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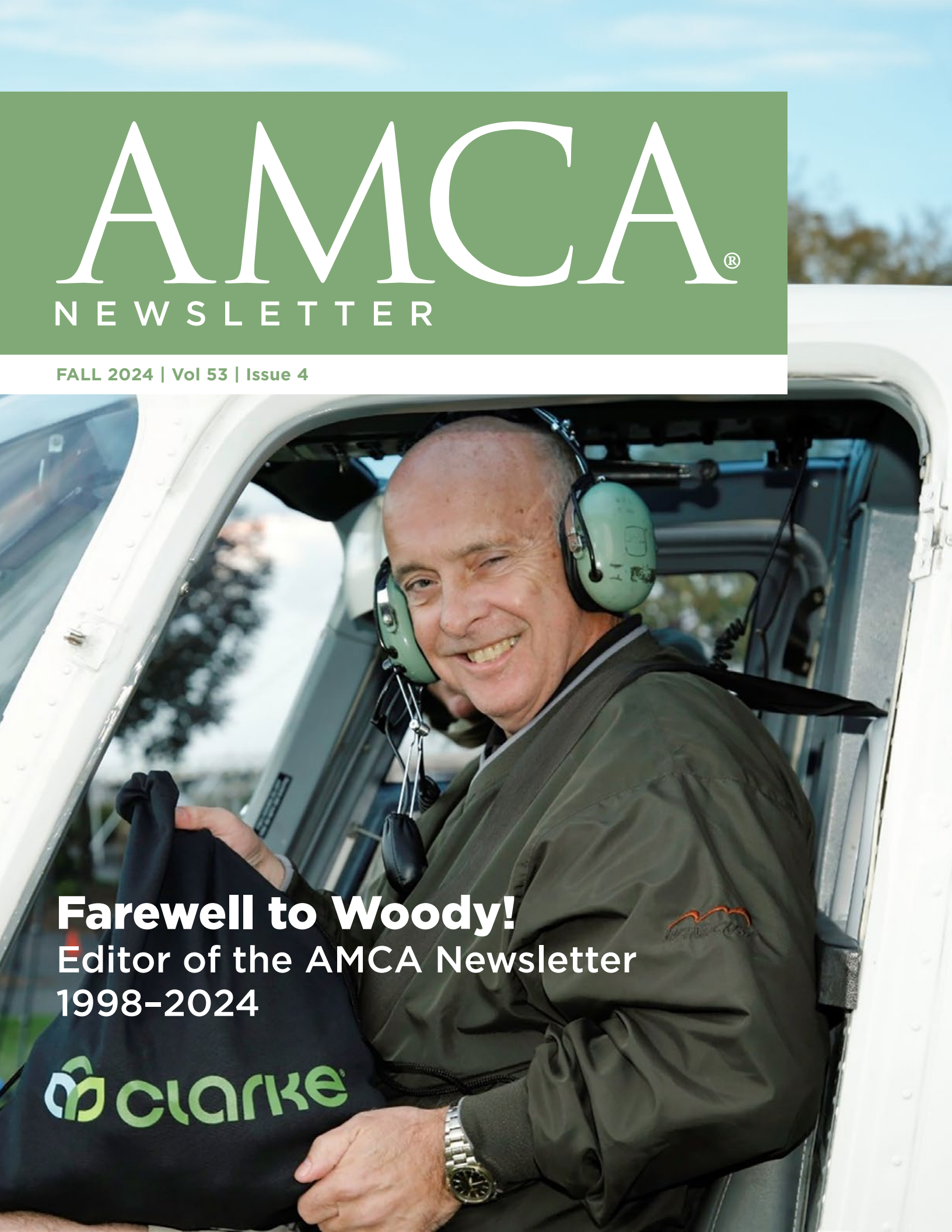

Farewell to Woody!
Editor of the AMCA Newsletter 1998–2024

Upcoming Events

AMCA 91st Annual Meeting
March 3-7, 2025

AMCA Webinar: Investigating the ecology of Culicoides biting midges: The big problem of tiny vectors.
October 30. Register here: https://amca.ce21.com/item/investigating-ecology-culicoides-biting-midges-big-problem-tiny-vectors-662570#tabFaculty

View our event calendar.

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Next Issue Deadline: December 15, 2024

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On The Cover

Photo courtesy of AMCA (mosquito.org)

Our mission is to enhance health and quality of life through the suppression of vector-transmitted diseases and the reduction of mosquitoes and other public health pests by providing leadership, information, collaboration, tools, and education.

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AMCA RESEARCH FUND

Mosquito control is science-based. Mosquito control professionals use observation of mosquito populations, evaluation of novel control technology and predictive modeling to determine the best way to manage mosquito populations and prevent pathogen transmission. Mosquito control has benefited from a long history of research within mosquito abatement agencies, at public and private universities, and at other qualified research institutions examining how to improve mosquito control to provide a better quality of life for the public.

2024 RESEARCH FUND AWARDEES

Bradley Willenberg, PhD., *"New Attractive Toxic Sugar Baits with Propylene Glycol as a Sugar Substitute and Toxicant in Capillary Alginate Gel Biomaterials"* **University of Central Florida**

CONTRIBUTIONS TO THE AMCARF ARE NOW BEING ACCEPTED!

