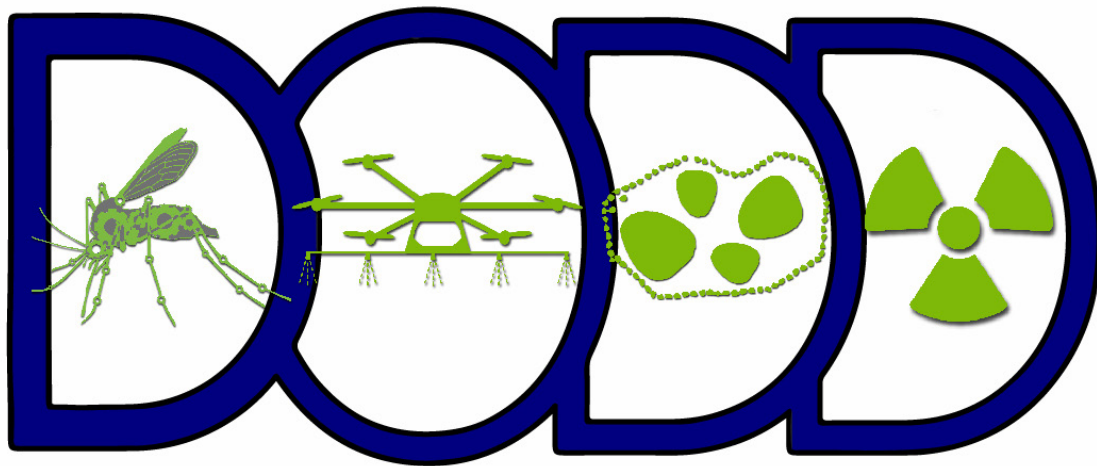


# Florida Mosquito Control Association 2023 Dodd Short Courses

January 30 - February 2, 2023



## INNOVATION

Hilton University of Florida  
Conference Center Gainesville

**1714 SW 34th Street  
Gainesville, Florida 32607**

# Agenda at a Glance

## Monday, January 30, 2023

Time	Course Name	Location
1:30 PM - 5:00 PM	<b>D:</b> Advanced Mosquito Control	Ballroom C
1:30 PM - 5:00 PM	<b>M:</b> Communicating with a Purpose: Promote your Public Image with Transparency and Education	Birch
1:30 PM - 5:00 PM	<b>U:</b> Identification of Adult Mosquitoes of Florida	Azalea
1:30 PM - 5:00 PM	<b>W:</b> In-House Molecular Testing	Hawthorne
1:30 PM - 5:00 PM	<b>Y:</b> Interpreting Pesticide Labels	Dogwood
1:30 PM - 5:00 PM	<b>Z:</b> Introduction to Mosquito-Borne Arboviruses in Florida	Hawthorne

## Tuesday, January 31, 2023

Time	Course Name	Location
8:00 AM - 5:00 PM	<b>D:</b> Advanced Mosquito Control	Ballroom C
8:00 AM - 5:00 PM	<b>FF:</b> Sentinel Chicken Disease Surveillance	Hawthorne
8:00 AM - 5:00 PM	<b>GG:</b> The Changing Face of Administrative Support in Mosquito Control	Birch
8:00 AM - 5:00 PM	<b>J:</b> Best Practices in Outreach Education	Hickory
8:00 AM - 5:00 PM	<b>K:</b> Chemical Spill Response Training	Dogwood
8:00 AM - 5:00 PM	<b>P:</b> Domestic Inspections	Ballroom B
8:00 AM - 5:00 PM	<b>U:</b> Identification of Adult Mosquitoes of Florida	Azalea
8:00 AM - 11:30 AM	<b>DD:</b> New Employee Introduction to Applying Pesticides	Live Oak
8:00 AM - 11:30 AM	<b>H:</b> Arbovirus Detection in Mosquito Pools: Approaches and Considerations	Ballroom A
1:30 PM - 5:00 PM	<b>B:</b> Advanced Mosquito-Borne Viruses in Florida	Ballroom A
1:30 PM - 5:00 PM	<b>EE:</b> Next Generation Techniques	Cedar
1:30 PM - 5:00 PM	<b>N:</b> Dimensional Analysis: A Different Approach to Pesticide Calibration	Live Oak

