



## Save the Date: IMVCA Annual Meeting November 17th & 18th, 2011 Champaign, Illinois

### *A Note From Our Secretary/Treasurer*

Nina Krasavin

I would like to thank everyone who has already paid their dues. You make my job easy. In contrast, to that very few who did not send their dues, I would like to remind you that the deadline for \$15 dues is June 30, 2011, after that it will be \$20. I know who you are, so please send those dues in.

Remember if you are a voting member, you have to pay your dues or you will not be allowed to vote. This is in our Constitution.

Finally, what we hope is the first of many more charitable efforts to come, members of the IMVCA donated \$675.00 worth of anti-malarial drugs through the UNICEF Inspired Gifts Program. This was enough medicine to treat 750 children. The funds were raised through the raffle of an iPad, generously donated by UNIVAR, during the IMVCA's Annual Meeting this past November. See you in Champaign!!

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### **Crucial Issues Threaten Mosquito & Vector Control Programs**

Dave Zazra, IMVCA President

Earlier this May, I participated in the American Mosquito Control Association's 13th Annual Washington Conference in Alexandria, VA. The conference is a concerted effort to meet with decision makers in our nation's capitol regarding issues that affect our ability to protect public health.

The central factor in all of these issues is financial. The majority of mosquito and vector control programs are funded with taxpayer dollars. The administrations of the requirements that come with NPDES permitting are a genuine waste of money. They are redundant with little or no added value to the public. These are dollars that are best spent on control programs, research and communications/education.

There are five issues that currently have the greatest potential impact on our ability to effectively control mosquitoes and other vectors. Each one of these requires our response to our elected officials.

The following is a summary of all the position papers presented to our elected officials or their staff during Washington Day and is reprinted with the permission of the AMCA:

1. NPDES/Clean Water Act Impacts on Mosquito Control Programs

Issue: Mosquito Control Programs (MCP's) across the country face potentially devastating costs and reductions to service due to the upcoming implementation of NPDES permits for mosquito control pesticide applications. These permits will be duplicative of existing regulations, expensive to comply with, provide impetus for anti-pesticide activists to initiate legal challenges, and will result in a reduction in public health protection from mosquitoes and mosquito borne diseases while providing little or no

environmental benefits.

**Needed Actions:** We urge the Senate Agriculture Committee to promptly consider and pass HR 872. The Senate should then immediately vote for its adoption. Passage of HR 872 will ensure that scarce valuable resources are not wasted and public health missions are not compromised by duplicative and unnecessary regulations.

## 2. Endangered Species Act Considerations and Mosquito Control

**Issue:** Endangered Species Act (ESA) decisions can impact the availability of pesticides used to protect the public's health and welfare. Unfortunately, these decisions are not being developed in a transparent manner based upon sound science, but are increasingly being driven by costly litigation.

**Needed Action:** Congress should direct the Services to implement measures to insure that ESA decisions are based upon reliable sound science, transparency, and the rule of law. Peer review needs to be established and the Services and Agency need to be allotted the appropriate resources to successfully implement the ESA.

## 3. Funding for National Disease Surveillance Network through Epidemiology and Laboratory Capacity (ELC) Grants from the Centers for Disease Control

**Issue:** The proposed budget reinstates critical funding for vector-borne disease monitoring and response programs nationwide. This funding is critical to maintain the nation's ability to detect outbreaks of endemic and exotic disease.

**Needed Action:** We respectfully request that Congress maintain funding at the current \$26.7 million for the program and resist any recommendations to reduce or eliminate the program for 2012.

## 4. Failure to Appropriate FQPA-Authorized Funding Threatens Availability of Public Health Pesticides

**Issues:** Nearly 15 years after the Food Quality Protection Act (FQPA) was enacted, funding for Congressionally-mandated public health pesticide data collection has not been appropriated.

**Needed Actions:** Ensure that language in the appropriations bill for Labor, HHS, and Education directs the CDC to implement the public health pesticide data collection program. Include the FQPA-authorized \$12 million in new funds for the CDC's budget to be directly allocated, without any overhead withdrawal by the CDC, to the USDA's IR-4 program for public health data collection purposes.

