

# THE SKEETER

VOL. 82, No. 4

**2022-2023  
Winter  
Newsletter**



**OFFICIAL NEWSLETTER OF  
THE VIRGINIA MOSQUITO  
CONTROL ASSOCIATION**

# President's Address

## Happy New Year to everyone!

In the following address you will find some important information on training and voting which are two very important parts of our programs, so be sure to participate where you can.

VMCA welcomed in 2023 with its first event of the year. Katherine Reutt and speakers Lisa Wagenbrenner, Jeffrey O'Neill, Jennifer Barritt, Ann Herring, and several others worked diligently to put together a very successful [recertification course](#) which took place on January 18, 2023. If you missed this fantastic opportunity, don't worry, the VMCA will continue efforts to bring events, meetings, and a variety of opportunities to each of you. Like in years past, the organization's main goal is to promote growth in each of its members so they can thrive in our profession.



Furthermore, the VMCA has been working on finalizing the details associated with the [2023 Annual Conference/Meeting](#). The committees, chairs, and Executive Board have been working extremely hard to make our experience this year smooth and satisfying. **The Board is also proud to announce that we will once again be offering recertification for Categories 60 and 8**, but members must attend on Wednesday February 15, 2023, to qualify for credit. That said, if you are attempting recertification, please remember to complete and submit **ALL** the required paperwork prior to the completion of the conference and/or the annual business meeting on February 16, 2023.

As previously indicated in some of my other addresses, the Executive Board has been dealing with turnover at various positions this year. This has resulted in the selection of several interim board members who have fortunately filled the roles to ensure the organization did not experience any lulls in productivity. However, as we approach the end of these terms, your votes become increasingly important.

Currently, Addie Weddle serves as Interim Vice President & Lisa Wagenbrenner as Interim First Vice President but for the board to sustain productivity in 2023 candidates must be selected via the 2023 election ballot. If you have not yet cast your vote, please [review the candidates](#) and choose one of the following methods:

1). Search your email for the sent digital ballot and submit your vote by replying to the email. If you are having trouble or need assistance, please reach out to Penny Smelser ([penelope.smelser@norfolk.gov](mailto:penelope.smelser@norfolk.gov))

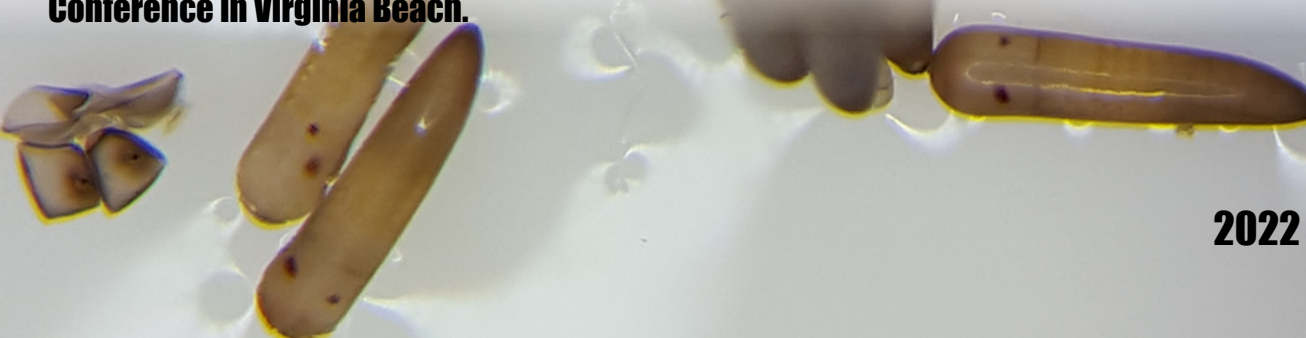
Or

2). Wait and obtain a paper ballot at the conference and submit it (to Penny Smelser) prior to the voting deadline of **February 15, 2023, at 5pm**.

Additionally, the board recently received the resignation of Mr. Kurt Vandock, which has opened an **opportunity for someone to fill the position as Interim for the 2023 Sustaining Member Representative**. This position is a voting member of the Executive Board and an important link between the board and the industries that provide goods and services to our membership.

All that said, please continue to read on and enjoy this edition of *The Skeeter*. In it you will find [candidate bios](#) and a ton of other useful and interesting information that will help you stay up-to-date with all the latest VMCA happenings. As always, I want to encourage each of you to submit your stories, photos, or program achievements to *The Skeeter* as we continue to grow this wonderful publication.

**Thanks to each of you for all that you bring to our profession. I hope to see you in a few weeks at the 2023 Conference in Virginia Beach.**



Sincerely,  
**Wes Robertson**  
2022 VMCA President

# ANNOUNCEMENTS

## WHAT'S IN THIS ISSUE

- [2](#) President's Address
- [3](#) Announcements, What's That?
- [4](#) 76th Annual VMCA Conference
- [5](#) Annual Conference Agenda
- [8](#) Student Poster Competition
- [9](#) Committee Sign-up
- [10](#) 2023 Election & Candidates
- [13](#) Silent Auction Donations
- [14](#) Virginia Beach in the Spotlight
- [16](#) Legislative News
- [18](#) Support the SCC
- [19](#) Historical Committee Flashback
- [21](#) Merchandise Announcement
- [22](#) Recertification Class Summary
- [23](#) CO<sub>2</sub> Shortage
- [24](#) What's That Answer
- [25](#) Virginia Jurisdictions and Resources
- [26](#) 2022 Sustaining Members
- [27](#) 2022 Committee List
- [28](#) 2022 Executive Board

## VMCA ORGANIZATIONAL MAILING ADDRESS

Virginia Mosquito Control Association  
 Jay Kiser, Secretary/Treasurer  
 800 Carolina Road, Suffolk VA 23434  
 Tel: 757-514-7608  
 Email: [VirginiaMosquito@gmail.com](mailto:VirginiaMosquito@gmail.com)

## WHAT'S ON THE COVER

An *Orthopodomyia signifera* larva floats in a well-plate waiting to be heat-killed and preserved in Suffolk's collection; photography by Karen Akaratovic, Biologist for Suffolk Mosquito Control

## UPCOMING EVENTS

### Annual Conference - Early Bird Registration Deadline

January 24, 2023

### Annual Conference - Room Reservation Deadline

January 28, 2023

### VMCA Executive Board Meeting

January 31, 2023; all members welcome; email [virginiamosquito@gmail.com](mailto:virginiamosquito@gmail.com) to register

### VMCA 76th Annual Conference

February 14-16, 2023, Hilton VA Beach Oceanfront

### AMCA 89th Annual Meeting

February 27-March 3, 2023 Reno NV

### NJMCA 110th Annual Meeting

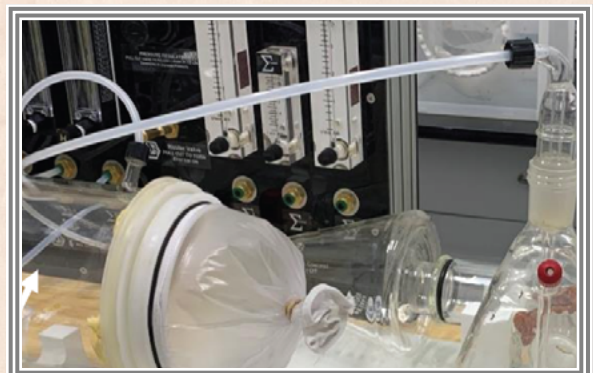
March 15-17, 2023 Atlantic City, NJ

## DID YOU KNOW?

Membership is complimentary when you [register to the annual conference!](#)

Not attending the conference? Renew your membership anytime [online.](#)

## WHAT'S THAT?



Answer on [page 24](#)

# 76TH ANNUAL VMCA CONFERENCE

**Don't forget to register for the 2023 conference - Early Bird Registration ends January 24!**



The 2023 annual conference will take place at the  
**Hilton Virginia Beach Oceanfront** on **February 14-16, 2023.**

Full details can be found on our [website](#).

**VMCA is offering early bird registration** this year and it is open through 1/24/2023. Early bird registration offers a price discount, so be sure to register by this deadline and avoid higher prices; registration form can be found here: [2023 Conference Registration Form](#)

**Honorary members**, don't forget you can attend the conference for free. Make sure you still register so we know you are coming.

As usual, **VMCA membership** is complimentary when registering for the annual conference. If you do not plan to attend the conference and would like to be a VMCA member, please sign up here: [2023 VMCA Membership](#)

**Sustaining members**, you also have an early bird option for sustaining membership/conference registration. Make sure to sign up before 1/24/2023 here: [2023 VMCA Sustaining Membership](#) or on our website. The form also provides space to show interest in sponsorship opportunities at the conference.