## Wednesday, February 1, 2023

Time	Course Name	Location
8:00 AM - 5:00 PM	<b>AA:</b> Introduction to Process-Based Ecological and Epidemiological Modeling	Hickory
8:00 AM - 5:00 PM	<b>C:</b> Advanced Medical Entomology B	Live Oak
8:00 AM - 5:00 PM	<b>D:</b> Advanced Mosquito Control	Ballroom C
8:00 AM - 5:00 PM	<b>G:</b> Aquatic Weed Control	Hawthorne
8:00 AM - 5:00 PM	<b>I:</b> Basic Insecticide Resistance Testing Using the CDC Bottle Bioassay	Ballroom B
8:00 AM - 5:00 PM	<b>Q:</b> Equipment Roundup & New Technologies	Parking Lot/Hickory
8:00 AM - 5:00 PM	<b>S:</b> Fostering Relationships Between MC and Beekeepers	Dogwood
8:00 AM - 11:30 AM	<b>CC:</b> Larvicides, Larviciding, and Resistance Management	Ballroom A
8:00 AM - 11:30 AM	<b>U:</b> Identification of Adult Mosquitoes of Florida	Azalea
8:00 AM - 11:30 AM	<b>X:</b> Intermediate Excel: Taking on Tables	Birch
1:30 PM - 5:00 PM	<b>BB:</b> Larvicide Bioassay and Demonstration	Ballroom A
1:30 PM - 5:00 PM	<b>V:</b> Identification of Larval Mosquitoes of Florida	Azalea

## Thursday, February 2, 2023

Time	Course Name	Location
8:00 AM - 5:00 PM	<b>D:</b> Advanced Mosquito Control	Ballroom C
8:00 AM - 5:00 PM	<b>E:</b> Advanced QGIS	Cedar
8:00 AM - 5:00 PM	<b>G:</b> Aquatic Weed Control	Hawthorne
8:00 AM - 5:00 PM	<b>L:</b> Commissioner's Caucus	Ballroom A
8:00 AM - 5:00 PM	<b>O:</b> Director's Caucus	Ballroom B
8:00 AM - 5:00 PM	<b>R:</b> Flies of Public Health Importance in Florida	Dogwood
8:00 AM - 5:00 PM	<b>T:</b> From Start to Finish: What your program needs to conduct applied research on vectors of public health importance	Live Oak
8:00 AM - 5:00 PM	<b>V:</b> Identification of Larval Mosquitoes of Florida	Azalea
1:30 PM - 5:00 PM	<b>A:</b> Advanced Aerial: Conventional and Unmanned Aerial Systems	Hickory
8:00 AM - 11:30 AM	<b>F:</b> Aerial 101: Conventional and Unmanned Aerial Systems	Hickory

# COURSE A

## Advanced Aerial: Conventional and Unmanned Aerial Systems

**INTENDED AUDIENCE:** Mosquito control employees who have at least a basic understanding of the science of aerial application.

**PREREQUISITES:** Must have completed Aerial 101 course or have a position participating in the aerial application for their District/ employer.

**COURSE DESCRIPTION:** This course will provide a deeper look into the science of different aerial application technologies utilized by both conventional and UAS application methods. Beginning with a discussion of computer spray fate modeling as a tool to predict the movement of droplets (and granules) necessary for accurate targeting (offsets) of spray blocks, it will then move on to practical considerations for aerial operation setups to include surveillance, GIS/flight planning and guidance, hazards to flight, payload configuration, predicted offsets and canopy penetration. Important aspects such as calibration and FAA flight rules for the different operational methods will also be discussed.

**CEUs:** 3 Public Health or 3 Aerial

**Contact:** Bill Reynolds, Leading Edge Aerial Technologies, Inc. | breynolds@leateam.com  
Mark Latham, Manatee County Mosquito Control District | manateemcd@aol.com

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE B

## Advanced Mosquito-Borne Viruses in Florida

**INTENDED AUDIENCE:** This course is intended for mosquito control personnel or health department personnel.

**PREREQUISITES:** Working knowledge of mosquito-borne diseases in Florida.

**COURSE DESCRIPTION:** This course will provide attendees with an in-depth look at mosquito-borne diseases in Florida, taking a closer look at disease trends and tools used for public health surveillance for both endemic and exotic arboviral diseases. Academic and mosquito control partners will also do a deep dive on advances in the field of mosquito-borne disease surveillance.

**CEUs:** 3 Public Health

**Contact:** Dr. Andrea Morrison, Florida Department of Health | andrea.morrison@flhealth.gov  
Dr. Lea Heberlein, Florida Department of Health | lea.heberlein@flhealth.gov

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE C

## Advanced Medical Entomology B

**INTENDED AUDIENCE:** Open to all mosquito control personnel

**PREREQUISITES:** Completion of the Introduction to Mosquito Control course

**COURSE DESCRIPTION:** This is a four-year rotating course (Advanced Medical Entomology A through D) which covers arthropods of public health importance, vector-borne diseases, and related topics. In Advanced Medical Entomology B (2023), students will learn about and discuss the following insects of public health importance: mosquitoes, sand flies, black flies, tsetse flies, and fleas. Students will also learn about the following vector-borne diseases: malaria, lymphatic filariasis, dog heartworm, leishmaniasis, onchocerciasis, African trypanosomiasis, plague, and murine typhus.

