



# Illinois Mosquito & Vector Control Association Newsletter

**Presidential Address:** by Tom Velat

Greetings to the IMVCA membership! This is the second time I have had the honor of addressing the membership as your incoming President for 2014. The Executive Board is sending this 2014 newsletter to take the opportunity to tell you about a few things that have happened in the Association and the mosquito world since we last saw each other at our 2013 meeting in Springfield.

First, I just wanted to mention how impressed I was with the caliber of presentations at last year's meeting including those from the Henry Lawicki Student Competition. It gives me confidence that the future of IMVCA is in good hands. Speaking of the future of the Association, I believe that many of the young people that participate in IMVCA meetings today could be the Executive Board members of tomorrow. Speaking from experience as a (relatively) young person, I went to many annual meetings before deciding to participate on the Executive Board. Part of my reservation about participating was that I didn't know what the workload would be. The other more experienced Board members helped me along the way to make the transition as smooth as possible for me. I can't thank them enough for that. There are many levels of participation depending on your ability to take on certain responsibilities. For the first two years on the Board I participated just as a regular Board Member and ran the presentation computer at the meeting. This was the level of responsibility that I was comfortable with at the time. I also participated in regular Board meetings and provided input and suggestions on various topics (annual meeting locations, banquet speaker suggestions, etc.). After that, I volunteered to revamp the Association's website. It really has been a long journey. Similarly, I think many of our young members have already started their journey with IMVCA. I would like to encourage them to progressively add to their participation level over the long term to nurture their professional relationship with the Association. Maybe challenge yourself to participate in preparation for the annual meeting. Or maybe you just have a good idea that you would like to see implemented in the Association. If you have thought about things like this in the past, let your nearest Board member know about it and we can try to make it happen. I sincerely believe that our Association is stronger when many of its members participate in its success.

Second, I am sad to announce that our Trustee Representative to the Executive Board, Bill Schneck, passed away a few weeks ago from complications related to a stroke. Bill served IMVCA in many different capacities. The Board put together a special dedication to Bill in this newsletter. If you didn't know Bill, we hope that reading this dedication will help you understand his commitment to the Association. If you knew Bill, we hope that these words help you remember him fondly.

Sincerely, Tom Velat, 2014 President – IMVCA

*What does The 2014 FIFA World Cup have to do with mosquitoes? See*  
<http://www.bbc.com/news/health-27441789>



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**Note from the Secretary/Treasurers Desk:** by Allison Montgomery

First off, I would like to thank everyone for helping us to raise \$750 for our UNICEF raffle at the 2013 meeting! We are so happy to make this donation to UNICEF for our third year in a row. Second, thank you to everyone who has submitted their 2014 dues. It's great to see a lot of new members this year. If you haven't done so yet, please remember that the deadline for the \$15 rate is June 30, 2014. Any dues paid after June 30 will be \$20.

I am sad to inform you that I have resigned from my position at the Medical Entomology Laboratory, effective May 30 and in July I'm moving to Chicago. As I am not sure what exactly the future holds for me yet, Rich Lampman and I have been working with the bank so that he can take over as Interim Secretary-Treasurer when the time comes. Since he is retiring and I will be looking for jobs in the Chicagoland area, we have decided to keep the finances in Champaign and switched the address on file with the bank to Rich's home address. This change will be reflected on future registration and membership forms.

If you plan to send dues to us before June 30, please mail these to his address:

Richard Lampman  
702 N Abbey Rd  
Urbana, Illinois 61802-2333

If you have any questions, feel free to email me as always, but please use this address: [avmontgo@gmail.com](mailto:avmontgo@gmail.com). It's been fun working with all of you and memorizing all of your names and faces over the years! Allison

**Student/Intern Competition 2013 Results:** By Jack Swanson

The Henry M. Lawicki Student/Intern Competition was held in November at the IMVCA Annual Meeting in Springfield, IL. Five Students from two Universities presented very interesting talks. The First Place winner was Sarah Schneider from the U of I, whose talk "Assessing the Contribution of Songbirds to the Movement of Ticks & Tick-Borne Pathogens in Illinois During Fall Migration" earned her \$300. There were two Runner Ups, Peter Brabant of ISU and Allison Gardner of UI, who each received \$100. And finally two honorable mentions were given to Kristina McIntire, ISU and Tyler Hedlund, U of I and each received Framed Photos by Alex Wild. It was truly difficult to select a winner among such fine talks!

