

# SOVE

Society for Vector Ecology

## SOVE Newsletter

### President's Message



Dear SOVE Family,

It has been an honor and pleasure to serve as President of the Society of Vector Ecology, and I have you all to thank for electing me to serve in the succession to this role, back in the Fall of 2021. Shortly after being elected to Vice President, I jumped right in (working for and with Michelle Brown!) to organize the 8<sup>th</sup> International Congress in Honolulu, Hawaii. I recently ran into a colleague who was a symposium speaker at that meeting, and she said that SOVE Hawaii 2022 was one of, if not **\*the\***, best scientific conference she's yet attended. It *really* was special. For me, being together with our SOVE family was an important jumpstart to the process of eclosion from the pandemic. The scientific content of that meeting, interwoven with the theme of global change, was outstanding; kudos to the symposium organizers! We were deliberate about showcasing the work of rising star, junior colleagues, and many of those folks have continued to attend our meetings and be part of SOVE. That energy continues – from Charleston in 2023 (organized by Denise Bonilla) to Fort Collins

(organized by Lee Cohnstaedt and Paula Lado) and Montpellier (organized by the ESOVE Advisory Board, Local Organizing Committee and International Scientific Committee) in 2024. I am very much looking forward to being with all of you at one or more of the SOVE meetings planned for 2025. As a reminder, January 21-25, The SOVE Indian Region and Academy of Public Health Entomology will meet in Chennai, Tamil Nadu, India. The 9<sup>th</sup> International Congress will take place in Chania, Crete, Greece, October 12-17. And the Latin American SOVE meeting will be held jointly with the Congress of Latin American Network of Vector Control from 27-31 October in Montevideo, Uruguay.

Just as our annual meetings provide us with a unique venue to connect with our colleagues and join in the scholarly process of sharing our results, so does the Journal of Vector Ecology. Let me take a moment to sing the praises of the Journal of Vector Ecology. . . . .

*President's message cont'd on p. 2.*

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The stressors of publishing are at an all-time high for authors, reviewers and editors, and predatory publishing practices abound. Avoid those headaches, and strongly consider the Journal of Vector Ecology for your upcoming and future publications. The Journal of Vector Ecology affords us a straightforward interface for submissions, timely review, professional and discipline-specific copy editing and quality control, and continuous and online publishing - all thanks to the leadership and expertise of Dr. Marc Klowden (Editor-in-Chief) and Anne Klowden (Copy editor). Many of you know that Marc and Anne are ready to step away from these roles to properly enjoy retirement. In the last year, the Publications Committee has worked diligently behind the scenes to secure a succession plan for the Journal of Vector Ecology. As part of that plan, we have identified the next Editor-in-Chief and Copyeditor (more on this in the near future), and voted to raise the rates of manuscript processing fees to better align with the costs of the process. In 2025, we will celebrate the Klowden's service to the society and journal, and pass the editorial torch to very capable hands.

I'll close with some of the same thoughts expressed this year at the opening of our meeting in Fort Collins. I'm grateful to get to practice Vector Ecology with all of you. We do fascinating and purposeful work, which promises to be ever more important to global health in a time of intense (and distressing) global and land use change. Indeed, a great deal of change is on the horizon here in the U.S., so I'm particularly looking forward to learning and laughing with you all at upcoming SOVE meetings. Until then, and with many thanks again, Lyric Bartholomay

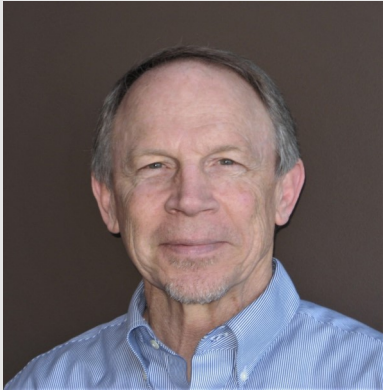
### **Dr. Lyric Bartholomay**

*Bernard C. Easterday Professor in Infectious Disease  
Director, Midwest Center of Excellence for Vector-Borne Disease  
Professor, Department of Pathobiological Sciences  
School of Veterinary Medicine  
University of Wisconsin-Madison*



CAPTION: SOVE leadership, past and present, gathered in Fort Collins, CO, USA, 2024. From left to right: (front row) Major Dillon, Ashwani Kumar, Alex Chaskopoulou, Lyric Bartholomay, Christina McCarthy, Michelle Brown, Edmund Norris; (back row) Steve Mulligan, Mike Kaufman, Lal Mian. Proof that it is impossible to get a group of vector biologists to comply with directions

