



The Biting Times

Newsletter for the
North Carolina
Mosquito & Vector
Control Association

February, 2014

Contents

Letter from the President: [page 2](#).

AMCA Washington Day: [page 3](#).

We Really Need Program Reports at the Annual NCMVCA Meetings: [page 3](#).

Western Carolina University Says “Good-Bye” to Mike Riles: [page 7](#).

Get Ready, Chikungunya Virus Has Arrived in the Caribbean Region: [page 8](#).

Upcoming Training Opportunities: [page 9](#).

New Mailing Address

Dr. Stephanie Richards is our new Secretary/Treasurer. All mail NCMVCA related correspondence, including conference registration, should go to:

ECU / Dr. Stephanie Richards
c/o NVMVCA
3403 Carol Belk Building
300 Curry Court
Greenville, NC 27858

Annual Conference Notes By Will Harrison

The 2013 NCMVCA meeting was a great success. This year we met November 4-6th at the Blockade Runner Beach Resort in Wrightsville Beach, NC. The weather was beautiful, the speakers and the topics they covered were wide ranging and very informative, and the accommodations were really nice. The part I think most of us look forward to, the banquet, was especially good this year. We made some important headway in updating and streamlining the NCMVCA Constitution to more accurately reflect how the NCMVCA has been operating, especially with PHPM no longer playing the role they once played. This can be viewed at www.ncmvca.org/NCMVCAConstitution11-06-13.pdf.

Even though some of you may still be riding high on the conference in November, you can start looking forward to the 2014 conference! The conference will be held in Greenville, NC at the City Bistro and Hotel on November 12-14. The hotel is offering the state rate of 65.90 per night for single occupancies and 74.90 a night for doubles. Available rooms may be limited, so book by October, 13 2014 to lock in a room at this rate. The next issue of the Biting Times will have a registration form and more details.

Letter From the President By Brian Byrd

Dear NCMVCA members,

I am honored and humbled to serve as your president for 2014. I want you to know that your executive board members are already hard at work. We have recently selected and secured the site for the 2014 NCMVCA Educational Meeting and I am pleased to announce that we will be returning to Greenville (City Bistro and Hotel) for our meeting during November 12-14th. At this meeting we aim to increase the number of operational talks and involvement from the broader membership. Please consider giving a talk or provide a local report. Dr. Bruce Harrison has provided a nice overview for you to consider as a template starting on page 3.

The executive board has also worked to better understand the intent and impact of the NCDA&CS “*Mosquito Control Directed Towards Structures-FAQs*” memo of 2 October 2013. Please see e-mail correspondence from 22 January 2013 for additional details. We rely on the expertise within our association so we hope that you will consider weighing in on this matter as appropriate. Please contact our legislative chair (Mr. Dennis Salmen: dennis_salmen@yahoo.com) for additional information.



I encourage you also to pay close attention to on-going developments in the Caribbean. Public health and vector control agencies are presently investigating multiple outbreaks of a mosquito-borne disease called Chikungunya. This disease is well known in other parts of the world, but has only recently spread with local transmission in the western hemisphere. It remains unclear what this means for North Carolina in the short term, but we certainly have a competent vector (*Aedes albopictus*) and thus the potential for local transmission. As you keep abreast of this issue, please consider signing up for on-line alerts from Pro-Med mail (<http://www.promedmail.org/>). Pro-Med is an internet based reporting system and is a great way to receive reports from local, national, and international agencies.

I recently returned from the 80th Annual American Mosquito Control Association meeting in Seattle, Washington. The AMCA meetings are always stimulating and this year was even more exciting as the city was abuzz with Super Bowl fever. I urge you to consider attending the 2015 AMCA meeting in New Orleans, or the 2016 meeting in Savannah. In addition, the AMCA hosts a “Washington Day” in order to address mosquito control related issues at the federal level. I am pleased to announce that this year your Executive Board has approved two \$500 stipends to support attendance. If you are interested in attending Washington Day, please consider applying for the NCMVCA stipend (Additional Details on the next page).

I look forward to working with you throughout the year and will see you in November.