**Submitted by VMCA Secretary/Treasurer Jay Kiser**

# 76TH ANNUAL CONFERENCE AGENDA

## Tuesday, February 14, 2023

11:00 AM **Registration**

*Presiding: Wes Robertson*

1:00 PM **Welcome and Opening Remarks**

Wes Robertson | rob106@henrico.us

*Henrico County Public Works*

1:10 PM **Virginia Arboviral Surveillance 2023**

David Gaines | david.gaines@vdh.virginia.gov

*VDH*

1:40 PM **Gravid Emulsion Trial**

Penelope Smelser |

Penelope.smelser@norfolk.gov

*City of Norfolk*

1:55 PM **Chesapeake 2022: The Quiet Flip-side of 2021**

Lisa Wagenbrenner |

lwagenbrenner@cityofchesapeake.net

*Chesapeake Mosquito Control Commission*

2:15 PM **Aedes sollicitans and Craney Island**

Addie Weddle | addieweddle@gmail.com

*Portsmouth Public Works*

2:30 PM **Ticks and Tickborne Diseases in Virginia**

David Gaines | david.gaines@vdh.virginia.gov

*VDH*

2:45 PM **Sustaining Member Presentation**

*Central Life Sciences*

2:50 PM **Break**

3:20 PM **An Introduction to the AMCA (Virtual)**

Michael Doyle | Michael.doyle@dhhs.nc.gov

*AMCA, Mid-Atlantic Region*

3:35 PM **Ketoglutaric Acid as a Mosquito Lure (Virtual)**

Benjamin Sumner |

bendemasisumner@gmail.com

*NIH-NIAID*

3:50 PM **Sustaining Member Presentation**

*CoDiagnostics*

3:55 PM **York County Outreach Update**

Janice Pulver | Janice.pulver@yorkcounty.gov

*York County Mosquito Control*

4:15 PM **All the Buzz You Missed**

Jay Kiser | jkiser@suffolkva.us

*City of Suffolk Department of Public Works*

4:35 PM **Join a Committee**

**VMCA Committee Chairs**

**Annual Meeting (Program/Agenda)**

Carla Caulkins |

ccaulkins@cityofchesapeake.net

**Bylaws, Membership, and Student Competition**

Jay Kiser |

jkiser@suffolkva.us

**Education**

Katherine Reutt |

kreutt@cityofchesapeake.net

**Historian**

Tim DuBois |

duboist@portsmouthva.gov

**Information and Website**

Karen Akaratovic |

kakaratovic@suffolkva.us

**Legislative**

Randy Buchanan |

buc06@henrico.us

**Special Awards**

Jennifer Barritt |

jbarritt@vb.gov.com

4:55 PM **Sustaining Member Presentation**

*Target Specialty Products*

5:00 PM **Adjourn**

5:30 PM **Ice Breaker (Courtney Terrace)**

7:00 PM **Hospitality Room (Albemarle Hall)**

## Wednesday, February 15, 2023

7:00 AM **Registration and Light Breakfast**

*Presiding: Tim DuBois*

8:00 AM **Cyzmic Activity**

Ann Herring | mherring@suffolkva.us

*City of Suffolk Mosquito Control*

**Join us TUESDAY night for the  
ICE BREAKER & Hospitality Room!**

**continued next page**

## 76TH ANNUAL CONFERENCE AGENDA CONT'D

- 8:10 AM **Mosquito B.E.A.C.O.N.S: Shining Light on Invasive and Non-native Mosquito Species.**  
Michael T. Riles | [mriles@central.com](mailto:mriles@central.com)  
*BEACONS / Central Life Sciences*
- 8:30 AM **VDACS Update**  
Robert Christian |  
[Robert.christian@vdacs.virginia.gov](mailto:Robert.christian@vdacs.virginia.gov)  
VDACS
- 9:00 AM **Civilian and Military Pest & Vector Control: Different but the Same\***  
Tony Hughes | [thughes@central.com](mailto:thughes@central.com)  
*Central Life Sciences*
- 9:25 AM **Sustaining Member Presentation**  
*Frontier Precision*
- 9:30 AM **VDACS Pesticide Spill Response**  
Robert Christian |  
[Robert.christian@vdacs.virginia.gov](mailto:Robert.christian@vdacs.virginia.gov)  
VDACS
- 9:45 AM **Break— Student Poster Competition Q&A**
- 10:15 AM **Allele Frequencies of *Culex pipiens* Bioforms Vary Across an Urban to Rural Gradient\***  
Sommer Stephens | [ststephe@ncsu.edu](mailto:ststephe@ncsu.edu)  
*North Carolina State University*  
*1st Place Poster Winner*
- 10:35 AM **Sustaining Member Presentation**  
*TBD*
- 10:40 AM **Evaluating the Spread of Tick-Borne Viruses in Virginia Using Serological Assessment of Domestic and Wild Animals\***  
Ahmed Garba | [ahmedg@vt.edu](mailto:ahmedg@vt.edu)  
*Virginia Tech*
- 11:10 AM **IPM in Museums & Art Galleries**  
Darryl Forest | [d-forest@nga.gov](mailto:d-forest@nga.gov)  
*National Gallery of Art*
- 11:30 AM **Characterization of insecticide resistance in *Culex pipiens* from the lower Chesapeake Bay**  
Lindsey Baxter | [lb694@cornell.edu](mailto:lb694@cornell.edu)  
*Cornell University NEVBD*
- 11:45 AM **Calibrations and Characterizations Made Easy**  
Katie Williams |  
[Katie.williams@valentbiosciences.com](mailto:Katie.williams@valentbiosciences.com)  
*Valent BioSciences*
- 11:55 AM **Sustaining Member Presentation**  
*TBD*
- 12:00 PM **Awards Banquet & Lunch**  
*Presiding: Carla Caulkins*
- 1:30 PM **Sustaining Member Presentation**  
*TBD*
- 1:35 PM **Getting an Egg up on Resistance Detection— 2022 Ovitraping in Fairfax County**  
Andy Lima | [Andrew.lima@fairfaxcounty.gov](mailto:Andrew.lima@fairfaxcounty.gov)  
*Fairfax County Health Department*
- 2:05 PM **Other Pests**  
Michael Rollins | [mrollins@pwcgov.org](mailto:mrollins@pwcgov.org)  
Prince William County
- 2:25 PM **Impact of Endangered Species on Pest Control Programs**  
Keith Tignor | [keith.tignor@vdacs.virginia.gov](mailto:keith.tignor@vdacs.virginia.gov)  
VDACS
- 2:35 PM **Utilizing ArcGIS Survey123**  
Amy Trimm | [antrimm@chathamcounty.org](mailto:antrimm@chathamcounty.org)  
*Chatham County Mosquito Control*
- 2:55 PM **Break**
- 3:25 PM **Spotted Lanternfly in the Urban Environment\***  
Eric Day | [idl@vt.edu](mailto:idl@vt.edu)  
*Virginia Tech*
- 3:55 PM **Optimization of an Attractive Toxic Sugar Bait Trap to Control *Aedes j. japonicus* Invasive Mosquitoes\***  
Helen Oker | [hmoker@vt.edu](mailto:hmoker@vt.edu)  
*Virginia Tech*
- 4:15 PM **Cold Blooded Killers: The Amphibian Biting Mosquito and the Diseases it Spreads\***  
Joanna Reinhold | [reinjm0@vt.edu](mailto:reinjm0@vt.edu)  
*Virginia Tech*

**Don't miss WEDNESDAY'S banquet  
when special awards are presented!**

**continued next page**

# 76TH ANNUAL CONFERENCE AGENDA CONT'D

## ⚡ Lightning Round ⚡

- 4:35 PM **The Ever Changing Tick Populations of Hampton Roads\***  
Holly Gaff | hgaff@odu.edu  
*Old Dominion University*
- 4:55 PM **Sustaining Member Presentation**  
*TBD*
- \*\*\*\* **50/50 Drawing after last presentation (Must be present to win)**
- 5:00 PM **Adjourn**
- 5:00 PM **Silent Auction Final Bidding (Final Bids must be in by 5:45 PM)**
- 7:00 PM **Hospitality Room (Albemarle Hall)**

## Thursday, February 16, 2023

- 7:00 AM **Breakfast Buffet**  
*Presiding: Jay Kiser*
- 8:00 AM **The Truth Stings**  
Wes Robertson | rob106@henrico.us  
*SWI Henrico*
- 8:20 AM **ULV Fogging Notification Map Rollout**  
Penelope Smelser |  
Penelope.smelser@norfolk.gov  
*City of Norfolk*
- 8:30 AM **Evidence of La Crosse Virus Circulation via Serology in Wildlife of Western Virginia\***  
Lindsay Faw | lrfaw@vt.edu  
*Virginia Tech*
- 8:50 AM **MAMCA Update**  
Tim DuBois | duboist@portsmouthva.gov  
*City of Portsmouth Public Works*
- 9:00 AM **Sustaining Member Presentation**  
*TBD*
- 9:05 AM **Break (Hotel Check-out)**
- 9:45 AM **West Nile Virus in Maryland (Virtual)**  
Brian Prendergast |  
brian.prendergast@maryland.gov  
*Maryland Department of Agriculture*

