



The Skeeter

Volume 67, No. 4

December 2007

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President's Message

I am honored to serve as President of the Virginia Mosquito Control Association for 2008. As a new comer to the organization I am grateful for the continuous support and dedication of our membership who are the heart of this truly exceptional organization. Thank you all for sharing your time and expertise for the good of this organization through your participation in the VMCA executive board or committees, annual meetings, recertification or mosquito identification courses, and the Skeeter publication. We can't do it without you!

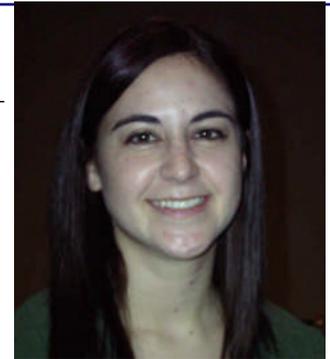
This year is already off to a great start with what was another outstanding annual meeting. The diversity of attendees and presenters really reflects our well-rounded membership comprised of experienced mosquito control and public health professionals, field personnel, research scientists, and industry representatives. Thank you to all of our presenters and everyone who helped put the meeting together.

The VMCA is pleased to announce that Virginia will be hosting the 2009 Annual Meeting of the Mid-Atlantic Mosquito Control Association. Our very own George Wojcik, who serves as Vice President of MAMCA, will be working closely with Kirby Foley, our newly appointed Virginia State Director, to organize the meeting for late February in Virginia Beach. The VMCA Executive Board is excited to be working with a seasoned mosquito control professional like Kirby. The VMCA annual meeting will be held as usual the first week of February in Williamsburg.

I encourage members that are interested in assisting with local arrangements for the MAMCA meeting to contact George or Kirby. In addition, we are always looking for members to participate in the organizational committees that keep this organization going. Information about the committees is provided in this edition of the Skeeter. Please contact any member of the board for additional information or to volunteer. Remember, the VMCA is your organization and the Executive Board is interested in your feedback so we can better serve our membership.

Mosquito season is upon us and I wish you all great success in managing mosquitoes and the diseases they carry. I am excited for all that is ahead for the VMCA in 2008 and look forward to working with each of you.

Jennifer S. Armistead
President, VMCA



**Jennifer Armistead,
VMCA President 2008**

2008 Awards

Jo Ann Beasley awarded Honorary Membership in the VMCA

It would be hard to find a document or event that does not have Jo Ann's involvement. Jo Ann's tireless dedication and commitment to the VMCA has brought considerable stability and continuity for over two decades. She also has the distinct honor of being the longest consecutive serving board member in recent history.

Thank you for all of your hard work and dedication to the VMCA.



Tom Gallagher awarded Honorary Membership in the VMCA

Tom has the VMCA in his heart and mind and his every effort is for the betterment of the association. Tom's list of accomplishments includes: Active AMCA member for nearly two decades, Past president of the Mid Atlantic Mosquito Control Association, A two time past president of the VMC, Active participant and committee chair for numerous committees over the past two decades, most recently provided a key contribution to the draft VMCA manual.

For his dedication to the organization, honorable representation of mosquito control profession in local, state, and national affairs Tom has been awarded Honorary Membership in the VMCA.



Chesapeake Mosquito Control Commission receives Outstanding Service Award

The Chesapeake Mosquito Control Commission has supported and promoted the Virginia Mosquito Control Association for over 20 years. The Commission has hosted the annual TMVCC luncheon for several years supplying personnel to arrange and set up facilities. Supported personnel to arrange and participate in recertification and certification courses. Supported personnel on various committees and on the executive board. The Commission served as the official business address and/or headquarters for the Virginia Mosquito Control Association and housed VMCA property for approximately 20 years.

June 1, 2007 VMCA official address was changed however, the Commission continues to support the VMCA with their personnel's time and talents.



Clem Morrissey receives Outstanding Service Award

Clem received a outstanding service award for all of his help the past few years manning the registration table at the annual meeting. If that were not enough Clem has been a key player in the selling shirts and sweatshirts at the annual meeting. Each year Clem would come to the meeting and ask "What can I do?" Shortly there after Clem would say "I'll take care of that" and he would, every time.

Thank You Clem for all of your hard work and dedication.



