

THE SKEETER

Vol. 78. No.3

2018 Fall Newsletter



Official Newsletter of the Virginia
Mosquito Control Association

President's Address

It is the beginning of October but you would not know it by the weather. High temperatures continue to reach the 80's and 90's for much of the state. Many of our areas continue to deal with above average rainfall and temperatures. Remnants from Tropical Storm Gordon brought heavy rains to many parts of the state and this helped to fuel mosquito populations.

Hurricane Florence left her mark. Just 36 hours out, many parts of the state of Virginia were forecast to have significant impacts from moderate tidal surge, flooding rains, and high winds. The governor ordered mandatory evacuations for Zone A. Fortunately for us the storm track changed. If the storm had tracked 90 miles to the north, many parts of Virginia would still be in recovery mode. Our friends to the south were not so lucky. Hurricane Florence caused some historic levels of flooding and destruction in parts of North Carolina and South Carolina. Full recovery will take years.

Looking forward, the 2019 annual meeting preparations are under way. The meeting next year will be held at the Virginia Beach Hilton on the oceanfront. There is an open call for presentations so please contact Latoya White (lnwhite@nnva.gov) or anyone on her committee to reserve a spot on the program.

As you read through the Skeeter please take the time to read the proposed changes to the bylaws. We are proposing some changes that will be voted on at the business meeting.



George Wojcik
2018 VMCA President

What's in this issue

Announcements, What's That?	3	2019 Merchandise Poll	13
Call for 2019 VMCA Presentations	4	Stimulating Sightings in Suffolk	14-16
Merchandise Committee Seeks Artwork	4	Asian Longhorned Tick Update	16
2019 Presentation Submission Form	5	Spooky Spiders	17-18
2019 First Vice President Nominations	6	Record Number of WNV Cases in VA	19
2019 VMCA Recertification Submission Form	7	What's That? Answer/EcoEvo Nature Article	20-22
2019 VMCA Recertification Class Schedule	8	Merchandise Sales Continue	23
VMCA Membership Form	9	VMCA Bylaws with Proposed Changes	24-28
2019 Silent Auction	10	2018 VMCA Committees	29
TMVCC Update	11	2018 Sustaining Members	30
2019 VMCA Award Nominations	11	Jurisdictions & Other Resources	31
Proposed Changes to VMCA Bylaws	12	2018 Executive Board	32

Announcements

Fillable Form Instructions

Throughout this issue of the Skeeter, you'll find a number of fillable forms. While you can't submit them directly from this document, you can fill them out, extract and save them if you have Adobe Acrobat (not Reader). Under tools, select "fill and sign" and enter your information. Next, select the page thumbnail view of the document. Right click the desired page and select "extract pages". You can then save it as a separate file and email it. Alternatively, website links are included for those without Acrobat.

VMCA Organizational Mailing Address

Virginia Mosquito Control Association
Jay Kiser, Secretary/Treasurer
800 Carolina Rd
Suffolk, VA 23434
Phone: (757) 514-7608
Email: virginiamosquito@gmail.com

You can now sign up for or renew your VMCA membership online! Visit our website and fill out the form [here](#)



What's That...?

Answer on [page 20](#)

Upcoming Events

SCMCA Annual [Meeting](#)

November 7-9, 2018
Greenville, SC

ESA, ESC, ESBC Joint Annual [Meeting](#)

November 11-14, 2018
Vancouver, Canada

TMVCC Oyster Roast and SCC 50/50 Raffle

November 14, 2018
Norfolk, VA

VMCA Merchandise Committee

[Art Contest](#) Deadline

November 16, 2018

VMCA Student Poster Competition

Submission [Due Date](#)

November 27, 2018

NCMVCA Annual [Meeting](#)

December 3-4, 2018
Greenville, North Carolina

NMCA Annual [Meeting](#)

December 3-5, 2018
Nashua, NH

VMCA Annual Pesticide Applicator's

[Recertification](#)

January 16, 2019
Hampton, VA

72nd Annual VMCA [Meeting](#)

February 5-7, 2019
Virginia Beach, Virginia

85th Annual AMCA [Meeting](#)

February 25-March 1, 2019
Orlando, FL

NJMCA Annual [Convention](#)

March 13-15, 2019
Cape May, NJ

44th MAMCA Annual [Meeting](#)

March 26-28, 2019
Harrisburg, PA

Call for 2019 VMCA Presentations

-Submitted by Agenda Committee Chair LaToya White

Dear VMCA Members,

The time has come again to celebrate the vector world! The 2019 VMCA Annual Meeting is February 5-7 and we are looking for individuals to submit a presentation to share their experiences and expertise with colleagues in the vector profession. This year's conference will be held at the Hilton on the waterfront of Virginia Beach. Individuals will benefit from your experience while you are making a valuable contribution to the profession. Our goal is for people to experience educational, informative, inspirational, and entertaining professional development. Attendees express a strong desire for presentations that are engaging, enjoyable, and applicable in the "real world" of vector. We are especially interested in but not limited to the following topics:

- Adult Control
- Larval Control
- Operational
- Field work
- Management
- Equipment
- GIS/GPS
- Disease/Vector Studies
- Education
- Public Relations
- Legislative
- Biology
- Behavior

If you have a topic you would like to present at the meeting, please complete the VMCA Presentation Submission Form on the next page and return to LaToya White at lnwhite@nnva.gov NO LATER than December 7th, 2018. Please feel free to call LaToya White with any questions (Work: 757-269-2884).

If, at this time, you are not sure of a presentation title but know you would like to present something, please let LaToya know so she can be sure to include you. We are looking forward to another outstanding meeting this February in Virginia Beach and hope to see you there!

Regards,

VMCA Executive Board

Merchandise Committee Seeks Artwork!

-Submitted by Merchandise Committee Chair Tim DuBois

The VMCA Merchandise Committee is looking for a new design for our upcoming merchandise sales. Think you have what it takes? Want to see your artwork on some cool swag? Email Committee Chair Tim DuBois at duboist@portsmouthva.gov with a copy of your artwork for a chance to see your work on our new merchandise. Winner will also get a \$50.00 prize for the best artwork. Deadline for this contest is November 16th, 2018.

2019 VMCA Annual Meeting Presentation Submission

Please return completed form to LaToya White at lnwhite@nnva.gov

NO LATER than December 7th, 2018

First name: _____ Last name: _____

Name of your primary contact if other than you:

Address:

Telephone: _____ ext. _____

Organization/Affiliation: _____

Email address: _____

Presentation Information

Your (Presenter's) Title:

Amount of time requested for presentation (please be as accurate as possible and include a few extra minutes for questions): _____ minutes

Audio/Visual Equipment Needed (if other than PowerPoint): _____

In Person: Yes No

GoToMeeting: Yes No

Online submission form can be found [here](#)

2019 Nominations for First Vice President

Nate Nagle

Nathaniel (Nate) Nagle graduated from Kutztown University of Pennsylvania in May, 2010 with a Bachelor's Degree in Environmental Science and a minor in Geography. His entire professional career has been in mosquito control starting as a seasonal employee with the Pennsylvania West Nile Virus Control Program in Lancaster County through the 2009-2010 seasons. In January 2011, Nate accepted a position as a Specialist I with Prince William County, Virginia at Mosquito and Forest Pest Management Branch. As a seasonal employee in Pennsylvania and Specialist I with Prince William County, Nate's primary responsibilities were in the field performing adult and larval mosquito surveillance and control. While with Prince William County, Nate was promoted to Field Supervisor in October, 2014 and again to Assistant Branch Chief in July, 2016. His responsibilities shifted to overseeing field operations, supervising field staff, and providing technical support to the Branch. Nate was promoted again in April, 2018 to Mosquito and Forest Pest Management Branch Chief where he now oversees all aspects of the Branch responsibilities and supervises a staff of twelve. In his free time, Nate enjoys the solitude of his cabin and spending time outside hunting, fishing, and hiking with his wife, Alyssa, and 2 dogs, Natty and Gus.