**THANKS!** To all our Sponsors & Vendors without whom our meetings could not be as good as they get, Adapco, Amvac Environmental Products, Central Life Sciences, Clarke, Univar, Valent Biosciences, Vector Disease Control International and Zoecon. Remember them for all your needs in mosquito and vector control as well as any arbovirus surveillance projects that you do on a regular basis. Support those who support us.



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## **Northeastern Illinois Regional Meeting for WNV: by Barb O'Meara**

A NE Illinois regional meeting for planning and communications about vector borne disease was held at the Indian Prairie Public Library in Darien, IL, April 29, 2014. Numerous entities were present from local and state government, Mosquito Abatement Districts, forest preserves, and commercial mosquito companies. The discussions ranged from weather (late cold temperatures) and moisture (Illinois is still in a drought) to what people were looking for in the coming months. Most entities are going to start their year right where they left off last year and adjust to the season as it goes along. One local city government asked when would be a good time to start larviciding and it was suggested to wait until water temperatures reached 55 degrees. Most entities have put off the start of their season and a discussion about which larvicide form to use for this season centered around utilizing a 90 day in the second half of May and then waiting until August to apply a 30 day form if needed.

## **Passing of William "Bill" Schneck.**

The Executive Committee of the IMVCA was informed of the passing of Bill Schneck May 8<sup>th</sup>, 2014. For those of you who didn't know, Bill was a Trustee for the Northwest Mosquito Abatement District and served as a Trustee Representative for IMVCA since 1999. Bill was also the President of IMVCA 2001 – 2002 and remained on the Board as the Trustee Representative until recently. Bill also helped with the IMVCA Newsletters for the past 10 years. One of the most important but also most thankless things Bill had done for our Association was to connect with our Vendors and Sponsors to get their support for the many things needed for our Annual Meetings. They help make our meetings as great as they have become. He will be missed and our thoughts and prayers go out to his wife and family.

## **Former Secretary-Treasurer of IMVCA Retires from INHS.**

Nina Krasavin of the Medical Entomology Program at INHS is set to retire in 2014. The IMVCA owes her a big "THANK YOU" for bringing the finances and record keeping of the association into the 21<sup>st</sup> Century, making sure the conferences ran smoothly, and several MADs also know her as the "Queen of RT-PCR". If you have a moment, drop her a line.

## **Scouring the Internet for Guides to Mosquito Identification and Classification: By Richard Lampman**

Learning to sight identify common vector and nuisance mosquitoes is an essential and valuable skill for MADs and PHDs. Many get turned off and repelled by jargon-laden dichotomous keys; however, there are many new references on the internet that use photographs and excellent drawings. Knowing the species is a guide to the larval habitats. It is amazing how much you can tell about an unseen environment based on the types of mosquitoes you ID. Here are a few references (let me know if you find others):

[http://www.cdc.gov/nceh/ehs/Docs/Pictorial\\_Keys/Mosquitoes.pdf](http://www.cdc.gov/nceh/ehs/Docs/Pictorial_Keys/Mosquitoes.pdf) (these are what I used as a student)  
<http://www.wrbu.org/index.html> Walter Reed Biosystematics Unit



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[http://www.wrbu.org/docs/mq\\_ClassificationNew201307.pdf](http://www.wrbu.org/docs/mq_ClassificationNew201307.pdf) Mosquitoes of the World (no key, but taxonomy)

<http://www.inhs.illinois.edu/files/4213/3892/7641/mosquitosILkey.pdf> The classic Illinois key

<http://www.mosquitocatalog.org/files/pdfs/016800-0.PDF> The key to North American mosquitoes (oldie but goodie)

<http://pick4.pick.uga.edu/mp/20q?guide=Culicidae> Answer my questions and you shall...