## Regional Reports



### NORTHWEST REGION, USA

#### Ben Beard Regional Director

Now that summer has come to an end, the days are shorter and temperatures are dropping, allowing many of us who work in public health entomology to take a deep breath and rest a little from the frenzied mosquito-borne and tick-borne disease transmission season of 2024. In addition to large regional outbreaks of dengue and Oropouche viruses across the Americas, there was significant transmission of West Nile virus in several locations and outbreaks of Eastern equine encephalitis across the northeastern U.S. Lyme and other tick-borne diseases have continued to increase in reported case numbers, and as I write this update, the annual number of reported Powassan virus cases is 48 for the year, one case shy of the highest annual number ever reported (in 2023), with another month to go (<https://www.cdc.gov/powassan/data-maps/index.html>). Of note, Powassan virus cases typically continue to accumulate well into the winter for the previous year, due in part to reporting delays. So, there is a good chance that before it comes to an end, this year will be in the record book.

Many of you will know that in March 2024, CDC stood up a formal emergency response in the wake of the dengue epidemic in Puerto Rico. While apparently slowing now, with the progression of the season, the outbreak in Puerto Rico is still well above the epidemic threshold. In the broader region of the Americas, PAHO reports over 12 million cases so far this year, which is by far the highest number of annual cases ever reported in the region, and more than 2.5x the number of cases reported in 2023 (<https://www3.paho.org/data/index.php/en/mnu-topics/indicadores-dengue-en.html>). In addition to Puerto Rico, locally transmitted dengue cases have been reported in the U.S. Virgin Islands (163), Florida (53), California (15), and Texas (1). So far this year over 7,500 total cases of dengue have been reported in the U.S. and in US territories, which is the third highest number of annual cases since dengue became nationally notifiable in 2010 (<https://www.cdc.gov/dengue/data-research/facts-stats/index.html>).

In August, CDC's formal dengue outbreak response was escalated to additionally address Oropouche virus, due to imported cases in travelers returning from Cuba. So far in 2024, 94 travel associated

cases have been reported to CDC from Florida (90), California (1), Colorado (1), Kentucky (1), and New York (1), all in travelers returning from Cuba. In the broader region of the Americas, PAHO reports over 10,000 confirmed cases, with local transmission reported so far in 2024, in seven countries: Bolivia, Brazil, Colombia, Cuba, Ecuador, Guyana, and Peru. Transmission had slowed significantly with the onset of the dry season in South America, but now that the seasons have transitioned, new cases are again being reported from Brazil (<https://www.gov.br/saude/pt-br/assuntos/saude-de-a-a-z/o/oropouche/painel-epidemiologico>). Most alarming are the reports of fetal deaths and congenital anomalies. Work is underway to evaluate vector competence for several species of mosquitoes and biting midges, to better understand the potential for local transmission in the U.S. and US territories.

In other news, HHS/OASH will continue to host a series of public engagement meetings in follow up to the completion of the HHS Tick-Borne Disease Federal Advisory Committee Working Group. The next two meetings are scheduled as virtual meetings and will focus on clinical diagnoses (January 28<sup>th</sup>) and treatment (April 29<sup>th</sup>), respectively. The third meeting will be held in person on June 25<sup>th</sup> and 26<sup>th</sup> in Portland, Maine and will focus on vector ecology, control, and One Health issues related to tick-borne disease. Additional information can be found at the following URL: <https://www.hhs.gov/oidp/initiatives/tick-borne-diseases-associated-illnesses-national-community-engagement-initiative/index.html>.

In other news from the region, the Rockies and High Plains Vector-Borne Diseases Center (RaHP VEC) provides the following three updates:

First, their internship program is seeking partners willing to host interns during the summer of 2025. Internships will be paid through Colorado State University. The program seeks to provide internship opportunities at local mosquito control districts, public health agencies, or both, ideally in coordination with local academic institutions to help forge strong, local partnerships. The website is currently being updated with new information for this year, with an application link to be provided by December (<https://rahpvec.us/training/internship/>). Interested parties should contact RaHP VEC at [rahp-vec@colostate.edu](mailto:rahp-vec@colostate.edu), to discuss internship possibilities. **Beard cont'd on p.10**



Dear Colleagues and Friends,

The Southwestern Region consists of 5 states: Arizona, California, Hawaii, Nevada and New Mexico. Using the Centers for Disease Control and Prevention (CDC) and state resources, a brief update on vector-borne disease surveillance in the region is presented here by state in our region.

**Arizona** ([www.Azdhs.gov](http://www.Azdhs.gov)). As of December 10, 2024, Arizona Department of Health Services reported 5 cases of anaplasmosis, 3 ehrlichiosis, 13 Chagas disease, 11 hantavirus, 7 Rocky Mountain spotted fever, 7 Lyme disease, 48 dengue, 3 chikungunya, 31 West Nile virus (WNV), and 17 malaria cases. With hantavirus in Apache, Coconino, Navajo and Pima counties. Maricopa county reported 39 mosquito samples positive for West Nile virus (WNV). Monsoonal season in Arizona usually brings cooler temperatures with high winds and flash flooding.