The AMCA Research Fund is currently accepting contributions for future research on mosquito control and related topics. Contributions can be made online through the Research Fund webpage or by check payable to:

AMCA Research Fund
ATTN: Megan MacNee
1 Capitol Mall, Suite 800
Sacramento, CA 95814

AMCA WOULD LIKE TO THANK THE FOLLOWING CONTRIBUTORS

- ADAPCO
- *Anonymous Contribution*
- Canyon County MAD
- Contra Costa Mosquito and VCD
- Michigan MCA
- Sacramento-Yolo Mosquito and VCD
- Schools First Federal Credit Union
- Valent BioSciences

President's Message

Rui-De Xue, PhD

Fall is the most active season for mosquitoes and mosquito-borne diseases. New emerging and reemerging vector-borne diseases are always threatening our public health. Our mosquito and vector control professionals constantly face new challenges. Recently, Oropouche fever, a vector-borne disease in South America (over 8,000 human cases) has an outbreak and it has spread to European countries and the USA through international travel. The vectors are biting midges (*Culicoides paraensis*) and possibly certain mosquitoes (*Culex quinquefasciatus*) that transmit the virus from an infected person to an uninfected person. Centers for Disease Control and Prevention (CDC) will release a response plan to assist state, Tribal, local, and territorial (STLT) health departments in investigating, identifying, and responding to the importance of potential transmission and local transmission of Oropouche virus (OROV).

In July & August, I joined the Young Professional (YP) Leadership interview committee to interview three excellent candidates. American Mosquito Control Association (AMCA) & the YP committee selected and hired Casey Crockett and Andrew Rivera as the next YP operation director and advisor. Congratulations to Casey and Andrew. The current Advisor and Operation Director (Chlore Wang and Kyndall C. Braumuller) will continue their role for training and transitioning the new advisor and director. Thank you and I appreciate Chlore and Kyndall for their hard work, contribution, and achievement to the AMCA YP group.

AMCA Research Foundation received 34 proposals. The review committee and science/technology committee did a great job. Due to limited funds, only one-two proposals will receive the funds. AMCA needs more donations and support from members and other organizations to support the research projects. Also, the committee needs more voluntary peer reviews to assist in selecting the proposals.

The annual meeting program committee and award/nomination committee have collected all the information needed and have updated the Board, the symposia and the call for paper submission will be opened on time. This information about the annual meeting will be updated in the biweekly newsletter.

This year AMCA received four excellent nominations for the Vice President position. The Board approved the nomination committee's recommendation. Based on the AMCA's By-law, three candidates have been listed on the ballot for member votes. To ensure you have a voice in this year's office and Board election, your participation in voting is what makes AMCA truly great.

The success of AMCA relies on your involvement and support. I encourage you to renew your membership on time and for potential members to join AMCA. As your president for AMCA, I am honored to lead this esteemed organization that brings together passionate individuals, committed to advancing mosquito control around the country and even the world. Inspiring and witnessing our members' incredible work has only intensified my dedication to ensuring that AMCA serves our members to the best of our ability. AMCA's commitment to providing access to the best information on mosquito control continues to grow. From our extensive online resources (including archived publications such as JAMCA), our newsletter, and Wing Beats, to the rich library of webinar archives available exclusively to our members are continually expanding our knowledge base. Moreover, our voice in advocating at the federal level has been strengthened. Together, we have impacted some shaping policies that affect mosquito control.

As we look ahead to an exciting year for AMCA, I look forward to connecting with you and our community again at the AMCA Annual Meeting in Puerto Rico next March. If you have questions, or ideas, and need support, don't hesitate to contact me. Working together, we can accomplish great things in advancing mosquito control and public health.

Photo by Dillon Kydd on Unsplash

As I approach retirement in January, this will be my final issue as Editor of the AMCA Newsletter. I assumed the editorship from Dr. Jimmie D. Long in January of 1998 and "will pass the baton" to Dr. Patrick Irwin for the 2025 winter issue. In my first issue, I wrote: "my goal is to provide a useful source to keep all members current on AMCA activities, initiatives, and issues." Over the past 26 years I hope I've been able to do that! I want to thank the Newsletter subcommittee team for their timely edits. I especially want to thank Kate Peyser of Advocacy Management Group for her steady guidance, and the production team for their excellent work. It has been my honor to serve AMCA! Best wishes!

Clark Wood

Thank You Woody!

Being an AMCA "Young Professional" is a unique opportunity, although it does have a downside. While we always remain professionals, it is inevitable that we will not always remain young. We make our mark and move on for the next generation to carry the torch. On that note, please join me in honoring a pillar of our industry, Clark Wood, affectionately known to many as "Woody."

Woody will be retiring from Clarke in January of 2025. His work with Clarke began in 1974 as their first staff biologist, after completion of his degree in biology from Northern Illinois University. Among his many accomplishments is the development of the Targeted Mosquito Management System (TMMS) in which helicopters are utilized to identify and map mosquito breeding sites. This system is still in use today. Clarke has provided mosquito control services since 1946. Woody has been instrumental in refining their efforts to conduct effective and efficient mapping and surveying of mosquito sources, monitoring of larval and adult mosquito populations, and performing larval and adult mosquito control.