Wes Robertson

Wes Robertson is a medical entomologist who works as a Senior Environmental Inspector/Medical Entomologist with the Henrico County Standing Water Initiative (SWI). Wes joined the Henrico County Department of Public Works SWI team in 2013. He works to actively identify, monitor, test, and analyze mosquito species. He also works as a public and private educator on pathogen transmission, insect identification, and IPM best practices. He advises and aids the local cooperative extension office, health department, and Henrico County Schools on insect identification and control methodologies. In 2016 Wes was integral in developing and implementing the Henrico County Zika Working Group and Task Force. His dedication, as the Henrico County Zika Mosquito Task Force Manager, resulted in his reception of the 2017 NaCo and VaCo Achievement Awards and the establishment of the Henrico County Arboviral Working Group. He is also a regular contributor to various academic and general publications.

His professional experiences include working as a volunteer instructor/trainer for the Virginia Master Naturalist Training Certification Program, the Governor's School for Medicine and the Health Sciences, and the Henrico, Hanover, and Chickahominy Health Districts. Wes also has experience as an Avian Point-Count Technician, Biological Community Coordinator, and Entomology Field and Laboratory Technician.

Wes started studying mosquitoes while working with Dr. Kevin Caillouett and Dr. Lesley Bulluck on vector contact rates on Eastern Bluebird nestlings. As an undergraduate student at Virginia Commonwealth University, Wes received an honors degree for his contributions, research, and publications on West Nile Virus transmission in Henrico County and the effects of avian predation on mosquito driven West Nile Virus transmission. Wes' passion for insects and education deepened during his time as a graduate student at the University of Florida where he received a certification in medical entomology from the University of Florida's College of Agricultural and Life Sciences in 2015 and a master's degree in medical and veterinary entomology in 2017. He regularly speaks to various interest groups, clubs, associations, and conference audiences about mosquitoes, pathogens, and other arthropod/insect related topics. In his free time, he enjoys spending time with his family, teaching classes, reading, world war II model diorama building, collecting insects, playing chess, and watching sports.



VIRGINIA MOSQUITO CONTROL ASSOCIATION 2019 VMCA RE-CERTIFICATION COURSE

Dear Members,

The Virginia Mosquito Control Association is sponsoring a re-certification course for Category 8 & Registered Technician (60) on Wednesday, January 16, 2019. It will be held at the Hampton Library, 4207 Victoria Blvd, Hampton, Virginia. Registration is at 9:00 AM. Please be on time!

The fee for this course is **\$10.00 for VMCA Members, \$15.00 for non-members (applicators not for hire), and \$30.00 for non-members (applicators for hire). There will be a \$2.00 late fee if paying after January 4, 2019.**

Should you have any questions or need further assistance, please contact either Jay Kiser at (757)514-7608 or Lisa Wagenbrenner at (757) 673-3932.

NAME: _____ PHONE: _____

CERTIFICATE NUMBER: _____

AFFILIATION/ORGANIZATION: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

If paying by check, please make check payable to VMCA

Mail Check and this form to: Jay Kiser, Secretary/Treasurer, Suffolk Mosquito Control, 800 Carolina Rd., Suffolk, Virginia, 23434.

If you need to pay by credit card: email this form to the Jay Kiser to the address below and request an invoice. A link with an invoice will be emailed to you. Invoices and credit card payments are made through PayPal. Email: Virginiamosquito@gmail.com

Directions

Location: Hampton Library

Address: 4207 Victoria Blvd, City of Hampton, Virginia

Phone: (757) 727-1154 (Library)

Parking: Please park at the stadium parking lot across the street.

Coming from I-64 West

Take exit 267, make a left on Settlers Landing Road, proceed to bridge and through town, make a left on Kecoughtan Road, go two blocks, Hampton Library on your left. (Library is on the corner of Kecoughtan and Victoria Road).

Coming from I-64 East

Take exit 265A to Lasalle Avenue, make a right, go to Settlers Landing Road, make a left, go to Kecoughtan Road, make a right and go two blocks, Hampton Library will be on the left.

Coming from I-664

Take exit 265A to Lasalle Avenue, make a right, go to Settlers Landing Road, make a left, go to Kecoughtan Road, make a right, go two blocks, Hampton Library is on the left.

Online submission form can be found [here](#)

2019 VMCA Recertification Class Schedule

-Submitted by Education Committee Co-Chair Lisa Wagenbrenner

VMCA RECERTIFICATION CLASS

January 16th, 2019

Hampton City Library, 4207 Victoria Boulevard

9:00	Registration, coffee & donuts	Jay Kiser VMCA Secretary
9:30 - 9:45	Welcome	George Wojcik VMCA President
9:45 - 10:15	Vectors, Life Cycle & Control/Surveillance/Environmental <i>Mosquitoes, IPM, sensitive areas, harmful effects on non-target plants and animals</i>	Jennifer Barritt Biologist Virginia Beach Mosquito Control
10:15 - 10:45	Personal Protective Equipment <i>Chemical resistant protective equipment, protecting your skin, eyes, respiratory tract and maintaining personal protective equipment</i>	Lisa Wagenbrenner Biologist Chesapeake Mosquito Control Commission
10:45 - 11:15	Formulations and Products <i>Liquid Formulations, Dry Formulations, Fumigants and Adjuvants</i>	Jeff Hottenstein Regional Sales Manager Clarke Mosquito Control
11:15 - 12:00	Legal Aspects <i>Certification categories and procedures, responsibilities of pesticide applicators, EPA approval of pesticide labeling, restricted use chemicals and pesticide use</i>	Robert Christian VDACS
12:00 - 13:00	LUNCH (on your own)	
13:00 - 13:30	Applying the Correct Amount <i>Deciding how much to apply, calibration methods, calibrating your equipment and measuring accurately.</i>	Phil Meekins Superintendent Virginia Beach Mosquito Control
13:30 - 14:00	Pesticide Handling, Mixing & Loading <i>Personal safety considerations, pre-application decisions, safe mixing and loading practices and applying pesticides safely.</i>	Lisa Wagenbrenner Biologist Chesapeake Mosquito Control Commission

Virginia Mosquito Control Association
New Membership & Member Renewal Application

MEMBERSHIP TYPE: () RENEWAL () NEW
Mark an "X" in the appropriate box

New to 2019: If you register to the 2019 annual meeting, membership will be complimentary and this form/ payment is not needed. If you don't plan on attending the Annual Meeting, please fill out this form.

NAME:	Regular \$15	
PHONE:	Associate \$10	
ADDRESS:	Student \$10 *Enclose proof of student status	
EMAIL:		
ORGANIZATION:		
	Total Submitted	

Questions or comments can be directed to Jay Kiser, Secretary-Treasurer,
757-514-7608 or email to: Virginiamosquito@gmail.com

The VMCA accepts cash, check, and credit card. Membership forms and payments are accepted on our website at www.mosquito-va.org.

Jay Kiser
VMCA Secretary-Treasurer
800 Carolina Rd
Suffolk, VA 23434
757-514-7608 office phone
757-923-2484 office fax

Regular Member - VMCA Newsletter, hold office, serve on committees, propose motions, vote, and participate in business meetings.

Associate Member - VMCA Newsletter, participate in business meetings.

Student Member - VMCA Newsletter, serve on committees and participate in business meetings. (Student must be enrolled as part-time or more in an accredited college or university. Student must produce valid College or University ID Card).

Sustaining Member - Exhibit space during the annual meeting and registration for one person. VMCA Newsletter, participation in commercial presentation session, listing in VMCA Newsletter and meeting program, listing on VMCA website.

Online submission form can be found [here](#)

Silent Auction 2019

Please Donate!

All proceeds benefit the VMCA Student Poster Competition

**Third Annual Silent Auction taking place during the
2019 VMCA Annual Meeting
February 5-7, 2019**

**Please drop off items at the meeting registration desk by Noon,
February 5, 2019**

We are looking for a variety of new or gently used items of good quality 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 vendor are appreciated.

Items may also be sent/dropped off before the meeting to:
Suffolk Mosquito Control, 800 Carolina Road, Suffolk, VA 23434
For more information please contact: [Ann Herring mherring@suffolkva.us](mailto:Ann.Herring@suffolkva.us)

TMVCC Update

-Submitted by TMVCC President Michelle Slosser

Tidewater Mosquito and Vector Control Council has had a successful year, meeting once a month to communicate with other jurisdictions and with our sponsors. We have been kept up to date on pesticide products, new technology for control methods, and other subjects relating to mosquitoes and their ecology. It has been very helpful to have these relationships and contacts in this specific, yet diverse, job of mosquito control. **The TMVCC board will be needing a new secretary in 2019**, and I encourage anyone who is interested in broadening their relationships to volunteer. The Secretary position of 2019 moves up to the Vice President in 2020, and the President of TMVCC in 2021. The Vice president in 2019 will be Mike Bowry, and the President will be Chris Hohnholt. Thank you everyone who continues to be involved in this regional group.