The American Mosquito Control Association Annual Washington Conference (Stipends Available)

Each year, the AMCA hosts a “Washington Conference” to identify and address concerns at the national level related to mosquito control. This year the 2014 Washington Conference will be held from May 5-7 at the Holiday Inn & Suites in Alexandria, VA. The conference is a mix of educational sessions addressing legislative issues and Capitol Hill visits. Additional details are available here:

<http://www.mosquito.org/washington-conference>

This year your NCMVCA Executive Board has approved two (2) stipends totaling \$500 each to support NCMVCA members attending the conference. Please note that it is likely that the costs associated with this conference will exceed \$500. If you wish to apply for a stipend, please e-mail the Awards & Nomination Chair, Mr. Parker Whitt (pwhitt123@gmail.com) to request an application. The deadline to receive applications is March 15th.

We Really Need Program Reports at the Annual NCMVCA Meetings by Bruce A. Harrison

When I first attended a NCMVCA (then NCMCA) annual meeting in December 1992 in Winston-Salem, I remember how impressed I was by the individual program reports that were given at the end of the meeting. To me this solidified the need for, and the real reason for having a state mosquito control association. State mosquito control associations are meant to bring together all like participants not only for friendship and a break, but for sharing the problems, successes, and needs that each program experienced during the past mosquito control season. After listening to these reports, issues can be detected that may affect many of the programs in the coming year(s), such as pesticide changes, invasive species and/or pathogens, resistance, new equipment, legal issues like NPDES, personnel needs, and educational needs for employees. The association can respond to such trends and issues as a group and assist the programs in finding resolutions for any problems they have. This is how the mosquito ID courses began in the late 1990s.

In the past, PHPM helped in resolving such issues, like dealing with post-hurricane mosquito control, and the educational aspects of the introductions of *Ae. albopictus* and West Nile virus into NC. Unfortunately PHPM is no longer with us. So it is now essential that the NCMVCA pick up the slack and assist in handling problems encountered by our programs. **When I say “the NCMVCA”, I mean all of the members of the association, not just the board of the association. Everyone can help!**

One of the easiest ways for all of us participate is to share information about our efforts at the annual meetings, and one of the best ways to do this is by presenting a talk or program report about your program's efforts and needs during the past mosquito season. Some may say we can do this by computers, but being social creatures we are more inclined to listen when oral presentations are made when we are all together. So I urge all of you to consider the need for sharing information and giving program reports at our annual meetings. Such reports do not need to be more than 2-3 minutes, but please give a report. These reports are best held at the last day Business Meeting. This will make our association a much stronger network and help solidify our mosquito control needs and efforts in North Carolina.

Below are some bullets representing useful information you may want to present.

- ◆ Number of requests for assistance (complaints)
- ◆ General mosquito abundance during the year
- ◆ Unusual changes in particular problem species
- ◆ Unusual species encountered
- ◆ Any changes in surveillance and control methods and results
- ◆ Equipment used, needed, problems, and resolutions
- ◆ Pesticides that worked well
- ◆ Ditches cleaned or modified
- ◆ Educational programs
- ◆ Mosquito pools submitted for virus testing
- ◆ Special (unusual) problems encountered and resolved
- ◆ Experimental efforts initiated and results
- ◆ Special assistance needs
- ◆ Program changes due to political, economic, personnel, or other reasons
- ◆ Any other topic you would like to present

The above topics are just suggestions, but will provide important information to other programs and assist them in their efforts. Our programs are already recording much of this information, so preparing short reports from that information should not be a problem. In the past after short reports were given at meetings written reports were submitted to the association as records of program efforts. This form of communication from our programs to the association is really needed and essential for a stronger association. Thus, the association would like all our programs to consider reinstating the program reports as an annual record. **Please participate in this effort and help make the NCMVCA more responsive and helpful to its membership.**



Western Carolina University Says “Good-Bye” to Mike Riles! by Brian Byrd

Mr. Mike Riles graduated this past December from WCU with a B.S. in Biology and a minor in Environmental Health Sciences. Mike conducted field and lab research investigating container-inhabiting mosquitoes in western North Carolina. His work was presented at the 2012 NCMVCA conference in Greenville, NC, the 2012 Entomologic Society of America conference in Knoxville, TN, and the 2013 American Mosquito Control Association meeting in Atlantic City, NJ.

In addition to conducting research, Mike also completed a summer internship at the Beach Mosquito Control District in Panama City, Florida. Mike reflects on his studies and internship experiences here:

My experiences within vector-borne infectious disease research have produced many opportunities that I never thought would be available to me. Being a member of the Western Carolina University Vector-borne Infectious Disease Facility, mentored by Dr. Brian Byrd, I have been graced with the ability not only to perform research but also to present my findings at professional and academic conferences. Networking at these conferences enabled me to ‘meet and greet’ with many professionals in the field of vector control and through these meetings I was able to secure an internship working with the Beach Mosquito Control District in Panama City Beach, Florida.



