THE 19TH 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 26th – 28th, 2024
www.amcdsjc.org

Celebration of grand opening of the Disease Vector Education Center and SIT Mass Rearing Facility
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PROGRAM AGENDA

MONDAY, MARCH 25, 2024

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

5:00 P.M. Group Dinner at Ruby Tuesday (sponsored by Clarke)

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 facilities 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, WHO/TDR, 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: WHO Special Program for Topical Diseases Research and Training (TDR) activities to support the testing of the Sterile Insect Technology against Aedes-borne diseases … 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. Chris Geden, Research Entomologist, 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 SESSION:

MODERATOR: DR. CHRIS GEDEN, RESEARCH ENTOMOLOGIST, 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. Paul Skelley, Assistant Chief, Bureau of Entomology, Nematology, and Plant Pathology, DACS/DPI, Gainesville, FL

2:00 P.M. Navy Entomology Center of Excellence (NECE)’s research and development capabilities… CDR Theron Hamilton, 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. Break

INTERNATIONAL SESSION:

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

3:20 P.M. Distribution and diversity of mosquito species and their population dynamics in Beijing Milu Park … Dr. Qing-Qing Zhang, Assistant Research Fellow, Milu Ecological Research Center, Beijing, China

3:40 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

4:00 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

4:20 P.M. Mosquito control in Europe: the role of the EMCA … Mrs. Sandra Gewehr, President of the Europe Mosquito Control Association, Ecodevelopment SA, Filyro, Greece

4:40 P.M. Anti-dengue activity of andrographolide compound against dengue vector, Aedes aegypti and dengue virus … Dr. K. Kovandan, Assistant Professor, Department of Zoology, Annamalai University, Tamil Nadu, Indian

5:00 P.M. Repellents for uniform and clothing treatment… Dr. Ulrich Bernier, Research Scientist (retired), USDA/CMAVE, Gainesville, FL

5:20 P.M. Update on the BEACONS working group and our work on Invasive mosquitoes in the southern United States … Mr. Mike Riles, Regional Sales Manager, Vector Central Life Sciences

5:35 P.M. Evaluating the Efficacy of In2Care Mosquito Stations in Suppressing Populations of Aedes aegypti and Aedes albopictus Around Tire Piles in St. Lucie County, Florida…. Mr. Daniel Tuzzolino, Senior Entomologist, Mosquito Control, Fort Pierce, FL

5:50 P.M. Session End

6:00 P.M. DINNER, CELEBRATION OF DR. KEN LINTHICUM RETIREMENT, & LECTURE (Overview of the 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.  
Outbreak of dengue fever and response in Miami … Dr. Isik Unlu, Operation Manager, Mosquito Control Division, Miami-Dade County, Miami, 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.  
Using trait-based community analyses for data driven predictions of West Nile virus transmission … Amely Bauer, Post Doctor & Dr. Lindsay Campbell, Assistant Professor, UF/IFAS/FMEL, Vero Beach, FL

11:05 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

11:20 A.M.  
Ecological considerations in the control of Culicides biting midges … Dr. Bethany L. McGregor, Research Entomologist, USDA-ARS, Arthropod-borne Animal Disease Research Unit, Manhattan, KS

11:35 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

11:50 A.M.  
An update on fly management studies at USDA CMAVE. Dr. Jerry Hogsette, Lead Scientist & Research Entomologist, USDA/ARS/CMAVE, Gainesville, FL

12:05 P.M.  
LUNCH BREAK (PROVIDED BY Leading Edge, Envu, and Target)

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 Goldenhys, and Edmund Norris, Gainesville, FL

1:20 P.M.  
Next steps to linking resistance data with control efficacy … Dr. Casey Crockett, Account Manager, S. Florida, Caribbean & International, Azelis Agricultural & Environmental Solutions, Áine Lehane, Dr. Edmund Norris, Dr. Sarah Wheeler, and Dr. Laura Harrington, Insecticide Resistance Work Group

1:40 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

2:00 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

2:20 P.M.  
Insecticide resistance of Aedes aegypti and Aedes albopictus in St. Johns County, Florida … Dr. Vindhya Aryaprema, Biologist, St. Augustine, FL

2:40 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

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

3:35 P.M. Vector Control Aspects of Global Malaria Eradication and Transmission Risks in Elimination Countries... Dr. Graham White, Professor Emeritus, Department of Entomology & Nematology, University of Florida, Gainesville, FL

3:50 P.M. Overview of international branches of the Society of Vector Ecology … Dr. Major Dhillon, Executive Director (Retired), Society of Vector Ecology, California

4:05 P.M. Mosquitoes in Turkey, in contemplation of European and the Black Sea Regions… Dr. Filiz Gunay, Assistant Professor, Hacettepe University, Ankara, Turkey. Post doctor, UF/IFAS/FMEL, Vero Beach, FL

4:20 P.M. Reproductive processes, new targets for vector control. Dr. Catalina Alfonso-Parra, Researcher, Colombian Institute of Tropical Medicine, Medelin, Colombia

4:40 P.M. American Mosquito Control Association’s update … Mr. Robert Cartner, Regional Director of the AMCA

5:00 P.M. The International Forum for Surveillance and Control of Mosquitoes and Vector-borne Diseases (9th IFSCMVD, XiAn, China, May 25-30, 2025) …. Dr. Rui-De Xue, Executive Director, AMCD, St. Augustine, FL & Dr. Tong-Yan Zhao, Professor, Beijing Institute of Microbiology and Epidemiology, China

5:10 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

8:40 A.M. The Snack that bites back: laying the 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