## 5. Mosquito Control on National Wildlife Refuges

**Issues:** To assure that the U.S. Fish and Wildlife Service's (USFWS) "National Mosquito Management Policy"

allows Mosquito Control Programs (MCPs) to effectively control mosquitoes on/off-refuge in a timely, cost effective and environmentally-compatible manner.

**Needed Actions:** USFWS should ensure that concerns formally expressed by mosquito control professionals are fully considered and satisfactorily addressed in the second version of the Service's draft National Mosquito Management Policy and if so, expedite its final promulgation. Pending formal adoption of the appropriately amended policy, current mosquito control practices on NWRs should remain unchanged.

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The content of the articles in the IMVCA Newsletter are brought together by the Newsletter Editor and reviewed by the Executive Board. The comments in the articles do not necessarily reflect the official position of the association, nor of its officers and members.

## Summary of Federal Funding Issues

A number of key activities associated with vector control rely on federal funding. In some cases the continuation of these funding avenues is problematic and is the subject of three of our position papers. In order to reduce the confusion that might arise when referring to each of these funding issues, the AMCA provides the following brief comparison.

Position Paper: Failure to Appropriate FQPA-Authorized Funding Threatens Availability of Public Health Pesticides

- Funding Origination: Department of Health and Human Services (DHHS)
- Routed Through: DHHS
- Funding Problem: Funds authorized but appropriation not requested
- Funding Amount: \$12 million
- Funding Rationale: Data collection costs for crucial "minor use" public health pesticides
- Proposed Recipient: USDA Inter-Regional 4 (IR-4) Program
- Failure to Implement: Potential public health pesticide cancellations

Position Paper: Funding for National Disease Surveillance Network through Epidemiology and Laboratory Capacity (ELC) Grants from the Centers for Disease Control and Prevention.

- Funding Origination: Department of Health and Human Services (DHHS)
- Routed Through: CDC Division of Vector-Borne and Infectious Disease
- Funding Problem: Proposed budget eliminates ELC grants
- Funding Amount: \$26.7 million
- Funding Rationale: Expand and maintain national vector-borne disease surveillance and monitoring infrastructure.
- Proposed Recipient: State public health agencies and local mosquito control programs.
- Failure to Implement: Loss of means of detecting and tracking vector-borne disease to optimize control.

Position Paper: Continued Federal Funding from USDA for Cooperative Research on West Nile Virus and Other Emerging Diseases, Conducted with the USDA/ARS Research Program in Florida and the Connecticut Agricultural Experiment Station

- Funding Origination: Department of Agriculture

- Routed Through: Connecticut Agricultural Experiment Station (CAES)
- Funding Problem: Funding dropped from proposed budget
- Funding Amount: \$1.47 million
- Funding Rationale: Cooperative research on West Nile and other vector-borne diseases
- Proposed Recipient: CAES, along with USDA Agricultural Research Service Center for Medical Agricultural and Veterinary Entomology
- Failure to Implement: Loss of federal/state collaborative research capability in methods of detecting, monitoring and controlling exotic vector-borne disease.

Please contact our Senators Richard Durbin and Mark Kirk and ask them to support these important issues so that we can maintain and enhance our control programs for the continued benefit of public health.

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## New Leader of Medical Entomology Program at INHS at UIUC

Dr. Ephantus Juma Muturi has accepted the Medical Entomologist position at the Illinois Natural History Survey (part of the new Prairie Research Institute at the University of Illinois) effective April 27, 2011 after serving as the interim program director since August 2010. Dr. Muturi joined INHS as a post-doctoral research associate in May 2009. Juma's academic and research background includes: Postdoctoral Student, University of Alabama-Birmingham and University of Illinois Urbana-Champaign; PhD Entomology, University of Illinois at Urbana-Champaign; MS, Parasitology, Kenyatta University, Kenya; and B.Ed. (Science), Botany and Zoology, Kenyatta University, Kenya.