### Good Regional Keys

<http://www.mosquitocatalog.org/files/pdfs/011800-1.PDF> California

<http://www.ct.gov/caes/lib/caes/documents/publications/bulletins/b966b996.pdf> Connecticut

<http://msucare.com/pubs/publications/p2699.pdf> Mississippi

[http://vectorbio.rutgers.edu/Adult\\_Pictorial\\_Key.pdf](http://vectorbio.rutgers.edu/Adult_Pictorial_Key.pdf) Light trap collections in New Jersey

<http://www.pavectorcontrol.org/docs/TB2009-001/Mosquitoes%20of%20PA%20-%20Complete.pdf> Pennsylvania

<http://fmel.ifas.ufl.edu/key/pdf/atlas.pdf> One of the best from Florida

[http://www.biology.ualberta.ca/bsc/ejournal/th\\_04/th04.pdf](http://www.biology.ualberta.ca/bsc/ejournal/th_04/th04.pdf) Canada. Very nice photographs

<http://www.mosquitocatalog.org/files/pdfs/123180-0.PDF> Carolina and Mid-Atlantic

<http://www.mosquito-va.org/pdfs/2014%20Presentations/31%20-%20A%20TIMELINE%20OF%20IDENTIFICATION%20MANUALS.pdf>

A great summary of manuals!

### Richard Lampman Retires, But Stays With IMVCA.

This June I retire from the INHS after 25 years and 30 years since I received my PhD in Entomology at the University of Illinois. I was trained as a scientist, essentially a problem solver, and that is something you do not retire from. In fact, retirement from something is only enjoyable when there is something to retire to. In other words, I will continue to work with the IMVCA, as an Executive Board member, newsletter contributor, and as interim Secretary-Treasurer next year. Furthermore, over the past 10-15 years in the IMVCA, I think most of you have come to realize I enjoy speaking to groups, especially regarding insect ecology and medical entomology. I feel strongly that we should standardize mosquito collection methods in Illinois, particularly now that we have such a good database managed by IDPH, and establish risk estimates based on vector index (established mean abundance per trap night times proportion infected). I hope to be able to interact with various MADs and public health groups in the future to promote these ideas. The Annual IMVCA Meeting is one of the more enjoyable conferences because of its small size and the friendships we've all established (although the food is good to).

On a personal note, I recently went through considerable difficulties and multiple surgeries with my eyes and it appears after several attempts to stop retinal detachment in my right eye (including vitrectomy and sclera banding) that I have lost considerable peripheral vision in the right eye. So, if it appears I ignore you, it's actually because I can't see you. At least, that's my story and I'm sticking to it. See you in Springfield in November (if you're on my left)! Rich Lampman



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**New West Nile Virus Threat Tool Based on Climate:** by Nancy Westcott

Since the 2002 introduction of West Nile Virus (WNV) into Illinois, over 1,300 of the more severe West Nile Neuroinvasive disease cases have occurred in Illinois and based on population and number of WNV cases, Peterson, (2012) estimated over 200,000 West Nile Virus infections in persons 16 years of age or older. WNV activity in Illinois was greatest in 2002, 2005, 2006 and 2012, with minimal human or horse cases in 2008, 2009, 2010 and 2011. Generally, above average temperatures and below average precipitation in the summer months favors WNV, and cool and/or wet summer conditions are not favorable for WNV. Several climate-based county models have been developed to help predict the onset of WNV, one for Cook County (<http://vetmed.illinois.edu/path/gissa/mirmodel.html>) and one for Champaign County (<http://mrcc.isws.illinois.edu/research/westnile/background.htm>). Verification of model results suggests that climate is an important factor related to the timing and severity of WNV outbreaks. The role of climate in WNV can be complicated as it affects vector, host, and human biology and ecology. My goal is to show how trends in transmission correlate to weather patterns in order to have predictive value.