10:00 AM– 11:00 AM

- The Weird World Around Us**  
Jay Kiser | jkiser@suffolkva.us  
*City of Suffolk Mosquito Control*
- Say Whaaat?**  
Wes Robertson | rob106@henrico.us  
*SWI Henrico*
- A Few Firsts**  
Karen Akaratovic | kakaratovic@suffolkva.us  
*City of Suffolk Mosquito Control*
- Mosquitoes & Politics**  
Tim DuBois | duboist@portsmouthva.gov  
*City of Portsmouth Public Works*
- Culex abominator: On the Move?**  
Michael T. Riles | mriles@central.com  
*BEACONS / Central Life Science*
- A Bug's Life: Possible Use of *Zeugomantispa minuta* as a Novel Form of Biological Vector Control**  
Alex Riley | sriley@suffolkva.us  
*City of Suffolk Mosquito Control*
- USNM Wants YOU! (to Submit Your Mosquito Specimens)**  
Andy Lima Andrew.lima@fairfaxcounty.gov  
*Fairfax County | Health Department*
- Take a Gander at the Fowl Side\***  
Janice Pulver | Janice.pulver@yorkcounty.gov  
*York County Mosquito Control*
- Critters in the Field**  
Carla Caulkins |  
ccaulkins@cityofchesapeake.net  
*Chesapeake Mosquito Control Commission*
- TBD**  
Charles Abadam | cabadam@suffolkva.us  
*City of Suffolk Mosquito Control*
- 11:00 AM **Lightning Round Winner Announced**
- 11:00 AM **VMCA Business Meeting and Door Prizes (Must be Present to Win Door Prize)**
- 12:00 PM **Adjournment**

Check the [VMCA website](#) for the most updated version of the agenda.

**Submitted by President Elect Carla Caulkins**

TENTATIVE

TENTATIVE

# 2022/2023 STUDENT POSTER COMPETITION

For this year's competition, the SCC made a few modifications. We wanted to expand the competition and the relationships between VMCA membership and the vector borne research taking place in our region. We decided to not only invite college and university students in Virginia to compete in the poster competition, but also the students from Virginia's neighboring states. We included colleges and universities from Kentucky, Maryland, North Carolina, Tennessee, Washington DC, and West Virginia. In order to spread the word, the **SCC individually emailed 190 department heads, chairs, and directors from over 80 schools.**

We are happy to announce that nine posters were submitted from seven universities in four states and Washington DC. With the additional states invited to this year's competition, we decided to increase the number of prizes as well. As usual, first place will receive the Dr. Jorge Arias Award and \$500. This year, we added a \$300 prize to second place and \$200 prize to third place. The top 5 posters are still offered free student registration to the annual conference. Below is a table that shows all the poster submissions and who received awards and prizes.

**All nine posters will be displayed at the 2023 VMCA Conference and a question and answer session will take place during the morning break on Wednesday, 2/15/2023. We invite you all to come, take a look, and participate.**

Place	Award	Student	School	Poster Title
1st	\$500, Free Registration	Sommer Stephens	North Carolina State University	Allele frequencies of <i>Culex pipiens</i> bioforms vary across an urban to rural gradient
2nd	\$300, Free Registration	Ayobami Awe	Catholic University of America	Dengue vaccine design using bacteriophage T4 nanoparticle platform
3rd	\$200, Free Registration	Pallavi Rai	Virginia Tech	Insulin reduces alphavirus infection of <i>Aedes aegypti</i> mosquitoes by influencing vector immune pathways
	Free Registration	Christopher Hayes	North Carolina State University	Behavioral interactions of bed bugs with long-lasting pyrethroid-treated bed nets
	Free Registration	Arielle Arsenault-Benoit	University of Maryland, College Park	Spatiotemporal organization of cryptic North American <i>Culex</i> species along an urbanization gradient in greater Washington, D.C.
		Christina Espada	Old Dominion University	Understanding the role of small mammals in the enzootic cycle of <i>Rickettsia parkeri</i> and <i>Amblyomma maculatum</i> in southeastern Virginia
		Sarah Knoll	Alderson Broaddus University	Identification of novel <i>Leptospira</i> in Central PA <i>Ixodes</i>
		Peyton Pretsch	University of North Carolina, Chapel Hill	Canary in the coal mine: dogs as sentinels of an emerging Lyme disease epidemic in Watauga County, North Carolina
		Forde Upshur	Virginia Tech	Sugar-feeding by invasive mosquitoes on ornamental plants

I would also like to thank several people for all their hard work. I want to thank all the students that submitted posters this year. I hope you had a great experience and will join us at the conference to share the details of your research. I want to thank the poster judges: Wes Robertson, Stephen Panossian, and Katherine Reutt. Grading nine posters is no easy task, we appreciate all the effort you put in. I also want to thank my committee for all their help, especially Karen Akaratovic, Alex Cumbie, and Kaitlyn Price for helping in the creation of our regional school communication list, as well as individually messaging each person on that list.

**Submitted by SCC Chair Jay Kiser**





Get involved with the VMCA!  
Remember to sign-up to be on a committee for  
the upcoming year!



**Submitted by Katherine Reutt**

[2022 COMMITTEE LIST](#)

[COMMITTEE GUIDELINES](#)

## 2023 ELECTION

The Virginia Mosquito Control Association is governed by a dedicated group of individuals on the Executive Board.

**Please take the time to vote in our upcoming 2023 Election.**

There is one candidate for President and four candidates running for the vacant positions of President Elect, Vice President, and First Vice President. Ballots with detailed instructions will be sent via email to membership and paper ballots will be available at the annual conference.

### Candidate for President



**Carla Caulkins** is the Biologist II for Chesapeake Mosquito Control Commission. Carla Graduated from Old Dominion University in 2016 with a Bachelor's degree in Biology. She completed an honors research project with Dr. Deborah Waller on the preference of habitat of mosquito larvae. It was through Dr. Waller where she heard about the seasonal biology intern job for Chesapeake. She did her first season in 2016. She liked it so much that she came back in 2017 as a summer and winter intern. In March of 2018 Carla became the Biologist I for Chesapeake. In February of 2021 Carla got promoted to Biologist II. When she is not working, Carla enjoys gaming and spending time outdoors. She also enjoys spending time with her husband, Chris, baby, Milo, and her two cats, Elise and Sir Bentley.

**continued next page**

# Candidates for President Elect, Vice President, & First Vice President



**Karen Akaratovic** graduated from Old Dominion University in 2011 with a Bachelor of Science in Biology and a minor in Environmental Studies. It was in this final year of college she started her journey in entomology with the City of Chesapeake Mosquito Control Commission as a biology intern. In 2012, Karen accepted the position as Biologist with the City of Suffolk Mosquito Control where she is responsible for conducting and overseeing field surveillance, larval and adult mosquito identification, arboviral and pesticide resistance testing, training and supervising seasonal staff, equipment maintenance and repair, among other tasks.

Throughout her first decade as a biologist, Karen has remained active in local, state, and national mosquito control organizations. From 2013-2015, she served on the local TMVCC board. Each year since 2012, she has participated in and/or served as chairperson on various committees of the VMCA including Education, Information, Membership, Merchandise, Special Awards, Student Competition, and as Website chair since 2019, was responsible for the rebuild when the

old site crashed. She has taught at every VMCA Adult ID Course since 2012 and presented at every VMCA conference since 2013 (save one year on maternity leave). She presented Virginia's new state records of *Culex coronator* and *Culex nigripalpus* at the 2018 AMCA conference and has participated in their Science & Technology and Mid-Atlantic Regional Nominating Committees, as well as reviewed manuscripts for publication in JAMCA.

Over the past 10 years, Karen has had the opportunity to collaborate with a variety of researchers, conduct many experiments, and coauthor several publications (Degener et al. 2021, Khalil et al. 2021, Little et al. 2021, Unlu et al. 2017, Molaei et al. 2015) to benefit the mosquito control community. She is primary author of three articles (Akaratovic et al. 2021, Akaratovic and Kiser 2017, Akaratovic et al. 2017), two of which document Virginia's newest mosquito species, both discovered first in Suffolk. Karen hopes the knowledge and experience she has gained will be beneficial in continuing to serve the VMCA membership through a position on the board.

When she's not in the mosquito lab, Karen enjoys spending time outdoors with her family, travelling, trying new foods, and MMO gaming.