2019 VMCA Award Nominations

-Submitted by Awards Committee Chair Jennifer Barritt

The VMCA recognizes individuals or a group of individuals who have contributed to making our organization the best it can be by presenting them awards at the annual meeting. The board is currently accepting nominations for members who deserve recognition. Please send your nominations and supporting documentation to Awards Committee Chair Jennifer Barritt (jbarritt@vbgov.com) by **December 21, 2018**.

VMCA awards include:

Outstanding Service Award: This award is given for field service to a VMCA member considered outstanding by their peers.

Distinguished Service Award: This award is given for organizational service to a VMCA member considered distinguished by their peers.

Honorary Member: Any individual who has rendered exceptionally distinguished service in the field of mosquito control and related work may be accorded special recognition by election to honorary membership in the VMCA. Nomination for this honor must be justified in writing. The Executive committee shall be required to review the nomination and vote unanimously to confirm the honorary membership nominee. Honorary members shall receive the same privileges as a regular member without paying annual dues.

R.E. Dorer Award: The R.E. Dorer Award is the highest achievement award of the Virginia Mosquito Control Association. Mr. Dorer graduated from Rutgers University in 1932 and moved to Virginia in 1933. He spear-headed mosquito control efforts for over 50 years in Virginia. Mr. Dorer's success in mosquito control came through his work at the State Health Department and as a Commissioner to the Virginia Beach Mosquito Commission for many years. Nominations for this honor must be justified in writing. The Executive committee shall be required to review the nomination and vote unanimously to confirm the R.E. Dorer Award nominee.

Proposed Changes to VMCA Bylaws

-Submitted by Bylaws Committee Chair Jay Kiser

The VMCA Bylaws Committee and Executive Board have created some proposed changes to the VMCA Bylaws. During the business meeting, at the end of the 2019 VMCA Annual Meeting (February 7, 2019), the attending membership will be asked to vote yay or nay to these changes. Please read through the VMCA Bylaws further down in the Skeeter and take note of the proposed changes written in blue. Included below is a summary of the sections that were changed and the reasoning behind the changes. If these changes are passed, most will come into effect during the 2019 fiscal year. One exception will be the industry representative becoming a voting member on the VMCA Board; this will not come into effect until 2020 when that person has been officially voted in by the VMCA Membership.

If you have any questions, concerns, or would like to talk about the changes before the business meeting, please email Jay Kiser (Bylaws Committee Chair and Secretary/Treasurer) at Virginiamosquito@gmail.com

- a) Defining the VMCA membership yearly time frame: Changes to the following sections:
 - i) Article IV, Section 2, A and C
 - ii) Article VII, Section 4

- b) Changes to the industry representative board position; simplifying the name and giving the position a vote on the VMCA board (this requires that the membership votes for this position): Changes to the following:
 - i) Article V, Section 1, A and C
 - ii) Article V, Section 2, A
 - iii) Article VII, Section 3, E
 - iv) Article VII, Section 4 (deletion)

- c) Additional suggested changes to the following:
 - i) Defining terms of MAMCA and TMVCC board positions: Article V, Section 1, D and E
 - ii) Updating list of obligatory committees (this is not an encompassing list of committees, just the mandatory ones): Article V, Section 3 A
 - iii) Stating the president's duty of overseeing the election process and counting ballots: Article V, Section 3 C
 - iv) Title correction: Article VI
 - v) Defining the roles of industry representative and TMVCC rep: Article VI, Sections 6, 7 and 8
 - vi) Stating the need for board positions on the ballot: Article VII, Section 3 C, and D
 - vii) Deleting unused article: Article XIV
 - viii) Renumbering article after deletion from above: Article XV

See [pages 24-28](#) to review the proposed changes to the bylaws. Changes are highlighted in blue.

Please help the merchandise committee choose new items for the 2019 meeting! Select your **TOP 3** on this fillable pdf and email it to Merchandise Committee Chair, Tim DuBois (duboist@portsmouthva.gov) ASAP. ***items shown are for example purposes only; exact items, style, color, and/or artwork ordered may vary***

2019 VMCA Merchandise Poll



- Glassware:
- Growler
 - Wine
 - Stemless wine
 - Pint



- Hooded lightweight rain jacket



- Umbrella



- Bags:
- Messenger
 - Sling pack
 - Backpack



- Hats
- Beanie
 - Baseball



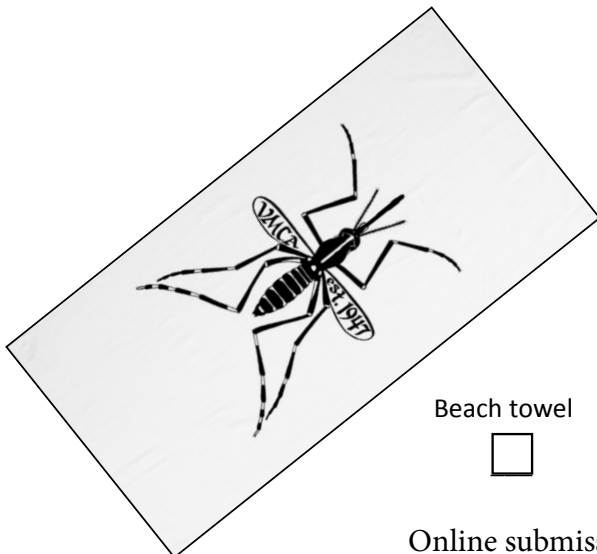
- Blanket



- Cell phone Popsocket



- License plate frame



- Beach towel



- Ceramic mug



- Other _____

Online submission form can be found [here](#)

Stimulating Sightings in Suffolk

-Submitted by Karen Akaratovic



These first two pictures are *Culex pipiens/quinqüefasciatus* females who have fed on a food-dyed sucrose solution in a gravid trap that is set out for a week at a time. We modeled this trap after an article we read in the fall 2017 edition of *Wing Beats* by Chip Hancock with Sarasota County Mosquito Management in Florida. Our own modified Reiter gravid traps were outfitted with a timer programmed to turn on during peak activity levels for this primary WNV vector. Interesting results were obtained during the 2018 trapping season. Make sure to attend the VMCA annual meeting in February 2019 to learn more!



This next picture is a *Psorophora columbiana* larva that was field collected at the end of June, 2018 from a tire rut on a residential property in southern Suffolk. It is well known that this species typically goes from first instar to pupa in less than a business week during those sizzling summer days so I thought it was pretty neat to see this specimen absolutely covered in algae or some other plant debris that seemed to be practically glowing neon green under my microscope!