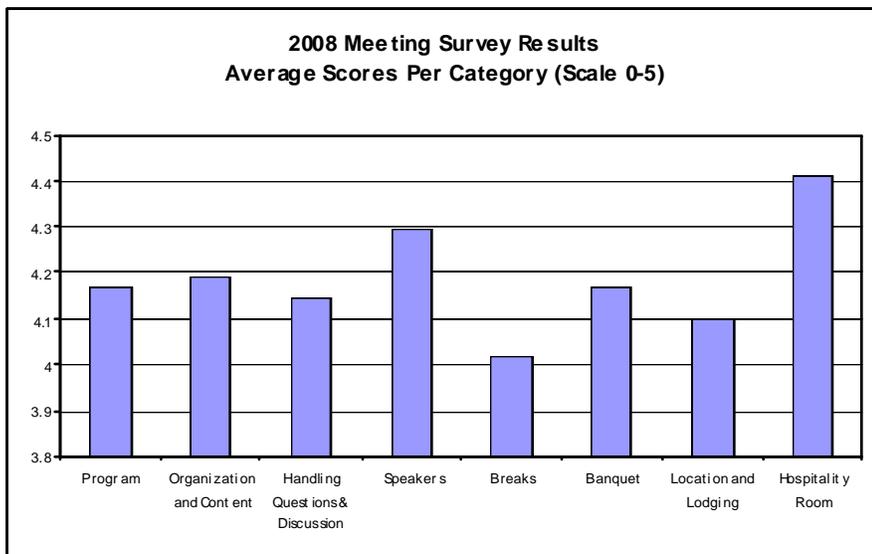
2008 Meeting Wrap Up

The 2007 Annual Meeting was a great success. There were 144 registered for the meeting (including speakers). Membership totals are:

- 13 sustaining members
- 92 regular members
- 82 associate members
- 16 organizational members
- 2 student members

(Meeting Presentations) Most presentations are available for distribution, contact Jason Williams at 757-637-3932 if interested.

Digital Images provided by Carl Sivertsen, Fairfax Co.; Mike Harrison, City of Portsmouth; and Beverly Holmberg, Middlesex Co.



54 out of 144 registered attendees completed and returned a survey. The chart is a summary of the average score for each item rated. Please note that not all 54 surveys contained a score for all categories.

Thank you to Brian Prendergast for preparing the survey summary this year.



Announcements

- April 22-23** Larval ID Course Salisbury, NC (Instructor: Parker Whitt)
- May 21-22** Adult ID Course Goose Creek State Park Washington, NC (Instructor: Parker Whitt For more information, parker.whitt@ncmail.net 336-771-5361)
- May 5 - 7** AMCA 10th Annual Spring Washington Conference
- May 21** Calibration Rodeo (James City County, VA)
- May 28, 29** Adult Mosquito Identification (Suffolk, VA)

The VMCA is dependant on its members to get things done. Take the time to volunteer for a committee in 2008. Your meeting registration packets will contain a form you can use to sign up for a committee. You can also contact any board member or committee chair at any time to participate.

Virginia State Pesticide Bids Are In

The pesticide bids are in and awarded. For more information check out Virginia Department of General Services web site.

<http://dps.dgs.virginia.gov/DPS/contracts/contractpathe.asp?ContractNumber=PF%2D21398>

Board Meeting Minutes To Be Posted On The Web

The issue of printing the board meeting minutes in the Skeeter was brought up at the annual meeting. The board thoroughly discussed this issue at the last board meeting. The VMCA board minutes will not be posted in the Skeeter due to the fact the Skeeter is only published quarterly. Instead the board voted to post approved minutes (minutes are approved at each board meeting) on the web site as soon as possible. Web updates can be performed at any time thus providing the quickest way to make the board minutes available to the membership.

The VMCA organization has a new mailing address, make sure you send all forms to the proper address.

Virginia Mosquito Control Association
Jo Ann Beasley, Secretary/Treasure
508 Whitehaven Crescent
Chesapeake, VA 23325

A special thanks goes out to all of our sustaining members for 2008. Without their generous contributions much of what we do would not be possible. Please do not hesitate to contact any of the sustaining members, they are here to help you.

Virginia Mosquito Control Association 2008 Sustaining Members

Adapco, Inc.
Ted Bean
385 Wilsey Road Franklin, PA
800-220-0882
tbean@myadapco.com

AMVAC Chemical

Jeffrey Alvis
804 Weybridge Lane Keller, TX
76248
(817) 742-7423
jeffreya@amvac.net

Bayer Environmental Science

Joe Barile
2 T.W. Alexander Drive
RTP, NC 27709
(772) 508-339-2792
joe.barile@bayercropscience.com

Central Life Sciences/Zoecon

Charlie Pate
88 Whitney Street
Eatonton, GA 31024
(706) 338-4734
cpate@central.com

**Clarke Mosquito
Control Products**

Jeff Hottenstein
159 North Garden Ave
Roselle, IL 60172
(800) 323-5727; Cell (703) 498-9362
jeffhottenstein@clarkemosquito.com

Crabbe Aviation LLC

Matt Crabbe
P.O. Box 534
Mechanicsville, VA 23111
(804)334-7370; Fax (804)779-3559
Crabbe3@prodigy.net

Dynamic Aviation Group, Inc.

