting midges ... **Dr. Bethany L. McGregor, Research Entomologist, USDA-ARS, Arthropod-borne Animal Disease Research Unit, Manhattan, KS**
- 11:30 A.M.** Evaluating the Efficacy of Management Tools for Flies of Medical Importance... **Dr. Sonja Swiger, Professor, Texas A & M University and the CDC Centers of Training and Evaluation, College Station, TX**
- 11:45 A.M.** An update on fly management studies at USDA CMAVE. **Dr. Jerry Hogsette, Lead Scientist & Research Entomologist, USDA/ARS/CMAVE, Gainesville, FL**

**12:00 P.M. LUNCH BREAK (PROVIDED BY AZELIS/ADAPCO & AMVAC)**

### **INSECTICIDE & RESISTANCE:**

**Moderator: Dr. Roxanne Connelly, Group Leader, Division of Vector-borne Diseases, CDC, Ft. Collins, CO.**

- 1:00 P.M.** Insecticide penetration and efficacy in mosquitoes: The role of cuticular lipids. **Dr. Jeff Bloomquist, Professor, EPI, UF, Shawn Culley, Werner Geldenhuys, and Edmund Norris, Gainesville, FL**
- 1:20 P.M.** Assessing methoprene resistance in *Aedes taeniorhynchus* mosquitoes from Indian River County, Florida... **Dr. Peter Jiang, Research Director, Mrs. Sherry Burroughs, Director, Indian River Mosquito Control District, Vero Beach, FL**
- 1:40 P.M.** Resistance surveillance in St. Johns County, Florida ... **Dr. Vindyha Aryaprema, Biologist, St. Augustine, FL**
- 2:00 P.M.** Effective Integrated Vector Management when the mosquitoes are resistant... **Mr. Alden S. Estep, Research Entomologist, USDA ARS Center for Medical, Agricultural, and Veterinary Entomology, Gainesville, FL**
- 2:20 P.M.** The occurrence of *kdr* mutations in Texas mosquito populations .. **Dr. Bianca Rendon, The Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX**
- 2:40 P.M.** Update on nanoparticles of insecticides against adult mosquitoes .. **Mr. Kai Blore, Ph.D. student, UF & Lab Manager, AMCD, St. Augustine, FL**

**3:00 P.M. BREAK**

### **INTERNATIONAL SESSION:**

**Moderator: Dr. Dr. Florence Fouque, Scientist, WHO, The Special Program/TDR, Geneva, Switzerland**

- 3:20 P.M.** Update malaria control project at Quelessebougou, Mali .. **Mr. Richard Loomis, Quelessebougou Malaria Project, Salt Lake City, UT**
- 3:40 P.M.** Biting back! Exploring mosquitoes by transforming them into a sustainable animal source. in Greece ... **Dr. Alexandra**

Chaskepoulou, Research Entomologist, USDA-ARS, European Biological Control Lab, Thessaloniki, Greece?

- 4:00 P.M.** Mosquitoes in Turkey, in contemplation of European and the Black Sea Regions... **Dr. Filiz Gunay, Assistant Prof, Department of Biology, Hacettepe University, Ankara, Turkey**
- 4:20 P.M. Dengue fever and insecticide resistance in Saudi Arabia .. **Dr. Abadi Mashlawi, Assistant Professor of Entomology, Jazan University, Saudi Arabia**
- 4:40 P.M.** Reproductive processes, new targets for vector control, **Dr. Catalina Alfonso-Parra, Researcher, Colombian Institute of Tropical Medicine, Medellin, Colombia**
- 5:00 P.M.** Mosquito surveillance and resistance monitoring of medically important vectors in Africa ... **Dr. Ian Sutherland, Office in Charge, NECE, Jacksonville, FL?**
- 5:20 P.M.** American Mosquito Control Association's update ... **Mr. Robert Cartner, Regional Director of the AMCA**
- 5:40 P.M. END OF THE SESSION**

**WEDNESDAY, MARCH 27, 2024**

**SUGAR FEEDING & ATSB symposium (Board Room, Bld 100)**

Moderator: Gunter C. Muller, Professor, Malaria Research & Training Center, University of Bamako, Mali