As Woody's importance and experience with Clarke grew, he was promoted to the position of Vice President of Business Development and Operations. In that role, he facilitated the spraying of over 48 million acres in response to hurricanes, floods and outbreaks of WNV and EEE in 20 states. This was accomplished through the partnership that began in 2003 between Clarke and Dynamic Aviation. This was not a small undertaking and required Woody to hold pesticide applicator licenses in 46 states. To this day, Woody continues to uphold a high standard of excellence by supporting Clarke's mission to make the world more liveable, safe, and comfortable.

Over the span of many decades, Woody has protected numerous communities across the country from mosquito borne illnesses. His work is often performed behind the scenes, but his dedicated service has been imperative to the success of countless spray missions. His work schedule has always been very demanding and caused him to make personal sacrifices. His passion for his work has never wavered. He is a true professional.

In addition to all his responsibilities at Clarke, he has been the Editor-in-Chief of the AMCA newsletter since 1998, received the honor of being named as a Kentucky Colonel by the Commonwealth of Kentucky for providing aerial and emergency response services in 2014, and was the recipient of the American Mosquito Control Associations' Industry Award in 2017.

I recall working on aerial spray missions with Woody in September of 2003 in South Dakota. West Nile virus had become a serious problem. The State of South Dakota contracted the services of Clarke Mosquito Control and Dynamic Aviation to suppress mosquito populations in 16 communities. Woody was a key person in that effort. He planned aerial spray missions and met daily with representatives of the Department of Health, the Governor's office, and the news media. Woody focused on every detail. It required working very long days with limited sleep. Fortunately, we found the time to celebrate his birthday one evening in Fort Pierre, despite the demanding work schedule. It was an unforgettable celebration.

I recall another spray mission in Canyon County Idaho during 2006. After days of planning and resolving logistical complications, calibrating equipment, etc., the mission was completed. It was late at night, and we had not eaten anything since that morning. We were extremely hungry, but we still had to count droplets from our spinner slides and put equipment away. Jeanie Fackler (now Jeanie Ingalls) came to our rescue and brought us hamburgers from Wendy's. I remember looking at Woody as we made quick work of the hamburgers. We did not speak a word. We just looked at each other as we devoured the hamburgers. In that moment those were the best burgers on the planet.

I am sure we all have similar stories and fond memories of working with Woody. I am so thankful that I had the opportunity to work with him. He is a true professional that always goes above and beyond expectations. Congratulations on your amazing professional journey Woody. We all wish you well on your retirement.

Stephen Ingalls
Field Supervisor
Benton County Mosquito Control

Technical Advisor Report

Daniel Markowski, PhD

I look forward to seeing everyone this fall/winter. There's been a lot going on within the Association, and you'll likely hear from myself, or your Regional Director, present on one or 2 topics this year. We've been working hard to expand our education, training and outreach programs all summer. Many of you may have taken AMCA's Best Practices for Integrated Mosquito Management Virtual Training Program this past year. If you didn't... what are you waiting for!?

In 2024, we've worked to expand our virtual training platform and it will now include a similarly designed, Certificate program complementing our Mosquito Management During a Public Health Emergency Best Management Practices Manual Supplement. Although, we don't have the published link yet (we're finalizing the materials as I write this) the course will be posted on our Training Center webpage in October.

Similar to our first virtual training program, the emergency response program is funded through a grant from the Centers for Disease Control and Prevention (CDC). This program consists of 10 modules created and instructed by 21 different experts located throughout the U.S. Each module contains a reading from either the AMCA's *Best Practices for Integrated Mosquito Management* manual or the *Mosquito Management During a Public Health Emergency* supplement. Videos focus on topics between 13-33 minutes long, and a 10-question quizzes covering both the reading and lecture. After completing the training program, a participant may choose to take a comprehensive exam to earn a certificate recognizing their accomplishment.

After completing all readings, video lectures, and evaluations, a participant should understand the different types of mosquito-driven public health emergencies. These include the components necessary to successfully respond to a mosquito emergency, the roles and responsibilities of the different organizations involved in responding, the importance of having and creating a plan before an emergency, and how to create different types of mosquito emergency response plans. We hope you'll find this course informative and useful in the planning and preparation of an emergency response plan for your program.

The second priority has been the development of a national communications strategy for mosquito control. At the annual meeting in Dallas, AMCA held a workshop to better understand the nature of public misconceptions about mosquito control and adulticide applications. One of the outcomes of this workshop was to identify the best potential solutions and next steps to address misconceptions related to our profession. One of the primary conclusions of the workshop was a desire to develop a national communications campaign that could give our industry a unified voice and could be filtered to the local level. With information gathered in Dallas and from member surveys, we've developed a new campaign: *Yesterday's Threat, Today's Solutions*.