Caleb Stitely
P.O. Box 7 1402 Airport Road
Bridgewater, VA 22812
(540) 828-6070
cstitely@dynamicaviation.com

Nikon Instruments, Inc

Doug Hill
2816 Dover Hunt Place
Richmond, VA 23233
(804) 512-2676; Fax (804) 762-4968
dhill@nikon.net

Southwest Assurance Corp

Katherine Reimann, CIC
3101 W Martin Luther King Blvd
Tampa, FL 33607
(813) 222-4025; Fax (813) 222-4040
kreimann@bbprograms.com

Summit Chemical Company

Zachary Cohen
235 S. Kresson Street
Baltimore, MD 21224
(410) 522-0661; Fax (410) 522-0833
zcohen@summitchemical.com

True North Mapping, Inc

Suzanne Luinis
31 Home Depot Drive #165
Plymouth, MA 02360
(781-710-8933
Suzanne@tnmapping.com

Univar USA

Joe Andrews
P.O. Box 177
Mars Hill, NC 28754
(252) 342-4651; Fax (828) 689-9139
Joe.Andrews@univarusa.com

Valent Bio Science

Jim Andrews
4908 Wedgefield Drive
Wilmington, NC 28409
(847) 778-8673; Fax (910) 392-7621
JamesAndrews@valent.com

MOSQUITO SURVEILLANCE AND IDENTIFICATION COURSE

INFORMATION SHEET

Course Title: Mosquito Surveillance and Identification Course

*Instructor: **David N. Gaines, PhD** – Virginia Dept. of Health
Bruce A. Harrison, PhD – N.C. Dept. Environ. & Nat. Resources*

Sponsor: Virginia Mosquito Control Association (VMCA)

Course Date: May 28 & 29, 2008

Location: Tidewater Agricultural Research and Extension Center, Holland, VA (8 mi. West of Suffolk City on Rt. 58)

Capacity: 20 students

Requirements:

Organizational members will have the first option to send an attendee.

Individual attendees should have mosquito surveillance and/or identification in their job description and duties. Prior experience with microscope and background in biology preferred.

Application and payment must be received by May 16, 2008

*Course Fee: \$70.00 - Virginia Mosquito Control Association members
\$75.00 - Non-members*

Course fee includes all training materials

Payment and/or arrangement for payment must be made before May 16, 2008. Contact Jo Ann Beasley, VMCA Secretary/Treasurer at 757-523-5224 or cell number 757-508-5224.



Mosquito Surveillance and Identification Course
May 28th and 29th, 2008 Tidewater Agricultural Research and Extension Center
Holland, VA (8 mi. West of Suffolk City on Rt. 58)

Schedule – Wednesday, May 28th

- 8:00 – 8:30 AM – Course Registration: Course Fee \$75
- 8:30 – 9:30 AM – Lecture/slides on WNV, mosquito biology, and mosquito surveillance
- 9:30 – 9:40 AM – Break
- 9:40 – 10:10 AM – Lecture/slides on mosquito taxonomy and identification.
- 10:10 – 11:00 AM – Use of microscopes to identify unknown adult mosquito specimens to
- 11:00 – 11:15 AM – Break
- 11:15 – 12:30 PM – Use of Microscopes to identify unknown adult mosquito specimens to
- 12:30 – 13:30 PM – Lunch
- 13:30 – 14:30 PM – Use of Microscopes to identify unknown adult mosquito specimens to
- 14:30 – 14:45 PM – Break
- 14:45 – 15:30 PM – Use of microscopes to identify unknown mosquito specimens to species
- 15:30 – 17:00 PM – Field Trip to set CDC-Light and Gravid Traps
- 17:00 PM – End of first day class

Schedule – Thursday, May 29th

Thursday's activities involve some field studies. Please dress appropriately; wear rugged clothing and shoes that are water resistant or that you don't mind getting dirty. Bring rain gear just in case. If you have a shoulder bag that can be used for fieldwork, it will make your larval surveillance exercise easier. Bring a canteen, or other source of drinking water

- 8:30 – 9:30 AM – Dr. Harrison – Lecture on the “Field Identification of Larvae” and “Knowing Larvae at the Generic Level”.
- 9:30 AM – 12:30 PM – Field trip to recover traps and trapped mosquitoes and field workshop on larval mosquito surveillance techniques and identification of larval growth stages.
- 12:30 – 13:00 PM – Return to the Laboratory.
- 13:00 – 13:30 PM – Lunch
- 13:30 – 15:00 PM – Use of microscopes to identify unknown mosquito specimens to species level.
- 15:00 – 15:10 PM – Break
- 15:10 – 17:00 PM – Use of microscopes to identify freshly trapped adult mosquitoes to species level.
- 17:00 PM – Class over

Course Location

The Mosquito ID Class will be held at the Tidewater Agricultural Research and Extension Center (TAREC) near Holland, VA. The TAREC facility is 8 miles west of the city of Suffolk on Rt. 58 [on the south side of road just east of Holland] (See Map below). The class will be held in the TAREC facility’s auditorium. Ample parking space is available in the lot just in front of the building.