Dr. Muturi competed in our student competition several years ago and was one of our winners. Dr. Muturi conducts research on ecological interactions among container mosquitoes, including mosquito-virus interactions and the molecular mechanisms that alter mosquito tolerance to stress. Specifically, he has studied how chemical contaminants (e.g. pesticides and plant chemicals from decaying organic matter) interact with natural biotic (e.g. competitors, predators, and entomopathogens) and abiotic (e.g. temperature, humidity, UV radiation) stressors. The focus of his research is how stress alters the outcome of inter- and intra-specific competition, and modifies mosquito-virus interaction, sometimes making the mosquitoes more likely to transmit pathogens.

Dr. Muturi can be reached at his Medical Entomology lab office at 244-3410 or via email at [emuturi2@illinois.edu](mailto:emuturi2@illinois.edu). Please congratulate Juma on his new appointment!

# The Illinois Mosquito and Vector Control Association Annual Student/Intern Competition

## Henry Lawicki Student / Intern Competition

David Bettinardi, University of Illinois, "Effects of Temperature on Adult Longevity in the Mosquito *Aedes albopictus*"

Allison Gardner, University of Illinois, "Factors Affecting Productivity of Catch Basins as a *Culex* Larval Breeding Habitat"

Bethany Krebs, University of Illinois, "Movements & Roosting Behavior of the American Robin: Implications for West Nile Virus Transmission & Amplification"

Hallie Kyrias, Champaign - Urbana Public Health District, "West Nile Surveillance in Champaign County: Implications for Abatement Strategies"

Brent Newman, Knox College, "Ecosystem Management: Monitoring Tick (Acari) Populations at Green Oaks Biological Field Station and the Implication for Human Health"

James Ricci, University of Illinois, "Effects of Insecticide and Type of Larval Food Resource on the Life History of *Aedes albopictus*"

The winners of the competition were: First place, Bethany Krebs, \$300. Two runners-up, James Ricci & Allison Gardner, took home \$100 each.

All student/Intern presentations were well received by IMVCA conference attendees, who had the opportunity to ask questions after each presentation. The student/intern presenters were also invited to participate in the annual meeting and evening banquet giving members a further opportunity to engage these scholars.

## Bill Schneck Receives Honorary Membership In IMVCA

The Executive Committee recommended Bill Schneck for Honorary Membership in the IMVCA. Voting Members unanimously approved this recommendation during the 56th IMVCA Annual Meeting. Bill has been involved with the IMVCA for as long as I can remember. He has served as President and has been on the Executive Committee as our Trustee Representative since 1999. Bill has been the one who coordinates with our sponsors, organizes who helps pay for what and Bill is the person that gets the programs printed for the annual meetings. Congratulations Bill, and thanks for all you have done for our Association!

# Special Thanks!

## Sponsors:

Clarke Environmental Products & Services, Lyell Clarke - Hospitality Hour & Student / Intern Competition; Zoecon, Loren Cunnington - Early Bird Lunches; Valent Biosciences, Ryan Solberg - Afternoon Break; Adapco, Univar, Sheri Cunningham - Raff e Sponsor Grand Prize; Brian Strebler - Morning Break; VDCI, Daniel Markowski - Program Brochure

## Exhibitors:

Adapco, Inc., AllPro Vector Group, Central Lifesciences (Zoecon), Clarke, Electronic Data Solutions, FourStar Microbial Products LLC, Mug-a-Bug, Univar USA & Valent Biosciences

Remember to support our Sponsors & Exhibitors when thinking about products & services. They help us bring you the Annual Meeting with all the extras & fun stuff we could not do without their support. From all of us at the IMVCA, THANK YOU !!