One of the fundamental aspects of the campaign will be to educate specific audiences about what we all do. This concept compares the ways life today has become more accessible and contrasts that with the problem mosquitoes still pose. Mosquito control professionals know how to do this, but we, as the American public, need to invest (individually and collectively) in making it happen at scale. We can win this fight if we come together to do so. Yesterday's Threat, Today's Solutions uses humorous anecdotes from across time and history to make our point, then quickly directs people to go deeper and act.

There are several key messages our campaign will hope to convey. For example, we all know why what we do is important. But the people we serve and protect every day may not even be aware of our work because when we're doing our jobs well, they don't see the threat for what it is. Thanks to you all - mosquito control professionals - the American public lives in relative safety, with little thought given to mosquitoes and the diseases they carry. Mosquitoes are simply seen as a nuisance. Our work is lifesaving, in the most literal sense. But if we want to have the resources and public support needed to do our jobs, we need a more compelling, publicly accessible way of communicating with the people we serve in our various contexts. That's what *Yesterday's Threat, Today's Solutions* makes possible. You're going to see more of this campaign this winter! I hope you'll all embrace the messaging and make it your own. ■

Science and Technology Committee Report

Edmund Norris • Science and Technology Chair

Hello everyone, I trust that you all have been busy with an active field season this summer. I just wanted to check in and provide a brief update on some of the items that are relevant to the Science and Technology Committee.

As every year, our committee is tasked with the review and administration of the AMCA Research Fund along with the help of the Board of Directors. I wanted to share some updates regarding the process of the AMCA Research Fund review process. This year, based on AMCA community feedback and survey responses, we have prioritized research project applications that focus on novel tools and techniques related to mosquito and arbovirus surveillance. Of the amazing 33 pre-proposals that were submitted, our volunteer reviewers scored and selected and invited 5 pre-proposal project applications for full proposal submission. These applications were due in mid-September, after which the next round of review will begin, ultimately leading to a funding recommendation to the Board of Directors. The Board of Directors then finally selects the awardee(s), based on project merit, AMCA priorities, overlap with other projects, and available funding. Each year, we hope to fund 1-3 projects based on the availability of funds and outlined project costs of the most highly scored projects. We anticipate the same this year and will keep the AMCA community updated (with decisions being made in October/November). In the coming weeks, we will be providing information about the pre-proposal application process with reviewer feedback for individuals that submitted pre-proposals. Last year and in the future, our goal has been and will continue to be to provide this feedback as a service to all those who took the time to submit a pre-proposal for consideration. We hope that these reviewers' comments will help applicants in future cycles and allow them to better craft their proposals for future AMCA Research Fund cycles and/or for other funding agencies.

I will now take the opportunity to remind everyone that the AMCA Research Fund depends on the generous donations of AMCA members. Please do consider donating to the fund if you are able. The Research Fund gives the AMCA community (all of you!) the opportunity to fund innovative research and technologies that allow us to better detect and control mosquitoes and mosquito-borne diseases. Please consider playing an active role in mosquito control research via your generous donations to the fund.

Finally, we would also like to remind everyone that poster submissions (which are evaluated at the Annual Meeting by members of the SciTech Committee) are due shortly! The deadline for those submissions is October 22nd. We strongly encourage you and your colleagues to submit a poster for consideration in the Annual Poster Competition! First, Second, and Third place Poster Competition Winners receive honoraria in acknowledgement of their achievements. ■

Legislative & Regulatory Committee Update

Mark Clifton, PhD • Legislative & Regulatory Committee Chair

Like the children's movie "The Neverending Story", litigation around malathion continues to go on and on. We are again in the land of Fantasia where a destructive force, "The Nothing", threatens to undo all progress on malathion endangered species act regulation leaving a void of uncertainty in its place. In this sequel, a lawsuit (i.e. "The Nothing" in my tortured metaphor) filed against the United States Fish and Wildlife Service (USFWS) challenges the results of the 2022 Biological Opinion (BiOp) issued by USFWS for malathion. More specifically, the plaintiffs allege that in a 2017 BiOp the USFWS identified 1,284 species which could be impacted by malathion. After refining the BiOp further, a final version in 2022 contained only 78 species. As a sidenote, it is this final BiOp which contains the 64 listed species which have led to the implementation of Bulletins Live Two! for us mosquito control people. The plaintiffs allege the reduction from 1,284 to 78 species in the evolving BiOp was not a "proper conclusion" and that nearly 1,534 species do not have "species-specific protections" like the 64 others do. More specifically, the plaintiffs allege that, "The Malathion BiOp contains numerous analytical shortcuts and arbitrary policy choices, which conflict with FWS's regulations and policies and the requirements of the ESA itself".

> **"I can easily imagine that if the USFWS had first started with smaller species ranges they would still be sued on the grounds that the ranges were not big enough and failed to capture everywhere an individual member of a listed species could be!"**

The plaintiff's complaints did not stop there. They also did not appreciate that the USFWS couldn't identify the exact amount of incidental take that may occur, the use of industry-derived county-level usage data, the lack of more specific restrictions on mosquito control uses or how the various species of Florida beach mice were handled. They even took issue with the software used to model effects, rejecting nearly every aspect of the analysis with the same enthusiasm one might reserve for swatting at mosquitoes.