Overnight Accommodations

For those who are traveling from distant locations, hotel/motel accommodations may be necessary. A selection of four of the local accommodations within the Suffolk area are as follows:

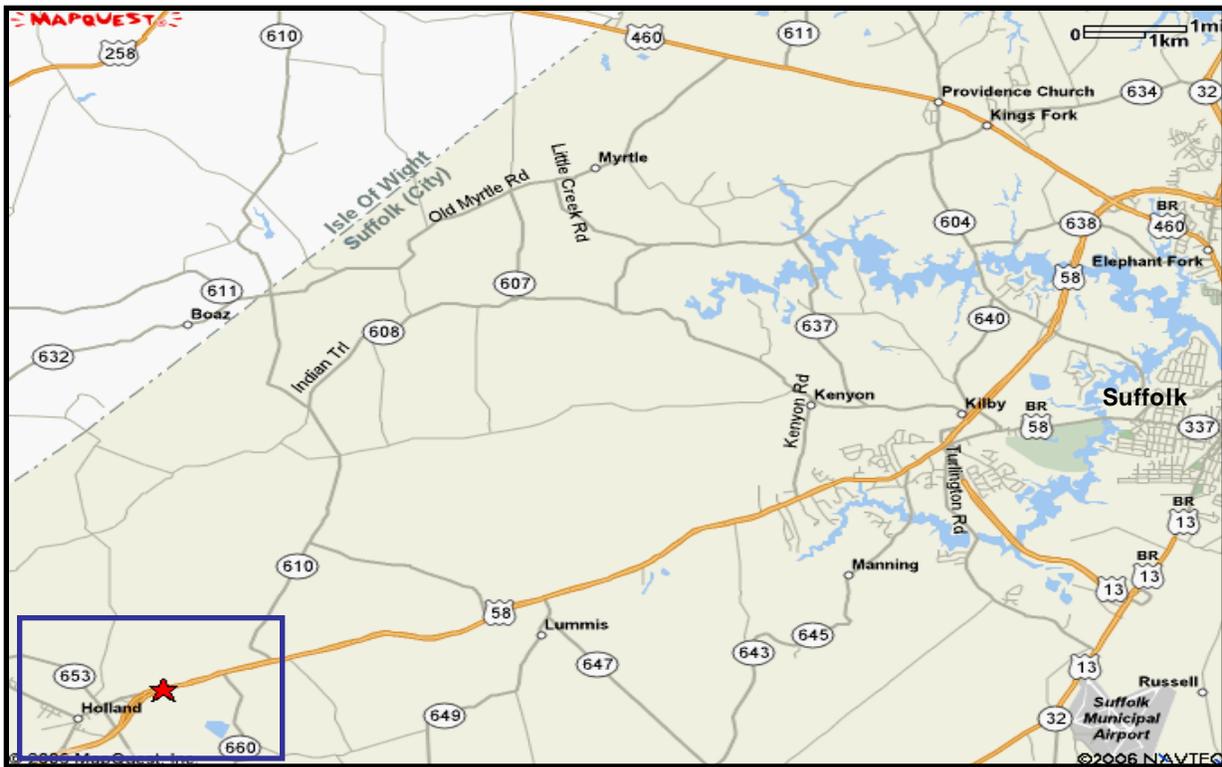
Days Inn, 757-539-5111, 1526 Holland Rd. [Rt. 58], Suffolk, VA (from \$64/night)

Quality Inn, 757-934-2311, 2864 Pruden Blvd. [Rt. 460], Suffolk, VA (from \$80/night)

Hilton Garden Inn 757-925-1300, 100 East Constance Road, Suffolk, VA (from \$139/night)

Super 8 Motel, 757-925-0992, 633 N Main St., Suffolk, VA (from \$55/night)

See map to TAREC facility below



**Detail Map of
Holland, VA**



Mosquito Surveillance and Identification Course VIRGINIA MOSQUITO CONTROL ASSOCIATION



The Virginia Mosquito Control Association will be sponsoring a Mosquito Surveillance and Identification Course on May 28 & 29, 2008. Instructors include David N. Gaines, Ph.D. and Bruce N. Harrison, Ph.D.

The course will cover mosquito biology, surveillance techniques, and adult and larval mosquito identification techniques. The class is limited to 20 seats, primarily for those who do the surveillance and identification of mosquitoes for their organization. Organizational members will have the first option to send an attendee. Seats will then be awarded on a "first come, first serve" basis.



The Registration Fee is \$70.00 for VMCA members and \$75.00 for non-members, which will include the class supplies. Lunch will be provided on site.

Directions and hotel information are listed in the Spring 2008 Skeeter.

**You must have your registration and payment
(or arrangements for payment) in before May 16, 2008 to participate.
No exceptions**