**CEUs:** 6 Public Health

**Contact:** Dr. Eva Buckner, University of Florida, Institute of Food and Agricultural Sciences, Florida Medical Entomology Laboratory | [eva.buckner@ufl.edu](mailto:eva.buckner@ufl.edu)

Dr. Estelle Martin, University of Florida, Institute of Food and Agricultural Sciences, Florida Medical Entomology Laboratory | [estellemartin@ufl.edu](mailto:estellemartin@ufl.edu)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE D

## Advanced Mosquito Control

**INTENDED AUDIENCE:** This 3 ½ day course is intended for students who are seasoned mosquito control professionals with a minimum five years on the job experience.

**PREREQUISITES:** Completion of Introduction to Mosquito Control.

**COURSE DESCRIPTION:** Students of this course will be presented with information leading to increased knowledge of advanced techniques of mosquito control operations including the following: IPM, Federal & State laws and regulations, mosquito borne diseases, mosquito surveillance and ID, mosquito control chemistries and modes of action, chemical safety, and mathematics used in the industry. This course will not provide students with all materials necessary to pass the Advanced Mosquito Control exam; students will also need the benefit of real-world experiences working in mosquito control operations for passage of the examination. Exam is not required.

**CEUs:** 6 Public Health and 6 CORE 487 or 482

**Contact:** Dr. Shelley Whitehead, Whitehead Entomology Consulting, LLC | [shelley@whiteheadecllc.com](mailto:shelley@whiteheadecllc.com)

Dr. Whitney Qualls, Anastasia Mosquito Control District | [wqualls@amcdf.org](mailto:wqualls@amcdf.org)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE E

## Advanced QGIS

**INTENDED AUDIENCE:** Mosquito control district personnel working with trap collections data for arbovirus surveillance

**PREREQUISITES:** Familiarity with GIS and Microsoft Excel; basic course steps will be provided in a step-by-step tutorial.

**COURSE DESCRIPTION:** This course will cover mapping and using the free, open-source software package QGIS. This course will walk students through data importation, visualization, and map construction. Basic clustering analyses, including Getis Ord\* to identify hot spots and cold spots, will be covered using existing functions within QGIS. Students will be provided example data from weekly mosquito control trap collections for the review portion of the course, and will have the opportunity to bring their own data sets and format and map during the afternoon portion of the course. A step-by-step tutorial containing screenshots of review activities will be provided to students, along with a glossary of basic GIS terms. The afternoon portion will include activities on student data sets, including formatting, importing, mapping, and exporting report quality maps for public health surveillance.

**CEUs:** 1 Public Health

**Contact:** Dr. Lindsay Campbell, Florida Medical Entomology Laboratory, Department of Entomology and Nematology, IFAS, University of Florida | [lcampbell2@ufl.edu](mailto:lcampbell2@ufl.edu)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE F

## Aerial 101: Conventional and Unmanned Aerial Systems

**INTENDED AUDIENCE:** Mosquito control employees from programs without aircraft, or those who do not currently work with aircraft and wish to learn more about aerial application methods.

**PREREQUISITES:** None.

**COURSE DESCRIPTION:** An introduction to the use of both conventional (helicopters and fixed-wing) and unmanned aircraft systems (UAS) in mosquito control. The course will cover the basic science of aerial application for mosquito control, the differences between aerial larviciding and aerial adulticiding, and a comparison of aircraft types to include area coverage capabilities due to size, load capacity, spray systems and speed. Finally, a direct comparison will be made between conventional and UAS applications, with the basic pros and cons of each application type.

**CEUs:** 3 Aerial

**Contact:** Bill Reynolds, Leading Edge Aerial Technologies, Inc. | [breynolds@leateam.com](mailto:breynolds@leateam.com)  
Mark Latham, Manatee County Mosquito Control District | [manateemcd@aol.com](mailto:manateemcd@aol.com)

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# COURSE G

## Aquatic Weed Control

**INTENDED AUDIENCE:** This course is for mosquito control personnel whose job responsibilities require them to be certified in the Aquatic Weed Control category

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will cover aquatic plant identification, IPM in aquatic, right-of-way and natural areas, and aquatic herbicide resistance. Approximately 85 plant species will be discussed. IPM case studies will be covered. Resistance topics will include modes of action and options for alternating modes of action for resistance management.

**CEUs:** 11 Aquatic Pest Control

**Contact:** Dr. Lyn Gettys, University of Florida | lgettys@ufl.edu

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE H

## Arbovirus Detection in Mosquito Pools: Approaches and Considerations

**INTENDED AUDIENCE:** Anyone interested in learning about virus detection strategies and methods (i.e. district managers, laboratory managers, biologists, and lab technicians of mosquito control districts, universities, and other agencies).