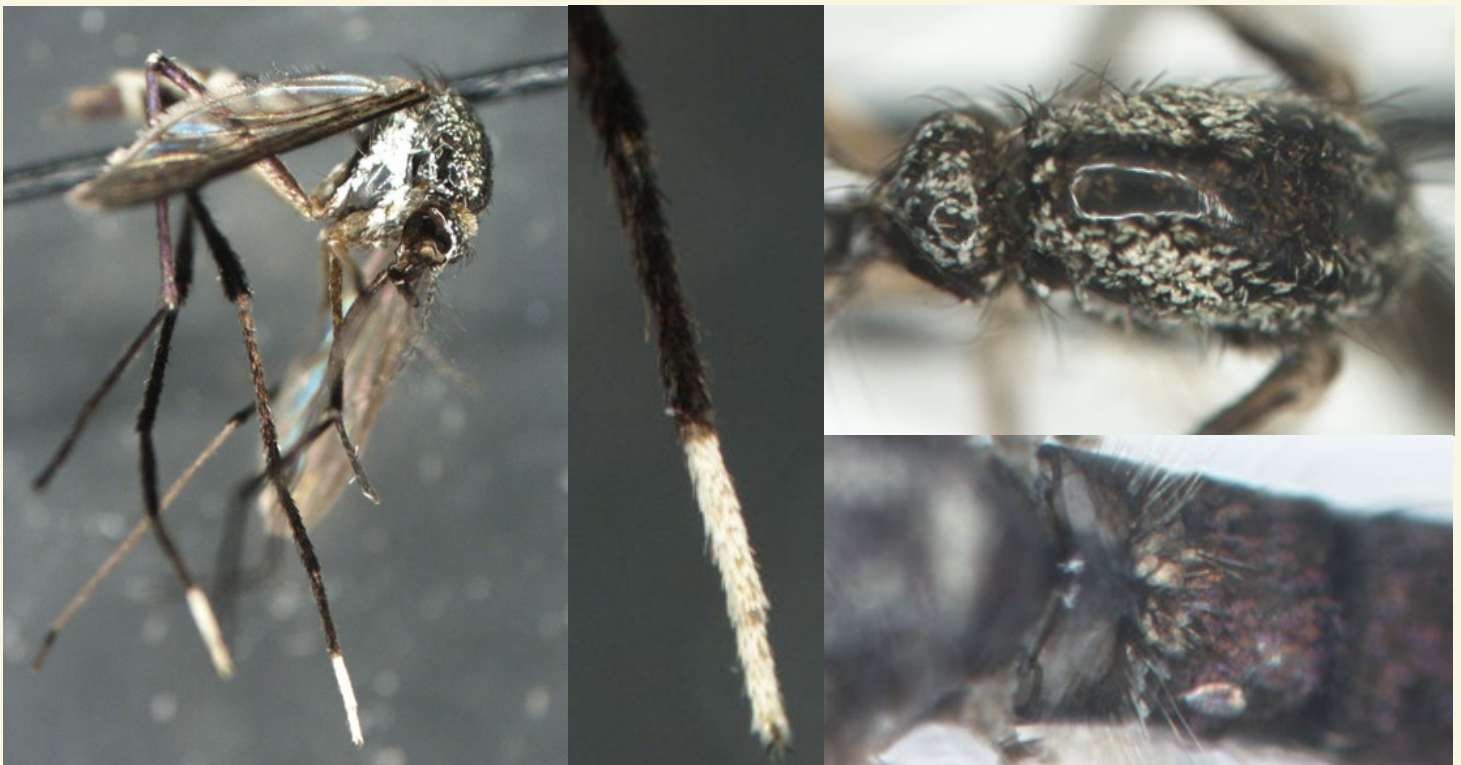
Year after year we find adult mosquitoes in our traps, usually females, that have mites attached in quantities ranging from a couple to over twenty! However, this was the first time any of us in Suffolk had ever seen mites on a larva. This *Anopheles quadrimaculatus* was found in early August 2018 and while we did not see active feeding by the mites, they were visibly disturbing the mosquito larva.

Watch the video [here!](#)

#parasitesonparasites



Next up is *Psorophora horrida*. This species was first collected in Virginia in 1904 and published in 1944 and is most likely quite widespread throughout the state. However, due to its morphological similarity to *Ps. ferox* and the fact that these temporary woodland pool species are generally trapped in considerably large quantities, specimens may be significantly rubbed or numbers so overwhelming that *Ps. horrida* are frequently overlooked. Suffolk has collected *Ps. ferox* every year where records exist, while *Ps. horrida* was only recorded in 2006 until this year. We collected 4 specimens in mid-June and 1 in mid-August, 2018. Note the pictures above showing close-ups of some key features: the distinct scutum pattern, abdominal tergum I with dorsal median patch of creamy white scales, and hindtarsomeres 4 and 5 all white.



Aedes tormentor is another species we've been collecting recently and were most likely misidentifying in the past as *Ae. atlanticus*, *Ae. infirmatus* or possibly even *Ae. dupreei*. Similar to the *Ps. ferox*/*Ps. horrida* situation, we usually collect *Ae. atlanticus* in such large numbers we did not take the time to devote a discerning eye for minor morphological variances. However, our biology technician, Ashley Byers, noticed its characteristic "eyeliner" head setae pattern in 2017 so we started taking a closer look and found 436 females, the bulk of which were collected July-September (compared to over 16,000 *Ae. atlanticus*). By 2018, we became much more efficient at separating *Ae. tormentor* from *Ae. atlanticus*, unless specimens were incredibly rubbed, and collected 619 mostly from June-August (compared to 8,600 *Ae. atlanticus*). While speciating the two species from a control perspective does not make much difference, as biologists, we thirst for knowledge and to be as accurate with our identifications as time will allow.



Asian Longhorned Tick Update

-Published by the CDC

What we know about Asian longhorned ticks

- Not normally found in the Western Hemisphere, these ticks were reported for the first time in the United States in 2017.
- Asian longhorned ticks have been found on pets, livestock, wildlife, and people.
- The female ticks can lay eggs and reproduce without mating.
- Up to thousands of ticks may be found at a time, or on an animal.

What we know about Asian longhorned ticks in the U.S.

- In other countries, bites from these ticks can make people and animals seriously ill. As of October 2, 2018, no harmful germs have been found in the ticks collected in the United States. Research is ongoing.
- Researchers are looking for these ticks to find out where they live.
- As of October 2, 2018, longhorned ticks have been found in Ark., Conn., Md., N.C., N.J., N.Y., Pa., Va., W.Va.

What you should do if you think you have found an Asian longhorned tick

- Remove any tick from people and animals as quickly as possible.
- Save the ticks in rubbing alcohol in a jar or a ziplock bag, then:
- Contact your health department about steps you can take to prevent tick bites and tickborne diseases.
- Contact a veterinarian for information about how to protect pets from ticks and tick bites.
- Contact your state agriculture department or local agricultural extension office about ticks on livestock or for tick identification.



Nymph and adult female, top view

More information can be found [here](#)

Spooky Spiders

-Submitted by Wes Robertson

As the month of October winds down many adults and children alike are anxiously awaiting October 31st, not just because it is the speculative end to mosquito season, but more so because it is Halloween. For so many, Halloween is synonymous with witches, goblins, ghosts, and interestingly spiders. In fact, it is the holiday's relationship with spiders that I find most fascinating. Given their general biological behavior why would spiders be so intimately associated with a such a late seasonal holiday? In general, most species of spiders have either begun their overwintering preparations or have died (there are always exceptions of course). More importantly, why did the symbolism of spiders withstand the lapse of so many centuries, cultural changes, and modernization?



Halloween's origins date back to the ancient Celtic festival of Samhain (pronounced sow-in). During this annual celebration people lit huge bonfires and adorned costumes to ward off ghosts. Over time, this Samhain ritual was assimilated into All Saints Day as Catholics adopted some of the ancient rituals into a three-day celebration. While all Saints Day is celebrated on November 1st, the evening before quickly became known as All Hallowe'en or holy evening. Cultural adaptation has since progressed the word into All Hallows Eve and later Halloween. This celebration eventually gained ground in Colonial America as millions of Irish fled their homeland during the Irish Potato Famine. Given their destitution these immigrants used the Irish/English tradition of Trick-or-Treat to go house to house to ask for food and/or money. This custom was combined with the more traditional use of ritualistic costumes which allowed immigrants to maintain modesty and adherence to their cultural roots.

One such root was the use of spiders as symbols of the Celtic culture and Westernized adaptation of Hallowe'en traditions. Like the bat, black cat, owl, witch, and pumpkin, spiders are frequently embodied in costumes and Halloween décor. Traditionally, spiders have symbolized mystery, power, and growth across cultures. The more direct lesson to contemplate is a spider's reflection on our own existence.

Many cultures, including some Native American, believe that as a spider weaves a web, it must make choices to keep the web strong and reliable against the elements and time. The web becomes emblematic of how we must

make choices when structuring our own lives. Cross-cultural thought seems to revert to the core principle that spiders represent how we must model our thinking to construct the life we desire. But, the lore of the Halloween spider does not stop there.