**Lauren Lochstampfer** is a senior Environmental Health Specialist with the Fairfax County Health Department's Disease Carrying Insects Program. She received her B.S. in Fisheries and Wildlife Management from Michigan State University. Many years ago, Lauren began her career in mosquito control as a summer employee treating catch basins for Clarke in Illinois. Since that time, her experience with mosquito control has involved coordinating operations for private and municipal mosquito surveillance and control programs in Pennsylvania, New Jersey, Maryland, and Virginia. In 2015 Lauren joined Fairfax County's Disease Carrying Insects Program and worked to set up a comprehensive larval inspection and control program.

When not working with mosquitoes and ticks, Lauren can be found at home in Manassas with her husband chasing her 3-year-old daughter around!

## Candidates for President Elect, Vice President, & First Vice President



**Michael Rollins** is a 4-year VMCA member from Prince William County's Mosquito and Forest Pest Office. He has worked conducting vector control and forest pest management since 2017. At his job he conducts inspections, quality control and outreach activities for our offices various pests.

Prior to this, he was working as a researcher and for his bachelors at George Mason University, focusing on aquatic ecology. He is a life-long Northern Virginian who has enjoyed protecting his fellow citizens from disease and his "backyards" trees. Michael believes strongly that his enjoyment for his work sprouts from his passion to be outside as much as possible. While not working he heads to the mountains or waterways for recreation, where he passively does his job noticing what mosquitos are biting him and what is destroying our forests.

He has thoroughly enjoyed VMCA's contributions to vector control efforts through science communication, the annual conference, and tour de skeeter. Michael hopes to contribute to the ongoing success of VMCA and bring new insights to the Association.



**Addison Weddle** graduated from Radford University with a bachelor's degree in Biology with a concentration in sustainability and environmental studies. During her time at Radford she studied abroad in the Peruvian Amazon rain forest where she completed an interactive project on the butterflies of the Amazon.

In 2021 Addie started as a mosquito control intern in York County. This is where she discovered her love for mosquito control, and spent a lot of her time doing outreach in the winter months. She is currently working as a mosquito control technician in the city of Portsmouth.

In 2022, Addie volunteered to step up and take the role as interim first vice president for the VMCA board. She has a passion for expanding outreach, education, and growth within the vector control field. If elected, Addie is enthusiastic about advancing mosquito control programs using innovative and collaborative ideas, while also expanding her own personal knowledge.

In her free time, she enjoys camping, reading, drawing and spending time with her dogs, Pepper and Winnie.

**VIRGINIA MOSQUITO CONTROL  
ASSOCIATION**



# Silent Auction 2023 PLEASE DONATE

All proceeds benefit the VMCA Student Poster Competition

**We are looking for a variety of items, including but not limited to:**

- Vector themed items
- Tools
- Artwork
- Antiques/Historical items
- Gift certificates
- Treasures
- Themed Prize baskets
- Apparel

Group donations by committee, agency, or vendors are always appreciated



**Please drop off items at meeting registration desk by noon, February 14, 2023.**

Items may also be sent/dropped off before the meeting to:

Suffolk Mosquito Control  
800 Carolina Road, Suffolk, VA, 23434

**VMCA Annual Conference**  
February 14-16, 2023  
Virginia Beach, VA.

**Conference information:**



**What does this support?**



**For more information contact:**

Ann Herring  
mherring@suffolkva.us

# VIRGINIA BEACH IN THE SPOTLIGHT



## The Virginia Beach Mosquito Control Bureau

is nestled in between farmland in the southern portion of the city. There are currently 31 full-time employees and 3 vacant seasonal laboratory positions. The program is dedicated to reducing the population of mosquitoes and the risks associated with mosquito-borne diseases in the area.

To achieve its goal, the VBMC program uses a variety of integrated pest management techniques, such as larviciding and ditch maintenance, to reduce the number of breeding sites in the area. This is accomplished with a team of 24 workers. To combat citizen complaints, a once-a-year home backyard spray is offered to residents, with an inspection conducted before the spray to alleviate any breeding habitats and to reduce the use of unneeded pesticides. These backyard inspections are provided each year by one team member. The biology laboratory is the link in our program that collects mosquitoes, tests for arboviral diseases and conducts public education.

VBMC's main winter activity focuses on cleaning and maintaining off-road ditch systems. Mosquito control is responsible for about 800 drainage structures throughout the city. Each is on a ditch maintenance schedule and crews go out to

these systems every 5 years to perform a full cleaning. This cleaning keeps water flowing to prevent mosquitoes and flooding issues. **In 2022, mosquito control crews cleaned just over 67,000 square feet of ditches.**

The active mosquito season's control efforts include larviciding and adulticiding. The city is divided into 12 small areas. Crew members travel through their assigned area and remove or treat any standing water found. In the 2022 season, less treatments for mosquito problems were necessary. This was due in part to below average mosquito collections and below average rainfall. Larvicides were used to treat just over 300 acres city-wide. This is about half of a typical season.

Adulticiding is the last method used for control. This program is conducted with a fleet of 11 ULV trucks. The city is divided into 16 areas. Assignments are based on mosquito thresholds, arboviral disease detection, and citizen complaints. Trucks are sent out to adulticide in the evening from sunset until 11 pm. **In 2022, treatments were well below average with a little over 87,000 acres treated.** A typical year is closer to 150,000 acres.

**continued next page**

# VIRGINIA BEACH SPOTLIGHT CONTINUED

Citizens can request services for mosquito problems by phone or online. Requests can be made to have a backyard inspection with a yard barrier treatment, standing water treated with larvicide, or nighttime ULV. These calls for service were just under 450 for the 2022 season. This is **less than half of our usual request levels**. On average, around 1,000 calls for yard inspections, treatments, and nighttime ULV spraying requests occur yearly. All treatments are based on surveillance data provided from the biology laboratory.

The 5 biology laboratory staff members play a key role in the VBMC program. They regularly monitor mosquito populations with the use of surveillance traps. **There are 84 surveillance sites where traps are regularly set from May to October.** The most common trap set is the gravid trap, making up 38% of trap totals; BG follows with 35%, and CDC with 25%. The VBMC program focuses on specific species of mosquitoes that are known to transmit specific diseases. For example, *Culex pipiens* and *restuans* are tested for the presence of West Nile virus (WNV), and *Culiseta melanura* are tested for eastern equine encephalitis virus (EEEV). These tests are done in-house at the biology laboratory at Virginia Beach Public Works. This past season, **98 mosquito pools were tested and all were negative.** This coincides with the lowest year on record for mosquito counts since 2004.

**Another way that VBMC tracks the spread of mosquito-borne diseases is with the use of sentinel chickens.** There are currently seven sentinel chicken sites, with two hens at each site. The 16-week-old chickens are picked up in mid-May and are left at their respective sites until October. They undergo weekly blood drawing to test for the presence of EEEV and WNV. Blood

samples from the chickens are sent to the Division of Consolidated Laboratory Services (DCLS) in Richmond for testing. If a chicken tests positive in the field for either disease, it will be removed from its site, and replaced with another "backup" chicken. "Backup" chickens are housed at the VBMC headquarters. At the end of each season, the chickens are donated to United Poultry Concerns in Machipongo, VA. This allows for them to live out the rest of their days at a safe haven, with a few turkeys and peacocks as neighbors.



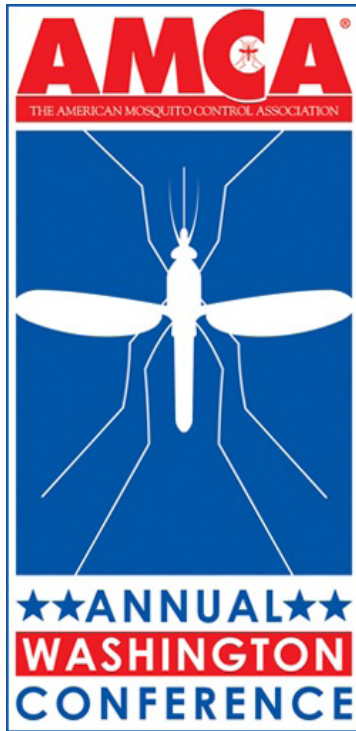
Another aspect of VBMC is education and outreach. **We use a combination of specimens, pamphlets, coloring books, display boards, and games to interact and engage with the public.** We try to have a presence at the Virginia Beach Farmers Market during the spring and fall, and attend city events as well. We also have presented at a number of schools; the Hampton Roads Public Works Academy has helped us broaden our audience

by allowing us to present at local trade schools. This year, we are presenting at the Pruden Center, in Suffolk, as well as the Virginia Beach Technical and Career Education Center. This allows us to have a one-on-one engagement with students in the area and give them a first-hand look at why Public Works and mosquito control is so important to our community.

As we all know, mosquito control is a year-round effort and **I'd like to take the time to thank the hardworking team at VBMC for all that they do for the citizens of Virginia Beach.** I am proud to be able to work and learn alongside all of you. Thank you.