Somewhat fitting for the land of litigation Fantasia, they especially didn't like the estimates of species' ranges or range maps because the USFWS drew the species' ranges in, "one of the largest possible conceptions". It's funny because in an attempt to be protective of the full extent of a species range (which includes possible, current, and historic occurrences of a species), the USFWS necessarily drew very large ranges. However, drawing a large range simultaneously reduces the percentage of overlap possible between a species range and malathion application areas because that's how fractions and mathematics work. Apparently, the plaintiffs would like the numbers massaged in the other direction with smaller species ranges so that there is a greater percentage of overlap with malathion application areas ostensibly to capture a greater likelihood for impacts and generate more restrictions.

I can easily imagine that if the USFWS had first started with smaller species ranges they would still be sued on the grounds that the ranges were not big enough and failed to capture everywhere an individual member of a listed species could be! This is what you call a paradox, a conundrum, or a good ole fashioned catch-22. By trying to capture the largest species ranges possible, it made the extent of malathion overlap and the possible effects from malathion too small for the plaintiffs. If the USFWS made arbitrary smaller ranges to boost the magnitude of impacts from malathion they would be forced to defend why they exaggerated the risks or excluded habitat! The USFWS now finds itself in the thick of a complex and ongoing litigation process—much like navigating through an ever-shifting fantasy landscape.

To be clear, the incredulous tone I am using is not meant to belittle or diminish the importance of protecting endangered species or the environment. However, I am mocking a regulatory and legal process that seems more make-believe than real with extended legal arguments over how to use denominators and numerators; thus the repeated reference to the make-believe land of Fantasia in the "Neverending Story". Given the extensive history of safe malathion use, it's increasingly relevant to question whether current concerns reflect genuine risks or have become abstract fantasy debates disconnected from practical experience.

After decades of safe use and public health protection with products containing malathion, you would think some of these fears and risks would have manifested themselves by now-but it just hasn't happened. As public health and mosquito control professionals, environmental protection is something we keep at the forefront in absolutely everything decision we make, and I think it shows. However, this entire process has become so unmoored from the day-to-day reality of the end-users, endangered species and the environment that I am beginning to think seriously that courtrooms are not good places to create pesticide regulation. The deep-down cynic in me is also starting to think that creating judicial friction

and uncertainty may be the ultimate goal here. Just bog down a product with litigation and confusion until someone gives up on it. Did I mention the plaintiffs are asking the court to make USFWS pay for their lawyers' fees in the filing? It seems that, beyond regulatory concerns, there's also a financial incentive to pursue these cases, with plaintiffs seeking reimbursement for legal fees—a strategy that can make litigation an attractive option in itself.

It's disheartening that just as we neared the resolution of the malathion saga, our progress faces new challenges. We had developed a balanced plan to safeguard endangered species, the environment, and public health, which we intended to use as a model for future regulatory efforts. Our members had already begun local discussions with USFWS to protect species and then, "The Nothing" threatens to undo all the work, potentially leaving us with court-ordered regulations.

Exactly what this new development means for the AMCA and its membership is not completely clear yet. To be sure, whatever happens will not happen quickly. The initial case that required the EPA to consult USFWS about endangered species and malathion is over 20 years old. However, I can definitely say what the plaintiffs would like to see happen from reading the filing. They would like the court to vacate the old BiOp (in whole or in part), order a new BiOp be completed, and for "interim" mitigation measures to be implemented (and to be paid money).

If the existing BiOp is vacated in part and a new BiOp is ordered by the court, it is possible that additional species could be added to the Bulletins Live Two! framework. The 64 species that we currently must consider in BLT! as part of species-specific mitigations could be greatly expanded; perhaps even up to the 1,534 total species identified. In fact, this outcome seems to be what the plaintiffs are aiming for with regards to mosquito uses of malathion- that more of the species identified in the BiOp undergo species-specific mitigations via local discussion with USFWS. Expanding the use of BLT! and local discussion would be the easiest and quickest way to get "species-specific" mitigations for mosquito control uses for more species. This potential outcome probably means more PULAs and use restrictions. However, I am not a lawyer or seer so take this amateur analysis as just that.

It is unknown what court-ordered "interim" mitigation measures could look like so I'm not even going to speculate on how that would play out. In other scenarios it's possible that the entire BiOp could be thrown out in its entirety (someone much smarter than me will have to predict what happens next). Finally, there is always the outcome where nothing will happen and the filing is dismissed, or that the USFWS is able to successfully and vigorously defend their BiOp in its current form.

It is worth noting that despite all of these developments, nothing changes for now. The AMCA L & R committee will continue to engage with our federal colleagues, industry stakeholders and our membership as necessary to ensure the best outcome possible. Users of malathion should continue to follow the label including using BLT! and discussions with local USFW field offices as necessary. When a development comes that will impact users, we will be sure to communicate to the AMCA membership. Until then, the saga continues. ■

A Request for Help

Colleagues from the Australian Department of Agriculture, Fisheries, and Forestry (AFF) are requesting your help. To expedite identification of introduced/invasive mosquitoes to Australia I have been collecting adult and larvae to send to AFF for MALDI-TOF analysis. Most of the species I have are from the Midwest, but we would like to collect as many different species from the US as possible. We are looking for 5-10 adults of each species and the same number of larvae. Adults and larvae can be put individually in 2ml flip-top microcentrifuge tubes (larvae need to be in 70% ethanol), labeled with species, date collected and location. The tubes can be sent through regular mail and do not need to be refrigerated. Please email me at pirwin@nwmadil.com before sending any samples so I can let you know if we still need that specific species or if you have any questions.