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will cover key topics of arbovirus detection in mosquito pools including basic virology, assays, workflow strategies, laboratory capacity-building, and results interpretation. The information covered will be basic enough to appeal to a wide audience, but technical enough to assist attendees in making informed decisions when implementing new or improving existing arbovirus detection programs based on target pathogens, number of expected specimens, and personnel and laboratory capacity.

**CEUs:** 3 Public Health

**Contact:** Kristy Burkhalter, Centers for Disease Control and Prevention | ktb3@cdc.gov  
 Chip Hancock, Centers for Disease Control and Prevention | thu4@cdc.gov

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE I

## Basic Insecticide Resistance Testing Using the CDC Bottle Bioassay

**INTENDED AUDIENCE:** Beginners to insecticide resistance testing, both lab and administrative personnel.

**PREREQUISITES:** None.

**COURSE DESCRIPTION:** Participants will learn the basic phenotypic assay for detecting insecticide resistance. How to do the test, what the test is measuring, and how it differs from other tests will be covered. In addition to data analysis, some discussion of next steps to take if resistance is discovered will be incorporated into the course. Hands-on activities will be performed.

**CEUs:** 4 Public Health

**Contact:** Dr. Janet McAllister, Centers for Disease Control | [jvm6@cdc.gov](mailto:jvm6@cdc.gov)  
 Dr. Casey Crockett, ADAPCO and Red River Specialties | [casey.crockett@azelis.com](mailto:casey.crockett@azelis.com)

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# COURSE J

## Best Practices in Outreach Education

**INTENDED AUDIENCE:** Anyone interested in enhancing or improving their agency’s educational outreach program.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** Public outreach is a vital part of an effective mosquito control program. The outreach and education of citizens can influence not only public receptiveness and cooperation but also tax receipts and budget. This course will provide participants an opportunity to learn about and share ideas related to community outreach. The focus of this course will be integrating the importance of public education within your districts and effective ways to conduct public education. This year, the focus will be on school programs, community groups, social media, and creating effective, engaging public health messaging for your citizens. Participants will learn a variety of techniques for developing relationships with citizens making the general public aware of the need for and methods of mosquito control and communicating the importance of effective Integrated Mosquito Management (IMM) Plans. The course will provide plenty of examples that can be easily and effectively incorporated for immediate use within your district.

**CEUs:** None

**Contact:** Jillian Meek, Jillian Meek the Mosquito Geek | [www.JMeekMosquitoGeek.com](http://www.JMeekMosquitoGeek.com)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE K

## Chemical Spill Response Training

**INTENDED AUDIENCE:** Government employees and first responders. Federal law requires annual emergency response training for all employees who may respond to a chemical spill, regardless if employed by the private sector or local government. For the training to qualify, it must review specific topics as specified by OSHA and EPA. This course fulfills those requirements.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This class meets the requirements under both OSHA and EPA for responding to chemical release. This is a certification course. Topics covered include the following: review of OSHA, EPA, and DOT rules governing spills; hazard assessment; spill reporting requirements, PPE, toxicology and chemical hazards, spill containment procedures/materials, decontamination, waste disposal, and review of recent incidents. All students completing the course will receive documentation indicating they are qualified to respond to chemical release.

**CEUs:** 4 CORE and 4 Public Health, Aquatic, Natural Areas, Forestry, Right-of-Way, Ornamental and Turf, or Aerial (Total 8)

**Contact:** Chris Pappas, Sigma Consulting and Training, Inc. | [chris@sigmatrainingservices.com](mailto:chris@sigmatrainingservices.com)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE L

## Commissioner's Caucus

**INTENDED AUDIENCE:** Mosquito control commissioners or trustees.

**PREREQUISITES:** None.

**COURSE DESCRIPTION:** This course will present topics of interest to mosquito control commissioners. Topics: Commissioner responsibilities and our enabling legislation, educational opportunities for commissioners (AMCA, FMCA, lobby days, etc.), strategic advantage to improve meetings, fiduciary duties and responsibilities, operational accountability audit. Working lunch (12 PM -1:30 PM) will be included alongside an open discussion on what the FMCA offers commissioners and districts. Final topic will include trip to University of Florida lecture and lab tour of Sterile Insect Techniques (SIT) under development. Transportation provided to and from hotel to UF or take own vehicle. Session ends upon completion of UF lab tour.

**CEUs:** 2 CORE 487 or 482

**Contact:** Phil Goodman, Florida Keys Mosquito Control District | [goodmanpl@aol.com](mailto:goodmanpl@aol.com)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE M

## Communicating with a Purpose: Promote your Public Image with Transparency and Education

**INTENDED AUDIENCE:** This course is for mosquito control personnel who may be in contact with the public, who may work with print and broadcast media, who present informative presentations to community groups, and those who wish to ensure the public has a more understanding of the role individuals play in mosquito control.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** Public education is a core component of integrated pest management. The course includes guidance on how to create consistent and fact-based messaging to build trust and confidence in mosquito control. Coursework covers: developing your message house for mosquito control, using hard and soft facts to make the case for mosquito control, new methods for delivering messages to your community, effective speaking, educating the public, improving writing style, handling adversarial questions, and developing community advocates.