Identification Course Application

Name: _____ Phone: _____ Fax: _____

Affiliation: _____

Address: _____

City: _____ State: _____ Zip: _____

E-Mail: _____

VMCA Member _____ The course fee is \$ 70.00 VMCA members

Non VMCA Member _____ The course fee is \$75.00 for Non VMCA members

Please make checks payable to: VMCA

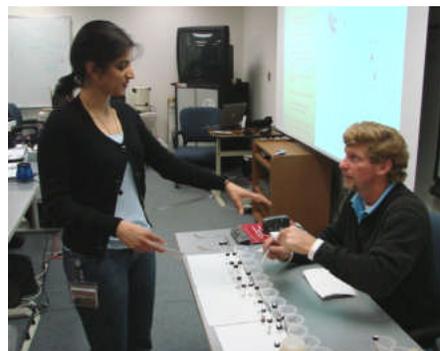
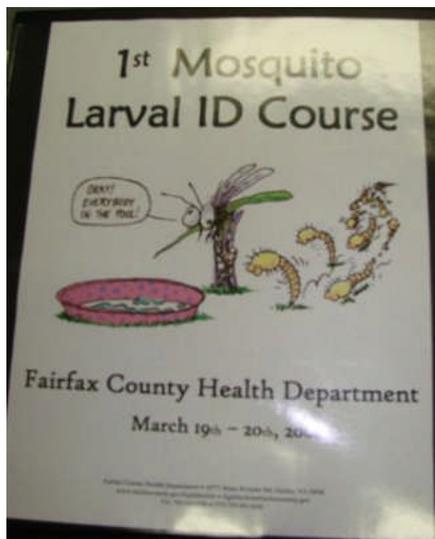
Mail or Fax this form to JoAnn Beasley, Secretary/Treasurer VMCA, c/o 508 Whitehaven Crescent,
Chesapeake, VA 23325 Fax: (757) 966-5236 Telephone: (757) 523-5224 or cell (757) 508-5224.

First Fairfax Larval ID Course a Big Hit!

On March 19-20th, the first larval ID course was held in Fairfax, with Bruce Harrison and Parker Whitt as instructors. This two-day course attracted 18 students from the following programs in the state: Alexandria, Arlington, Fairfax, Ft. Belvoir, Henrico, Prince William, and Suffolk. During the two-days students learned how to identify larvae to the genus level and to identify larvae of 43 species of mosquitoes that occur in the Mid-Atlantic area. Fairfax was a magnificent host for this course, providing notebooks with keys and information, good space, meals at lunch, students, and plenty of muscle power to set up and pack up the equipment. Although the course was intense and involved 2 full days of microscope work, everyone seemed to have a good time and many wanted more time allotted for the course. Thanks to all for making this a delightful and very successful course.

P.S. Remember, use that scope because practice makes perfect!

Bruce Harrison



TMVCC 2008

The current TMVCC officers are still hammering out a meeting schedule for the 2008 season. We are trying our best to work with our great vendors to do some demonstration style events for this summer. Demonstration events require a bit more logistical planning to make these events successful. With that in mind, we ask that the TMVCC members be patient and understanding about the delayed 2008 schedule. We are sure that this year's TMVCC meetings will be fun and informative. Lastly we would like to thank all of our vendors for sponsoring our events and allowing these meetings to be possible.

Mike Harrison, TMVCC President

Tentative Schedule

| | |
|---------|---|
| April 9 | Joe Andrews – Univar – Sandy Bottom Nature Park, Hampton |
| May 21 | Jeff Hottenstien – Clarke Calibration Rodeo – Warhill Sports Complex, James City County |
| June 11 | Charlie Pate – Central Life Sciences – City Park, Portsmouth |
| July 9 | TBA - Newport News |
| Aug 13 | Jim Andrews – Valent BioSciences – Chesapeake Golden Corral Battlefield Blvd. |
| Sept 10 | TBA - Norfolk |
| Oct 8 | TBA |
| Nov 12 | TBA |

2008 TMVCC Officers

President – Michael Harrison (757) 393-8666 harrisonm@portsmouthva.gov
 Vice President – Lisa Wagenbrenner (757) 727-2808 lwagenbrenner@hampton.gov
 Secretary – Mitch Burcham (757) 225-5592 burchamg@langley.af.mil

Virginia Looses CDC WNV Funding

It is with great regret that I inform you that yesterday evening I received news from the CDC's Division of Vector Borne Infectious Disease (DVVID) in Fort Collins, CO, that Virginia would receive no more West Nile virus funding in 2008. At the beginning of this year (2008) the CDC provided Virginia with \$110,000 (i.e., half the funding that they had given us in 2007), but told us that we might expect to see the other half of that funding (another \$110k) by mid year. The additional funds we expected to get from the CDC would have allowed me to provide our testing laboratories with levels of funding similar to what they got in 2007, and allow them to test mosquitoes at approximately the same "per pool" prices as they charged last year. Yesterday, the CDC explained to me that much less additional money was made available for their WNV program in 2008 than they had expected. This caused them to decide to give what little extra funding they had to the states which had the worst WNV problems. As Virginia has had relatively few human WNV cases over the past seven years, we were not considered to be a priority state.

This cut in funding leaves the Norfolk Lab and the DCLS with a lot less funding to use for their mosquito testing program (they will get about 1/4th of what they got in 2007). At this time the DCLS is evaluating whether they will be able to continue testing mosquitoes, and the Norfolk Laboratory is in the process of trying to estimate how much they will need to charge per pool to cover their testing costs. I am sure that any testing done by either laboratory in 2008 will have a much higher cost per pool than last year. The laboratories got the bad news from me this morning, so it may take them a week or two to decide what they are going to do. In the mean time I will keep you posted as soon as I hear of decisions on testing from the laboratories or the fate of next year's funding.