The weavers and webs have also become symbolic of time, fate, progress, and the representation that the human journey is very much physical, philosophical, and spiritual. An example of how spiders have intertwined with the spiritual is their representation of balance. Biologically spiders have 8 legs which promote balanced movement and help each species compensate for weaknesses such as poor eyesight. However, early civilizations were unconcerned with a biological purpose and saw 8 legs as purely symbolic. In ancient history the Arabic numeral - 8 evolved to encompass two equally constructed halves. These halves were believed to work in harmony granting the numeral a sense of balance. Evolution of numeral symbology interprets the modern 8 as more symbolic of mitosis. Much like the aforementioned lore, cell mitosis signifies the clarification of new life and the process of joining, dividing, and evolving into something more balanced. So how did this relationship with balance progress Halloween spider lore? The answer is quite simple. A spider's prowess for balance and web-weaving made them attractive tools to those who embarked on the practice of witchcraft, an art that was originally undertaken by those without the luxury of modern medicine. It was believed that a spider or spider web provided balance to any potion formulation. It was this link to witchcraft and the legends of Samhain witches that distorted people's opinions of spiders and has forever linked them with All Hallow Eve!



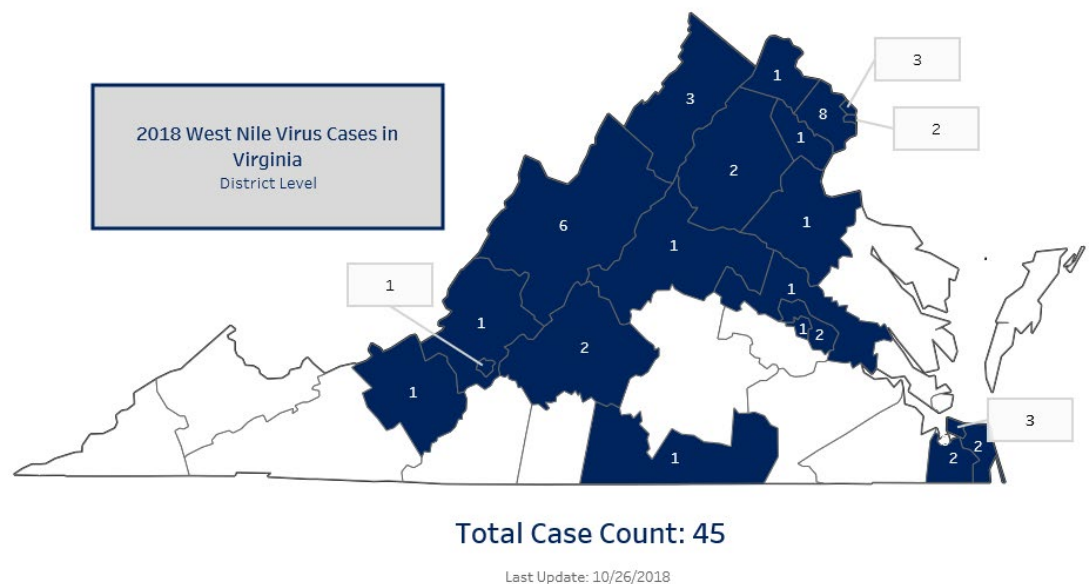
Record Number of WNV Cases in VA

-by Gordon Rago for the Virginian Pilot

October 5th, 2018: The first human case of West Nile virus in Virginia was recorded in 2002. Since then, the Commonwealth has had years in which it's seen up to 29 cases. But only until this year has that number been surpassed, the Virginia Health Department said this week. As of Friday, the department confirmed 38 cases of the virus being transmitted to a human. Two of those have led to fatalities, said David Gaines, a public health entomologist with the health department. Of the 38, six were cases right here in Hampton Roads – one in Virginia Beach, three in Norfolk and two in Chesapeake. Data on the health department's website will be updated each Friday until Oct. 31, the end of mosquito season.

More human transmissions are expected, Gaines said, attributing the spike in part to high temperatures the state saw over the summer. "One of the things that was an early clue that this would be a bad year was that we started seeing the first infected mosquitoes in June," Gaines said. The earlier there are infected mosquitoes – they get the virus from biting an infected bird – the more time there is for West Nile to build up in the mosquito population. If temperatures stay at about 75 degrees, Gaines explained, it may take a month or so for the virus to fully invade the mosquito's body and its salivary glands, making it infectious to anything it bites. But if it's 85 degrees or above, that time period is sharply dwindled to three days. Infection rates in mosquitoes this year were pretty high, Gaines said, about 1 1/2 mosquitoes out of every 100 were infected. Sometimes those rates can be double that.

Most of the human cases have been in the Shenandoah Valley and northern Virginia, but also in more urban places like Norfolk. That can be attributed to cities having several places with standing water, like in abandoned swimming pools or backyard containers, where mosquitoes like to lay their eggs. Of the 38 cases, most of the people have shown neurological symptoms, according to Gaines, who said patients can be hospital-bound for weeks or months with muscle weakness or respiratory failure. "The virus invades the spinal cord and gets into the brain and causes havoc," he said. People with the virus can show signs of struggling to speak or thinking correctly. Other symptoms include high fever, headaches and stiff necks. There is no vaccine for the virus. Hospitals can simply help patients with breathing difficulties or pain until the body's immune system beats the virus back. In previous years, some of the human cases included Virginians who had traveled out of state and gotten West Nile. This year? "As far as I can tell, all 38 cases are locally transmitted," Gaines said.



Original article can be found [here](#).

Above: 2018 WNV cases in the state of Virginia, reported by [VDH](#)

What's That? Answer



“That” is a *Uranotaenia sapphirina* adult feeding on an annelid worm. The host of this flashy mosquito species was unknown until biologist Lawrence Reeves set about observing its feeding habits in the dark, dense waterways of Florida’s River Styx. Read his fascinating ‘behind the scenes’ [blog post](#) on *Nature Ecology and Evolution* below, check out the published paper [here](#), and watch the worm feeding video [here](#).

Uranotaenia sapphirina is a charming mosquito that is common throughout eastern North America. It’s diminutive, even by mosquito-standards, and spotted with iridescent, sapphire-blue scales. This species is associated with freshwater wetlands, and, in these habitats, can reach high densities. Despite this, *Uranotaenia sapphirina* doesn’t irritate humans, except as a source of frustration among those who have studied its host-use patterns. The host animals of *Uranotaenia sapphirina* have been something of a mystery: females are often found with scarlet-red blood meals in their abdomens, in appearance, not unlike those of any other mosquito species. However, the molecular and serologic blood meal identification techniques used to identify the hosts of mosquitoes generally fail for this species.

Females of most mosquito species require proteins, obtained from the blood of a host animal, in order to complete the development of their eggs. Each mosquito species (and there are >3,550 of them) has unique host-use patterns, feeding from a distinct range of host animals. Some species are relative generalists that feed from various animal classes, while others specialize on particular host groups. For example, females of the mosquito *Culex erraticus* are rather opportunistic and take blood from mammals, birds, reptiles and amphibians, females of *Culex territans* take blood primarily from frogs and the occasional alligator or lizard, and females of *Aedes baisasi* take blood from amphibious fish.

Understanding mosquito host-use patterns is important: blood feeding by mosquitoes creates a network that enables pathogens to move between host animals and through ecosystems, potentially affecting humans or our associated pets and livestock. Knowing which mosquitoes feed from which hosts helps us to manage mosquito-borne pathogens, predict public health risks, and respond to emerging mosquito-associated pathogens.

To characterize the host-use patterns of mosquitoes, we use blood meal analysis – a collection of serologic and

molecular techniques that taxonomically identify a mosquito's host through its blood meal. Current blood meal analyses consist of a Jurassic Park-esque DNA extraction, PCR amplification of a barcoding gene, and DNA sequencing. By design, these methods target only vertebrate host taxa.

In the spring of 2015, Dr. Chris Holderman and I were Ph.D. students at the University of Florida Entomology and Nematology Department, both studying mosquitoes. In our research, we had both encountered blood fed *Uranotaenia sapphirina* in field collections of mosquitoes. Our curiosity with this species was piqued by a departmental seminar by Dr. Nathan Burkett-Cadena, in which he noted the mystery of *Uranotaenia sapphirina* host use. That seminar led to a collaborative effort to determine the host associations of *Uranotaenia sapphirina*.

We tinkered with several ideas:

Perhaps *Uranotaenia sapphirina* steals blood meals from other mosquitoes, and by the time we get mosquitoes collected and DNA extracted, the host DNA has been too severely degraded by digestion to be detected by PCR. We collected blood meals in the early morning hours, presumably shortly after they'd fed, and preserved the freshest specimens upon collection. No amplification.