**CEUs:** None

**Contact:** Laura McGowan, The McGowan Group | [laura@mcgowansonline.com](mailto:laura@mcgowansonline.com)  
Robin King, Collier Mosquito Control District | [rking@cmcd.org](mailto:rking@cmcd.org)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE N

## Dimensional Analysis: A Different Approach to Pesticide Calibration

**INTENDED AUDIENCE:** Professional pesticide applicators and managers who are required to perform calculations related to pesticide application.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** There are different ways to calculate pesticide application rates. Unlike formula-based methods, dimensional analysis uses logic to calculate values, which means that very little memorization is necessary. This course will teach students how to perform various mosquito control and aquatic weed control pesticide calculations using the dimensional analysis approach. Material will be presented using a combination of lectures, live demonstrations, and brief, hands-on activities designed to consolidate knowledge and evaluate student comprehension. By the end of the course, students will have learned how to apply dimensional analysis to most common mosquito and aquatic weed control pesticide calibration questions and to use this method to back check calculations made using other approaches.

**CEUs:** 1.5 CORE 487 or 482

**Contact:** Dr. Rebecca Heinig, Collier Mosquito Control District | [rheinig@cmcd.org](mailto:rheinig@cmcd.org)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE O

## Director's Caucus

**INTENDED AUDIENCE:** This course is for mosquito control directors, assistant directors, administrators, and senior staff.

**PREREQUISITES:** None.

**COURSE DESCRIPTION:** This course will be a discussion of current issues that are impacting mosquito control in Florida. The course will provide a few presentations on current topics and follow a virtual discussion format that allows a free interchange of ideas.

**CEUs:** 3 Public Health

**Contact:** Sherry Burroughs, Indian River Mosquito Control District | s.burroughs@irmosquito2.org

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE P

## Domestic Inspections

**INTENDED AUDIENCE:** This course is for mosquito control personnel whose job responsibilities involve domestic inspections and associated mosquito management, community outreach, and/or customer service.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will be taught at the beginner to intermediate level, but all levels are welcome. Topics will include an overview of domestic mosquitoes, diseases and habitats of concern, inspection criteria and typical findings, common sources of mosquito production, and adult trapping and larval treatment considerations. A case study format will be presented to simulate a typical response to a human case notification by the Department of Health, and all course concepts will be applied in a hands-on field activity on hotel grounds, followed by a Q&A session and open forum discussion.

**CEUs:** 3 Public Health and 3 CORE 487 or 482

**Contact:** Mike Buono (michael.buono@brevardfl.gov)

Steve Whitt (steven.whitt@brevardfl.gov)

Jonathan Koagel (jonathan.koagel@brevardfl.gov)

Joseph Faella (joseph.faella@brevardfl.gov)

Brevard County Mosquito Control District

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE Q

## Equipment Roundup & New Technologies for Mosquito Control

**INTENDED AUDIENCE:** Mosquito control technicians and field applicators.

**PREREQUISITES:** Interest in mechanics, fabrication, and calibration.

**COURSE DESCRIPTION:** This course provides an opportunity for mosquito control personnel to showcase equipment and/or ideas for improving equipment. Instructors will discuss various equipment for use in ranging mosquito habitats such as: spray systems (adulticide, larvicide, herbicide, backpacks, and spray pots), vehicles (ATV's, boats, trucks, and aircraft), handheld sprayers (electric, ULV, and thermal), and maintenance. Past, present, and future equipment and technology will be discussed. Inspectors and technicians will discuss equipment they currently use or make to provide efficiency for their programs. *Participants are strongly encouraged to bring equipment, both small and large.* Students should meet in Hickory classroom in the morning.

**CEUs:** 3 Public Health and 2 CORE 487 or 482

**Contact:** Chris Bustle, Manatee County Mosquito Control District | christian.bustle@manateemosquito.com

Israel Stinton, Manatee County Mosquito Control District | israel.stinton@manateemosquito.com

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE R

## Flies of Public Health Importance in Florida

**INTENDED AUDIENCE:** All personnel within mosquito control are welcome, however those directly dealing with the public (i.e. treatment requests, outreach, etc.) may find the course most useful.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** The course is an introduction to the biology, ecology, and public health importance of other dipterans (true flies) besides mosquitoes. By the end of the course, students should be well equipped to handle public questions and concerns about the flies discussed. The purpose of this course is **not** to train how these dipterans may be treated but to instead equip mosquito control personnel with information on these common pests to better assist the public when treatments are not feasible.