**California** ([www.cdph.ca.gov](http://www.cdph.ca.gov)). As of December 15, 2024, California continues to show the distribution of two invasive mosquito species, *Aedes aegypti* and *Ae. albopictus*. The former species was found in 19 counties from San Diego and Imperial counties in the south to Shasta County in the north; the latter species maintained its presence in 5 counties—San Diego, Orange, Los Angeles, San Bernardino and Shasta. Regarding vector-borne diseases in the state, as of December 6, 2024, there were 124 human cases (12 deaths) of WNV, 536 dead birds, 2,007 mosquito pools, 159 sentinel chickens, and 3 horses testing positive for WNV. The WNV activity was reported from 32 counties (8 with human deaths) included Butte (1), Colusa, Contra Costa (1), Fresno (2), Glenn (1), Imperial, Kern, Kings, Lake, Los Angeles (2), Merced (1), Madera, Orange, Riverside (1), Sacramento, San Bernardino, San Diego (1), San Joaquin, San Mateo, Santa Clara (1), Solano, Sutter, Shasta, Tehama (1), Tulare, Ventura, Yuba, Yolo. The 124 human cases for 2024

## SOUTHWESTERN REGION, USA

Lal S. Mian

Regional Director

are lower than 192 in 2022, and well below the state 5-year average (425). Since its arrival in California in 2003, WNV has resulted in >8K cases with ~4K deaths. Also, Additionally, Saint Luis encephalitis virus was detected in 18 mosquito pools in 5 counties.

**Hawaii** ([www.health.hawaii.gov/vcb/mosquitoes](http://www.health.hawaii.gov/vcb/mosquitoes)). As of December 1, 2024, the Hawaiian Mosquito Control reported confirmed cases of dengue (15), malaria (1), WNV (1). Of the day-biting mosquito species, *Ae. albopictus* is found in all islands, whereas *Ae. aegypti* is reported in the Big island only. Mosquito-borne diseases are not endemic and are not thought to be an immediate threat to health in Hawaii; however, diseases transmitted by *Aedes* spp. include dengue, chikungunya and Zika viruses..

**Nevada** (<https://dhhs.nv.org>). As of October 2024, the southern Nevada Health Department reported 8 human cases of Lyme disease, 5 cases of malaria and 14 cases of WNV. Of the 51,112 mosquitoes into 3,497 pools, 388 pools (11.1%) tested positive for WNV and 583 mosquitoes into 21 pools (0.6%) tested positive for Saint Luis encephalitis virus in Clark county [[southernnevadhealth.district.org](http://southernnevadhealth.district.org)]. The northern Nevada public health (formerly Washoe County.org) as of August 27, 2024, detected some WNV activity in mosquito pools.

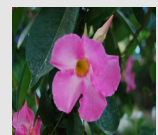
**New Mexico** ([nmhealth.org](http://nmhealth.org)). As of December 2024, New Mexico Health reported 27 deaths due to WNV. There were also 5 cases of hantavirus in Sandoval, Cibola, San Juan and McKinley and Quay counties. And on February 8, 2024, a case of human plague was reported in Lincoln county.

In closing, I would like to remind our regional members to please send me ([lmian@csusb.edu](mailto:lmian@csusb.edu)) any news about your employment, professional recognition, or any significant accomplishment that you would like to see published in the newsletter. Thanks!

Stay healthy and safe!

Cordially,

Lal





## NORTHEASTERN REGION, USA

### Edmund Norris

#### Regional Director

for us to stay on top of exciting opportunities for scientific growth for ourselves and the public that we interface with. We are entering a truly wonderful time when there are so many accessible courses/resources available to the public, our students, and ourselves that is nice to have a list of some useful ones “at-the-ready.”

Recently a new Disease Vector Education Center opened in St. Augustine, FL under the auspices of the Anastasia Mosquito Control District. They welcome school and group tours on Mondays and Tuesdays, and general admission is open to Wednesday-Sunday. It’s a great way to teach little ones and those new to Vector Control about the basics of the science if you’re ever in the North Florida area. The DODD Short Courses are gearing up again this year to highlight the science behind vector control operations. These courses are a great way to provide the fundamentals in vector control science to beginner and intermediate-level vector control technicians. They are held in January-February, and I direct everyone to [yourfmca.org/events/fmca-dodd-courses/](https://yourfmca.org/events/fmca-dodd-courses/) for more information. There are also scholarships available to students and young professionals new to vector control who could particularly benefit from the experience (<https://sercoevbd-flgateway.org/training-opportunities/>).