**Submitted by Kaitlyn Price, Biologist  
Virginia Beach Mosquito Control**

# LEGISLATIVE NEWS



## SAVE THE DATE!

### AMCA Annual Washington Conference

May 15 - 17, 2023

Hilton Alexandria Old Town

Washington, DC

#### **2023 MENTORING PROGRAM**

If you have been participating in the conference for a few years and are willing to share your knowledge and experience, please consider volunteering to mentor to a new attendee.

#### As a mentor you will:

Help set up Congressional appointments

Participate in informational sessions

Guide your mentee to the Hill (if needed)

Join your mentee for at least the first couple of Congressional office visits

#### **New members requesting assistance and potential mentors contact:**

Angela Beehler via email [angela@mosquitocontrol.org](mailto:angela@mosquitocontrol.org) or call 509-967-2414

**The U.S. EPA Office of Chemical Safety and Pollution Prevention publishes a weekly e-mail post in the effort of transparency (excerpts on subsequent pages). [Sign up](#) if you are interested.**

The latest information regarding the Endangered Species Act (ESA) may have implications regarding Public Health Pest Control. As an organization affiliated with the American Mosquito Control Association (AMCA), we (VMCA) generally support the AMCA's position on Mosquito and Public Health Vector Control issues. With that said, AMCA Technical Advisor, Daniel Markowski, PhD., will be presenting an ESA update, as related to Public Health Pest Control, from the AMCA perspective, at the 2023 MAMCA meeting.

In addition, Virginia Department of Agricultural and Consumer Services (VDACS), Keith Tignor will be presenting a VDACS update on their perspective regarding the potential implications of the ESA to our Public Health Pest Control efforts in the Commonwealth of Virginia at our 2023 VMCA annual conference.

If you are interested in federal or state level legislative issues regarding Public Health Pest Control issues, please feel free to contact me ([buc06@henrico.us](mailto:buc06@henrico.us)) and get involved.

**Every year there is legislation introduced in the VA General Assembly to reduce the tools that we have in our tool box.** This includes a reduction of EPA approved pesticides...to application equipment...note there will likely be a bill introduced to ban gas powered blowers again this year as well as a ban on any OP's and likely further restrictions on Pyrethrins and Pyrethroids.

Please make your voices heard during any public comment periods regarding the various legislative bills that impact our effort to protect Public Health Pest Control.

**Submitted by Randy B Buchanan  
Legislative Committee Chair**



## LEGISLATIVE NEWS CONTINUED

# Pesticide Update

EPA's Office of Chemical Safety and Pollution Prevention

### **ICYMI: Recording of Endangered Species Act Workplan Update Webinar**

Presentation slides and a recording of the Environmental Protection Agency's (EPA) Nov. 17, 2022, [webinar](#) on the Agency's Endangered Species Act (ESA) Workplan Update are now available. The ESA Workplan Update [released last month](#) details how EPA will pursue protections for nontarget species, including federally threatened and endangered (listed) species, through pesticide registration review and other Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) actions.

The webinar covered:

- The proposed menu of FIFRA Interim Ecological Mitigation measures that EPA will draw from in many future conventional and biological pesticide registration and registration review actions to protect nontarget species.
- Proposed label language to expand the use of online endangered species protection bulletins to implement geographically specific mitigation measures for individual listed species.
- Current and future initiatives with other federal agencies to prioritize mitigation for listed species that are particularly vulnerable to pesticides and to improve the efficiency and timeliness of the ESA-FIFRA process.

EPA staff also answered participant questions about the ESA Workplan Update.

EPA is currently accepting public comments on the proposed set of interim mitigation measures and the proposed revisions to label language included in the ESA Workplan Update appendix. Comments are due by Jan. 30, 2023, in docket [EPA-HQ-OPP-2022-0908](#) at [www.regulations.gov](http://www.regulations.gov).

[Learn more about the ESA Workplan Update.](#)

View the [webinar](#) and the [presentation slides](#).

### **EPA Continues Work to Reduce Chlorpyrifos Exposure**

This week, the U.S. Environmental Protection Agency (EPA) is issuing a notice of intent to cancel (NOIC) three products containing the pesticide chlorpyrifos and is publishing a notice of receipt of voluntary requests submitted by some chlorpyrifos registrants to cancel 14 chlorpyrifos pesticide registrations and terminate food uses for three chlorpyrifos pesticide registrations.

These actions are the latest efforts by the Agency to cancel the use of chlorpyrifos on food consistent with its earlier revocation of chlorpyrifos tolerances — which is the amount of a pesticide that is allowed on food. Chlorpyrifos has been found to inhibit an enzyme that leads to neurotoxicity, including potential neurodevelopmental effects in children. As a result of the revocation, chlorpyrifos can no longer be used on or registered for food without resulting in adulterated food.

Previously, chlorpyrifos, an organophosphate insecticide, was used for use on a large variety of agricultural crops, including soybeans, fruit and nut trees, broccoli, cauliflower, and other row crops. Based on data from 2012-2018, the cancellation of food uses represented over 95% of the total chlorpyrifos use. Additionally, the insecticide is used for non-food uses, which are unaffected by these actions.

**continued next page**

# LEGISLATIVE NEWS CONTINUED

## Registration Review of Non-Food Uses

Chlorpyrifos is also undergoing the registration review process for the remaining non-food uses. EPA's review may involve the proposal of additional measures to reduce human health and ecological risks associated with the remaining registered uses. More information on the [registration review process](#) is available online.

All chlorpyrifos registration review documents are available in the chlorpyrifos registration review docket [EPA-HQ-OPP-2008-0850](#) at [www.regulations.gov](http://www.regulations.gov).

[More information about chlorpyrifos is available on EPA's website.](#)

## From Virginia's Legislative Information System: Aerial Applications West of the Blue Ridge

[HB1548](#) requires a commercial pesticide applicator or private pesticide applicator (farmer) who applies pesticides using a fixed-wing or rotary aircraft to any lands west of the Blue Ridge Mountains to submit the following information to the Commissioner of Agriculture and Consumer Services no less than seven days prior to such application: (i) the location of such proposed application, (ii) the date and time of such proposed application, and (iii) the brand name or common product name of the pesticide to be used in such proposed application. The bill provides that any commercial applicator or private applicator who violates the provisions of the bill shall be subject to a civil penalty of \$500 for a first offense and \$2,500 for each additional offense.

# SUPPORT THE STUDENT COMPETITION COMMITTEE JOIN US DURING THE 2023 CONFERENCE

## Silent Auction

- Bid on items anytime Tues & Wed
  - Forms next to items
- Final Bidding Social Event Wednesday 5-6 PM
  - **Free Appetizers** and a **Cash Bar**



Final bid at 5:45 PM exactly

## 50/50 Raffle

Purchase tickets throughout the meeting from: Karen Akaratovic & Kaitlyn Price



**\$1 for 1 ticket**

**\$5 for 6 tickets**

Winner's drawing:

**Wednesday after last presentation~5PM**

**Ticket must be present to win**

1/2 \$\$\$ goes to SCC

1/2 \$\$\$ goes to 1 lucky winner



# HISTORICAL FLASHBACK

With our annual conference right around the corner, the Historical Committee has prepared a really neat look into the past. The following article summarizes the very first VMCA meeting. The condition of the original was difficult to read and so was rewritten by VMCA Historical Committee member Carla Caulkins.

## THE "SKEETER"

THE OFFICIAL ORGAN OF THE VIRGINIA MOSQUITO CONTROL ASSOCIATION

### THE "SKEETER" CONVENTION ISSUE

**VOLUME III**

**NORFOLK, VIRGINIA**

**JANUARY 1948**

**EDITION NO. 12**

The first annual convention of this Association was held in Norfolk in the Monroe Room of the Monticello Hotel on January 16, 1948.

There was a morning session and an afternoon session, President, Perry W. Ruth, presiding.

It was largely attended, approximately 150 persons being present, some very distinguished persons engaged in mosquito control work in other parts of the country, being among these.

Very interesting papers were presented and were well received.

The Lieutenant Governor of Virginia, Lewis Preston Collins was one of the speakers and made an excellent address.

On the whole, the entire program was one for which the Association should be justly proud.

It being impossible at the present time, for the "Skeeter" to publish each paper, or speech, in its entirety, we give therefore, excerpts from them which we hope will be of interest to those who were unable to attend.

First, a prayer was offered by the Rev. G.T. Forrester, Commissioner, Virginia Beach-Princess Anne County Mosquito Control Commission.

The Honorable Richard D. Cooke,

Mayor of the City of Norfolk, made the address of welcome to the Association, which was responded to by the Honorable V. D. McManus, Mayor of Williamsburg and also Mosquito Control Commissioner from that city.

Col. James W. Roberts, member of the General Assembly, introduced Lieutenant Governor, Lewis Preston Collins, who brought greetings from Governor Tuck. He was made a very fine extemporaneous address in which he brought out the point, that it was just "too bad" that the peoples of the world could not get together and work for peace as they have gotten together to control mosquitoes.