David N. Gaines Public Health Entomologist

VDH - Division of Environmental Epidemiology Richmond, VA 804-864-8141

Virginia Mosquito Control Association Officers 2008

President: Jennifer Armistead (703)507-7510 jsarmistead@gmail.com
 President Elect: Lane Carr (804) 727-8359 car04@co.henrico.va.us
 Vice President: Brian Prendergast (757) 953-0734 Brian.Prendergast@med.navy.mil
 1st Vice President: Charles Abadam (757) 514 -7609 cabadam@city.suffolk.va.us
 Secretary / Treasurer: JoAnn Beasley (757) 523-5224 or 508-5224 jo.beasley@att.net
 Past President: Randy Buchanan (804) 501-7332 buc06@co.henrico.va.us
 *TMVCC Representative: Mike Harrison (757) 393-8666 harrisonm@portsmouthva.gov
 *MAMCA Representative: Kirby Foley (757) 673-39323 kfoley@cityofchesapeake.net
 * Denotes a non voting member of the board.

2008 Organizational Members

| | | |
|--|---|--|
| Chesapeake Mosquito Control Commission Gene Payne 900 Hollowell Lane, Chesapeake VA 23320 gpayne@cityofchesapeake.net 757-382-3458 | City of Emporia Linwood Pope P. O. Box 51, Emporia, VA 23847 publicutilities@telepage.net 434-634-4500 | City of Newport News Marcus Leeper 505 Oyster Point Rd. Newport News, VA 23602 jleeper@mngov.com 757-269-2884 |
| City of Portsmouth George Wojcik 2001 Frederick Blvd. Portsmouth, VA 23704 gwojck@portsmouthva.gov 757-393-8666 | City of Suffolk Charles Abadam 441 Market St. Room 114, Suffolk, VA 23439 cabadam@city.suffolk.va.us 757-923-2049 | Henrico County Randy Buchanan P.O. Box 27032, Richmond, VA 23272 buc06@co.henrico.va.us 804-501-7332 |
| Fairfax County Jorge Arias 10777 Main Street, Suite 100, Fairfax, VA 22030 jaria2@fairfaxcounty.gov 804-501-7332 | James City County Rick Hall 115 Tewning Road, Williamsburg, Va wrhall@james-city.va.us 757-259-4116 | |
| Town of Boykins R.S. JR Edwards P. O. Box 363 Boykins, VA 23827 townofboykins@charter.internet.com 757-654-6361 | York County Thomas Gallagher P.O.Box 531 Yorktown, VA 23690 gallagher@yorkcounty.gov 757-890-3791 | Gloucester County James Diggs P. O. Box 329, Gloucester, VA 23061 jdiggs@gloucesterva.info 804-693-5250 |
| Virginia Department of Health Dr. David Gaines 109 Governor ST. P. O.Box 2448 Suite 516 Richmond, Va 23219 david.gaines@vdh.virginia.gov 804-864-8141 | Langley AFB Mitchell Burcham 7154 Chapman Dr. Hayes, VA 23072 mitchell.burcham@langley.af.mil 757-764-3324 | Fort Eustis Yardley Butt 1407 Washington Blvd. Fort Eustis, VA 23604 yardley.butt@us.army.mil 757-237-3721 |
| City of Poquoson Jerry Cagle 500 City Hall Ave Poquoson, VA 23662 jcagle@ci.poquoson.va.us 757-868-3519 | City of Hampton Mike Elberfeld 419 N. Armistead Ave. Hampton, VA 23669 melberfeld@hampton.gov 757-727-2807 | Norfolk Dept Public Health Norman Greefe 2800 Tarrant Street Norfolk, VA 23509 norman.greefe@vdh.virginia.gov 757-683-2841 |

Are you a director, manager, lead mosquito control person for your area. Consider signing up as an organizational member, the cost is only \$15 but includes one regular membership.

Mid-Atlantic Mosquito Control Association (MAMCA) Update

The past two months have been very active with MAMCA. The 2008 Annual Conference in Baltimore was a great meeting. Chris Lesser and Zach Cohen did an excellent job putting the meeting together. There were some complaints about the location and overall costs, but that was the best deal we could get in the city. Even with the higher costs the Baltimore meeting exceeded attendance projections by over 20%. There was a very large contingency from Pennsylvania. We had 27 delegates from VA at the meeting with several on the program, all represented Virginia very well. At the business meeting I was elected VP. As the VP I am the chair for local arrangements and the program for the 2009 meeting. I gave a formal invitation for folks to attend the 2009 meeting in Virginia. This also created a vacancy in the VA state director position for 2008 and 2009. A solicitation for candidates was sent out to the current VMCA membership. We were very fortunate to have four fully qualified candidates interested in serving as the VA state director. After careful consideration Kirby Foley was selected as the new Virginia state director. I have already met with Kirby and transferred the VA State director handbook and brought him up to speed on the plans for the 2009 meeting. Kirby's contact information is (757) 673-39323 kfoley@cityofchesapeake.net. I encourage everyone to provide Kirby the same support I received. I am more than confident that Kirby will do a great job.