*On June 1, 2013 I reported for duty. I worked with Dale Martin, the district entomologist, and field technician Danny Hood trapping and collecting mosquitoes. I was able to experience first-hand how to set a number of different traps (i.e., canopy, CDC light traps, gravid, exit and updraft), how to conduct landing rates, identify a variety of mosquitoes indigenous to Florida, and complete data entry for record keeping. I also was introduced to virus surveillance through the management of sentinel chickens. I helped care for the sentinels and also performed surveillance (i.e., bleeding and swabbing). The blood and swabs were then sent into the state for testing the presence of antibodies or virus (i.e., WNV, SLE and EEE). I also had the opportunity to larvicide with the district team leader for operations, Eddie Summers. We checked breeding grounds (i.e., catch basins, ditches, depressions) for larvae and applied Bti granules where needed. We also went on a call for mosquito disturbance in a neighborhood, found the source, and fogged the area. The culprit was our old foe: *Aedes albopictus*.*

*The district team leader for public relations, Cindy Mulla, introduced me to a whole new arena for mosquito control: public education. Public relations is a huge focus for this particular district, they are dedicated to educating the citizens within their district through interviews with local television and radio stations, setting up booths at public gatherings and festivals, and engaging children by performing presentations at district public schools. I was also present for Mosquito Awareness week where I was allowed to represent the district by answering some questions pertaining to *Ps. cilita*, the gallinipper, on regional news station, Channel 7.*

I was also able to fly in the district helicopter with pilot Brad Gunn. This was an experience of a lifetime! I received a bird's eye view tour of the district boundaries. Brad showed me sites where there was standing water that appeared dry from the ground perspective. Being able to see possible mosquito breeding sites from the air made my mind turn several different ways for ideas about surveillance! It was an awesome experience.



Integrating and working with the Beach Mosquito Control District personnel of the district was great. These professionals readily accepted me into their district. Of course there was a little 'ribbing' ... but this is what I love about the people involved in mosquito control. There is always room for a joke or two and I fit right in!

The opportunity to intern for a vector control district and use the experiences and knowledge I gained in my undergraduate education have helped me make the decision that the mosquito control profession is where I want to

be! Throughout the internship I worked hard to demonstrate my abilities, passion for mosquito control, and the desire to learn new skills. I believe these traits and experiences helped facilitate a position with this district. At the completion of my internship, the district director (James Clauson) asked me if I wanted a job as the team leader position upon Dale's upcoming retirement. My answer: "OF COURSE!" As of January 6th 2014, I am the new team leader for surveillance at the Beach Mosquito Control District! YA-HOO!!!!

Mike Riles may be reached at mtriles12@yahoo.com or at the Beach Mosquito Control District, 1016 Cox Grade Road, Panama City Beach, FL 32407.

Image captions:

- 1) Mike collecting sentinel chicken sera for arbovirus surveillance.
- 2) Beach Mosquito District's helicopter.

Get Ready, Chikungunya Virus Has Arrived in the Caribbean Region

**by Bruce A. Harrison, David Gaines,
Ryan L. Harrison, and Brian D. Byrd**

On December 9th David Gaines, State Medical Entomologist, Virginia, sent out a message (see below) that provided specific reports of confirmed locally acquired cases of Chikungunya virus (CHIKV) in people on the Island of Saint Martin in the Caribbean Region.

"It was only a matter of time before the Chikungunya virus came into the Americas in an infected traveler and infected the local mosquitoes. There are so many countries and places that have the domestic *Aedes* species active year-round, unscreened living conditions, and travelers arriving on jets from around the world.

Although this outbreak might be limited to the Island of St. Martin, only time will tell whether it was introduced by someone traveling from the old world (Asia or Africa), or someone traveling from an as of yet identified outbreak on some other Caribbean Island, or from some other part of the Americas. If CHIKV becomes established in the American tropics, the frequency of its importation into the U.S. will increase substantially."