Your President, Mr. Perry W. Ruth, gave a paper in which he enumerated the advantages of an organization, bringing out the accomplishments of our Virginia Mosquito Control Association.

Mr. W.S. Harney, Manager of the Norfolk Association of Commerce, read a paper on the subject "What Mosquito Control means to Norfolk City". He called attention to many things that had been done on the mosquito control program for Norfolk's benefit. He said he did not know how much money had been spent on mosquito control in Norfolk but was convinced that it was the best money ever spent for a public cause.

**continued next page**

# HISTORICAL FLASHBACK CONTINUED

Rear Admiral, J.C. Adams (MC) U.S. Navy read a paper "Highlights of Mosquito Control in the Navy". He particularly emphasized the value of DDT in airplane spraying, and spraying from motorized equipment such as trucks, jeeps, etc. He explained the effectiveness of small fog units and motor tank foggers. He stated that good control has been maintained by the U.S. Navy and that they were cooperating with local mosquito control organizations. His paper contained some very pertinent technical data.

Dr. L.J. Roper, Virginia State Health Commissioner and ex-officio Chairman of all mosquito control districts in the State, spoke on the subject, "Health Importance of Mosquitoes". He stated, that in his opinion, the State Law should be changed to allow any community in the State to create a mosquito control district, thus eliminating a restriction now existing that only allows the communities in Southeastern Virginia to create districts.

A very fine paper was read by Mrs. Jesse A. White, President of the Federation of Garden Clubs of Norfolk and Vicinity, in which she brought out how the house-wife could aid in eliminating mosquito breeding places. Her talk was spiced with personal experiences.

Mr. Robert L. Vannote, Secretary, Passaic Valley Mosquito Control Conference read the paper "Mosquito Control in the United States". He started with the early history of mosquito control and worked on through to the work now being done. It was very enlightening to learn from Mr. Vannote the extent and the amount of money being spent by other communities in our Country.

R.E. Dorer, Director of Insect and Rodent Control for the Virginia State Health Department presented a paper on the "Future of Mosquito Control in Virginia". He predicted that mosquito control in the future would become more popular and that the people would be less inclined to accept the mosquito as a necessary evil.

At this point in the program, the convention adjourned for lunch. The afternoon program

opened with a technical session.

Dr. William E. Bickley, Entomologist for the Virginia State Health Department, read a paper on "The Mosquitoes of Virginia", in which he explained the system of biological classification used in identifying insects. He reported that forty-three species of mosquitoes have been recorded in Virginia.

A paper prepared by Superintendent, R.G. Carter of the Virginia Beach-Princess Anne county Mosquito Control Commission, on the subject, "Eliminating Aquatic Weeds from Lake at Virginia Beach", was read by Dr. G.T. Forrester, Commissioner. It was brought out that in the lower branch of Lake Holly there appeared a bottom growing aquatic plant which formed ideal protection for the breeding of *A[n]. quadrimaculatus*. The application of Sodium Arsenate resulted in complete elimination of the weeds from the lake and good control was manifest, thereafter.

Mr. George L. Hutton, Entomologist, Tactical Air Command, U.S. Army, Langley Field, Virginia, spoke on the subject of "Airplane Spraying at Langley Field". He exhibited a map showing the sections sprayed from the air with DDT, which included about 5000 acres of salt marsh, and which received five applications throughout the season. He also called attention to the usage of light traps, which were placed in different sections of Langley Field to evaluate the results. He noted from his light trap collections, a sudden and great reduction in the salt marsh mosquitoes after each application of DDT.

Mr. J.E. Borches, Insect and Rodent Control Specialist, District NO. 2, U.S. Public Health Service, spoke on the subject, "DDT as a Mosquito Larvicide". He gave dosages and methods of hand applications of DDT, bringing out the advantages of this method, principally, from a financial standpoint.

**continued next page**

# HISTORICAL FLASHBACK CONTINUED

Mr. N.S. Beaton, Superintendent of the Elizabeth City and the Warwick County Mosquito Control Commissions, gave an analysis of the reasons why concrete ditch lining was recommended for mosquito control work. He described the two types used in Virginia with the advantages and disadvantages of both.

"Fogging for Mosquito Control", was the subject of a paper read by R.E. Dorer, Director, Insect and Rodent Control, Virginia State Health Department. He explained the differences and the actions of sprays, mists, fogs and smokes, and concluded that sprays and mist might be used to good advantage as a larvicide, and fogs and smokes might be used against the adult mosquito. He cautioned that when these methods become commonplace, that better trained and higher type workers will have to be employed.

After a short intermission, reports from the various Mosquito Control Commissions were read as follows:

Williamsburg, Honorable V.D. McManus, Mayor of Williamsburg, and Mosquito Control Commissioner.

Portsmouth, Dr. L.H. Denny, Health Officer and Mosquito Control Commissioner.

Warwick County, Johnathan S. Gibson, Commissioner.

Virginia Beach-Princess Anne County, W. Peyton May, Commissioner.

Elizabeth City County, W.R. Freeman, Commissioner.

City of Richmond, W.R. Horton, Supervisor, Insect and Rodent Control, Richmond City Health Department.

Norfolk City, Perry W. Ruth, Secretary and Technical Advisor.

Thanks of the Association are extended to Mr. S.K. Rubaiz for his hospitality in entertaining Lieutenant Governor Collins at the Monticello Hotel during the convention.

Special commendation is due the Registration Committee which consisted of Mr. Marshall Taylor, Chairman, Mrs. M.N. Broughton and Mrs. R.E. Bacchus, Jr. They registered 104 persons, signed up nine new members and distributed literature to those attending.

original author unknown

**Submitted by Carla Caulkins  
Historical Committee**

## MERCHANDISE ANNOUNCEMENT

### Greetings from the Merchandise Committee!

Like many of you, we are eagerly anticipating the upcoming VMCA Annual Meeting and the opportunity for members get their hands on new merchandise! We're giving a sneak peek at the newest offerings from the VMCA. This year, we will have for sale **a new hoodie**, as well as **a stainless steel tumbler**. Both feature designs submitted by our membership. Hoodies will be available in sizes Small to 2XL and will cost \$35 each. Tumblers will be available for the low cost of \$15. As always we will have merchandise from previous years available. We accept **cash, check, card, and don't forget your VMCA gift cards** if you registered for the Tour de Skeeter.

We look forward to seeing everyone soon!

**Submitted by Merchandise Chair Penny Smelser**



# 2023 RECERTIFICATION CLASS SUMMARY



The VMCA Education Committee started 2023 by conducting a Pesticide Recertification Course. The course took place on January 18th, 2023 at the Hampton City Library. The course offers recertification credit for the categories of 60 – Registered Technician and 08 – Public Health Pest Control through criteria standardized and approved by the Virginia Office of Pesticide Services. The course is open to anyone interested in renewing valid, preexisting pesticide certification.

(Crew Leader, City of Suffolk Mosquito Control Division). VMCA Secretary/Treasurer, Jay Kiser, was a tremendous help with all recertification registration and application paperwork. VMCA President-Elect, Carla Caulkins, made the trip to Hampton to provide assistance with set-up and commence the course with a warm welcoming speech. As a member of the Education Committee, Karen Akaratovic, provided a great amount of assistance with course preparations.

A special “thank you” to all who were involved in making this Recertification Course a professionally informative VMCA event. We are lucky to have such phenomenal support from our committee and board members. We are also appreciative of the Hampton Library for providing a well-suited space for us to host this course.

Another course that was all but forgotten as of 2020, has been successfully brought back to our association. There are high hopes that the future will hold many more like it.

**Submitted by Katherine Reutt  
Education Committee Chair**



Presenters from Virginia Beach and Suffolk Mosquito Control



Katherine Reutt (Education Committee Chair) and Jay Kiser (Secretary/Treasurer) going over the registration process

There were 25 commercial pesticide applicators in attendance, representing various MC jurisdictions from the Hampton Roads and surrounding areas. The agenda included very informative presentations from: Mr. Robert Christian (Inspector, VDACS), Ms. Katherine Reutt (Biologist I, Chesapeake Mosquito Control Commission), Ms. Lisa Wagenbrenner (Director, Chesapeake Mosquito Control Commission), Mr. Jeffrey O’Neill (Vector Regional Manager, Products Division of Central Life Sciences), Ms. Jennifer Barritt (Superintendent, City of Virginia Beach Mosquito Control), and Ms. Ann Herring



**Top:** Robert Christian going over "Legal Aspects" of pesticide applicator certification

**Middle:** Jeff O’Neill presents on "Formulations and Products"

**Bottom:** Lisa Wagenbrenner presents on "Personal Protective Equipment"

# CO<sub>2</sub> SHORTAGE

## **The County of Henrico experienced a disruption in our dry ice supply in the middle of the summer 2022.**

Henrico has been using pelletized dry ice since 2005 to bait our CDC mini light traps w/ BG lures added for host-seeking mosquitos.