Student summer internships area available through the Southeast Area Center for Vector-Borne Diseases (CDC SECVBD). These internships are available annually and allow students the opportunity to work on diverse vector-related projects (ID, disease surveillance, etc.) in a variety of university labs and control districts. For more information and availabilities, please reach out to [flvbd-coe@gmail.com](mailto:flvbd-coe@gmail.com). **Ed Norris** *cont’d on page 9.*

Dear Colleagues,

It was a pleasure spending time with you all at the most recent SOVE meeting in lovely Fort Collins, CO. The conference and field ecology day were wonderful (as usual), and it was a great opportunity to catch up with many of you and see the beautiful shortgrass prairie wildlife in the foothills of the Colorado Rockies.

As we move into the cooler months and field research/vector control programs begin to settle, I hope we can all reflect on the wonderful warmer season and successful research year. Things are always very exciting during our active warmer months, but the transition to cooler temps and cooler schedules can be a welcome change allowing us to reflect on the year and our progress. To that end, I wanted to discuss some of the exciting things that occurred this year in the Southeast Region that I am honored to have the opportunity to highlight as the current Regional Director of our region in SOVE. I’m choosing to highlight three major areas where our region has some particularly exciting updates and opportunities available to all vector biologists throughout the nation: vector education programs, research news, and funding opportunities.

#### Vector Education Programs

As vector ecologists (and adjacent vector toxicologists/physiologists like myself), it is important



## European-SOVE REGION

### Filiz Gunay, Regional Director

sove/2024/documents/Book-of-Abstracts\_ESOVE-2024.pdf).

Regarding vector-borne diseases, this year, autochthonous dengue cases were reported from France (along with chikungunya virus), Italy, and Spain. The northward extension of epizootic hemorrhagic disease continued, circulating in three serotypes. Despite efforts to control the spread, it persists due to factors like climate change and increased vector activity, causing substantial loss. The Bluetongue virus continues to persist, while the West Nile virus circulated in 19 European countries! The Oropouche virus reached Germany, Italy, and Spain via travelers. Potential transmitters in Europe are unknown. In other news, the northernmost limit of sand flies has changed again. This year, sand flies were found in Belgium along the border with France and Luxembourg.

Before I end my words, I want to remind everyone that as ESOVE, we prioritize keeping our connection with Early Career Professionals (ECP) and giving a helping hand in SOVE ECP's webinars and events. You can log in to the SOVE website and watch the previous webinars today. I encourage you ECPs to be a part of it by adding your email address to the list using the QR code. Our next aim is to create ECP ESOVE, so please come and join us! Have a happy and healthy new year.

Filiz Gunay

ESOVE

*See the winners at the Conference on page 7.*

Dear Friends and Colleagues,

I want to share a few thoughts with you before the year ends. This year was particular; we have welcomed 350 guests at the 23rd European Society for Vector Ecology Conference in Montpellier, France. Many were happy to be back 12 years later. Meeting new faces, discussing their work, and feeling their enthusiasm was a pleasure.

Taking a look back, I can say that we have succeeded in organizing a quite diverse meeting, including presentations that focus on mosquitoes (32%), *Culicoides* (24%), ticks (16%), other vertebrate vectors (12%), sand flies (10%), and plant pathogen vectors (6%) approximately. This meeting, "*One Health in Action: supporting and accelerating the bridging of the vertebrate health and plant health communities*" was our first attempt to link ecologists of various vectors. I hope the meeting inspired participants with diverse perspectives from different disciplines. Thanks to all the participants, the Local Organizing Committee, the International Scientific Committee, and the Advisory Board, it was one of the most impressive ESOVE meetings. Please take the time to look at the content from some brilliant minds (

**Our winners! Best oral communication - PhD and Post-doctoral researchers**

Yu Fu - Identification of receptors of the plant virus Turnip mosaic virus (Potyviridae) in their aphid vectors

Annia Alba Menéndez - Alien lymnaeid snails in the Western Mediterranean basin: new invaders and trematode - transmitters in the region?