Perhaps our primer sequences are mismatched with the annealing sites of the host taxa. We tried various primer sets used for blood meal analyses. No amplification.

Maybe the DNA concentration is too high? Or the MgCl₂? Or the annealing temperature? We adjusted all of these, stepwise. No amplification.

With nothing working, I looked into another thought: Maybe there was something in *Uranotaenia sapphirina* tissue that was inhibiting the PCR. I ran a series of PCRs with arthropod DNA barcoding primers. Each one amplified exactly as it should, indicating that something else was causing the problem.

If you go out at night looking, with a good headlamp, you can find mosquitoes feeding from their hosts. Calling frogs, sleeping birds and lizards, mammals, crocodilians, snakes – if you can quietly approach these animals without disturbing them, you may notice the mosquitoes. Knowing that female *Uranotaenia lowii* (the only other *Uranotaenia* species in Florida) are easily found feeding from their anuran hosts, I figured that if the lab work wasn't going to tell me anything, I'd try my luck with field observation, spend a night palling around with *Uranotaenia sapphirina* in a swamp, and maybe catch them in the act of feeding from a host.

The River Styx is a real place. It's in Florida. It's a densely vegetated waterway, habitat for cottonmouths, alligators, sirens, and amphiumas, flowing through cypress swamp and connecting Payne's Prairie to Orange Lake in Alachua County, just south of Gainesville. Marjorie Kinnan Rawlings wrote about the River Styx in her book, *Cross Creek*, but beyond that, it's known only to the locals who fish or frog there, and to a few plant, reptile, or bird nerds from the greater Gainesville area. It was my first real field spot, and since I learned to drive, I've been a regular – frequenting the River Styx and keeping tabs on its biodiversity and ecosystems, taking friends out for a night of calling in barred owls, hunting around for snakes, or collecting mosquitoes and other insects. Through these visits, I knew River Styx was a good place to start looking for *Uranotaenia sapphirina*.

It was September 12, 2015 when I'd run the PCR on *Uranotaenia sapphirina* blood meal DNA extracts using arthropod DNA barcoding primers. That evening, I picked up a double espresso and made my way south, out of Gainesville and across Payne's Prairie on US 441, turning east in Micanopy toward Cross Creek. It had been dark for an hour or so by the time I arrived. I pulled off the road and started poking around for mosquitoes and host animals. *Coquillettidia perturbans*, *Mansonia* spp. and *Culex erraticus* mosquitoes promptly found me. I walked toward the water's edge, camera in hand, scouring the edge of the swamp as I walked. I knew to look closely at the

herbaceous vegetation growing at the margins of the water.

There were a few *Uranotaenia sapphirina* in the muddy sand at the edge of the water. At first, I noticed just a handful of individuals, usually as they took flight, but as I developed a search image I realized I was right on top of a relatively large congregation of maybe a hundred. It wasn't apparent what they were doing, and at first it looked like they were just hanging around on the mud, ambling around a bit. I started snapping photos with a macro lens. I took a set of ten or twenty before reviewing the images. Some of the photos showed just a *Uranotaenia sapphirina* female standing in the mud, but others clearly showed them positioned squarely above some sort of partially submerged annelid, appearing as if their proboscises were in contact with the animal. My first thoughts were something along the lines of "these can't be the hosts we're chasing; mosquitoes feed from vertebrates; this is just some incidental thing; annelids don't have red blood? Do they?"

As it turns out, annelids have red blood. Reviewing more and more photos, it became obvious that this was not something incidental where the annelids and mosquitoes just enjoy the same microhabitat. They were interacting. The mosquitoes were ambling around in the mud, like mini roseate spoonbills, probing around with their proboscises. When they stumbled into a host, they began feeding. Once a photo clearly showed the reflexed proboscis of a mosquito touching a worm, stylets exposed, I knew that this was the answer: Our PCRs weren't working because, like everyone else performing blood meal analysis, we were using primers that parse vertebrate from invertebrate DNA templates, and these primers don't amplify annelid templates. Satisfied, I made a few excited phone calls from the bridge that crosses the River Styx, and headed back to Gainesville.

After identifying annelids as the putative primary hosts of *Uranotaenia sapphirina* through field observations, we then decided on a molecular route of quantifying their host-use patterns. We fished around trying to find primer sets that could amplify annelid, but not mosquito DNA, designed *Uranotaenia* blocking primers, but ultimately settled on an approach that used a primer designed de novo to avoid co-amplification of mosquito templates.

There are a lot of implications to recognizing annelids as the hosts of *Uranotaenia sapphirina*. I hope that with this recognition, researchers around the world will look closer at *Uranotaenia* species and their host-use patterns (and those of other mosquito genera). In the US, there are only three *Uranotaenia* species, but globally, and primarily in the tropics, there are 270 described species, and for the vast majority, nothing is known about their host-use. I think it will be especially interesting to see what these species are feeding on in tropical forests, and whether *Uranotaenia sapphirina* is an outlier or the norm for this genus.

This post was published first on the Nature Research Microbiology Community.



Merchandise Sales Continue!

*Didn't get what you wanted at the VMCA Annual Meeting?
Couldn't attend due to weather, funding, time?*

There's still time to get all that mosquito swag you just have to have!



**Black t-shirt with
Aedes albopictus
design**
\$5



**Gray t-shirt with
2018 MAMCA/
VMCA design**
\$10



**2018 VMCA
lettered t-shirt
design**
\$15



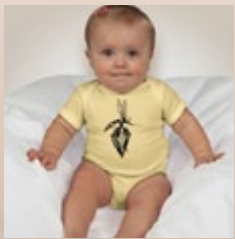
**Gray Aedes
albopictus pullover
hoodie**
\$15



**Gray zip-up hoodie
with 2018 MAMCA/
VMCA design**
\$20



**2018 VMCA
pullover hoodie
with flying
mosquito design**
\$25



**2017 MAMCA/
VMCA yellow
onesie**
\$5



**VMCA pint glass
with Aedes
albopictus design**
**\$6
2 for \$10**



**Green reusable
tote bag with
VMCA logo**
**\$1
Free with \$50
purchase**



**Blue can coolie with
mosquito
silhouette**
\$2



**Black leatherette
portfolio with
VMCA design (pad
& pen
included)**
\$5



**2017 MAMCA/
VMCA tumbler**
\$8



**2018 VMCA
lettered logo
cork coaster set**
\$4



**VMCA sticker with
Aedes albopictus
design**
\$.50



**Black/white
VMCA logo pen**
\$.25

The Merchandise Committee is continuing to sell the items listed through local pickup or shipment. If you have any questions or are interested in purchasing something, please contact VMCA Merchandise Chair, Tim DuBois (duboist@portsmouthva.gov). Payments can be made by cash (local pickup only), check, or credit card. Shipping will be paid by the purchaser and will be done through the lowest cost method (unless otherwise requested). This information is also available [online](#).

Proposed Changes to VMCA ByLaws

-Submitted by Bylaws Committee Chair Jay Kiser

VIRGINIA MOSQUITO CONTROL ASSOCIATION BYLAWS

Article I Name

The name of the association is the Virginia Mosquito Control Association, hereinafter referred to as the VMCA.

Article II Purpose

The purpose of the VMCA is to promote environmentally sound mosquito control practices in Virginia; to keep abreast of developments and methods; to disseminate information and provide training to association members and other interested parties, to educate the general public and unite common interests and objectives to further professionalism in the control of mosquitoes.

Article III Geographical Scope and Principal Office

Section 1. Geographical scope:

The VMCA shall serve all counties and municipalities in the Commonwealth of Virginia

Section 2. Office:

The principal office of the VMCA shall be designated annually by the executive committee.

Article IV Membership and Dues

The VMCA shall be a membership based association. The executive committee shall make provision for membership and provide for the eligibility standards, dues payment schedules and methods, termination process, honorary memberships and other provisions as deemed appropriate. The executive committee shall reserve the right to reject an applicant whose interests are not in keeping with those of the VMCA. Rejection of an applicant will be upon the recommendation of the executive committee and on approval by two thirds of the members present at the annual meeting.

Section 1. Membership categories are based on entitlements and fee requirements.