After 15+ years of service with our supplier, first we experienced a delay in delivery, then a reduction in quantity available with the delay, and then the notice came that we were cut off for the rest of the season...

Reaching out to other providers around the Richmond Metro area, we were told "we are not accepting new customers" everyone is experiencing a shortage in CO<sub>2</sub> availability...We were told that all CO<sub>2</sub> was being directed to medical and food service facilities...

### **Misconceptions:**

- Originally, I thought they sucked the CO<sub>2</sub> out of the air...what a profitable business...but it turns [out] it's a much more complicated industry and process with many more suppliers and end users involved.
- The Craft Beer Industry is putting an extra burden on the CO<sub>2</sub> supply
- Isn't it good that we are reducing the CO<sub>2</sub> levels
- And a bunch more random thoughts...

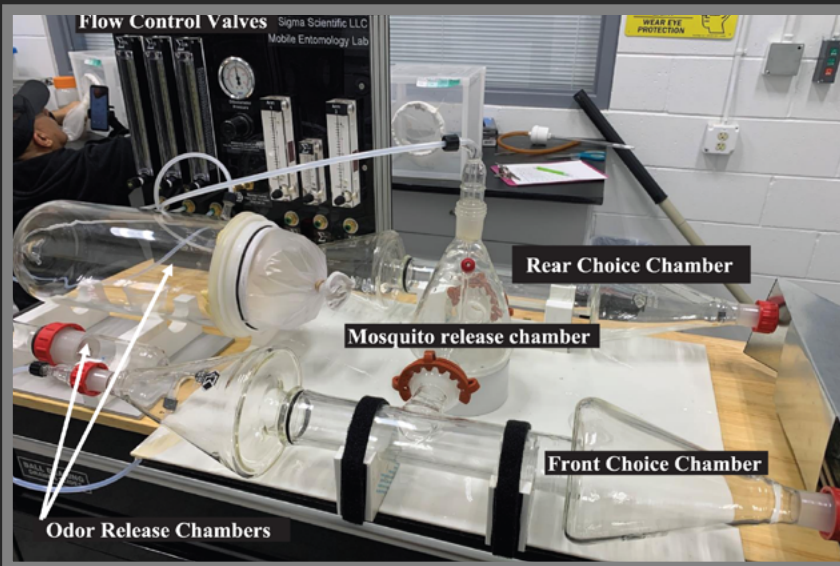
**Did you know** that CO<sub>2</sub> is one of the most important "gases" on the planet and that life as we know it would not exist without a certain amount of CO<sub>2</sub> in the atmosphere...


As it turns out, Henrico has found a supplier that says "no problem for 2023 supplies of pelletized dry ice...we never had a shortage last year." Proof is in the pudding so we would just like to **suggest you double check your sources before the season begins.**

Hoping for a very low level of mosquito activity for 2023.

**Submitted by Randy Buchanan  
Henrico Standing Water Initiative**

# WHAT'S THAT ANSWER



JOURNAL OF THE AMERICAN MOSQUITO CONTROL ASSOCIATION		
Mosquito News		
		
VOLUME 38	DECEMBER 2022	NUMBER 4
CONTENTS		
ARTICLES		Page
<i>Aedes portus</i> , <i>Anopheles stephensi</i> , <i>Culex deflorator</i> , and <i>Cx. interrogator</i> : An Update of Mosquito Species Records for Charlotte County, Florida	Beth C. Kovach, Lawrence E. Reeves, Candalaria Domingo, Sydney N. L'Hercules, Gavriel V. Burger, Scott D. Schermerhorn and Michael T. Riley	241
Lethal and Sublethal Concentrations of Formulated Larvicides Against Susceptible <i>Aedes aegypti</i>	Robert L. Akhridge, Barry W. Aho, C. Roxanne Connolly, Bernard Okoch, Blair Skerfving and Kenneth J. Linthicum	250
Evaluation of Essential Oils as Spatial Repellents Against <i>Aedes aegypti</i> in an Olfactometer	Muhammad Farooq, Lea Bangonan, Rui-De Xue and Asghar Talbalaghi	261
Evaluation on the Activity and Efficacy of Omiprose™ WSP and XWSF Against the Southern House Mosquito <i>Culex quinquefasciatus</i> in Simulated Catch Basins	Tianyun Su and Heng Su	268
SCIENTIFIC NOTES		
New Records of Mosquitoes in Bolivia and Northwestern Argentina	Mario J. Dauter, Juli, Edeko I. Villarreal-Martinez, Paul L. Dague, Marina Stein and Maria Anke March Sallum	276

**THAT** is an **olfactometer** as published in "Evaluation of essential oils as spatial repellents against *Aedes aegypti* in an olfactometer" by Muhammad Farooq, Lea Bangonan, Rui-De Xue, and Asghar Talbalaghi in the December 2022 issue of the Journal of the American Mosquito Control Association. This article discusses an interesting potential addition to our integrated mosquito management toolbox in the seemingly never-ending quest to deal with resistance in mosquito populations and protect the public's health. The article's abstract is printed below and you can read the full article [here](https://meridian.allenpress.com/jamca). Also, if you didn't already know, AMCA now publishes its journal in an online, open-access format. **This means it is open to the public and FREE!** You don't have to be an AMCA member to stay informed on all the fun new things happening in the field of mosquito control. Start reading here: <https://meridian.allenpress.com/jamca>

### Abstract from Farooq et al. 2022

Spatial repellents are becoming an integral part of the integrated mosquito management and are considered another tool to prevent mosquito-borne diseases. They are also gaining attention as a potential disease transmission breaking strategy. Current vector control practices are losing their viability due to resistance development in arthropods to synthetic pesticides. Economic feasibility of developing natural products is driving towards search for natural products as spatial repellents evidenced by increase in number of their studies. Different volumes (0.0625, 0.125, 0.25, 0.5 ml) of clove oil, eucalyptus oil, geraniol, Immortelle oil, lemongrass oil, and RepelCare (mixture of turmeric oil and eucalyptus oil) were evaluated for their repellency against *Aedes aegypti*, replicating each test 5 times. Biogents lure and fresh air were used as control. The evaluations were conducted in a True Choice olfactometer by passing air carrying 2 vapors from 2 different products, i.e., an attractant, repellent, or clean air, through 2 chambers and providing mosquitoes an option to move to the chamber of their choice. For each run, 24-h-starved 15–20 female *Ae. aegypti* were released into the mosquito release chamber and number of mosquitoes in the 2-choice chambers and the mosquito release chamber were counted after 15 min and recorded. The difference in mosquitoes between 2 chambers indicated presence or absence of repellency. All the natural oils and RepelCare provided  $\geq 70\%$  repellency, except for Immortelle oil which had no repellency. All repellents tested except Immortelle and lemongrass oils showed increase in repellency with increase in application volume. However, minimum application volume to be effective was different for each oil. Lemongrass is the only oil which showed a peak at 0.125-ml volume.



# VIRGINIA MOSQUITO CONTROL JURISDICTIONS & OTHER RESOURCES

## Virginia mosquito control jurisdictions

- [Alexandria Health Department](#)
- [Boykins, Town of](#)
- [Chesapeake Mosquito Control Commission](#)
- [Chincoteague Mosquito Control](#)
- [Fairfax County Health Department](#)
- [Gloucester County Mosquito Control](#)
- [Hampton Environmental Services](#)
- [Henrico County](#)
- [Joint Base Langley-Eustis](#)
- [Newport News Vector Control](#)
- [Norfolk Vector Control](#)
- [Poquoson Mosquito and Drainage](#)
- [Portsmouth Mosquito Control](#)
- [Prince William County Mosquito & Forest Pest Management](#)
- [Suffolk Mosquito Control](#)
- [Virginia Beach Mosquito Control](#)
- [Williamsburg Public Works](#)
- [York County Mosquito Control](#)

**Know of another jurisdiction  
or resource to add?  
Please submit them to the [Editor](#).**

## Neighboring, regional, & national mosquito control organizations

- [American Mosquito Control Association](#)
- [Mid-Atlantic Mosquito Control Association](#)
- [Delaware Department of Natural Resources and Environmental Control](#)
- [Maryland Department of Agriculture](#)
- [New Jersey Mosquito Control Association](#)
- [North Carolina Mosquito and Vector Control Association](#)
- [Northeastern Mosquito Control Association](#)
- [South Carolina Mosquito Control Association](#)
- [Georgia Mosquito Control Association](#)
- [Florida Mosquito Control Association](#)

## Other resources

- [Virginia Department of Health](#)
- [Centers for Disease Control & Prevention](#)
- [Fairfax County Education and Outreach Materials](#)
- [Northeast Regional Center for Excellence in Vector-borne Diseases](#)
- [VMCA Employment Opportunities](#)
- [AMCA Career Center](#)

## SUBMISSIONS WANTED!

**Do you have photos  
of mosquitoes or  
other insects?**

**Do you have information  
you'd like to share with  
membership?**



The Information Committee is always on the hunt for organizational updates, operational news, experimental findings, education/outreach activities, pictures, stories...even the bloopers!