**Best poster award - Master students and PhDs**

Pepijn Helleman - How ecology and population history shape mosquito population genetics: a case study from the Caribbean

Edwin David Castaneda - A proof-of-principle for a Cost-efficient User-friendly LAMP-enabled Xenosurveillance (*Culex*) approach

**Best poster award – Post-doctoral researchers**

Giulia Ferrari - Spatio-temporal re-colonization of top-predators modulates zoonotic infections in ticks

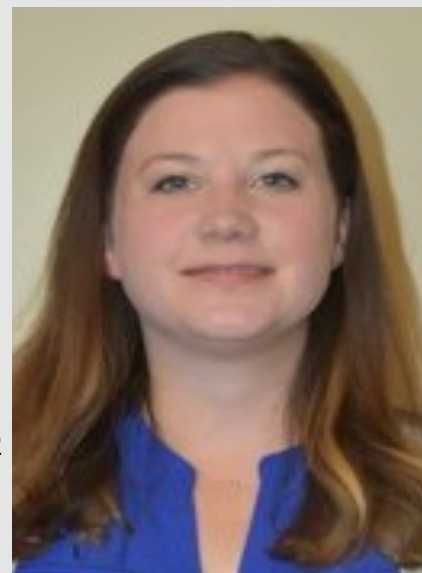
Erley Lizarazo - Advancing arbovirus surveillance in the Netherlands: Field evaluation of FTA cards and citizen science integration.

## Update on the expansion of *Haemaphysalis longicornis*, Asian longhorned tick (ALHT), in the US

Angela Caranci, Ph.D.

Northwest Mosquito & Vector Control District, Corona, California

Since this newsletter's previous reports of the Asian longhorned tick's (ALHT) arrival and expansion in the US, ALHT has now been observed in 20 US states throughout the Northeast, Mid-Atlantic, and as far west as Oklahoma (APHIS 2024, Myers & Scimeca 2024). Recalling that initial observations of specimens collected outside ports of entry were reported in New Jersey in 2017, which were quickly followed by identifications of ALHT in 12 neighboring states, with retrospective observations dating back as far as 2010 in West Virginia. ALHT displays several types of reproduction that aid its ability to expand including bisexual and parthenogenetic, the latter of which notably allows for rapid reproduction, infestation, and expansion.



Recent updates in the literature have revealed additional context and ecology of ALHT in the US. Genetic analysis of several populations from within the US along potential source populations abroad revealed three differentially distributed haplotypes throughout the US, all of which were associated with parthenogenetic phenotypes. This supports the observation that most if not all populations in the US display parthenogenetic reproduction and suggests the possibility of three separate introductions of ALHT, all genetically similar to populations from East Asia. Global distribution of ALHT favors temperate environments, even in other instances of invasion. However, in the US, ALHT appears to adapt to variable climate and environmental conditions, leading models to propose ALHT could further expand to most of the eastern states and coastal western states (Namgyal et al. 2020).

As a three host species, ALHT host-seeking nymphs are active in spring, adults in summer, and larvae in fall; however, no host size preference has been noted for successive life stages. Hosts include: dogs, cats, goats, sheep, pigs, horses, white-tailed deer, several rodent and bird species (full list APHIS, 2024). Laboratory confirmed transmission of *Rickettsia rickettsii*, *Theileria orientalis* (bovine theileriosis), Heartland virus, and Bourbon virus has been documented by ALHT, while *Theileria orientalis*, *Theileria cervi*, *Babesia microti*, *Babesia sensu lato*, *B. burgdorferi* s.s., *A. phagocytophilum*, Bourbon virus, and additional *Babesia* spp. have been detected in U.S. ALHT collected from vegetation (sources summarized in APHIS, 2024). Evidence of co-feeding transmission of Powassan virus in laboratory conditions has also been reported (Obellianne et al. 2024). These factors—opportunistic host feeding behavior and vector competence for pathogens present in the U.S.—underscore the significance of ALHT as a serious threat to both public and veterinary health.

For more detailed information and extensive literature review of ALHT in the US, the Animal and Plant Health Inspection Service (APHIS) released a January 2024 update, including exhaustive reviews of reported observations by location and host species reported at the time of publication.

APHIS [Animal and Plant Health Inspection Service]. 2024. Monitoring *Haemaphysalis longicornis*, the Asian longhorned tick, populations in the US Myers S and Scimeca RC. 2024. First Report of *Haemaphysalis longicornis* (Neumann) in Oklahoma, USA. Pathogens.

Namgyal J, Couloigner I, Lysyk T, Dergousoff S, and Cork S. 2020. Comparison of habitat suitability models for *Haemaphysalis longicornis* Neumann in North America to Determine Its Potential Geographic Range. *Int J Environ Res PubHth*

Obellianne C, Norman P, Esteves E, Hermace ME. 2024. Interspecies co-feeding transmission of Powassan virus between a native tick, *Ixodes scapularis*, and the invasive East Asian tick, *Haemaphysalis longicornis*. *Parasites Vectors*.