The two WNV/*Culex* models, mentioned above, have been calibrated to their local areas, however, and WNV activity can vary throughout the state for a given year. For example in 2007 and 2013 when there was only moderate activity in northeast Illinois, there was a greater than average number of cases in southern Illinois. One possible cause of differences in WNV activity is the variation in temperature and precipitation regimes across the state during any given summer. A real-time climate-based WNV Threat tool is being developed for each of the 9-Illinois Climate Divisions (Figure 1 below) to help determine the impact of climate on each individual region. This tool will be launched in June,



available from the Illinois State Water Survey's, Midwestern Regional Climate Center's research web site: <http://mrcc.isws.illinois.edu/research/westnile/background.htm>. It will use real-time daily data and 10-day forecasted temperature and 3-day forecasted precipitation data. This graphically-based tool is preliminary in design and in content, and not meant to replace the two county-based models (see example in Figure 2). It is expected that when temperatures are above normal in June, July and August, and when there are long periods with little

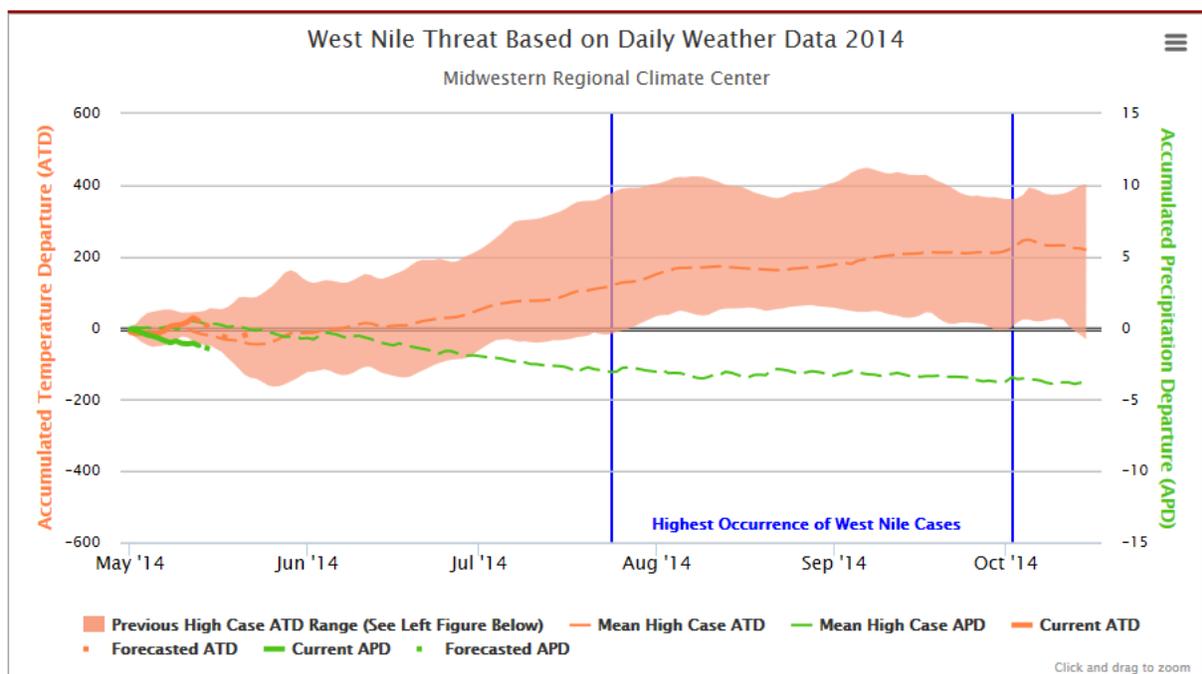
precipitation during the same period, there will be an increased WNV threat. However, differences in environmental conditions (mosquito habitat), differences in human and bird behavior, the impact of



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mosquito abatement, and a smaller human population target also may impact the frequency of WNV cases. Thus, it is hoped, but not guaranteed that this experimental tool will help indicate the severity of the current years WNV threat throughout Illinois. The models will be fine-tuned this summer, hopefully using mosquito abundance data from several collaborators. To help make the tool more user-friendly, send in questions and comments ([nan@illinois.edu](mailto:nan@illinois.edu))!