Patrick Irwin, PhD
Entomologist and Assistant Director
Northwest Mosquito Abatement District
Rolling Meadows, IL 60008

Species already collected	
Ae. albopictus	*Cx. tarsalis*
Ae. vexans	*Cx. erraticus*
An. barberi	*Oc. atropalpus*
vAn. crucians	*Oc. cinereus*
An. punctipennis	*Oc. japonicus*
An. quadramaculatis	*Oc. stimulans*
Cq. peturbans	*Oc. triseriatus*
Cs. inornata	*Oc. trivittatus*
Cs. melanura	*Ps. ciliata*
Cx. pip molestus	*Ps. ferox*
Cx. quinquefasciatus	*Ps. horrida*
Cx. restuans	*Ur. sapphirina*
Cx. salinarius	

South Atlantic Director Report

Robert Cartner • South Atlantic Director

The South Atlantic Region has had a fairly average season so far, with some exceptions. We've made it to the back half of hurricane season relatively unscathed. Northern Florida and Coastal Georgia and South Carolina endured extended periods of rainfall from Tropical Storm Debby. The storm passed over Puerto Rico and the US Virgin Islands as a disturbance. Everyone in the region is hoping that the rest of hurricane season will be uneventful. While some areas in the country are entering the downswing of their season, much of the South Atlantic Region has at least a month before seeing a reduction in mosquito populations. The consistent rainfall in the region over the last month, with the exception of Northern Georgia and Alabama, will likely lead to increased West Nile virus (WNV) vector populations in some areas. The increased rainfall could also mean an increase in *Ae. aegypti* populations in areas that are already seeing a spike in locally acquired Dengue cases. As of September 7th, Florida has 31 locally acquired cases. That's an increase from 19 cases at the same point in 2023. Puerto Rico has seen a sharp increase in local Dengue cases this year. They have 2,960 reported as of early September and the total number in 2023 was 1,270. The US Virgin Islands has 102 local Dengue cases, with none reported in 2023. While increased local and travel-acquired Dengue in Florida may be an issue we come to expect each season, Oropouche virus (OROV) was likely not on many Bingo cards. As of early September, there have been 48 travel-associated cases reported in Florida. The impact of OROV on mosquito control strategies is unknown, but it's important that we all stay vigilant and educated.

Georgia Update

Georgia has seen just about every type of weather possible this summer. We have had drought. We have had floods. We have had sheer hot and humid misery conditions. We even had a tiny foretaste of Fall. And, we had a hurricane. Fun times. We also have West Nile virus (WNV) and Eastern Equine Encephalitis (EEE) in various parts of Georgia. Eastern equine encephalitis came on early and seems to have subsided here, although the news is jumping with reports of EEE in the New England area. WNV is picking up, with lots of mosquito positives in our counties that test and slowly increasing numbers of people infected.

This year, so far, we have had 3 EEE+ mosquito pools reported from Southwest Georgia, as well as one EEE+ horse in the same area. At last count, we have 1 WNV+ horse. We have had 159 WNV+ mosquito pools from 3 counties. Unfortunately, we have only 15 or our 159 counties testing mosquito pools due to funding shortfalls. We have had 9 WNV+ humans confirmed (7 cases and 2 PVDs), but a number of additional cases are currently being investigated.

This year we have been fortunate to have 3 interns from the Center of Excellence. We had 4 but one of the interns got hurt before the season started, one National Environmental Health Association intern, several volunteers, one paid intern, and an ESA PHEFA Fellow. The interns have been working on a variety of both mosquito and tick projects, and a few will join us in the Fall when we work with the Georgia Department of Natural Resources collecting ticks off deer and bear at quota hunts in the Wildlife Management Areas.

In other news, the Georgia Mosquito Control Association (GMCA) annual meeting will be on October 16-18 at Amicalola Falls in Dawsonville, GA. We have a wide range of interesting talks on the agenda and what is bound to be a fascinating talk on moonshining at our banquet. Check out https://www.gamosquito.org/meeting.htm for more information. - **Dr. Rosmarie Kelly**

The Anastasia Mosquito Control District (AMCD) saw a mosquito population outbreak following Tropical Storm Debby. Recent daily rainfall has increased the nuisance and vector mosquito populations again. Since opening in March of this year, AMCD's Disease Vector Education Center has received more than 6,000 visitors and positive feedback. The District has received all of the equipment for their sterile insect technique (SIT) building and has begun calibrating the machines. AMCD's Board of Commissioners recently approved the collaboration with the State Department of Environmental Protection (DEP) to create a mutual benefit Biologist position through a grant fund. This collaborative position will examine the impact of tide and wet land change on mosquito populations, over the next three years. The District's intern training program, especially the summer interns, has been very successful. More than 20 high school and college students have gone through the program this year.