**Ed Norris cont'd from page 5** : A two-week, high-intensity mosquito ID camp is available this upcoming 2025 summer season through University of Florida. For non-UF students, this course is available at a cost of \$600 per person, and \$100/week of room and board in the Vero Beach bunk houses. The course provides a truly unique opportunity for anyone interested in immersive mosquito ID education! And if you decide to stay in the bunk houses, this will be truly *immersiv*!

The university of Florida offers an Introductory Tick Biology course that provides a nice background to anyone who is new to tick-related physiology and biology. It provides a nice survey of the major basic aspects of tick biology and their relationship to vectored pathogens.

### Research News

A recent meta-analysis indicated that 2024 was the worst year on record for dengue cases worldwide with more than 10 million cases globally. Sadly, this is likely to only get worse over the years to come. Already the cost of dengue control and its associated economic losses is enormous, and these costs and damages are only expected to grow in the years to come due to a changing global climate. Thankfully, numerous groups are developing new technologies to combat disease vectors and novel approaches are showing significant promise. A recent field study in Cambodia demonstrated that the spatial repellent transfluthrin emanating devices significantly reduced outdoor biting by up to 94% percent. These studies remind us that there are growing threats to global public health, but also reasons to be hopeful.

Within the Southeast area, we have some interesting research to highlight over the past year:

Mappin, F., Bellantuono, A.J., Ebrahimi, B. and DeGennaro, M., 2023. Odor-evoked transcriptomics of *Aedes aegypti* mosquitoes. *Plos one*, 18(10), p.e0293018.

Lehane, Á., Parker-Crockett, C., Norris, E., Wheeler, S.S. and Harrington, L.C., 2024. Measuring insecticide resistance in a vacuum: exploring next steps to link resistance data with mosquito control efficacy. *Journal of Medical Entomology*, 61(3), pp.584-594.

Wilke, A.B., Vasquez, C., Medina, J., Unlu, I., Beier, J.C. and Ajelli, M., 2024. Presence and abundance of malaria vector species in Miami-Dade County, Florida. *Malaria journal*, 23(1), p.24.

2020. *The Lancet Regional Health–Americas*, 35.

Lyme disease is the most common vector-borne disease in the United States with the majority of cases occurring in the Northeast, upper Midwest, and mid-Atlantic regions. While historically considered a low incidence state, North Carolina (NC) has reported an increasing number of cases over the past decade. Therefore, the aim of this study was to characterise the spatiotemporal evolution of Lyme disease in NC from 2010 to 2020.

### Funding Opportunities

Finally, as researchers and educators it is important to remind ourselves where our collective agencies/institutions/labs can obtain funding to continue to grow and learn about vector-borne disease and develop novel methods to prevent these diseases. Some major opportunities that everyone should be aware of is the recent call from the Innovative Vector Control Consortium for proposals related to novel contact and repellent technologies that might prevent mosquito-borne and tick-borne disease (<https://www.delta-sourcing.com/delta/respondToList.html?accessCode=6MG34N8VZ6>). If research groups are capable of partnering with a small business partner, there are Small Business Innovative Research/Small Business Technology Transfer grants available from different government agencies. **Ed Norris cont'd on page 10**

## From the Desk of Executive Director, Michelle Brown, Ph.D.

Please take note of the changes effective 1/1/2025:

Starting January 1, 2025, membership dues will be increasing for regular members (to \$100), institutional members (to \$750) and retirees (to \$45). Student dues will not increase.

Additionally starting January 1, 2025, the publication charges for the Journal of Vector Ecology will increase to \$1,000 for members and \$1,250 for non-members.

Thank you,

Michelle

### *Beard, cont'd from p. 3:*

Second, the RaHP VEC annual meeting will be held on Feb. 20, after the conclusion of the 2025 joint Wyoming Mosquito and Vector Management + West Central Mosquito & Vector Control Association Annual Meetings in Jackson Hole, WY. The annual meeting is an opportunity to learn about RaHP VEC activities in year 1, major program changes for year 2, provide feedback, and generate ideas for collaborations. Anyone from the region is welcome to attend.

Third, RaHP VEC, is conducting surveillance work to assess the presence and spread of *Ae. aegypti* in the mountain west region. This invasive species was discovered in recent years in southern Utah, and just this year, an established breeding population has been discovered in Grand Junction, CO. RaHP VEC is monitoring the spread and welcomes any information regarding *Ae. aegypti* from communities across the mountain west. RaHP VEC can be reached at the following e-mail address: rahp-vec@colostate.edu.

