



# Skeeter Scanner

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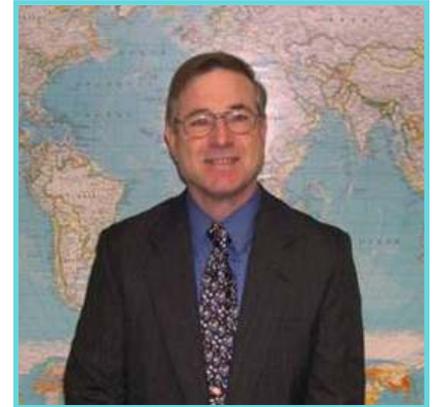


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## PRESIDENT'S MESSAGE

As I sit here reflecting about MMCA's past conference and the direction for the organization I realize the importance of having diverse groups of individuals when it comes to maintaining the viability of the organization as a whole. The 22<sup>nd</sup> Annual MMCA Conference was a great success, despite lower than expected attendance. Mark Harten and his planning committee deserve kudos for a great choice in meeting facilities, excellent program, and extremely



thought-provoking entertainment. The well-rounded agenda included something for everyone. Again, the education outreach portion of the program continues to shine as students from the Climax-Scotts School district received basic mosquito education provided by Dr. Walker and Randy Knepper and then enjoyed the William J. Lechel, II Student Competition. I would like to personally thank all the vendors for their support of the scholarships, coffee breaks, silent auction, and door prizes. Vendor support of MMCA is what makes this quality conference possible.

As members prepare to gear up for the upcoming season remember to think about sharing any research at the next conference in Ann Arbor. Contact Joyce McLaughlin at (989) 687-5044 if you will generate information that others would find useful, there is always a need for speakers.

In the past, effort has been made to reach out to others in similar occupations such as the members of Michigan Pest Control Association (MPCA) and people that would be involved in setting up new programs, such as Michigan Township Association (MTA) members. The Board continues to look for ways of educating others about mosquitoes and mosquito control by having the MMCA display booth and representatives at the Michigan Environmental Health Association's conference, as well as having a speaker on their program. Plans are also being formulated to have representatives and possible speakers at the Michigan Municipal League's fall conference. If you know of other organizations that might benefit from a mosquito control presentation or the presence of representatives and the MMCA booth please contact any Board member with your suggestion. Remember members from diverse groups are what makes MMCA strong.

*Charles Dinmore*

## **ASU Researchers Granted \$1.5M to Seek West Nile Virus Vaccine**

Arizona State University scientists are testing whether tobacco plants can yield a vaccine or drug that blocks the West Nile virus from attacking a person's central nervous system.

Researchers at ASU's Biodesign Institute received a four-year, \$1.5 million grant from the National Institute of Allergy and Infectious Diseases to study ways to halt the disease.

There is no drug that counteracts the virus, which last year infected more than 3,500 people in the United States and resulted in 109 deaths. There were 94 West Nile virus cases reported in Arizona.

Qiang "Shawn" Chen and his research team are studying ways to deliver drugs directly to a person's brain to attack the virus.

Now, viruses such as West Nile can traverse the "blood-brain" filter that protects the organ, but drug treatments cannot.

Chen's team, which includes scientists from ASU and Washington University in St. Louis, is attempting to develop plant-based antibodies that can cross this filter and attack the virus directly.

A key part of the research is to create a system that cranks out these plant-based proteins. This allows a mass-production system of sorts that allows researchers to test many types of proteins in a rapid fashion. The goal is to find one that has the potential to break the blood-brain filter.

The group will inject proteins into the tobacco plants and harvest the leaves for potential drugs. It takes just 10 days or so to harvest the modified plants.

"Shawn has come up with a clever way to cross into and protect the brain," said Charles Arntzen, director of Biodesign's Center for Infectious Diseases and Vaccinology.

Chen, an assistant professor at ASU's Polytechnic campus' department of applied biological sciences,

said research of mosquito-borne disease is a personal mission. His father died after contracting meningitis from a mosquito bite while on a university-sponsored retreat in a remote area of China.

The University of Arizona, too, is studying ways to combat the West Nile virus. However, the Tucson researchers are studying a method that may prevent bites altogether.

Scientists at UA's Bio5 Institute envision a molecule that would instantly kill a disease-carrying mosquito when it bites a human.

This one-bite-and-you're-out molecule could be sprayed on mosquitoes, theoretically preventing the spread of mosquito-spread diseases such as West Nile virus, malaria, yellow fever or Dengue fever.