He included the following link about this: http://www.thedailyherald.com/index.php?option=com_content&view=article&id=44572 with a more recent link here: <http://www.scienceworldreport.com/articles/11606/20131216/african-mosquito-bred-virus-chikungunya-spreads-to-the-americas.htm>

You may also want to check the link for the CDC fact sheet for vector control professionals: <http://www.cdc.gov/chikungunya/pdf/CHIKVVectorControl.pdf>

In 2011, the CDC and Pan American Health Organization (PAHO) prepared a 161 page book entitled “*Guidelines for Preparedness and Response for Chikungunya Virus: Introduction in the Americas.*” This book is available in PDF format through a link on the CDC Chikungunya webpage <http://www.cdc.gov/chikungunya/> or through PAHO, Washington, D.C.

Briefly, over the last 6-7 years we have been following the ongoing progression of a developing pandemic of CHIKV cases. The name of the virus is attributed to the Kimakonde (Mozambique) word meaning “that which bends up” because it causes a febrile illness accompanied by severe muscle and joint pain. Although the disease is rarely fatal, it may be temporarily debilitating and fatigue may last for several weeks. The illness can also result in chronic joint pain and arthritis in the extremities (hands, feet, wrists, ankles, elbows, and knees) that may persist for three to five years, or longer (CDC). Aside from the debilitating symptoms caused by Chikungunya (CHIK), our concerns about this virus are based on the large numbers of documented cases wherever the virus occurs, the lack of a vaccine, and the fact that our common Asian tiger mosquito [*Aedes albopictus* (Skuse)] is a primary vector. In most areas of the known distribution for CHIK transmission is accomplished through a mosquito-human-mosquito virus cycle, without confirmed zoonotic mammal or bird amplifying hosts. However, when CHIKV was initially discovered in Africa in 1953 non-human primates were found infected and suspected to have served as primary hosts and reservoirs for the virus. At that time *Aedes africanus* (Theobald) was incriminated as the enzootic vector for the virus. More recently *Aedes aegypti* (Linnaeus) and *Aedes albopictus* have been recognized as the primary vectors of this virus to humans. In Asia, nonhuman primates do not appear to be involved in the virus cycle.

In the decades following its discovery CHIKV spread out of Africa, but did not cause extensive outbreaks like this time. In the 1960s there were cases of CHIKV in Thailand when Bruce and Ryan were there. In fact one of our friends had a case that lasted for several weeks. However, at the beginning of the current outbreak, the virus first spread to several Indian Ocean islands, including the Island of Reunion where in 2005-06 one third of its residents (266,000 of the 800,000) contracted active CHIK infections. Of even more interest, the virus was primarily transmitted by *Aedes albopictus* on Reunion. At that time this was thought to be due to the rarity of *Aedes aegypti* on the island. Subsequently this was found to also be due to a single mutation of the virus that adapted it to *Ae. albopictus* and enhanced its vector efficiency. In 2006-07 it spread to India where both *Ae. aegypti* and *Ae. albopictus* occur, and there were 1.5 million recorded cases in 2007. In 2007 it also spread to Italy where it caused a small outbreak (200+ cases), and again the vector was *Ae. albopictus*. Meanwhile, it was also spreading eastward to Indonesia, Thailand, Malaysia, Singapore, Vietnam, southern China, and the Philippines, where both mosquito species are present. Examples of outbreaks since 2007 include 50,000 cases in southern Thailand in 2012. Also, Singapore has been trying to control this virus since 2007, but an additional 924 cases occurred in that urban country in 2013, where the primary vector is *Ae. albopictus*. Most recently CHIKV has shown up on several isolated Pacific Islands in Micronesia, and now it has arrived in the Western Hemisphere.

The cases on St. Martin in the Caribbean represent the first locally acquired cases of this virus in the Western Hemisphere. This introduction should be taken very seriously by mosquito control personnel working in areas of the USA where *Ae. albopictus* and/or *Ae. aegypti* occur and commonly cause residential nuisance complaints. Now we are talking about daylight feeding species that live in close association with people and are mostly unaffected by insecticide applications made from crepuscular/nighttime spray trucks. This should send a shudder up your spine. How many backpacks and employees do you have? Not enough, I assure you.