A. **Regular Member** – Anyone concerned with or interested in mosquito control and related work or desiring to participate in the promotion and improvement of such work, may become a member of the VMCA by filing an application and paying any dues owing.

Regular members shall pay annual dues set by the executive committee, receive the VMCA newsletter, be exclusively entitled to hold office, may serve on committees, propose motions, vote, and participate at officially called business meetings.

B. **Associate Member** – Anyone concerned with or interested in mosquito control and related work or desiring to participate in the promotion and improvement of such work, may become an associate member of the VMCA by filing an application and paying any dues owing.

Associate members shall pay annual dues set by the executive committee, receive the VMCA newsletter and enjoy the same privileges as regular members, except they shall not have voting privileges or hold office.

C. **Student Member** – An undergraduate or graduate student enrolled in an accredited college or university and taking at least one-half full schedule, is eligible for student membership. A student must be certified as meeting these requirements by the department head or major advisor. This must be done at the time of application and at each renewal date.

Student members shall pay annual dues as set by the executive committee, receive the VMCA newsletter and enjoy the same

privileges and carry the same responsibilities as regular members, with the exception of holding office and voting.

D. **Sustaining Members** – Any agency, company, or individual interested in furthering the efforts of the VMCA may become a sustaining member upon an annual lump sum payment set by the executive committee. Each sustaining member qualifies for a display area at the annual meeting, one (1) full meeting registration, and a listing in all publications. This class of membership is entitled to one active membership and one vote.

E. **Honorary Member** – Any individual who has rendered exceptionally distinguished service in the field of mosquito control and related work may be accorded special recognition by election to honorary membership in the VMCA. Nomination for this honor must be justified in writing and submitted to the executive committee for review. The executive committee shall be required to vote unanimously to confirm the honorary membership nominee. Honorary members shall receive the VMCA newsletter, pay no dues and enjoy the same privileges as regular members.

Section 2. Fiscal Year and Dues

A. The [VMCA](#) fiscal year ~~is shall be defined as from~~ January 1 to December 31.

B. Membership dues are payable on or before the annual meeting date. Any unpaid dues shall be declared in arrears, and the delinquent member shall not ~~be~~ in good standing.

[C. An annual membership's duration will be defined within a VMCA fiscal year; January 1 to December 31. If a membership is obtained after January 1 for that year, it will similarly conclude on December 31.](#)

Article V Officers and Committees

Section 1. Officers

A. The association officers shall consist of the president, president elect, vice president, first vice president, secretary/treasurer, ~~and current past president~~ [and industry representative](#). ~~The MAMCA representative, Sustaining member/Industry representative and TMVCC chairperson are special non-voting officers.~~

B. The president, president elect, vice president and first vice president shall serve until elections the following year.

C. The secretary/treasurer [and industry representative](#) will serve a two-year term.

In case of a vacancy or if an officer is unable to fulfill the duties of the office of president, president elect, or vice president, the next officer in progression would ascend to the vacated office as decided by the executive committee. In case of a vacancy or if an officer is unable to fulfill the duties of secretary/treasurer, ~~or first vice president, or industry representative~~, the executive committee can appoint a person(s) to serve until the next elections. The executive committee shall notify the membership in writing of any changes.

[D. MAMCA representative will serve a three year term. The MAMCA representative will be selected by individuals that are members of both VMCA and MAMCA.](#)

[E. TMVCC representative will serve a one year term. They will be selected by the TMVCC suborganization](#)

Section 2. Executive Committee

A. Members of the executive committee shall consist of the president, president elect, vice president, first vice president, secretary/treasurer, ~~and the current past president~~, [and the industry Representative](#). The MAMCA representative and the TMVCC chairperson are special non-voting members.

B. The committee will conduct a business meeting at least every three months as scheduled by the chairperson (president). At such meetings the members present shall exercise all of the powers of the VMCA between annual meetings. At least one-half of the members of the committee shall be present to constitute a quorum for an executive meeting.

Section 3. Other Committees, Designation and Appointment

A. Committees, whether they are standing or ad hoc, shall be designated by the president with the approval of the executive committee to carry on the affairs of the VMCA. They shall include but may not be limited to the following committees with specified responsibilities: information (VMCA Newsletter), Public relations ([setting up mosquito awareness week Poster contest/ Science Fair](#)), photography ([photograph](#) special activities and awards), education (certification and recertification), ~~Chemical Review (Joint Pesticide Purchase)~~; audit (financial records), historian ([document](#) significant [historical](#) events), awards ~~and Decorations~~ (recognition), annual meeting (facility and arrangements), program (annual meeting agenda), commercial planning (annual meeting vendors) ~~and~~ nominating ([new](#) officers), ~~and~~ membership committee (enhance membership), ~~and Standing Advisory Committee (Dispense advice)~~.

B. The Chairperson for each committee shall be appointed by the president and that individual shall choose its members from the VMCA membership. The only exception is that all nominating committee members shall be appointed by the president and approved by the majority of the executive committee. The current past president shall be its chairperson.

C. The President is an ex-officio member of all committees except the nominating committee. [The president will be in charge of the elections process and oversee the counting of ballots after the election.](#)

Article VI Duties of Officers and [Executive](#) Committee Members

Section 1. The president of the VMCA shall be chairperson of the executive committee and shall have the usual responsibilities and powers of supervision and management and such other powers as are specified in the bylaws. The following are specific duties.

- A. Attend and preside at all executive and annual meetings of the VMCA
- B. Present questions concerning policy for the consideration of the committee
- C. Serve as the official spokesperson for the VMCA
- D. Call special meetings and initiate special actions by correspondence or other means
- E. Establish association goals for attainment

Section 2. The president elect shall preside in the absence of the president and shall assist the president whenever requested.

Section 3. The vice president and first vice president shall assist the president and president elect with duties of their offices as directed.

Section 4. The secretary/treasurer shall have the following duties:

- A. Record and maintain all meeting minutes
- B. Prepare and submit expenditure reports as required
- C. Record all monies paid and disbursed by the VMCA
- D. Submit to the membership an annual financial statement for the current year together with the audit report.
- E. Expend funds for routine operations with the approval of the president
- F. Prepare, with input from the executive committee, a proposed budget for the next fiscal year and perform other duties relating to the office as may be necessary.

Section 5. The past president shall assist the president in any other capacity as requested.

Section 6. [The industry representative shall serve as the liaison between the sustaining membership and VMCA Executive Board.](#)

Section 76. The VMCA representative to the MAMCA will serve as the liaison for the state association on matters of mutual

concern.

~~Section 8. [The TMVCC Chairperson will serve as liaison between the TMVCC and the VMCA Executive Board.](#)~~

Article VII. **Nomination and Election of Officers**

- Section 1.** Nominating committee. The nominating committee shall be established annually and will be chaired by the current or serving past president.
- Section 2.** The nominating committee shall submit to the executive committee its nomination(s) for each office to be filled in the ensuing year. All nominations, including write-in candidates, shall carry the consent of the nominee and assurance that they will serve if elected.
- Section 3.** The nominating committee chairperson shall prepare an election ballot containing the names of the nominees for offices with space for write-in candidates for each office. The ballot shall:
- A. Be reviewed and approved by the VMCA Executive Board and sent to all voting members at least six weeks prior to the annual meeting.
 - B. Automatically contain the name of the president elect as a nominee for the office of president.
 - C. Contain at least two qualified candidates for the office of first vice president.
 - ~~D. [Contain at least one qualified candidate for the office of secretary/treasurer every two years.](#)~~
 - ~~E. [Contain at least one qualified candidate from the sustaining membership to serve as the industry representative every two years.](#)~~
 - ~~D E.~~ Voting must be completed before 5:00 PM the day before the annual business meeting.

~~Section 4. [Eligible voters for the elections above will consist of the VMCA members in good standing during the fiscal year or years in which voting is to take place.](#) New voting members or voting members who have not completed the voting process will be able to do so at the annual meeting. In the case of a tie for any elected office, the election shall be decided by the majority vote of the voting members present at the annual business meeting. There will be no nominations from the floor during the business meeting.~~

~~Section 4. [The sustaining members shall select a representative to sit on the Executive Board for a two-year term.](#)~~

Article VIII. **Annual Meeting**

- Section 1.** Annual Meeting. The VMCA shall hold an annual meeting at a place and date which shall be determined by the executive committee. It will be announced through the VMCA newsletter not less than six months before the established date. The meeting shall be open to registrants; however only VMCA members in good standing shall be eligible to attend business meetings.