## **Urban Entomology: A Student Debate**

From the public health issues of West Nile Virus, cockroach-related allergies, and bed bugs to the use and misuse of pesticides, the public is becoming increasingly aware of urban entomology. The following is an excerpt from an article printed in the summer 2007 issue of *American Entomologist*.

### **Should pest abatement be mandatory when insect-transmitted disease threats to human health are documented?**

*Marc Fisher, Siddharth Tiwari, Joao M. Sousa, and Bryan Jackson.* Department of Entomology, Virginia Tech

Mandatory insect abatement programs are a reasonable method for suppressing insect-borne diseases that are documented public health concerns. Public interest groups have questioned where the line should be drawn between a government's role in protecting the health of the general public versus the rights of individuals who do not want to be exposed to mandatory pesticide applications. The Supreme Court case of *Jacobsen vs. Massachusetts* (1905) defined that line. The court concluded that the individual liberty granted by the Constitution is not free of restraint, especially when the public's health and safety are at risk.

One of the most prevalent and successful examples of a mandatory abatement program is mandatory mosquito abatement. Mandatory programs have been effective, from a scientific perspective, in reducing the incidence of insect-borne diseases. Lardeux et al. (2002) found that a community-mandated control program using IPM techniques resulted in a significant reduction of mosquitoes. It can likewise be argued that the sharp decline or absence of several major insect-transmitted diseases in the United States, including malaria and yellow fever, is due to mandated mosquito abatement programs (Wagner and Magee 1977). In addition to being effective, many of the IPM tools used in mandated mosquito management programs are relatively safe for the environment and humans (Hershey et al. 1995, Hanowski et al. 1997). Similar principles that have been used effectively in mandatory mosquito abatement programs can be applied to other urban pests that threaten public health (i.e., fleas, rats, flies).

From an economic point of view, mandatory abatement can save money in the short term and improves the long-term viability of local economies. Farmer et al. (1989) found that one mandatory mosquito program yielded economic benefits between 2.6 and 4.3 times the program's cost. Ofiara and Allison (1986) similarly found that chemical and non-chemical mosquito control measures yielded a positive economic benefit. In the long run, abatement programs ensure the economic health of areas prone to insect-borne diseases (Wagner and Magee 1977).

Past studies have shown that most individuals are supportive of mandatory mosquito abatement (Farmer et al. 1989). John et al. (1987) found that a majority of residents within a mandatory mosquito abatement program viewed the program as being successful. They found that residents were supportive of implementing alternative non-chemical mosquito control measures, even if it would mean additional costs to individual households.

We maintain that mandatory insect abatement is a scientifically, economically, and socially reasonable method for ensuring public health. Mandatory laws are better than voluntary guidelines in attaining

public assurance that the proper measures are being utilized to deal with public health emergencies (McKay and Moeller 2002).

## **Long Term Effects of West Nile Virus**

Most people who suffer severe infection with West Nile virus still experience symptoms years after infection and many may continue to experience these symptoms for the rest of their lives according to research presented March 17, at the 2008 International Conference on Emerging Infectious Diseases in Atlanta, Georgia.

"What we are finding is that about 60% of people, one year after severe infection with West Nile, still report symptoms," says Kristy Murray of the University of Texas Health Science Center at Houston, a lead researcher on the study.

Supported by a grant from the National Institutes of Health (NIH), Murray and her colleagues have been conducting a long-term, in-depth study of people in the Houston, Texas area who have been diagnosed with West Nile. They monitored 108 patients over a 5-year period, checking in every 6 months to record both subjective and objective clinical outcomes and rates of recovery.

Persistent symptoms of West Nile infection still plagued 60% of patients in the study at the end of the first year. Moreover, Murray and her colleagues discovered that most, if not all, recovery appeared to take place in the first two years following infection.

"Once they hit two years it completely plateaus. If a patient has not recovered by that time, it is very likely they will never recover," says Murray. Approximately 40% of patients in the study continued to experience symptoms 5 years after infection. Some long-term damage included memory loss, loss of balance and tremors.

Approximately 80 percent of people who are infected with West Nile do not experience symptoms. This study only included patients with symptoms, which can range from mild fatigue and weakness to seizures, paralysis and tremors. Half the patients experienced encephalitis due to

infection and another third presented with meningitis. Murray and her colleagues noted a significant difference in recovery rates.

"Those patients with encephalitis were less likely to recover than those who had meningitis or uncomplicated fever," says Murray.

Another outcome of severe West Nile infection was depression. At the one-year follow up 31% of the patients reported new-onset depression. Using objective measurements, the researchers determined that 75% of those cases met the definition of clinical depression.