**CEUs:** 3 Public Health and 3 CORE 487 or 482

**Contact:** Jessica Ber, Florida Department of Agriculture and Consumer Services | jessica.ber@fdacs.gov

Caitlin Gill, Florida Department of Agriculture and Consumer Services | caitlin.gill@fdacs.gov

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE S

## Fostering Relationships Between Mosquito Control and Beekeepers

**INTENDED AUDIENCE:** All mosquito control personnel.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course is intended to provide mosquito control personnel with practical ideas and approaches to effectively communicate with beekeepers. Basic information will be provided about honey bees, beekeepers, apiary inspection and how to implement communication strategies. Each student will receive information on resources that they can further utilize for themselves or distribution to local beekeepers.

**CEUs:** 6 Public Health

**Contact:** Caitlin Gill, Florida Department of Agriculture and Consumer Services | [caitlin.gill@fdacs.gov](mailto:caitlin.gill@fdacs.gov)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE T

## From Start to Finish: What Your Program Needs to Conduct Applied Research on Vectors of Public Health Importance

**INTENDED AUDIENCE:** Those involved in their abatement district’s science department or anyone interested in conducting applied operational vector control research.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will provide hands-on training on developing and implementing applied operational research within your abatement program. The instructors will develop a bioassay laboratory that will focus on all aspects of the evaluation from start to finish. Instruction will include how to develop standard operating procedures, study plans, scopes of work, how to calculate concentrations, review of EPA and WHO guidelines for bioassay evaluations, analyzing results including LC/LD 50/90s, and writing a final report.

**CEUs:** None

**Contact:** Dr. Whitney Qualls, Anastasia Mosquito Control District | [wqualls@amcdf.org](mailto:wqualls@amcdf.org)

Dr. Steve Peper, Anastasia Mosquito Control District | [speper@amcdf.org](mailto:speper@amcdf.org)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE U

## Identification of Adult Mosquitoes of Florida

**INTENDED AUDIENCE:** Individuals whose job requires identification of adult mosquitoes as part of research or vector surveillance, or those whose job will be enhanced by the ability of being able to identify adult mosquitoes.

**PREREQUISITES:** None, although basic knowledge of mosquito anatomy and familiarity with a stereomicroscope would be helpful.

**COURSE DESCRIPTION:** This course will cover the morphology of the adult mosquito, the recognition of mosquito genera that occur in Florida, and the identification of selected mosquito species to genus using “Keys to the Adult Females and Fourth Instar Larvae of the Mosquitoes of Florida” by Darsie and Morris. The required text and microscope will be provided in class.

**CEUs:** 12 Public Health

**Contact:** Dr. Derrick Mathias , University of Florida, FMEL | d.mathias@ufl.edu  
Jason Stuck, Pinellas County Mosquito Control | jstuck@co.pinellas.fl.us

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE V

## Identification of Larval Mosquitoes of Florida

**INTENDED AUDIENCE:** Those whose main job responsibility is to identify larval mosquitoes, those who perform surveillance work, or those whose job will be enhanced by the knowledge of being able to identify larval mosquitoes.

**PREREQUISITES:** None; some basic knowledge of mosquito identification will be helpful.

**COURSE DESCRIPTION:** This course reviews the morphology of the larval mosquito, the recognition of the genera which occur in Florida, and the identification of Florida’s most important mosquito species using the keys in the “Keys to the Adult Females and Fourth Instar Larvae of the Mosquitoes of Florida” by Darsie and Morris. Textbooks are provided in class; students are encouraged to bring their own compound microscopes.

**CEUs:** 5 Public Health

**Contact:** Wade Brennan, Sarasota Mosquito Management Services | wbrennan@scgov.net  
Jason Stuck , Pinellas County Mosquito Control | jstuck@co.pinellas.fl.us

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE W

## In-House Molecular Testing

**INTENDED AUDIENCE:** Those involved in their abatement district’s arboviral surveillance program – technicians, scientists, managers, directors – anyone wanting to learn more about establishing molecular capabilities for their program.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will discuss the elements needed for districts to be able to perform in-house testing for arboviruses. It will cover the equipment needed and potential associated costs. This course will provide a brief overview of different testing methods to choose from. It will discuss the laboratory and staff requirements for specific assays and how to interpret results from those assays. It will discuss the pros and cons of developing in-house testing (costs, turnaround time, man hours, etc.). This course will provide a framework for any district desiring to establish an in-house molecular program.

**CEUs:** 3 Public Health

**Contact:** Dr. Steve Peper, Anastasia Mosquito Control District | [speper@amcdf.org](mailto:speper@amcdf.org)  
Mike Riles, Central Life Sciences | [mriles@central.com](mailto:mriles@central.com)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE X

## Intermediate Excel: Taking on Tables

**INTENDED AUDIENCE:** This course is intended for intermediate Excel users who have some familiarity with data analysis but are seeking to expand their proficiency by taking advantage of Excel’s newer automation tools.