- 8:00 A.M.** The chemical ecology and olfactory basis of *Aedes aegypti* attraction to fruits and flowers...**Dr. Jeff Riffell, Professor, Department of Biological Sciences, University of Washington, Seattle, WA**
- 8:20 A.M.** Leveraging nectar meal analysis in mosquito ecology ... **Dr. Edwin R. Burgess IV, Assistant Professor, Department of Entomology and Nematology, University of Florida, Gainesville, FL**
- 8:35 A.M.** The snack that bites back: laying groundwork for Attractive Toxic Sugar Baits (ATSB) in the intermountain west ...**Dr. Chris Bibbs, Lab Manager, Salt Lake City Mosquito Abatement, Salt Lake City, UT**
- 8:50 A.M.** New Attractive Toxic Sugar Baits with capillary alginate gel biomaterials ... **Dr. Brady Willenberg, Assistant Professor, University of Central Florida, Orlando, FL**
- 9:10 A.M.** Terpenoid esters as potential toxic bait insecticides ... **Dr. Edmund Norris, Research Chemist, USDA/CMAVE, Gainesville, FL**
- 9:25 A.M.** ATSB potential use for control of adult mosquitoes in Taiwan ... **Dr. Kok-Boon Neoh, Associate Professor, Department of Entomology, National Chung Hsing University, Taichung, Taiwan**
- 9:40 A.M.** Urban malaria challenges and new possibilities for ATSB application ... **Dr. Gunter Muller, Professor, Malaria Research & Training Center, University of Bamako, Mali**
- 10:00 A.M. BREAK**

**REPELLENT, MOSQUITOCIDE, & TRAPING SYMPOSIUM (IN BOARD ROOM, BLD 100):**

**MODERATOR:** Dr. Daniel L. Kline, Research Entomologist, USDA/CMAVE, Gainesville, FL

- 10:20 A.M.** Evaluation of natural mosquitocides ... **Dr. Daniel R. Swale, Associate Professor, University of Florida/EPA/Dept. of Entomology and Nematology, Gainesville, FL**
- 10:40 A.M.** Digging deeper on coconut oil fatty acid repellency against blood-sucking insects... **Dr. Jerry Zhu, Research Entomologist, USDA/AMRU, Lincoln, NE**
- 11:00 A.M.** New insect repellent evaluation at Anastasia Mosquito Control District ... **Dr. Whitney Qualls, Assistant Director, Anastasia Mosquito Control District, St. Augustine, FL**
- 11:20 A.M.** The uniform test kit protocol for the deployed warfighter... **Dr. Joseph Diclaro, CDC/NCEZID/DPDM/EB, [npv8@cdc.gov](mailto:npv8@cdc.gov)**
- 11:40 A.M.** Can the H-trap be used as a reliable mosquito surveillance tool?... **Dr. Daniel L. Kline, Research Entomologist, USDA/CMAVE, Gainesville, FL and Karen McKenzie**

**12:00 P.M. LUNCH BREAK (IN HANGAR)**

**SIT & ADULT CONTROL SYMPOSIUM (IN BOARD ROOM, BLD 100)**

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

**1:00 P.M.** Lee County Mosquito Control District's exploration of a drone release system for *Aedes aegypti* SIT ... **Mrs. Rachel Morreale, Manager of Applied Science and Technologies, Dr. David Hoel, Executive Director, Dr. Aaron Lloyd, Assistant Director, LCMCD, Lehigh Acres, FL**

**1:20 P.M.** Overview of SIT for operational mosquito control... **Dr. Daniel Hahn, Professor & Vice Chair, Department of Entomology and Nematology, University of Florida, Gainesville, FL**

**1:40 P.M.** SEPARATOR and next-generation SIT are novel tools for safe and efficacious mosquito control... **Dr. Nickolay Kendul, Visiting Scientist, University of California, San Diego, CA**

**2:00 P.M.** Update about SIT project at USDA/CMAVE ... **Dr. Ken. Linthicum, Center Director, USDA/CMAVE, Gainesville, FL**