"West Nile virus infection can result in significant long-term clinical sequelae and cognitive and functional impairment, particularly in those who present with encephalitis," says Murray.

*Adapted from materials provided by [American Society for Microbiology](#).*

## **Plum Island: Refuge, Mosquito Agency to Cooperate on Spraying**

A proposed new federal policy dealing with mosquito control on wildlife refuges will apparently have a minimal effect on local control measures at the Parker River National Wildlife Refuge.

The Northeast Massachusetts Mosquito Control and Wetlands Management District director Walter Montgomery said he and refuge manager Graham Taylor will work on a mosquito management plan "that we can both live with."

The U.S. Fish and Wildlife Service is accepting public comment until next week on a national policy that would "allow populations of native mosquito species to function unimpeded" on national wildlife refuges, "unless they cause a human and/or wildlife health threat," because of the insect's value to the marsh's ecosystem. Mosquitoes and mosquito larvae are a source of food for a number of species of fish and birds.

The Northeast Massachusetts agency for many years has implemented a program of spraying mosquito larvae on about 300 of the Parker River Refuge's 4,662 acres.

Local officials feared that the proposed policy would ban larvae spraying and that by the time a health threat was identified, mosquitoes would be far more difficult to control. Mosquitoes are carriers of two potentially fatal diseases, Eastern equine encephalitis and West Nile virus.

But last week, Congressman John Tierney's staff convened a meeting with community representatives, Montgomery and Taylor. Town officials and neighbors had contacted Tierney's office with concerns about how the new policy would affect the community, Tierney, D-Salem, said in a statement.

The parties agreed that the new mosquito policy would allow for pre-emptive larviciding operations to continue, as long as established thresholds for larvae count were met, the statement said.

Montgomery said he and Taylor will come to an agreement on what number of larvae would constitute a health threat, which would trigger control measures.

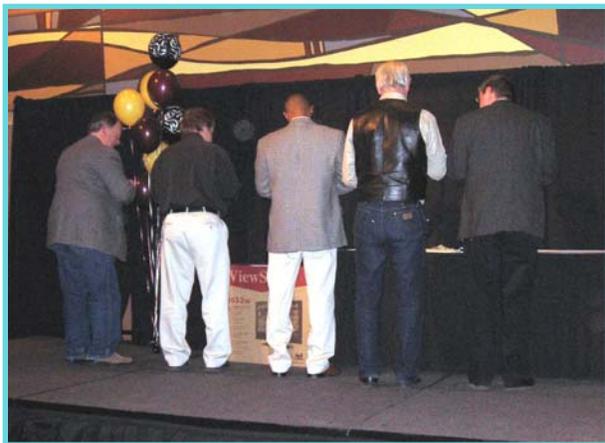
Taylor and Montgomery both said they were confident that an effective mosquito management plan could be developed.

"We're optimistic that will be the case, that we'll be able to continue as we have in the past," Montgomery said.

"I am pleased that this question, vital to the public health of our community, has been clarified," Tierney said in the statement. "I commend those who have taken an active role in seeking to address this issue on the community's behalf, and I look forward to working with them as this process moves forward." Tierney said in the statement that preventive pesticide spraying will occur this spring as it always has.

Under the proposed draft policy, each of 35 affected refuges will form a committee of local, state, public health and other interested parties to jointly prepare a management plan for their area. All of the participants at the meeting will be members of the committee formulating the new policy and will be joined by other state and local public health officials, Tierney said.

# 2008 MMCA Conference – Kalamazoo, Michigan



## MMCA 2008-2009 Board of Directors

<b>President</b>	<b>Charles E. Dinsmore</b> , Midland County Mosquito Control 989.687.5044 Email: <a href="mailto:cdinsmore@co.midland.mi.us">cdinsmore@co.midland.mi.us</a>
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	<b>Jake Britton</b> , Clarke Mosquito Control 810.240.3734 Email: <a href="mailto:jbritton@clarkemosquito.com">jbritton@clarkemosquito.com</a>

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Tom Putt	Isaac Blackmon	Mary McCarry	

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**Chairman: Randy Knepper (989) 755-5751**

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Mary McCarry			

### Awards and Recognition Committee

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Tom Wilmot	Bob Kline	Alicia Wallace	Andy Lowry
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### Public Education and Information Committee

**Chairman: Margaret Breasbois (989) 755-5751**

Tom Anderson	Bill Stanuszek	Joyce McLaughlin	Randy Knepper
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### Member and Nominating Committee

**Chairman: Mary McCarry (989) 894-4555**

Gloria Katch	Tom Putt	Rich Colopy
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### 2009 Planning Committee

**Chairman: Joyce McLaughlin (989) 687-5044**

Gloria Katch	Rebecca Brandt	Mary McCarry	Alicia Wallace
Lee Mitchell	Isaac Blackmon	Doug Allen	Bill Wallace (2010 chairman)
Tom Putt	Melinda Moreno	Keith Kuhlman	

## **EPA Moves Forward To Propose a Rule Requiring Pesticide Container Recycling**

EPA is moving forward to propose regulations that once finalized, would require registrants of agricultural and professional specialty pesticides to recycle plastic pesticide containers.