**PREREQUISITES:** This course is intended for intermediate Excel users who have some familiarity with data analysis but are seeking to expand their proficiency by taking advantage of Excel’s newer automation tools.

**COURSE DESCRIPTION:** This course will explore Microsoft Excel’s table features and their practical applications for mosquito control data management and analysis. Material will be presented using a combination of lectures; live demonstrations; and brief, hands-on activities designed to consolidate knowledge and evaluate student comprehension. By the end of the course, students will have learned how to intelligently format mosquito surveillance data, utilize table functions to summarize and analyze those data to evaluate mosquito population trends and treatment efficacy, and construct interactive dashboards for operational tracking and reporting.

**CEUs:** 1.5 Public Health and 1.5 CORE 487 or 482

**Contact:** Dr. Rebecca Heinig, Collier Mosquito Control District | [rheinig@cmcd.org](mailto:rheinig@cmcd.org)  
Atom Rosales, Collier Mosquito Control District | [arosales@cmcd.org](mailto:arosales@cmcd.org)

	MON 1/30	TUES 1/31	WED 2/1	THUR 2/2	FRI 2/3
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# COURSE Y

## Interpreting Pesticide Labels

**INTENDED AUDIENCE:** Mosquito control professionals.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** A review of the history and evolution of pesticide regulation, dispel pesticide myths, briefly describe the federal pesticide registration process and the dynamics of label development. Interpreting pesticide labels will cover mandatory vs. advisory labeling, the review of actual federally registered mosquito control pesticide labels in an open discussion and Q&A format. The consequences of misuse and the liabilities of noncompliance will also be explained.

**CEUs:** 1 Public Health and 2 CORE 487 or 482

**Contact:** Carlton Layne, Aquatic Ecosystem Restoration Foundation | layn1111@bellsouth.net

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# COURSE Z

## Introduction to Mosquito-Borne Arboviruses in Florida

**INTENDED AUDIENCE:** This course is for mosquito control personnel or health department personnel who are involved with arboviruses in any capacity.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will provide attendees with an introduction to arboviruses of importance in the US, focusing on the southeastern US including: West Nile, La Crosse encephalitis, Chikungunya, dengue, Zika, and Eastern equine encephalitis viruses. The course will introduce the mosquito vectors and their life cycle, transmission cycle, disease, distribution, and public health response for each virus.

**CEUs:** 3 Public Health

**Contact:** Dr. Kyndall Dye-Braumuller, University of South Carolina, Department of Epidemiology and Biostatistics | kyndallb@email.sc.edu

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# COURSE AA

## Introduction to Process-Based Ecological and Epidemiological Modeling

**INTENDED AUDIENCE:** Those interested in understanding basic model concepts and simple interpretation of model results.

**PREREQUISITES:** None. However, students MUST bring a laptop. Sharing in groups of 2-3 is acceptable. NetLogo can be downloaded or used via web interface.

**COURSE DESCRIPTION:** This course is intended to provide students with an overview of process-based biological modeling, to enable them to identify the main types of models and to assess the primary goals and structure of a model, the potential relevance to their work, and limitations.

**CEUs:** 3 Public Health

**Contact:** Dr. Cynthia Lord, University of Florida | clord@ufl.edu

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# COURSE BB

## Larvicide Bioassay and Demonstration

**INTENDED AUDIENCE:** Vector control professionals (scientific and operational), R and D personnel from industries, and experts from regulatory entities.

**PREREQUISITES:** Prior attendance to Larvicide course.

**COURSE DESCRIPTION:** This course will provide 50 years of development in mosquito larvicides, larviciding and resistance management, including demonstration of bioassays for larvicide resistance detection.

**CEUs:** 3 Public Health

**Contact:** Dr. Steven Su, EcoZone International LLC | stevensu1995@gmail.com

Dr. Peter Jiang, Gainesville Vector Control | jiangy1@cityofgainesville.org

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# COURSE CC

## Larvicides, Larviciding, and Resistance Management

**INTENDED AUDIENCE:** Vector control professionals (scientific and operational), R and D personnel from industries, and experts from regulatory entities.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will provide 50 years of development in mosquito larvicides, larviciding and resistance management, including demonstration of bioassays for larvicide resistance detection.

1. Larvicides: Introduction to biorational larvicides, active ingredients, and modes of action.
2. Larviciding: Common formulations, field application, efficacy evaluation, data interpretation, factors affecting field efficacy.
3. Resistance Management: Risk assessments of resistance, factors leading to resistance evolution, resistance testing, data analysis, interpretation and application.