If you have anything remotely vector-related and are willing to share it in an upcoming newsletter or on Facebook/Instagram, please send it in!! You can email

*The Skeeter* Editor, Karen Akaratovic at [kakaratovic@suffolkva.us](mailto:kakaratovic@suffolkva.us) or [submit online](#).

# 2022 SUSTAINING MEMBERS

The VMCA gratefully acknowledges the support of the following sustaining members for 2022. Without their generous contributions, much of what we do would not be possible. Please do not hesitate to contact them. They are here to help you!



## Frontier Precision

Chad Minter  
(208) 420-2778

[chad@frontierprecision.com](mailto:chad@frontierprecision.com)

Please welcome  
our new 2023  
sustaining members!



## Summit Chemical

Zach Cohen  
(443) 250-6500

[zcohen@summitchemical.com](mailto:zcohen@summitchemical.com)



Agricultural &  
Environmental  
Solutions

## Azelis

Dan McCombie  
(314) 541-1972

[daniel.mccombie@myadapco.com](mailto:daniel.mccombie@myadapco.com)



## Bayer

Kurt Vandock  
(919) 549-2226

[kurt.vandock@envu.com](mailto:kurt.vandock@envu.com)



## Central Life Sciences

Jeff O'Neill  
(302) 312-3950

[joneill@central.com](mailto:joneill@central.com)



## Clarke

Jeff Hottenstein  
(703) 498-9362

[jhottenstein@clarke.com](mailto:jhottenstein@clarke.com)



## Co-Diagnostics

Chuck Berg  
(801) 455-0332

[c.berg@codiagnostics.com](mailto:c.berg@codiagnostics.com)



## Target

Steve Molnar  
(470) 432-3134

[steve.molnar@target-specialty.com](mailto:steve.molnar@target-specialty.com)



## Valent

Jim Andrews  
(910) 547-8070

[james.andrews@valent.com](mailto:james.andrews@valent.com)



## Veseris

Brock Verworn  
(571) 296-6976

[brock.verworn@veseris.com](mailto:brock.verworn@veseris.com)

# 2022 VMCA COMMITTEES

COMMITTEE NAME	CHAIRPERSON	CURRENT MEMBERS
Annual Meeting (Hospitality Room)	Ann Herring <a href="mailto:mherring@suffolkva.us">mherring@suffolkva.us</a>	Jay Kiser
Annual Meeting (Local Arrangements)	Charles Abadam <a href="mailto:cabadam@suffolkva.us">cabadam@suffolkva.us</a>	Carla Caulkins, Ann Herring, Jay Kiser
Annual Meeting (Program/Agenda)	Carla Caulkins <a href="mailto:ccaulkins@cityofchesapeake.net">ccaulkins@cityofchesapeake.net</a>	Tim DuBois, Jay Kiser,
Annual Meeting (Vendor Planning)	TBA	
Audit	Penelope Smelser <a href="mailto:penelope.smelser@norfolk.gov">penelope.smelser@norfolk.gov</a>	Michael Bowry, Amber Rymer
Bylaws	Jay Kiser <a href="mailto:jkiser@suffolkva.us">jkiser@suffolkva.us</a>	Charles Abadam, George Wojcik
Curations & Preservation	Wes Robertson <a href="mailto:rob106@henrico.us">rob106@henrico.us</a>	Karen Akaratovic, Carla Caulkins, Lauren Lochstampfor, Katherine Reutt
Education	Katherine Reutt <a href="mailto:kreutt@cityofchesapeake.net">kreutt@cityofchesapeake.net</a>	Karen Akaratovic, Jennifer Barritt, Ann Herring, Lisa Wagenbrenner
Elections	Wes Robertson	Penelope Smelser
Historian	Tim DuBois <a href="mailto:duboist@portsmouthva.gov">duboist@portsmouthva.gov</a>	Carla Caulkins
Information	Karen Akaratovic <a href="mailto:kakaratovic@suffolkva.us">kakaratovic@suffolkva.us</a>	Jay Kiser, Kaitlyn Price, Katherine Reutt
Legislative	Randy Buchanan <a href="mailto:buc06@henrico.us">buc06@henrico.us</a>	
Membership	Jay Kiser	Karen Akaratovic
Merchandise	Penelope Smelser	Karen Akaratovic, Ann Herring, Tim DuBois, Katherine Reutt, Lisa Wagenbrenner
Nominating	Tim DuBois	
Photography	Terrell Carner <a href="mailto:carnertw@nnva.gov">carnertw@nnva.gov</a>	Karen Akaratovic, Carla Caulkins, Alexandra Cumbie, Janice Pulver
Public Relations	Ann Herring	
Special Awards	Jennifer Barritt <a href="mailto:jbarritt@vbgov.com">jbarritt@vbgov.com</a>	Karen Akaratovic, Ann Herring
Student Competition	Jay Kiser	Karen Akaratovic, Alexandra Cumbie, Ann Herring, Kaitlyn Price, George Wojcik
Technical Support	Charles Abadam	Joshua Bernick, Kyle Gironi, Janice Pulver
Website	Karen Akaratovic	Alexandra Cumbie

**Take the time to volunteer on a committee! An active membership makes for a stronger organization. Contact the chairperson of any committee that interests you or any member of the [VMCA Executive Board](#) to participate. Read about the committees in the [VMCA Book of Guidelines](#).**

# 2022 VMCA EXECUTIVE BOARD

## THE SKEETER

OFFICIAL NEWSLETTER  
OF THE  
[VIRGINIA MOSQUITO  
CONTROL ASSOCIATION](#)

### Skeeter Production Team

#### COMMITTEE CHAIR/ NEWSLETTER CONTACT

**Karen Akaratovic**  
Suffolk Mosquito Control  
800 Carolina Road  
Suffolk, VA 23434  
(757) 514-7608  
[kakaratovic@suffolkva.us](mailto:kakaratovic@suffolkva.us)

#### COMMITTEE MEMBERS

**Jay Kiser**  
Suffolk Mosquito Control  
[jkiser@suffolkva.us](mailto:jkiser@suffolkva.us)

**Kaitlyn Price**  
Virginia Beach Mosquito Control  
[kcprice@vbgov.com](mailto:kcprice@vbgov.com)

**Katherine Reutt**  
Chesapeake Mosquito Control  
[kreutt@cityofchesapeake.net](mailto:kreutt@cityofchesapeake.net)

#### EDITORIAL REVIEW

VMCA Executive Board

PHOTOGRAPHY IN THIS ISSUE:  
KAREN AKARATOVIC, KAITLYN  
PRICE, JANICE PULVER,  
KATHERINE REUTT



#### President

Wes Robertson  
[rob106@henrico.us](mailto:rob106@henrico.us)

#### Interim First Vice President

Lisa Wagenbrenner  
[lwagenbrenner@cityofchesapeake.net](mailto:lwagenbrenner@cityofchesapeake.net)

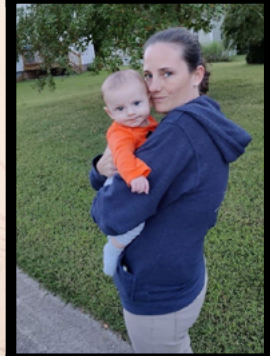


#### Past President

Tim DuBois  
[duboist@portsmouthva.gov](mailto:duboist@portsmouthva.gov)

#### Secretary/ Treasurer

Jay Kiser  
[jkiser@suffolkva.us](mailto:jkiser@suffolkva.us)



#### President Elect

Carla Caulkins  
[ccaulkins@cityofchesapeake.net](mailto:ccaulkins@cityofchesapeake.net)

#### Industry Representative

Vacant



#### Interim Vice President

Addison Weddle  
[weddlea@portsmouthva.gov](mailto:weddlea@portsmouthva.gov)

#### MAMCA Representative

Jeff Hottenstein  
[jhottenstein@clarke.com](mailto:jhottenstein@clarke.com)



### Connect with us!

FB: [facebook.com/mosquitova](https://facebook.com/mosquitova)  
IG: [@virginiamosquitocontrol](https://@virginiamosquitocontrol)

The Skeeter is the official publication of the Virginia Mosquito Control Association. The VMCA membership is encouraged to submit articles, reviews, photography, and any other interesting facts or tidbits for publication. Submissions can be sent to Karen Akaratovic: [kakaratovic@suffolkva.us](mailto:kakaratovic@suffolkva.us)