Turning our efforts towards hosting the 2009 meeting in Virginia Beach, VA. In the past VA has combined the VA and MAMCA meetings into one joint meeting. For next year we are going to try something different: we are going to have two separate meetings two weeks apart. The VMCA meeting will be on February 4,5,6 2009 in Williamsburg, VA. The MAMCA meeting will be February 25,26,27 in Virginia Beach, VA. The Virginia meeting and MAMCA meetings are two separate forums with the VMCA catering to issues in Virginia and MAMCA representing issues from the 8 member states. As the program chair for MAMCA I will work closely with Lane Carr (VMCA Program Chair) to prevent presentation overlap between the VMCA and MAMCA meetings. Much of the MAMCA program will be from the other member states, the plan is to have 2 - 3 speakers from each of the member states and possibly speakers from other states not represented in MAMCA. We will offer an experience right here in our back yard that many folks in VA can not take advantage of due to travel restrictions. We have selected a hotel and prepared a budget that will be presented to the MAMCA board for approval at the planning meeting later this month. More meeting details will be available after the MAMCA board has its planning meeting April 23rd in Virginia Beach.

This is my last MAMCA update for the "Skeeter", I have thoroughly enjoyed serving the past 4 years. I have made many new contacts and built some strong professional relationships that have directly benefited the VMCA, The City of Portsmouth, and my self professionally. I am truly grateful for the opportunity to have served in this position. Thank you to The City of Portsmouth, the VMCA board, and the VMCA membership for allowing me so serve as the VA state director.

I am looking forward to the 2009 meeting, hope to see everyone there.

Respectfully submitted,

George Wojcik

Useful up-to-date information about mosquitoes.

Bruce A. Harrison, PHPM, NC DENR

In 2007 there were two publications (see below) about mosquitoes that provided very useful general as well as taxonomic information about mosquitoes. Unlike much of the inaccurate information on the web, those two publications provide accurate numbers for mosquitoes and other general information. Plus, I've included some observations and comments of my own. I think that many of you will find the information below of value in preparing reports, talks and in your discussions with people.

There are 3,490 (as of 2007) recognized species of mosquitoes in the world (the count changes on a weekly basis). Compare that number to the following: 175 species recognized in the United States, 60 species in North Carolina, 56 species in Virginia. As of 2005 there were 436 species recognized in Thailand, a country the size of California (this represents 12.5% of the world fauna) – (see reference below)

All mosquito species are included in two Subfamilies of the Family Culicidae

Anophelinae

Culicinae (previously *Toxorhynchites* was considered to be in a separate Subfamily, but now it is included in one of the 11 Tribes found in the Subfamily Culicinae).

World numbers for the genera we have are:

Aedes – 363 (based on data through 2003)

Anopheles – 476 (2007 data)

Coquillettidia – 57 (2007 data)

Culex – 763 (2007 data)

Culiseta – 37 (2007 data)

Ochlerotatus – 550 (based on data through 2003)

Orthopodomyia – 38 (2007 data)

Psorophora – 48 (2007 data)

Toxorhynchites – 88 (2007 data)

Uranotaenia – 265 (2007 data)

Wyeomyia – 140 (2007 data)

- Slightly less than 150 species are considered primary vectors of pathogens that are responsible for human morbidity/mortality. Most of those are *Anopheles* species involved in the transmission of malaria.
- Mosquitoes are found on every continent except for Antarctica. Most species occur in the tropics. However, unimaginable numbers of a very few species can occur in extreme areas, even above the Arctic Circle.
- Based on species diversity found in recent molecular studies it is estimated that about one-fifth of the species of mosquitoes have been described. Many species of *Anopheles* are known only by alphabetical designations like *An. crucians* A, B, C, D, or E, and remain undescribed. Molecular studies have not even begun in many of the other genera.
- One final suggestion - when you talk to people about the numbers of mosquito species do not presume that they know what a “species” represents. Since many people think mosquito species are like varieties (or breeds) of dogs, chickens, cats, horses, cows, pigs, etc., always emphasize that mosquito species are not varieties. Each species is unique in many ways, like species of birds. For most people this is a hard concept to understand, but the great differences between mosquito species justify all of the work that needs to be done to effectively control mosquitoes and the pathogens they spread.

References

- Harbach, R. E. 2007. The Culicidae (Diptera): a review of taxonomy, classification and phylogeny. Pp. 591-638. in Zhang, Z.-Q. and W. A. Shear (Eds) Linnaeus Tercentenary: Progress in Invertebrate Taxonomy. *Zootaxa* 1668: 1-766.
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VMCA Committees

Annual Meeting

Local Arrangements (Choose a meeting place and negotiate with the management over prices of room; decide on banquet details and negotiate prices; organize coffee breaks, biting times, etc.; secure meeting room(s) and commercial display area; in conjunction with the program committee, determine audio—visual equipment needs and make them available for the speakers; obtain fliers, literature on the area, etc. for registration packets; act as liaison between hotel and VMCA; and secure banquet entertainment if appropriate.)

Program Committee (Secure speakers for the program; coordinate time schedules and have substitute speakers available; allot money designated by the Executive Board for speaker rooms and banquets; determine all special needs for speaker presentations and work with local arrangements committee to secure them; secure banquet speaker if appropriate.)

Commercial Planning (Solicits participation at annual meeting from commercial suppliers; works with local arrangements to assure that displays needs are met; responsible for set up/break down of display area.)