**CEUs:** 3 Public Health

**Contact:** Dr. Steven Su, EcoZone International LLC | [stevensu1995@gmail.com](mailto:stevensu1995@gmail.com)  
 Dr. Peter Jiang, Gainesville Vector Control | [jiangy1@cityofgainesville.org](mailto:jiangy1@cityofgainesville.org)

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# COURSE DD

## New Employee Introduction to Applying Pesticides

**INTENDED AUDIENCE:** New employees.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will cover three main topics: New Certification and Training Standards: Will You be Ready, Who is the PIO and what is CORE?, and The Dollars and Sense of Proper Calibration. The U.S. EPA recently updated the requirements for pesticide licensing and Florida will be implementing this in the coming years. We will discuss the changes, review why these changes were made, and discuss implementation timeline and what this means to applicators. Additionally, topics will cover the CORE standards of laws and regulations from Title 40, Chapter 1, Subchapter E, Part 171.103, (c) (8): Knowledge of all applicable State, Tribal, and Federal laws and regulations. Finally, pesticide math is one of the most commonly feared and failed portions of the pesticide exams. Many just don't like math, but it is so important for making sure pesticide applications work and are legal. At the completion of this class applicators should have an understanding of why the math is needed and see how it is actually helpful. They will have a better understanding of how to do the math associated with the treatments they do and feel more confident about doing it. Several real-world mosquito treatments will be discussed.

**CEUs:** 3 CORE 487 or 482

**Contact:** Dr. Emily Kraus, Pesticide Information Office, University of Florida | [emilyckraus@ufl.edu](mailto:emilyckraus@ufl.edu)  
 Dr. Brett Bultemeier, Pesticide Information Office, University of Florida | [bwbult@ufl.edu](mailto:bwbult@ufl.edu)

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# COURSE EE

## Next Generation Techniques

**INTENDED AUDIENCE:** All mosquito control personnel.

**PREREQUISITES:** None.

**COURSE DESCRIPTION:** This course will inform attendees about next-generation mosquito control tools used as part of management strategies that generally seek to eliminate wild mosquito populations or make them less likely or unable to transmit pathogens. The next-generation control tools covered will include those made possible through mosquito genome manipulation, such as mosquito strains resistant to pathogen infection, genetic sex determination, and gene-drive technology. Tools that involve mosquito-associated microorganisms like *Wolbachia*-based population replacement and suppression, new biopesticides, and paratransgenesis will also be covered. Examples of next-generation mosquito control tools being used in Florida will be highlighted. Course material will be presented using PowerPoint presentations, videos, active learning exercises, and class discussions.

**CEUs:** 3 Public Health

**Contact:** Dr. Eva Buckner, University of Florida, Institute of Food and Agricultural Sciences, Florida Medical Entomology Laboratory | [eva.buckner@ufl.edu](mailto:eva.buckner@ufl.edu)

Dr. Eric Caragata, University of Florida, Institute of Food and Agricultural Sciences, Entomology and Nematology Department | [e.caragata@ufl.edu](mailto:e.caragata@ufl.edu)

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# COURSE FF

## Sentinel Chicken Disease Surveillance

**INTENDED AUDIENCE:** Anyone who currently runs a sentinel chicken program now or intends to in the future.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** This course will focus on flock maintenance and care, chicken diseases and ailments, field cages and bleeding techniques, sample processing and shipping, and what goes on behind the scenes at the DOH along with explanations of the different test types and results.

**CEUs:** 4 Public Health

**Contact:** Beth Carey-Kovach, Charlotte County Mosquito and Aquatic Weed Control | [beth.cary-kovach@charlottecountyfl.gov](mailto:beth.cary-kovach@charlottecountyfl.gov)

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# COURSE GG

## The Changing Face of Administrative Support in Mosquito Control

**INTENDED AUDIENCE:** Administrative personnel, as well as Directors.

**PREREQUISITES:** None

**COURSE DESCRIPTION:** The course discusses some of the evolving roles of administration in the mosquito control industry, to include financial reports, vehicle utilization/mileage, bidding, public depositories, tracking depreciable and non-depreciable assets, salary surveys, fraud, IT security, and other topics that may be brought up by participants.

**CEUs:** None

**Contact:** Stacy Welch, Collier Mosquito Control District | sjwelch@cmcd.org

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# Certifications, Reviews, & Exams

FDACS is no longer providing exams in-person. All FDACS exams will be administered virtually.

Questions related to these exams should be directed to Caitlin Gill (caitlin.gill@fdacs.gov) or Jessica Ber (jessica.ber@fdacs.gov).

## Advanced Mosquito Control Exam

Friday, February 3 8:00AM-12:00PM  
Classroom: Century C Ballroom

*\* Please bring a writing utensil, preferably a pencil. Calculators will be provided, if needed. \**

Questions related to this exam should be directed to Dr. Shelley Whitehead (shelley@whiteheadcllc.com).