Mosquito control programs in South Carolina received much-needed support, in the form of hurricane relief funding, from the South Carolina Department of Public Health (SCDPH). SCDPH, formerly known as SCDHEC, disbursed more than $1.4 million to 38 agencies throughout the state. Mosquito control programs in the state will be receiving additional funding in FY25, although with smaller award amounts.

The South Carolina Mosquito Control Association (SCMCA) held their annual Summer Workshop in June at Pinopolis, SC on Lake Moultrie. The SCMCA Summer Workshop is a free, half-day, educational event, with an emphasis on technicians and operations. A portion of the program is dedicated to break-out sessions to allow for participant engagement.

Events:

Florida Mosquito Control Association (FMCA)
Orlando, FL |November 4-7, 2024.

Georgia Mosquito Control Association (GMCA)
Amicalola Falls State Park | October 16-18, 2024

South Carolina Mosquito Control Association (SCMCA)
Hilton Head Island, SC | November 6-8, 2024

North Pacific Regional Update

Angela Beehler • North Pacific Director

I appreciate the opportunity to serve on the board as a regional director, and I look forward to bringing the association news from the Pacific Northwest. The mosquito control program I work for is in the southeast corner of Washington state. Washington does not have an association of mosquito control programs, so we rely on the American Mosquito Control Association, the Northwest Mosquito and Vector Control Association, the Oregon Mosquito and Vector Control Association (OMVCA), and the Idaho Mosquito and Vector Control Association to keep us informed and prepared for the future.

> **"With the detection of *Aedes aegypti* in Oregon, districts and laboratories throughout Idaho are on high alert. It was reported that mosquito control programs are sharing traps to expand the reach of their surveillance programs."**

It's crucial not to lose sight of the "big picture" in the midst of the mosquito season. I recently had the opportunity to listen in on an OMVCA conference call, and I was heartened to see that Idaho, Oregon, and Washington were all represented. As the group gave updates, the members mentioned openly sharing data with California mosquito control programs, Yale University, Oregon universities, and the Washington Department of Health. This commitment to transparency and data sharing is commendable, as it fosters collaboration and collective learning. As the North Pacific Regional Director, I am committed to fostering and expanding this type of collaboration.

AEDES AEGYPTI IN OREGON

On July 23, 2024, a single *Aedes aegypti* was found in Talent, Oregon, marking the first time this species has been found in Oregon. Since the initial detection, Jackson County Vector Control District (JCVCD) has detected 120+ *Aedes aegypti* mosquitoes from 26 trap locations throughout the city of Talent. Some of the specimens collected have been sent to Yale University for genetic testing to determine their origin.

JVCDC is working with an extensive list of stakeholders to eradicate Aedes aegypti through awareness, detection, and prevention strategies. Public outreach and support are vital, and JCVCD has set up a webpage for aegypti education, resources, and an online reporting form for day-biting mosquitoes (JCVCD webpage).

With the detection of *Aedes aegypti* in Oregon, districts and laboratories throughout Idaho are on high alert. It was reported that mosquito control programs are sharing traps to expand the reach of their surveillance programs. This, to me, exemplifies good public health practices. We have limited funds for surveillance, but rather than complaining about it until the money becomes available, these folks are sharing resources and collecting the data. By demonstrating that there is a risk of disease and invasive species, Idaho is strengthening its case for future grant applications and more federal dollars coming in. Good job, Idaho.

DRONES IMPROVE LARVICIDING EFFICIENCY

Canyon County Mosquito (CCMAD), Idaho, reported making 50% fewer adulticide applications than the previous year, attributed to using drone technology to better and more completely treat breeding sources. Cody John, Director of Gem County Mosquito (GCMAD), Idaho, saw some challenges when his larviciding drone caught fire due to an electrical short. It managed to land itself, and no property damage was sustained, but he had to do all his residual treatments by hand or ATV-mounted sprayer, which was painstaking after relying on a drone for this work.

IDAHO IS BUILDING CAPACITY

IMVCA held a bottle bioassay workshop this summer for local districts to test resistance in local mosquito populations. New district employees learned the process with the help of Casey Crockett, PhD, Azelis, and Dan Markowski, PhD, AMCA Technical Advisor. IMVCA will also be having a late fall/early winter conference again this year; watch the website for updates on location and final dates! www.idmvca.net

MOSQUITO RESEARCH

Dr. Heidi Pullmann-Lindsley and Eliana Harris from George Fox University have been researching mosquitoes' diversity and host preferences in the Willamette Valley of Oregon. Over the summer, they collected mosquitoes from Yamhill and Marion Counties and samples of blood-fed female mosquitoes from Multnomah and Washington Counties. So far, molecular analysis has revealed that Culex pipiens, Culiseta incidens, and *Aedes sierrensis* are found in Yamhill County and have been feeding primarily on human hosts. Dr. Pullmann-Lindsley and Ms. Harris will continue to process mosquito samples and present their work at the Murdock Undergraduate Research

Conference in early November.