Article IX **Publications**

- Section 1.** Publications. The VMCA shall publish the newsletter "Skeeter" as its official publication. The newsletter shall be published quarterly or more often as circumstances dictate or as the executive committee may authorize.
- Section 2.** Editor. The president, with approval of the executive committee, shall appoint the editor of the VMCA newsletter.

Article X **Funds**

- Section 1.** Funds are necessary for the routine operation of the association. The secretary/treasurer, with the approval of the president, may expend up to \$100 for needed administrative supplies. Any expenditure exceeding this

amount must be approved by the executive committee.

Section 2. Non-routine expenditures of association funds may be made with the approval of the executive committee.

Section 3. In the event that the VMCA is dissolved, the funds remaining after payment of all debts will be given to an appropriately recognized (by the Internal Revenue Service) non-profit organization to be determined by a majority of the last executive committee.

Article XI Audit

Section 1. The financial records of the VMCA will be audited by the audit committee on an annual basis prior to the annual business meeting.

Section 2. The president will appoint a committee of three voting members not presently serving on the executive committee to conduct the audit of the association financial records.

Article XII Parliamentary Authority

The rules outlined in Roberts "Parliamentary Law" and Roberts "Rules of Order" shall govern VMCA procedure in all instances where they are applicable.

Article XIII Amendments to the Bylaws

Section 1. Any proposal to amend the bylaws shall be submitted to the president at least four months prior to the date of the annual meeting. The president will subsequently submit this to the members of the executive committee for review. The recommendation report will be sent to each VMCA member at least thirty days prior to the annual business meeting. A two-thirds vote of the members present shall be needed for approval.

Section 2. An existing bylaw may be repealed by passing a bylaw to this effect.

~~Article XIV Joint Pesticide Purchase Plan~~

~~The joint pesticide purchase plan is no longer used. Pesticides can be purchased off the state bid (www.eva.state.va.us/contracts/contracts/htm):~~

~~Article XV~~ XIV Permanent Sub Organization

The Tidewater Mosquito and Vector Control Council (TMVCC) is a permanent sub-organization of the VMCA. As such its officers are required to be regular members of the VMCA. The VMCA will provide funding for administrative supplies, postage, and luncheon for guest speakers.

2018 VMCA Committee List

[Table of Contents](#)

The VMCA is successful because its members get involved in the operations of the association. Below are the current committees and their chairs. Please join a committee by contacting any executive board member listed on the last page of this edition of The Skeeter!

Committee	Chair(s)	Members	Projects
Annual Meeting (Local Arrangements)	Tim DuBois	Luz Grant, Ann Herring, Lisa Wagenbrenner, Charles Abadam	Decides location of future meetings
Annual Meeting (Program/Agenda)	LaToya White	Mitch Burcham, Jay Kiser	Organize annual meeting program
Annual Meeting (Vendor Planning)	Ted Bean	George Wojcik	Vendor correspondence/setup
Audit	Mitch Burcham	Penelope Smelser, Chris DeHart	Annual audit of financial record
Bylaws	Jay Kiser	Luz Grant, Charles Abadam	Bylaw revision/maintenance
Education	Karen Akaratovic, Lisa Wagenbrenner	Ann Herring, Jennifer Barritt, Wes Robertson, Jay Kiser	Recertification, Adult ID course
Elections	George Wojcik	Penelope Smelser	Sets up online voting, sends out voter information, counts votes, announces winners during annual business meeting
Historian	Tim DuBois	John Orr	Historical Archives
Hospitality Room	Ann Herring	Luz Grant	Annual meeting hospitality room
Information	Rachel Kempf, Karen Akaratovic	Eli Hosen, Janice Gardner, Wes Robertson, Charles Abadam, Tim DuBois	The Skeeter, Facebook, Instagram
Legislative	Randy Buchanan		NPDES, VPDES, PESP
Membership	Jay Kiser	Ann Herring	Keeps updated list of membership
Merchandise	Tim DuBois	Lisa Wagenbrenner, Ann Herring, Penelope Smelser Rachel Kempf, Karen Akaratovic	Coordinating sales merchandise for annual meeting
Nominating	Jeff Hottenstein		Finds candidates for election, prepares/gathers profiles of nominees for ballots
Photography	Janice Gardner	Rachel Kempf	Takes photos of VMCA-related events for website, The Skeeter, Facebook, and Instagram
Public Relations	Ann Herring		Mosquito Awareness Week/Outreach & Education
Special Awards	Jennifer Barritt		Annual meeting awards– R.E. Dorer, Outstanding Service
Student Competition	Jay Kiser	Ann Herring, Ashley Byers, John Orr, Wes Robertson, Karen Akaratovic, Francis Valera, Charles Abadam, Dennis Salmen	Organizes a student research/poster project competition with an award to be given at the annual meeting, raises funds for award
Technical Support	Charles Abadam	Eli Hosen	Maintains/advises on VMCA hardware/software; operates computer/projector during annual meeting
Website	Penelope Smelser	Charles Abadam, Karen Akaratovic	Maintains/revises website

2018 Sustaining Members

The VMCA gratefully acknowledges the support of the following sustaining members for 2018. 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!



Bayer Environmental Science



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Virginia Mosquito Control Jurisdictions & Other Resources

As a result of revisions to the VMCA By-Laws, the organizational member category was eliminated. In order to facilitate communication among mosquito control programs, jurisdictions with known mosquito and vector control programs are listed below. If there are other jurisdictions that should be listed, please submit them to the editor.

Virginia Mosquito Control Jurisdictions

[Alexandria Health Department](#)

Boykins, Town of

[Chesapeake Mosquito Control Commission](#)

[Chincoteague Mosquito Control](#)

[Fairfax County Health Department](#)

Fort Eustis

[Gloucester County Mosquito Control](#)

[Hampton Environmental Services](#)

[Henrico County](#)

[Newport News Vector Control](#)

[Norfolk Vector Control](#)

[Poquoson Mosquito and Drainage](#)

[Portsmouth Mosquito Control](#)

[Prince William County Mosquito & Forest Pest Management](#)

[Suffolk Mosquito Control](#)

US Air Force / Langley Air Force Base

[Virginia Beach Mosquito Control](#)

[Williamsburg Mosquito Control](#)

[York County Mosquito Control](#)

Other Mosquito Control Organizations

[American Mosquito Control Association](#)

[Mid-Atlantic Mosquito Control Association](#)

Other Resources

[Virginia Department of Health](#)

[Centers for Disease Control & Prevention](#)

[Fairfax County Education and Outreach Materials](#)

Wanted: Submissions!

Do you have information you'd like to include in the next issue of The Skeeter or a photo you'd like to share? We are always looking for organizational updates, operational news, education and outreach activities, pictures, stories, and anything remotely vector-related to include in upcoming newsletters as well as on [Facebook](#) and [Instagram](#).

Please send all items to the Skeeter editor, Rachel Kempf at rkempf@pwcgov.org

THE SKEETER

Newsletter of the [Virginia Mosquito Control Association](#)

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Editorial Review :
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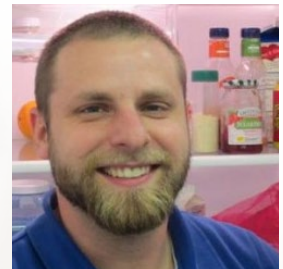
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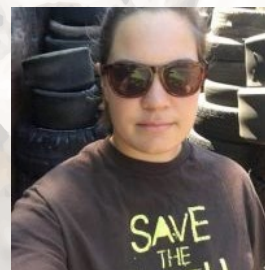
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Take the time to volunteer on a committee! An active membership makes for a stronger organization. Contact anyone on the Board to participate.

The Skeeter is the official production of the Virginia Mosquito Control Association. The VMCA membership is encouraged to submit articles, reviews, and any other interesting facts or tidbits for publication. Submissions can be sent to Rachel Kempf at rkempf@pwcgov.org or Karen Akaratovic at kakaratovic@suffolkva.us