After careful deliberation and consideration of all possible options, the Agency is moving forward expeditiously with a proposed pesticide container recycling rule. Given the extensive time necessary for the rulemaking process, EPA is following an aggressive schedule that allows publishing the proposed regulations by the fall of 2008. The Agency will provide the public a 60-day comment period on the proposed rule.

## **Dengue Outbreak Worsens**

An outbreak of dengue has killed at least 47 people and perhaps twice that in Rio de Janeiro state this year, officials said Thursday [20 Mar 2008], announcing a hot spot in a hemispheric outbreak that sickened nearly one million people in 2007.

State officials said 51 cases are being reported every hour as the outbreak strains public hospitals' capacity.

"What we see today in Rio de Janeiro is a catastrophe," said Edmilson Migovski, a professor of infectious diseases at the Federal University of Rio de Janeiro. "The death toll is rising because the virus is becoming more virulent, and at the same time, people who were infected once are getting infected again."

Brazil had more than half of the 900,782 cases of dengue in the Americas last year [2007], according to the Pan American Health Organization. Of the hemisphere's 317 deaths, 158 came in Brazil, including 31 in Rio state.

But while federal officials say overall numbers were down in early 2008, they have jumped in Rio state. State officials say dengue has already killed 47 people and is suspected of killing another 49, whose deaths are under investigation. The state, which has

16 million inhabitants, has seen more than 32,000 dengue cases this year [2008], officials said.

"I am treating it as an epidemic because the number of cases is extremely high," state Health Secretary Sergio Cortes said.

Mr. Migovski told the Associated Press that the problem may actually be worse: "An emergency room doctor who has to attend 40 or 50 patients in a morning is not going to be able to inform officials about all the cases."

Health officials across the Americas are trying to coordinate their fight against dengue, which has steadily gained strength since the early 1980s.

Experts fear the virus could grow deadlier and more widespread, in part because tourism and migration are circulating 4 different strains across the Americas.

## **MMCA Attends the Michigan Environmental Health Association Annual Meeting**

Continuing our outreach initiative MMCA members attended the MEHA state meeting held at the Double Tree Resort in Bay City, from March 12<sup>th</sup> through the 14<sup>th</sup>. Our display booth was set up and our new MMCA brochures were distributed. Randy Knepper also gave a presentation on "Elements of a Comprehensive Mosquito Control Program" to conference attendees.





# News From Around The Districts

Boy, how quickly the winter season flew by. We know it's time, though, for another mosquito season as we begin listening to Tiger Baseball on AM radio stations once again!

Since attending Delta College's Employment Fair on March 18, we have been diligently interviewing to fill 34 seasonal technician jobs for the 2008 season (this is an increase of two from 2007); just over half are returning employees from last season. The first training session is scheduled for April 4 and we hope to have the majority of technicians in attendance; a second training session will be held May 2 for those folks coming on a little later.

Bay County compiled a newly revised 2008 Program Plan in March, followed by hosting the Mid-Michigan Technical Advisory Committee meeting on March 12. Papers were filed with MDEQ for approval authorizing mosquito control in surface waters and our comprehensive community outreach program was revised and submitted to the MDA.

Control material bids were opened in January with most materials seeing a moderate cost increase. Aerial applicators submitted a two-year bid for the spring treat project in 2007, so this year will mark the last year of the current contract with Reed's Fly-On Farming (fixed wing) and Clarke Mosquito Control (helicopter).

Staff continue to update training manuals (including a new safety presentation) and the webpage, attend technology training programs through our MSU Extension office, update the Hazardous Communication Plan and MSDS manual, work on mapping, and revamp presentations that will soon be broadcast on our local Bay 3-TV. New pallet racks were built this winter in our chemical storage building, which will allow for stacked storage while creating more usable floor space. Staff has been working with Bay County administration and commissioners to place the mosquito control millage question on the August primary ballot for an eight-year renewal of .45 mills.

Aerial announcement letters were recently mailed to media and government offices in preparation for the upcoming season.