OROPUCHE VIRUS

An outbreak of Oropouche virus (OROV) has been occurring in South America, Central America, and the Caribbean with cases occurring in Cuba for the first time. While no locally acquired cases have been detected in the United States, state and local public health officials are on alert for human cases. Potential primary vectors in the U.S. include the biting midge *Culicoides paraensis* and the mosquito *Culex quinquefasciatus*, neither of which occur in the Pacific Northwest. Another potential vector, *Culicoides sonorensis*, does occur in the PNW, but prefers rural areas around livestock pens. Its proficiency as a vector for OROV is uncertain. The vectorial capacity of other *Culicoides* species in the PNW for OROV is unknown. CDC considers the likelihood of Oropouche spreading widely in the continental United States to be low due to differences in climate, types of midges and mosquitoes present, and lifestyle factors. However, vector competence studies are still ongoing.

Any human OROV cases will be investigated by state and local public health epidemiologists. If there is concern that there could be local transmission of the virus, PNW state health departments would work with local public health professionals, including local mosquito control districts, to conduct environmental investigations, which could involve vector surveillance.

Here is a link to a paper on vector transmission studies on Cx. *quinquefasciatus*., Cx. tarsalis, and *Culicoides. sonorensis*. Viruses | Free Full-Text | Infection, Dissemination, and Transmission Potential of North American Culex quinquefasciatus, Culex tarsalis, and Culicoides sonorensis for Oropouche Virus (mdpi.com).

NORTHWEST MEETINGS ARE A GREAT ESCAPE

Meetings of the Northwest Mosquito and Vector Control Association may be a bit off the beaten path, but we do that intentionally to show the world why we love to live and work in this region. It may be too late for you to catch the **2024 Fall Meeting (October 21st-23rd) in the Bavarian-style town of Leavenworth, WA**, nestled in the Cascade Mountains. But mark your calendars for **October 21st- 23rd, 2025**, and join us in **Island Park, Idaho**, about a 30-minute drive from the west entrance of **Yellowstone National Park**. It's a great way to escape after the peak of mosquito season, get some fresh air, and enjoy nature.

> "An outbreak of Oropouche virus (OROV) has been occurring in South America, Central America, and the Caribbean with cases occurring in Cuba for the first time. While no locally acquired cases have been detected in the United States, state and local public health officials are on alert for human cases."

THANKS

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Thank You to our 2024 Sustaining Members

Renew your membership today for the 2024 year!

DISTRICTS

- Adams County MCD
- Alameda County MAD
- Amelia Island Mosquito Control
- Anastasia MCD
- Animas MCD
- Atlantic County Office of Mosquito Control
- Beach MCD
- Beaufort County Mosquito Control
- Benton County MCD
- Broward County Mosquito Control
- Butte County MVCD
- Canyon County MAD
- Cape Cod Mosquito Control
- Citrus County MCD
- City of Lubbock Vector Control
- Clackamas County VCD
- Coachella Valley Mosquito & VCD
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- Copper Valley Community Services District
- Davis County MAD
- Delano MAD
- Delaware Mosquito Control Section
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- East Side MAD
- EBRP Mosquito & Rodent Control
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- Fresno Westside MAD
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- Klamath VCD
- Lake County VCD
- Lee County MCD
- Macon MAD
- Magna Mosquito Abatement
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- Merced County MAD
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- Mosquito & Vector Control Association of California
- MVMD of Santa Barbara County
- North Morrow VCD
- North Shore MAD
- Northwest MAD
- Northwest Mosquito & VCD
- Orange County Mosquito and VCD
- Osceola County Mosquito Control
- Otter Creek Watershed Insect Control District
- Pasco County MCD
- Placer Mosquito & VCD
- Sacramento-Yolo Mosquito and VCD
- Salt Lake City MAD
- San Gabriel Valley Mosquito and VCD
- San Joaquin County MVCD
- San Mateo County MVCD
- Santa Clara County VCD
- Shasta Mosquito & VCD
- South Cook County MAD
- South Salt Lake Valley MAD
- South Walton County MCD
- St. Lucie County MCD
- Sutter-Yuba MVCD
- Tangipahoa MAD
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- Texas MCA
- Toledo Area Sanitary District
- Warren County Mosquito Commission
- West Side MVCD
- West Umatilla MCD

INDUSTRY

- AMGUARD Environmental Technologies
- Azelis A&ES
- Bell Textron Inc
- Central Life Sciences
- Clarke
- Envu Environmental Science
- GroPro Corp.
- Leading Edge
- London Foggers, Inc
- MGK Insect Control Solutions
- Tabula
- Target Specialty Products
- The McPherson Companies, Inc.
- Valent BioSciences LLC
- Vector Disease Control International (VDCI)
- Veseris

REG/STATE ASSOC.

- Georgia MCA
- Idaho MVCA
- Louisiana MCA
- Michigan MCA
- Mid-Atlantic MCA
- New Jersey MCA
- North Carolina MVCA
- Northeastern MCA
- Northwest MVCA
- Oregon MVCA
- Pennsylvania Vector Control AssociationA
- South Carolina MCA
- Utah MCA
- Virginia MCA
- West Central MVCA

STATE AGENCIES

- Hawaii Dept. of Health, Environmental Services Division
- Pennsylvania Dept of Environmental Protection Vector Management

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