9:00 A.M. New Attractive Toxic Sugar Baits with capillary alginate gel biomaterials … Dr. Brady Willenberg, Assistant Professor, University of Central Florida, Orlando, FL

9:20 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

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

10:35 A.M. Terpenoid esters as potential toxic bait insecticides … Dr. Edmund Norris, Research Chemist, USDA/CMAVE, Gainesville, FL
10:50 A.M.  Spatial insect repellent evaluation at Anastasia Mosquito Control District … Dr. Whitney Qualls, Assistant Director, Anastasia Mosquito Control District, St. Augustine, FL

11:05 A.M.  The uniform test kit protocol for the deployed warfighter… Dr. Joseph Diclaro, CDC/NCEZID/DPDM/EB, npv8@cdc.gov

11:20 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 Adam Bowman

11:40 A.M.  Comparison of BG-Pro trap system with the CDC Light Trap and BG-Sentinel 2 for Mosquito Surveillance … Dr. Carrie DeJesus, NECE, Jacksonville, FL

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

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

MODERATOR: 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. Nikolay Kandul, Visiting Scientist, University of California, CEO, Synvect Inc., 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 the 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

3:00 P.M.  BREAK

STUDENT SESSION: (IN BOARD ROOM, BLD 100):

MODERATOR: DR. WHITNEY QUALLS, ASSISTANT DIRECTOR, AMCD, ST. AUGUSTINE, FL

3:20 P.M.  Blood meal host association of Aedes aegypti and Dirofilaria immitis frequency in disparate ecosystems… Brittani Ciomperlik, MS student (Burgess Lab), University of Florida, Gainesville, FL

3:35 P.M.  Update on nanoparticles of insecticides against adult mosquitoes … Kai Blore, Ph.D. student, University of Florida & Lab Manager, AMCD, St. Augustine, FL

3:50 P.M.  Population dynamic of salt marsh mosquitoes in St. Johns County, Florida … Kate Gualilo, MS student, University of North Florida, Jacksonville, FL & AMCD Interns Student, AMCD, St. Augustine, FL

4:05 P.M.  Insecticide resistance in mosquitoes in St. Johns County, Florida … Connor Kuppe, MS student, University of Florida & Biotech, AMCD, St. Augustine, FL

4:30 P.M.  Trapping collection for mosquito pools to detect arbovirus in St. Johns County, Florida … Edward Zeszutko, MS student, University of Florida & Biotech, AMCD, St. Augustine, FL

4:45 P.M.  Beyond Emergence and Neglect: Chagas Disease in the United States–A Work in Progress …Mr. Bernardo Moreno Peniche, Ph.D. student, University of California, Berkely, CA

THURSDAY, MARCH 28, 2024

OTHER PROGRAM I (IN HANGAR):

Moderator: Mr. Chris Lesser, Director, Manatee County Mosquito Control District
<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>8:00 A.M.</td>
<td>Research and Extension activities of Arthropod Population Ecology and Evolution Lab at FMEL… Dr. Yoosook Lee, Assistant Professor, UF/IFAS/FMEL, Vero Beach, FL</td>
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<td>8:20 A.M.</td>
<td>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</td>
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<td>8:40 A.M.</td>
<td>Snap shot Iberia Parish Mosquito Control program review… Mr. Herff Jones, Executive Director, Iberia Parish Mosquito Control District, LA.</td>
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<td>9:00 A.M.</td>
<td>Chatham County Mosquito Control Program and Arbovirus Update … Mr. Ture Carlson, Director, Chatham County Mosquito Control, Savannah, GA</td>
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<td>9:20 A.M.</td>
<td>A Pre-season Pilot Project at a Brevard County Mosquito Impoundment: Ecological Surveillance and Applications … Bridget Coffey-Pico, Environmental Specialist II. Max Reynolds, Jonathan Linder, Michael Buono, Steven Whitt, &amp; Joseph Faella, Brevard County Mosquito Control Department, Titusville, FL</td>
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<td>9:40 A.M.</td>
<td>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</td>
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<td>10:00 A.M.</td>
<td>BREAK</td>
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<td>10:00 A.M.</td>
<td><strong>OTHER PROGRAM II (IN HANGAR):</strong></td>
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<td>10:20 A.M.</td>
<td>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</td>
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<td>10:35 A.M.</td>
<td>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</td>
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<td>10:50 A.M.</td>
<td>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</td>
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<td>11:05 A.M.</td>
<td>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</td>
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<td>11:20 A.M.</td>
<td>Auburn University Urban Entomological Extension program’s overview… Dr. Xingping Hu, Professor, Department of Entomology and Plant Pathology, Auburn University, Auburn, AL</td>
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<td>11:35 A.M.</td>
<td>Overview of Amelia Island Mosquito Control District… Mr. Anthony Dunkelberger, Assistant Director/Entomologist, Amelia Island Mosquito Control District, FL</td>
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<td>11:50 A.M.</td>
<td>Updated Label Claims and Efficacy Trials Using Sumilarsv 0.5G WSPs… Dr. Caleb Corona, Entomologist, MGK, MN</td>
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<td>12:05 P.M.</td>
<td>LUNCH BREAK (provided by MGK)</td>
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<td>1:00-3:00 P.M.</td>
<td><strong>DEMONSTRATION IN THE FIELD</strong></td>
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<td>Industry equipment and new technological demonstration, sprayer, drone for granular larvicide application, &amp; droplet calibration and analysis …Dr. M. Farooq, Mr. Bill Rynold (Leading Edge), Mr. Dana Smith, and Mr. James Wynn, AMCD, St. Augustine, FL</td>
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**Welcome to the 20th workshop, St. Augustine, FL, March 25th - 27th, 2025.**

*(Updated on March 18)*