As always, the Michigan Mosquito Control Association's 2008 conference was a collegial and educational event. Joe Conlon's talk on diseases affecting the troops during the American Civil War was a poignant and entertaining presentation. For those of you who were unable to meet with us in Kalamazoo, please plan now to attend the 2009 conference in Ann Arbor so you don't miss another great program.

We have completed recruitment and training of seasonal employees and are now preparing for the mosquito control season. We will be using Kontrol (permethrin) adulticide this year and conducting field tests of other permethrin formulations. Our biology staff will continue and expand our research on the seasonal dynamics of *Aedes japonicus* in Michigan.

Midland County is proud to have our employees working on your behalf. Charles Dinsmore's Presidential Report is found on the first page of this newsletter. Joyce McLaughlin would like to thank you all for your confidence in her and wants you to know how much fun she is having learning how to perform her duties as MMCA Treasurer.

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As is typical for this time of year staff are busy completing winter projects which include: repair and upgrades of application equipment and vehicles; fabrication of new ULV spray equipment control boxes for truck cabs; build ten new gravid traps; investigate updating our automatic vehicle location (AVL) system; and purchase and fabricating a new tire trailer. We also purchased new mopeds for catch basin larviciding that all need to be outfitted with application equipment and safety features.

Our 2008 Program Plan has been completed and can be reviewed or printed from our website at [www.scmac.org](http://www.scmac.org) for those who may be interested. Our website has been totally redesigned this winter so I would encourage anyone who hasn't visited it in awhile to check it out as it is full of additional information and pictures.

School presentations by our education department continue to be very popular. This school year our Education Coordinator has already scheduled 160 classroom presentations. This spring we will be conducting an essay contest for all third, fourth, and fifth grade students in Saginaw County with this year's theme of "The summer the mosquitoes moved in and I moved them out." On March 14<sup>th</sup> Margaret Breasbois and Bill Stanuszek judged science fair projects at the Saginaw County Science and Engineering Fair and selected winners for two awards sponsored by our agency. This year's winners were: Senior Division – Lauren Verner – A study of the effects of roadside mosquito control spray on lichens in the Gratiot-Saginaw game area. Junior Division – Kavita Raval – Maximizing oil production using plant nutrients, carbon dioxide and low temperatures on algae, *nannochloropsis* species.

Many months ago we began the process of securing permits to allow us to conduct aerial larviciding for spring mosquitoes on federal and state refuge lands. A few days ago we received tentative approval for this year's permits. However, this permit process is extremely problematic and subject to personal interpretation thus future permits may continue to be difficult to secure. Our agency also submitted comments to the U.S. Fish and Wildlife Service in regards to the "Draft Mosquito and Mosquito-Borne Disease Management Policy Pursuant to the National Wildlife Refuge System Improvement Act of 1997."

Interviews for seasonal employment have been completed and our annual training session was held on March 14-15<sup>th</sup>. Our 2008 control season should get started around the 2<sup>nd</sup> or 3<sup>rd</sup> week of April but currently cold weather conditions have put this time frame in question.

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For us at Tuscola County Mosquito Abatement the season officially started March 17<sup>th</sup> (Saint Patrick's Day) with the arrival of some of our seasonal staff and the interview process began. Starting April 7<sup>th</sup> all Technicians were busy being trained and soon tested afterward to be Certified Applicators. We have 7 new Technicians and 17 returning Technicians. We have been very busy receiving control materials and preparing for this year's onslaught of mosquitoes.

On March 12th, Tuscola County Mosquito Abatement, Bay County Mosquito Control and Midland County Mosquito Control appeared before the Mid-Michigan Mosquito Control Technical Advisory Committee and each of their 2007 Year End Reports and 2008 Technical Programs were approved by the committee.

Our Biology Department will be watching closely for signs of West Nile Virus (WNV) in this county and continue to monitor other mosquito-vector diseases. We are purchasing an AIMS (Army Insecticide Measurement System)-DC III to measure adulticide droplet size. Again, due to state funding cuts our Health Department will not be testing corvids this year for WNV so we will be taking this task upon ourselves starting this June.

We are adding two new trucks and ULV's which will bring us to 14 ULV's to cover our 23 townships.

The staff and I wish all a pleasant season.

SAGINAW

TUSCOLA

# MMCA Sponsors Annual Mosquito ID Class.

This is a reminder of our annual Mosquito ID Class to be held on **Wednesday, May 21st.** from 9am-3pm at Saginaw County Mosquito Abatement Commission.

Participants must bring their own microscopes.

Call Randy at 989-755-5751 to make your reservation for this free seminar.



Spring

**Michigan Mosquito  
Control Association  
P.O. Box 366  
Bay City, MI 48707**