**2:20 P.M.** Evaluation of misting system against adult mosquitoes ... **Dr. M. Farooq, Mosquito Control Engineer, AMCD, St. Augustine, FL**

**2:40 P.M.** Pesticide deposition sprayed by aerial crafts. **Mr. Mark Latham, Retired Director, Manatee County Mosquito Control Dist, FL**

**3:00P.M. BREAK**

**THURSDAY, MARCH 28, 2024**

**OTHER PROGRAM I (IN HANGAR):**

**Moderator:** Mr. Chris Lesser, Director, Manatee County Mosquito Control District

**8:00 A.M.** Research and Extension activities of Arthropod Population Ecology and Evolution Lab at FMEL... **Dr. Yoosook Lee, Assistant Professor, UF/IFAS/FMEL, Vero Beach, FL**

**8:20 A.M.** An overview of the applied research program at Salt Lake City Mosquito Abatement District ... **Dr. Nate Byers, Molecular Biologist, Salt Lake City Mosquito Abatement, Salt Lake City, UT**

**8:40 A.M.** Snap shot Iberia Parish Mosquito Control program review... **Mr. Herff Jones, Executive Director, Iberia Parish Mosquito Control District, LA.**

**9:00 A.M.** Chatham County Mosquito Control Program and Arbovirus Update ... **Mr. Ture Carlson, Director, Chatham County Mosquito Control, Savannah, GA**

**9:20 A.M.** A Pre-season Pilot Project at a Brevard County Mosquito Impoundment: Ecological Surveillance and Applications ... **Bridget Coffey-Picco, Environmental Specialist II, Max Reynolds, Jonathan Linder, Michael Buono, Steven Whitt, & Joseph Faella, Brevard County Mosquito Control Department, Titusville, FL**

**9:40 A.M.** Control of malaria outbreak through control of vector *Anopheles* mosquitoes by aerial application in West Coast area ... **Mr. Chris Lesser, Director, Manatee Mosquito Control District, FL**

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

**OTHER PROGRAM II (IN HANGAR):**

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

**10:20 A.M.** Attack of the Zoospores! Discovery of a new Pythium species infecting mosquito larvae in Lee County .. **Constance Darrisaw, Field Validation Biologist III, Lee County Mosquito Control District, Lehigh Acres, FL**

**10:35 A.M.** Using average daily temperature lows to help identify times to pause adult mosquito trapping and the potential cost savings in Citrus County... **Dr. Fred Stell, Entomologist, Citrus County Mosquito Control District, FL**

**10:50 A.M.** The use of Spinosad on Florida Department of Environmental Protection and United States Fish and Wildlife lands in Lee County, Florida ... **Mr. Ed W. Foley, Manager, Mosquito Control, Lee County Mosquito Control District, Lehigh Acres, FL**

**11:10 A.M.** Brevard Mosquito Control District's road to in house testing: grants, equipment, and patience... **Mr. Maxwell Reynolds, Jonathan Linder, Bridget Coffey-Pico, and Joseph Faella, Brevard Mosquito Control District, Titusville, FL**

**11:25 A.M.** Auburn University urban entomological extension program's overview.. **Dr. Xingping Hu, Professor, Department of Entomology and Plant Pathology, Auburn University, Auburn, AL**

**11:40 A.M.** Updated Label Claims and Efficacy Trials Using Sumilarv 0.5G WSPs... **Dr. Caleb Corona, Entomologist, MGK, MN**

**12:00 P.M.** **LUNCH BREAK** (provided by MGK)

**1:00-3:00 P.M.** ***DEMONSTRATION IN THE FIELD***  
Industry equipment and new technological demonstration, sprayer, drone for larviciding, & droplet calibration and analysis ..... **Dr. M. Farooq, AMCD, St. Augustine, FL, Dr. James Cilek, NECE, Jacksonville, FL**

***Welcome to join the 20<sup>th</sup> workshop, St. Augustine, FL, March 25<sup>th</sup> - 27<sup>th</sup>, 2025.***