In the news from the University of Idaho, the Institute for Health in the Human Ecosystem will be hosting their annual, highly acclaimed Biology of Vector-borne Diseases six-day course. The course targets advanced graduate students, postdoctoral fellows, faculty, and professionals to ensure competency in basic biology, current trends and developments, and practical knowledge for U.S. and global vector-borne diseases of plants, animals and humans. This course is offered as a part of the Institute's efforts to train the next generation of scientists and help working professionals to address current and emerging threats more effectively with holistic approaches and a strong network of collaborators and mentors. Applications are currently being received through March 17, 2025. Of note, NSF EEID scholarships are available for highly competitive international and domestic applicants, and **the application deadline for consideration for these scholarships is 31 Dec 2024**. More information is available at the following website: <https://www.uidaho.edu/research/entities/ihhe/education/vector-borne-diseases> or by inquiring via the following e-mail address: [chhe@uidaho.edu](mailto:chhe@uidaho.edu); also see the ad on page 12.

**Ed Norris cont'd from page 9:** These can be offered to groups able to partner with specific government research agencies, like the USDA or Department of Defense. If a company with an exciting technology is able to partner with a government agency (SBIR grant) or a university (STTR grant), they might have a significantly greater chance of being funded (>80% funding rates). Moreover, the American Mosquito Control Association offers a research fund from yearly donors to support starting and/or high-impact research projects. The call for proposals is made available in the spring and affords up to \$50,000 for a one-year pilot project. The priorities of what projects may be funded in a given year changes, so please visit the American Mosquito Control Association website ([mosquito.org/research-fund/](https://mosquito.org/research-fund/)) for more information. There will also be a slew of new funding opportunities available as we move into the new year, these range from DoD grants related to vector-control and surveillance (<https://ebrap.org/eBRAP/public/ProgramFY.htm?programFYId=625101>), NIH NAID grants focused on disrupting pathogen physiology within the insect host (<https://www.niaid.nih.gov/research/vector-bio>), and USAID funding to support collaborative projects with developing countries grappling with neglected tropical diseases ([usaid.gov/global-health/health-areas/malaria/research-innovation](https://www.usaid.gov/global-health/health-areas/malaria/research-innovation)).

I hope these opportunities/resources can allow everyone to have a successful start to another exciting and eventful research season!

**Pesticide Update**

Nancy C. Hinkle, Ph.D.  
University of Georgia,



## EPA Issues First Voucher to Incentivize the Development of Novel Mosquito Control Products

The U.S. Environmental Protection Agency (EPA) has issued its first voucher under its Vector Expedited Review Voucher (VERV) Program as a result of a recent approval by EPA of a new active ingredient - *Wolbachia* wAlbB strain. The [VERV Program \[links-1.govdelivery.com\]](#), which is required by the Pesticide Registration Improvement Act of 2022 (known as “PRIA 5”) and announced in [December 2023 \[links-1.govdelivery.com\]](#), aims to incentivize companies to develop novel or unique mosquito control products to help prevent the spread of mosquito-borne diseases like malaria, dengue, and Zika.

Mosquito-borne diseases are among the world's leading causes of illness and death and pose a significant risk to people in the United States. Controlling mosquitoes is challenging, especially because many are developing resistance to currently registered insecticides. The pesticide product associated with this new active ingredient, WB1 Males, was registered by EPA [in April 2024 \[links-1.govdelivery.com\]](#) for commercial use as a population suppression tool for *Aedes aegypti* mosquitoes which are a known vector of several serious illnesses including dengue, chikungunya, and Zika. WB1 Males prevents population growth by reducing reproductive success in areas where the product is continually released over time. The use of this particular *Wolbachia* bacteria strain within the WB1 Males is a novel mode of action for the *Aedes aegypti* species, which has had reported resistance to a range of mosquito insecticides.

Under the VERV program, EPA may issue a voucher to the registrant of a new, qualifying pesticide product for mosquito control after it is successfully registered. Vouchers may be sold or transferred to other registrants. An applicant may then redeem this voucher when submitting a future application for a different product under one of the specified PRIA codes. EPA will then expedite its review of the new application, potentially providing a shorter time to market for the product involved. The EPA’s issuance of a voucher is in no way to be construed as an endorsement or recommendation of this product.

After reviewing all submitted data, EPA determined that WB1 Males meets the required criteria for VERV Program [eligibility \[links-1.govdelivery.com\]](#):

1. **Proven Efficacy:** After different trials showed population reductions of 68 - 95%, the EPA concluded that the product can be expected to provide population suppression over a minimum of a 20-acre contiguous area.
2. **Novel Mode of Action:** The use of *Wolbachia* with the WB1 Males product is novel for the species, *Ae. aegypti*.
3. **Targets Mosquitoes Capable of Spreading Diseases:** The target pest, *Ae. aegypti*, is a vector of a number of human diseases, including yellow fever, chikungunya, dengue, and Zika viruses.
4. **Accessibility and Global Access Plan:** The registrant submitted a plan addressing the manufacture, distribution, procurement, and pricing processes for foreign vector control programs for the use of WB1 Males.
5. **Broadens Integrated Pest Management Strategies:** The label for WB1 Males indicates that the product is intended to be used as part of a mosquito control program.
6. **New Product Containing a New Active Ingredient:** No products containing the active ingredient, *Wolbachia* wAlbB strain, have been previously registered by the EPA for use against *Ae. aegypti*.