Figure 2. DEMONSTRATION OF MODEL For Climate Division 3: current (bold solid, as of 05/12/2014) and mean (dashed) values of a) accumulated temperature departure from normal (ATD) and b) accumulated precipitation departure from normal (APD), plus 10-day forecasted (dotted) ATD and 3-day forecasted APD. An increased risk of human WNV cases is associated with ATD values above the zero line and APD values below the zero line and/or steadily decreasing trend, particularly in July and August.



### Any West Nile Virus Transmission in the US Yet?

MISSISSIPPI: February 10, 2014, the Mississippi State Department of Health (MSDH) reports the state's first human case of West Nile virus (WNV) for 2014. The reported case is in Hinds County. The MSDH only reports laboratory-confirmed cases to the public. "While it does seem surprising given all the winter weather we've had this season, it serves as a good reminder that WNV can occur year-round,



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even if we are not in the peak summer months of July, August, and September,” said MSDH State Epidemiologist Dr. Thomas Dobbs.

FLORIDA: Although I have not seen a report of WNV yet, I see they have reported EEE in five horses as of May 17<sup>th</sup> 2014.

ARIZONA: The Arizona Department of Health Services had reported an avian positive for West Nile virus as of their April 9<sup>th</sup> 2014 report.

TEXAS: Texas still has just one positive mosquito report from one county, April 28<sup>th</sup> as of May 19<sup>th</sup>.

PENNSYLVANIA: Pennsylvania’s West Nile Virus Control Program reported their first West Nile virus activity as a positive mosquito batch collected from Daupin County on May 13<sup>th</sup> 2014.

CALIFORNIA: San Joaquin County had reported its first case of West Nile Virus activity in March, two months ahead of schedule. There are now ten counties seeing indication of West Nile Virus activity in 2014. Nineteen dead birds from eight counties have tested positive for WNV in 2014. There are also seven WNV positive mosquito samples reported in three counties as of May 19<sup>th</sup> 2014.

**Estimated Cost of West Nile Virus in U.S. Nearly \$800 Million:** CDC, SOURCE: American Society of Tropical Medicine and Hygiene, news release, Feb. 10, 2014

Researchers tallied costs in health care expenses and lost productivity from 1999 through 2012, which is higher than previously reported or about \$56 million a year over the 14 years. The researchers examined more than 37,000 cases of West Nile virus reported to the CDC from 1999 through 2012. They found that more than 16,000 patients developed neurologic disease, more than 18,000 were hospitalized and more than 1,500 died. People older than 50 are more likely to develop severe neurologic disease if they're infected with the West Nile virus, the release noted. The number of West Nile virus disease cases reported to the CDC is likely fewer than the actual number that occurred in the United States since 1999, according to the news release. The costs associated with West Nile virus infection varied widely depending on what types of complications patients developed, according to the study published online Feb. 10 in the American Journal of Tropical Medicine and Hygiene.

**Chikungunya: The Next Invasive in North America?** EDITED FROM PROMED [Byline: Charles Simmins]

Included in the week 16 communicable disease threats report, issued by the European Centre for Disease Prevention and Control (ECDC) on 18 Apr [2014] are the 1st chikungunya [virus infection] (CHIKV) case counts from the Dominican Republic [DR]. The DR has reported 17 confirmed and 767 suspected cases of the mosquito borne disease. The number of confirmed and suspected cases for the entire Caribbean outbreak increased nearly 20 per cent in the week, to 29,760.

The French-speaking islands of Martinique and Guadeloupe continue to be the most seriously affected



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by CHIKV. Martinique is reporting 1,473 confirmed cases and an astonishing 16,000 suspected cases, along with 2 deaths. Guadeloupe has seen 1,261 confirmed and 4,710 suspected chikungunya cases, with one death. The French side of the island of St. Martin has reported 3 chikungunya deaths. There have been 793 confirmed cases and 2,980 suspected cases. Chikungunya was 1st detected in the Western Hemisphere on French St. Martin in early December 2013. The spread of chikungunya on the South American mainland continues to be slow but steady. French Guyana reported 46 confirmed cases, an increase of 4 from last week.