Audit Committee (Audit the records at the Secretary—treasurer for the annual meeting)

Awards & Resolutions A secret committee appointed by the president. (Take nominations from the executive board for special awards and resolutions and reviews materials supporting nominations; make decisions on who will receive awards and which resolutions will be adopted; through the secretary—treasurer, arrange for plaques, certificates, etc. to be available at the banquet; make presentations at annual banquet.)

Nominating Committee (Reviews new candidates for executive board and makes a formal nomination at the business meeting.)

Education (Determine through phone calls, surveys, etc. the educational needs of the association members; secure approval for the program from the Department of Agriculture; arrange meeting place, speakers, schedule, coffee break details, etc. for certification, pre—test or other courses; obtain all the necessary forms and submit paperwork for certification credits; aid the Department of Agriculture in developing new teaching materials.)

Public Relations (Organize and judge the grade school poster contest with the assistance of the host city organization; make the necessary contacts and appoint an individual to judge and make presentations at the Tidewater Science Fair; arrange Mosquito and Vector Control Awareness Week through the Governors office; seek media coverage during this week; act as liaisons between the VMCA and the media, with the approval of the president and aid member organizations who are seeking public relations ideas and materials; set up a display at the annual meeting.)

Information (Responsible for the SKEETER and dissemination of information regarding educational courses, upcoming events, new regulations, news on disease vectors, etc.; contact for members who are seeking information on the above.)

Historian (Collects and keeps records and information on the history of mosquito and vector control, especially as it applies to Virginia and the VMCA; sets up displays (in conjunction with PR committee) at annual meetings or other events; gives a presentation at the annual meeting, if feasible.)

VMCA Committees continued

Photography (Takes pictures at the annual meeting and other events for the web site and news letter.)

Membership (Actively promotes and recruits new members.)

Web Page (Designs and maintains the organization web page; responds to web inquires and or directs inquires to the proper person/locality.)

Resolution Committee (Prepares suitable resolutions for consideration of the membership at the annual meeting. Resolutions should be concerned with giving recognition to certain persons or organizations which contributed to the success of the meeting, such as the hotel, the sponsors, etc. Also, certain special resolutions should be prepared which might express the feeling of the Association on matters of importance to the Association such as sending a message to the Legislature or the State Health Department.)

Special Awards Committee (It shall be the duty of the Special Awards Committee to select a recipient for the R.E. Dorer award. The President shall receive information on applicants from the membership and others. The committee will screen all applicants and select one who is considered to be deserving of the award. While the award will be made at the annual meeting, it is not necessary to make an award if no one appears to be sufficiently qualified. In considering an applicant, the following criteria will be considered: Outstanding contributions beyond the normal call of duty. Continuing outstanding service over a period of years. High moral character. General recognition of outstanding achievement among his peers. Other items not listed above.)

Take the time to volunteer on a committee. An active membership makes for a stronger organization.

Contact any one on the board to participate.

President: Jennifer Armistead (703)507-7510 jsarmistead@gmail.com

President Elect: Lane Carr (804) 727-8359 car04@co.henrico.va.us

Vice President: Brain Prendergast (757) 953-0734 Brian.Prendergast@med.navy.mil

1st Vice President: Charles Abadam (757) 514 -7609 cabadam@city.suffolk.va.us

Secretary / Treasurer: JoAnn Beasley (757) 523-5224 or 508-5224 jo.beasley@att.net

Past President: Randy Buchanan (804) 501-7332 buc06@co.henrico.va.us

*TMVCC Representative: Mike Harrison (757) 393-8666 harrisonm@portsmouthva.gov

*MAMCA Representative: Kirby Foley (757) 673-39323 kfoley@cityofchesapeake.net

The Skeeter is the official publication 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 gwojck@portsmouthva.gov

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Distribution: Lane Carr, Henrico County

Regular Contributors: Dr. Jorge Arias, Dr. David Gaines, Dr. Bruce Harrison

Editorial review: All the members of the board.

Co editor: We are currently seeking an individual or individuals interested in learning how to produce the news letter. Anyone interested should contact Randy Buchanan at buc06@co.henrico.va.us.

**Newsletter of
The Virginia Mosquito
Control Association**

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www.mosquito-va.org

2008 VMCA Membership Application

*Membership payment is by calendar year and includes subscription to the VMCA Newsletter
"Skeeter: Memberships renew January 1st each year*

| | | |
|---------------|-----------------|----------|
| NAME: | Regular | \$ 10.00 |
| PHONE: | Associate | \$ 5.00 |
| ADDRESS: | Student: | \$ 3.00 |
| E-MAIL: | Organizational | \$ 15.00 |
| ORGANIZATION: | Sustaining: | \$300.00 |
| | TOTAL SUBMITTED | |

Enclose proof of student status

Mail or Fax this form to JoAnn Beasley, Secretary/Treasurer VMCA, Fax: (757) 966-5236 Telephone: (757) 523-5224 or cell (757) 508-5224

Payable to: Virginia Mosquito Control Association,
% Jo Ann Beasley
508 Whitehaven Crescent
Chesapeake, VA 23325