Addressing an outbreak of Chikungunya in the USA next summer or a following summer presents many problems for mosquito control personnel. Now is the time to seriously consider how you and your program would/will approach emergency control of *Ae. albopictus*. When it arrives in the Mid-Atlantic area of the U.S., the media will certainly spread the info and hype about the virus and how to control *Ae. albopictus*. We suggest you have a white paper with educational recommendations that stress the need for “Tip and Toss” and source reduction as your primary prevention strategy, as well as other essential parts of your overall control plans. This should be ready to hand out to the media so that what they say agrees with what you will be doing. Also, this winter make sure that your backpacks, light weight ULVs, and thermal foggers are all in good condition for use this coming year and have plenty of the pesticide you will need for these on stock. Each program needs to prepare for the potential that next mosquito season is when the virus will arrive in the United States. This may be hard to do since you operate on yearly budgets, but you can go ahead and prepare the paper work and make plans for whatever will be needed.

In case you still think this is primarily an *Ae. aegypti* driven virus and are not convinced of the urgency of developing control plans for this virus because you only deal with *Ae. albopictus*, think again. Turell et al. (1992, J. Med. Entomol., Vol. 29:49-53) conducted laboratory vector efficiency tests using *Ae. aegypti* and *Ae. albopictus* strains infected with an Asian strain of CHIK virus and found that *Ae. albopictus* was a more competent laboratory vector of this virus than *Ae. aegypti*, regardless of the geographic strains of the two species. The U.S. strains of *Ae. albopictus* they tested included strains from New Orleans, Houston, Honolulu, and Polk County, Florida. More recently, McTighe and Vaidyanathan (2012, Vector-Borne and Zoonotic Diseases, Vol. 12:867-871) tested the vector competency of Virginia and Georgia strains of *Ae. albopictus* for CHIK virus and determined that they were all highly competent vectors of this virus. In their conclusions these last authors stated, **“Only early and specific detection of human cases coordinated with vector control can reduce the risk of local transmission of CHIKV in the U.S.”**

Saint Martin is a tropical island that will enjoy warm weather and endure biting mosquitoes throughout our winter. CHIKV is already established on the French (Saint-Martin) and Dutch (Sint Maarten) sides of the island, and is continuing to spread. Most recently the **European Centre for Disease Prevention and Control (ECDC), Communicable Disease Threats Report, CDTR, Week 1, 29 December – 4 January, 2014** [bottom of page 2], **Stockholm, Sweden www.ecdc.europa.eu** reported that additional cases have now been confirmed from other islands: Martinique, Saint Barthélemy, Guadeloupe, and one imported case from Martinique has been reported on mainland South America in French Guyana. As of January 4, 2014, and less than a month after the first CHIKV cases were identified, there have been 98 laboratory confirmed cases counted on St. Martin, as well as 13 confirmed cases on Martinique, and 7 cases on Saint Barthélemy. Several hundred additional cases are being investigated. The fact that CHIKV had already been causing illness on St. Martin for more than a month before its detection, and that cases are now being found on other islands suggests that it may have already spread well beyond containment in the Americas. Thus, more infected travelers than ever could soon be bringing the virus into the U.S., and will significantly enhance the risk of local, autochthonous outbreaks in the U.S. this coming summer. Meanwhile, keep your fingers crossed and prepare for emergency control of the Asian tiger mosquito and other day-biting container species.

Upcoming Training Opportunities

Brunswick County ULV Calibration Workshop April 16 & 17

The Brunswick County Operation Services is offering a 2 day mosquito control workshop. The first day will consist of classroom training and the second will be ULV mosquito sprayer calibrations. The first day will be held at the Cooperative Extension Training Room, Building N 25 Referendum Dr., Bolivia, NC 28422. The ULV calibrations will be held at 235 Grey Water Rd NE located off Hwy 211, also known as Green Swamp Rd, in Supply, NC.

There is no cost associated with this training. The training organizers have applied for 3.5 hours of Category B Pesticide continuing education credits.

For more information or to register, contact Jeff Brown at (910) 253-2507 or JBrown@Brunasco.net.

City of Rocky Mount ULV Calibration Workshop April 24 & 25

The City of Rocky Mount Community Code Enforcement Division will be holding a 2 day mosquito control workshop. The first day will consist of classroom training and the second will be ULV mosquito sprayer calibrations. The first day will be held in the Environment Services Operations Center Training Room at 1221 Thorpe Rd, Rocky Mount, NC 27804. The second day will be held at 300 Barnum Rd (southern end of the Stadium area between Independence Dr. and Barnum Rd.).

There is no cost associated with this training. The training organizers have applied for 3.5 hours of Category B Pesticide continuing education credits.

Contact Robert Collins at (252) 343-31550 or Robert.Collins@RockyMountNC.gov for more information or to register.