## A Summary of Some of the Talks Presented at the 56th Annual IMVCA Meeting November 18 - 19, 2010, Champaign, Illinois

Tom Velat, Invertebrate Ecologist, Forest Preserve District of DuPage County

### Movement and Roosting Behavior of the American Robin: Implications for West Nile Virus Transmission and Amplification. Bethany Krebs, University of Illinois

The speaker's graduate work focuses on the American Robin as a super-spreader of WNV. They found the following results from preliminary investigations. American robins are common, migratory, and well adapted to urban living. They are consequently predisposed to harbor WNV for a large portion of the summer. Moreover, they found that robins form large communal roosts, especially during winter in areas that have decent food sources such as European buckthorn stands. Robins have been found to stay infected with WNV longer than most other birds, and therefore can infect more mosquitoes during their viremic period. Roost dynamics need to be investigated further because some roosts are active all winter and can contain up to 20,000 robins. As a result, more research will be necessary to identify the role of urban green space on the transmission of WNV through super-spreaders like the American robin.

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**Illinois Surveillance and Disease Update. Dr. Linn Haramis, Illinois Department of Public Health**

This talk was aptly named “Dodging the Bullet” because the speaker discussed the ways in which this season could have been much worse for human disease transmission. West Nile virus was not “gone” at the beginning of this season. 2008 had the third coolest August and 2009 had the seventh coolest July on record. These conditions dictated the results of those seasons but are not something that humans can control. Prevention practices (i.e. larvaciding, surveillance, adulticiding to a degree) typically reduce WNV activity. On a different topic, there are rumors of human immunity to WNV but recent data is not supporting this theory. Many folks ask why IDPH continues dead bird surveillance. The speakers response was that it is a check and balance measure on the surveillance efforts of each county in the state. Also, many counties do not have the staff to conduct mosquito surveillance efforts so this method provides at least a minimum level of data for those locations. Is there really higher WNV activity in Northeastern Illinois? Yes, probably because of massive urban underground stormwater drainage systems which create additional breeding habitats and overwintering harborages for Culex – remember that Chicago was built on marshland and all the water must go somewhere. Viral amplification and infection rates started rising later than usual because rain events regularly flushed out breeding sites in the first half of summer. Also, one of the largest nuisance mosquito hatches in early August kept people using repellent or staying indoors during the second half of summer.

**Mosquitoes, Infection, and Weather: A Historical Perspective. Marilyn Ruiz, University of Illinois**

Her research explored how weather might be measured relative to vector-borne disease risk. They used spatial and statistical modeling techniques fine scale spatial (2000m<sup>2</sup>) and temporal (weekly) patterns of WNV infection rates relative to changing weather conditions in the urban landscape of the greater Chicago region from 2004 to 2008. Increased air temperature was the strongest predictor of WNV infection rate increase, with cumulative high temperatures distinguishing years with mosquito infection and human illness rate from those with lower rates. This may explain why urban centers seem to be hot-spots for WNV because the daily temperature varies much less in cities than in rural areas (i.e. average nighttime temps stay much warmer). This is often referred to as the urban heat island effect. Spatially, low precipitation was the most important variable predicting stronger mosquito infection and this was expected. Their model predicted high mosquito infection rate in 2010 but would occur later than usual. An online version of the model is expected to be in the works but this will be highly dependent

on local weather data to determine reliable results. Since this high resolution data doesn't exist in some cases it will be difficult to utilize this model across Illinois.

**Ticks in Illinois: Faunistics and Other Current Efforts. Nohra Mateus-Pinilla, Illinois Natural History Survey**

These are the results of Jennifer Rydzewski's work with Ixodes scapularis ticks and presence of the Lyme disease-causing bacteria Borrelia burgdorferi. They looked at habitat diversity and temporal changes of I. scapularis densities in one central Illinois preserve. They also looked at small mammal diversity relative to presence of B. burgdorferi. Of all small mammals sampled, Microtus ochrogaster had the highest incidence of B. burgdorferi. Also, the sample site showed the highest number of I. scapularis ticks in prairie, second highest in young forest, and third highest in old forest. This was unexpected because we consistently do tick drags for presence of I. scapularis in older growth mesic savannas. This may have been an artifact of the sampling method since the ticks were collected from the ear and head region of small mammals captured during the study.