The British and Dutch islands that have reported chikungunya cases reported no new cases this week. Timely testing is an issue for these islands, with patient specimens being sent to other islands such as Trinidad for processing.

The Dominican Republic began investigating an outbreak of illnesses with chikungunya symptoms in mid-March [2014]. On 4 Apr [2014], the Health Minister, Dr. Freddy Hidalgo Nunez, announced that testing done by the Centers for Disease Control in Atlanta had confirmed CHIKV were present. Today's [18 Apr 2014] data represents the 1st official case counts after that announcement.

Chikungunya is carried by the yellow fever mosquito, *Aedes aegypti*. The mosquito is common throughout tropical and sub-tropical North and South America. The University of Florida, in its presentation on *Ae. aegypti*, notes that the species has been found in at least 23 U.S. states. The yellow fever mosquito is highly adapted to feeding off humans. It is an aggressive day biter, and will bite indoors as well as outdoors. The species breeds in containers with rainwater in them such as empty cans, gutters, unattended pet bowls and bird baths.

[This report is yet another example of CHIKV moving long distances, no doubt via a viremic individual who acquired the virus infection in Asia and transported it to the Caribbean, where there were abundant populations of mosquito vectors. It is not surprising that there has been virus movement over shorter distances in the Caribbean.] – PROMED Mod.TY

### **And Just in Case You Were Thinking “At Least We Don’t Have *Aedes aegypti*” –**

A Single Mutation in Chikungunya Virus Affects Vector Specificity and Epidemic Potential. 2007. Konstantin A Tsetsarkin, Dana L Vanlandingham, Charles E McGee, Stephen Higgs. Chikungunya virus (CHIKV) is an emerging arbovirus associated with several recent large-scale epidemics of arthritic disease, including one on Reunion island, where there were approximately 266,000 cases (34% of the total island population). The 2005–2006 CHIKV epidemic on Reunion Island was unusual because the vector responsible for transmission between humans was apparently the Asian tiger mosquito, *Aedes albopictus*. We found that E1-A226V mutation in the virus is directly responsible for CHIKV adaptation to *Ae. albopictus* mosquitoes, which provides a plausible explanation of how this mutant virus caused an



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epidemic in a region lacking the typical vector. This research gives a new insight into how a simple genetic change in a human pathogen can increase its host range and therefore its geographic distribution. *Ae. albopictus* is abundant and widely distributed in urban areas of Europe and the United States of America, and this work suggests that these areas are now vulnerable to CHIKV establishment.

### **Voters Approve Mosquito Abatement District Parcel Assessment Hike.**

May 13, 2014 THE HERALD Monterey County, CA

Our web posts don't get the kind of puny treatment we sometimes give our for-print headlines, so please humor me for just a second here: Mosquito District Wins Scratch Lotto. Voters Give Mosquito District a Bump. Mosquito District Scratches Seven-Dollar Itch. OK, thanks. On to the news Monterey County's been waiting for (with abated breath):

Voters approved a small hike on the [parcel tax supporting the Northern Salinas Valley Mosquito Abatement District](#), officials announced at today's district board meeting.

### **And Now For Something Completely Different.**

"Guess Who"

It's that scratching time of year

When those thirsty pests appear!

Hanging out in rain-soaked ditches

Giving us abundant itches!

They leave us in a month or so

'Till then we're bit from head to toe!

They're feisty springtime foes –

Dracula's cousins – MOSQUITOES!

Arline Clarke

*THE OPINIONS EXPRESSED IN ARTICLES ARE THOSE OF THE AUTHORS AND NOT NECESSARILY THOSE ENDORSED BY THE ILLINOIS MOSQUITO AND VECTOR CONTROL ASSOCIATION. Articles are submitted to the Newsletter Editor and reviewed by the Executive Committee. They are meant to inform and generate discussion.*