2014 NCMVCA Officers, Board of Directors And Committee Members

President

Brian Byrd

Vice-President

Jung “Woogie” Kim

Secretary/Treasurer

Stephanie Richards

Past President

Vencent Dodge

Membership and Communications

Brian Byrd

Will Harrison (Newsletter/Website)

Joe Strickhouser (Industry)

Jung Kim

Program

Jung Kim (Chair)

Larry Modlin

Bruce Harrison

Stephanie Richards (Student Competition Chair)

Awards & Nominations

Parker Whitt (Chair)

Ryan Harrison

Larry Modlin

Parliamentarian

Dennis Salmen

Constitution and By-Laws

Tommy Bowen (Chair)

Stephanie Richards (Ex officio)

Joe Andrews

Robert Collins

Members-At-Large (Voting)

Robert Collins (Member)

Joe Strickhouser (Industry)

Finance

Stephanie Richards (Chair)

Brian Byrd

Robert Collins

Jung Kim

Auditor from membership is:

Mr. Ken Manuel

Email Addresses

Joe Andrews: joeskeeto@earthlink.net

Tommy Bowen: tommy.bowen@duke-energy.com

Brian Byrd: bdbyrd@wcu.edu

Robert Collins: robert.collins@rockymountnc.gov

Vence Dodge: vdodge@pendercountync.gov

Bruce Harrison: skeeterdoc@gmail.com

Ryan Harrison: HarrisRL@Forsyth.cc

Will Harrison:

William.Harrison@mecklenburgcountync.gov

Jung “Woogie” Kim: info@ncbedbugs.com

Ken Manuel: klmanuel@duke-energy.com

Larry Modlin: publicworks@boilingspringlakes.com

Stephanie Richards: Richardss@ECU.edu

Dennis Salmen: Dennis_Salmen@Yahoo.com

Joe Strickhouser: JStrickhouser@Clarke.com

Parker Whitt: pwhitt@triad.rr.com

Legislative

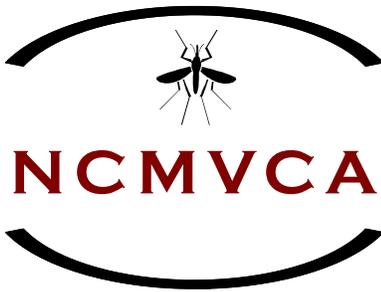
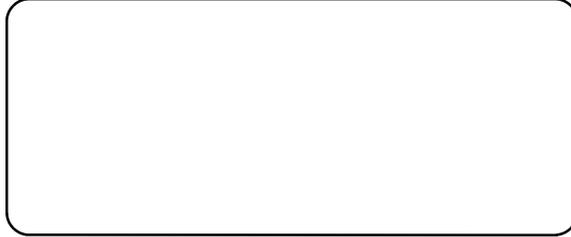
Dennis Salmen (Chair)

Brian Byrd

2014 Sustaining Members

 <p>Steve Molnar 877-881-6105 smolnar@e-adapco.com</p>	 <p>Joe Andrews 888-603-1008 joea@allprovector.com</p>
 <p>Peter Connelly 772-563-0606 PeterC@amvac-chemical.com</p>	 <p>Gordon Morrison 919-549-2535 gordon.morrison@bayer.com</p>
  <p>Charlie Pate 706-338-4737 cpate@central.com</p>	 <p>Joe Strickhouser 630-894-2000 jstrickhouser@clarke.com</p>
 <p>Dynamic Aviation 540-828-6070 info@dynamicaviation.com</p>	 <p>Tommy Bowen 704-875-5422 twbowen@duke-energy.com</p>
 <p>Michael Crowe 919-431-9320 michael.crowe@univarusa.com</p>	 <p>Jim Andrews 910-547-8070 Jim.Andrews@valent.com</p>

ECU / Dr. Stephanie Richards
Secretary/Treasurer
NCMVCA
3403 Carol Belk Building
300 Curry Court
Greenville, NC 27858



New Membership Application and Membership Renewal Form N.C. Mosquito and Vector Control Association

Name: _____

Organization/Company _____

Mailing Address _____

_____ Zip Code: _____

Telephone Number (____) _____ E-Mail: _____

Dues Payment for Year _____ Amount: (\$10.00/year) _____

Make check payable to NCMVCA and mail to:

ECU / Dr. Stephanie Richards
c/o NCMVCA
3403 Carol Belk Building
300 Curry Court
Greenville, NC 27858