**Update on Natular. Jim McNelly, Clarke Products**  
Natular is a made from a naturally occurring Actinomycete bacterium synthesized using fermentation to get Spinosyn A & D. Together they make up spinosad. In 1995 the EPA classified it as a reduced risk insecticide. In 1997 the first spinosad products were registered with EPA. In 1999, it received the Presidential Green Chemistry Award. The Natular inert ingredient goals were to qualify as a minimal reduced risk insecticide, qualify for National Organic Program Registration, go through the Reduced Risk Review process, get Section 3 Registration, and then finally get Organic Materials Registration. It has accomplished all of these goals. It employs 100% control of most target species within 72 hours of application and the extended release tablets last for 6 weeks under normal conditions. It has a unique mode of action that can be used in a rotational larvaciding program. It has a favorable aquatic profile which is not toxic to wildlife and not persistent in the environment. It will be commercially available in 2011.

**Tracking Eastern Equine Encephalitis Virus in Northeastern U.S. John-Paul Mutebi, CDC**

EEE consists of 26 different viral complexes. There are two viral varieties – the mellow one is in South and Central America as well as neo-tropical U.S. The bad one is up north and contains the more severe alphaviral encephalitides. Similar to WNV, EEE has the two disease forms – systemic and neurologic. There is a 90% fatality rate in the neurologic form. There are severe long term neurologic symptoms in survivors. Illness is more severe in children and elderly. It is transmitted by Culiseta melan-

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ura and passerine birds with other bridge vectors in *Culex* and *Coquillettidia* genera. Primarily distributed in eastern North and South America, *C. melanura* occurs in parts of east-central Illinois, Maine to Wisconsin south to Florida and east to Texas, but isn't found very easily in Illinois. There were no EEE human cases in Illinois from 1964 to 2009. One horse case was found in Illinois during 2010 but may be resulting from exposure to the epidemic in southern Michigan this year. This was not confirmed through epidemiological studies because the horse had already been buried before these could be completed. There is evidence that EEE is expanding northward and Mutebi is interested in this because the virus tends to be fueled by excessive rain. He also found that New England states have had rising human cases in the last ten years. They also initiated a short serological survey at a deer check station in Maine. It's easy to do and hunters are usually very precise at locating where they shot the deer. The results showed that deer frequently get exposed to EEE infections. Deer typically live in home ranges that don't often exceed 1.6 km<sup>2</sup> so they could be good indicators of EEE activity in a given region. 23% of the deer tested positive. They also found that deer culled from non-forested areas are more prone to be exposed to EEE than in forested areas.

**General NPDES Permit for Pesticide Application Point Source Discharges. Leslie Lowry & Darin Lecure, Illinois Environmental Protection Agency**

This effort was borne from a longstanding principle of the EPA of not requiring permits for pesticide applications since these products were not considered pollutants if they were applied according to FIFRA regulations. However, as soon as the EPA made it official they got sued. As a result, applications of pesticides in, over or adjacent to Waters of the U.S. will need to have an NPDES permit. The IEPA intends to issue the final permit by February 2011. Categories include discharge to waters of the State resulting from mosquito control, weed and algae control, aquatic nuisance animal control, and forested areas pest control and these are covered under this new permit. Off target spray drift is outside of the scope of this permit because that is covered by FIFRA and IEPA cannot permit an action that is illegal under FIFRA. The Notice of Intent (NOI) is the actual application form and is submitted to IEPA. Who has to file the NOI? Either the landowner or the applicator needs the permit for the operation – not both. The permit application lists annual thresholds for each category of pesticide application. If the agency is above these thresholds in any one category, then they will be required to submit a Pesticide Discharge Management Plan (PDMP) which is an annual report on the pesticides and amounts applied to Waters of the U.S. This report would include the technology based effluent limitations and surveillance data. The permit cycle is 5 years. Ad-

verse incident reporting is required. Endangered species consultation may be required with IDNR representatives for E&T protections. Jurisdictional determinations (i.e. what is a Water of U.S.) will be made by the applicator. The permit fee has yet to be established by the State Legislature but will probably be close to \$1000. The Federal EPA has pushed back the final permit posting until the beginning of January. NOIs must be submitted to IEPA by April 9th, 2011.