For more information about the VERV Program, visit [EPA’s webpage \[links-1.govdelivery.com\]](#). The final registration decision and supporting documents for WB1 Males are available at docket ID [EPA-HQ-OPP-2020-0028 \[links-1.govdelivery.com\]](#) on [www.regulations.gov](http://www.regulations.gov)

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## Resources

### BEI Resources for Vector Biology Research (www.beiresources.org)

The NIAID’s BEI Resources program provides Vector Biology resources for free to registered, approved researchers in domestic and foreign institutions with appropriate facilities and containment procedures for vector research. Our widely requested holdings include LIVE arthropod vectors of human disease, including anopheline and culicine mosquitoes, reduviids, ticks and sand flies, associated reagents and genomic materials for entomological research, along with insectary protocols. For the cost of nothing, recipients are only required to acknowledge the use of the individual resources in publications and presentations of the research in which the materials are used.

BEI Resources arthropod colonies are made available by the deposit contributions of investigators throughout the world. Deposited materials undergo review by NIAID prior to acceptance. Please notify BEI Resources through the Suggest A Reagent Form if you have a request for inclusion or the Deposit Inquiry Contact Form if you have a unique strain for consideration.

Vector Biology resources available through BEI Resources will remain available throughout the current coronavirus pandemic. Orders and/or shipping of certain live vectors may be delayed or temporarily on hold depending on the current operating status of individual insectaries for mosquitoes, ticks, reduviids and sand flies. BEI Resources is pleased to announce the upcoming availability of black fly life stages through a partnership with the University of Georgia Black Fly Rearing and Bioassay Laboratory, which has operated the only known colony of black flies (Diptera: Simuliidae) for over 20 years. Since its establishment, the

*Simulium vittatum* colony has been used for a variety of research projects, including vector transmission studies, environmental monitoring, vector control and larval feeding studies.

I wanted to share some information regarding the NIAID Bioinformatics Resource Centers for Infectious Diseases (BRCs) that were recently renewed. There has been concern in the vector research community regarding the accessibility of bioinformatics data on vectors under the new awards. If the SOVE newsletter editors agree to post this information, below is what is available at this time:

BRCs website: <https://www.niaid.nih.gov/research/bioinformatics-resource-centers> [niaid.nih.gov]

Information on the BRC new awards: NIAID Funds Cutting-Edge Genomics and Bioinformatics Programs | NIAID: National Institute of Allergy and Infectious Diseases (nih.gov) [niaid.nih.gov]

The NCBI also has vector data in a comprehensive, easy to navigate format. Here is an example for *Aedes aegypti*: Search: *Aedes aegypti* - NLM (nih.gov) [ncbi.nlm.nih.gov] Information on other vectors can be accessed by placing the name of the vector in the search box.

The contact person for bioinformatics resources at NIAID is Wiriya Rutvisuttinunt (wiriya.rutvisuttinunt@nih.gov) and she can be contacted with any questions.

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**Application process**

- October 1, 2024  
Applications accepted starting
- December 31, 2024  
Deadline to be evaluated for scholarships
- February 17, 2025 \*  
Notification of scholarship recipients
- March 17, 2025  
Final application deadline

\* Accepted applicants without scholarships will be notified after February 17

**June 16-21, 2025**

**Biology of Vector-borne Diseases course**

The University of Idaho Institute for Health in the Human Ecosystem 6-day **Biology of Vector-borne Diseases course** provides training for the next generation of professionals to understand plant, animal and human vector-borne diseases as interconnected pathosystems. Scholarships are funded by **National Science Foundation Ecology and Evolution of Infectious Diseases (NSF EEID) Program**.

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## About SOVE . . . . .

The Society for Vector Ecology is a nonprofit professional organization formed in 1968 by a group of individuals involved in vector biology and control programs in California. The membership has since grown to represent an amalgamation of diverse research, operational, and extension personnel from all over the world. The Society is committed to solving many complex problems encountered in the field of vector biology and control. Among these are the suppression of nuisance organisms and disease vectors through the integration of various control options, such as environmental management, biological control, public education, and appropriate chemical or non-chemical control strategy.

The Society publishes the biannual Journal of Vector Ecology that contains research and operational papers covering many phases of vector biology, ecology, and control. The Society also issues a quarterly newsletter and holds an annual conference in September/October.

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