Other talks presented:

AMCA Update. Jim Stark, North Central Regional Director, AMCA

Northwest MAD: 2010 in Review. Mike Szyska, Northwest MAD

A Clinician's View of West Nile Virus. Russell Bartt, Rush Medical University

Considerations For Belowground Mosquito Management in Stormwater Treatment Structures. Justin Harbison, North Shore MAD

Vector Index. Tom Anderson, Northwest MAD

Larval Stress and the Ability of Mosquitoes to Transmit Arboviruses. Ephantus Muturi, Illinois Natural History Survey

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## **MOSQUITO IDENTIFICATION AIDS AND KEYS**

photographic key

<http://fmeal.ifas.ufl.edu/key/pdf/atlas.pdf>

Training slides for Mosquito ID

<http://www.utep.edu/leb/mosquito/larvaeID.pdf>

<http://www.utep.edu/leb/mosquito/mosquitoadult.pdf>

Michigan

<http://www.mimosq.org/PDF/Michigan%20Mosquito%20Manual.pdf>

Illinois

<http://www.mosquitocatalog.org/files/pdfs/112700-0.pdf>

<http://www.inhs.illinois.edu/research/MedEnt/mosquitosILkey.pdf>

Indiana

<http://www.mosquitocatalog.org/files/pdfs/122890-2.pdf>

Wisconsin

<http://insects.entomology.wisc.edu/diptera/culicidae/index.html>

<http://www.mosquitocatalog.org/files/pdfs/035830-0.pdf>

Iowa

<http://www.mosquitocatalog.org/files/pdfs/070710-0.pdf>

[http://mosquito.ent.iastate.edu/browse\\_species\\_.php](http://mosquito.ent.iastate.edu/browse_species_.php)

awesome records

Ohio

<http://www.mosquitocatalog.org/files/pdfs/108270-0.pdf>

Nice keys

Pennsylvania

<http://www.afpmb.org/sites/default/files/whatsnew/2010/188616.pdf>

**CALL FOR PRESENTATIONS**  
**ILLINOIS MOSQUITO & VECTOR CONTROL ASSOCIATION**  
**2011 ANNUAL MEETING, NOVEMBER 17<sup>TH</sup> & 18<sup>TH</sup>**  
**HILTON GARDEN INN**  
**CHAMPAIGN, ILLINOIS**

**DEADLINE:** Requests must be received by **October 10, 2011** to guarantee a place in the program. Email to: richlamp@illinois.edu

**RETURN FORM TO:** Richard Lampman, PhD,  
Medical Entomology Program  
Illinois Natural History Survey  
University of Illinois, Urbana-Champaign  
1816 South Oak Street  
Champaign, IL 61820

**TITLE OF TALK:** (15 WORDS OR LESS) \_\_\_\_\_

**ABSTRACT:** We would like to share abstracts or papers on the IMVCA website unless the author indicates otherwise. Please submit a Microsoft Word Document or PowerPoint Presentation, preferably as an e-mail attachment to: richlamp@illinois.edu

**NAME(S) OF AUTHOR(S):** \_\_\_\_\_

**PERSON PRESENTING:** \_\_\_\_\_

**INSTITUTION ADDRESS:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**TELEPHONE NUMBER:** \_\_\_\_\_

**TYPE OF PRESENTATION:**

( ) oral 10 min.      ( ) oral 15 min.      ( ) oral 20 min.

**EQUIPMENT:** A laptop computer and projector will be provided. Additional equipment must be arranged by the presenter and program chair should be notified.

**OTHER EQUIPMENT NEEDED:** \_\_\_\_\_

For more info visit the IMVCA website at [www.imvca.org](http://www.imvca.org) or contact richlamp@illinois.edu