

# SOVE

Society for Vector Ecology

## SOVE Newsletter

### President's Message



Lyle R. Petersen, MD, MPH

Dear SOVE members,

If this were normal times, we would be busy planning for and communicating with you about the upcoming SOVE annual meeting. But, of course, these are not normal times. Having had to cancel this year's meeting, we are anxious to host the annual meeting in 2021. However, given the COVID-19 uncertainties, the SOVE Board decided to postpone until early 2021 a decision whether to have an in-person, a virtual, or a hybrid Congress next year. In the meantime, we are exploring other educational or interactive opportunities for SOVE members, such as webinars. Throughout it all, the SOVE Board continues to work behind the scenes via Zoom videoconferencing to further the mission of SOVE. For example, the Board has formed a new Bylaws Committee, which had been inactive for several years. While bylaws may seem boring, they govern how we function as an organization and thus their review and modification are vital for SOVE's continuing success and operation. For example, the Bylaws Committee is anxious to draft language to for-

mally add a voting student representative to the SOVE Board and will outline the duties of the student representative. Revisions to the bylaws must be voted on by the SOVE membership, which we hope to do in late fall.

I would also like to take the opportunity again to congratulate Alex Chaskopoulou on her selection as the incoming SOVE Vice President. She currently sits on the SOVE Board as the European representative, so she should be able to hit the ground running when her term begins on January 1. On another note, it is with a heavy heart that I inform you of the passing of Minoo Madon, who passed away in August of COVID-19. Madon had a long and distinguished career, which included his receipt of the 1996 SOVE Distinguished Service Award and his service as SOVE president in 1988. I know the COVID-19 pandemic has impacted all of us in many ways; unfortunately, it is not going away soon. We are all anxious to get back to our normal lives and work, but please be safe.

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#### ***In this issue***

President's message, L. Petersen	<b>1</b>
North central US Regional report—N. Achee	<b>2</b>
Southeastern US Regional report—R-D Xue	<b>3</b>
SOVE Indian Region report—Ashwani Kumar	<b>4</b>
Tick report—M. Diul-Wasser; Andrea Swei	<b>5, 6-7</b>
WMCA; In Remembrance; Resources	<b>8, 9, 10</b>
About SOVE, Board, staff	<b>11</b>

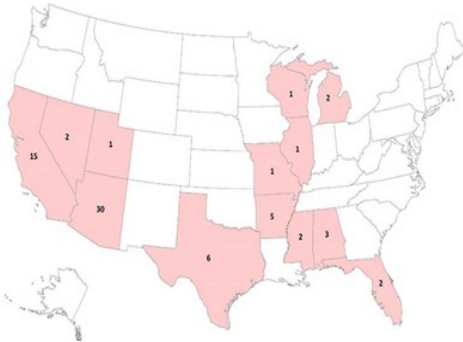


## NORTH CENTRAL US

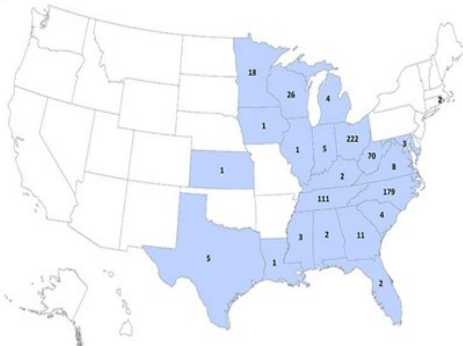
**Nicole Achee**

Regional Director

St. Louis encephalitis virus neuroinvasive disease cases reported by state of residence, 2010-2019\*



La Crosse virus neuroinvasive disease cases reported by state of residence, 2010-2019\*



Dear Colleagues and Friends,

First, and most important - hoping all of you, your friends and family have been able to stay healthy in light of the COVID-19 pandemic!

Although our regional states are experiencing varying degrees of COVID19-related restrictions, the great outdoors continues to be fully open during the past summer and upcoming falls seasons – get out and enjoy! Of course, a consequence of being outside, whether it be in a suburban backyard or forested state park, is the potential exposure to biting arthropod vectors.

Most recent surveillance data reported to the Centers for Disease Control and Prevention (CDC) indicates that Lyme disease, St. Louis encephalitis (SLE), and La Crosse continue to be threats. In 2019, a total of 1,121 confirmed cases of Lyme disease were reported from Wisconsin and 950 from Minnesota, both states categorized as ‘high incidence’.

Also, in 2019, a total of 14 SLE neuroinvasive cases and 46 confirmed La Crosse virus neuroinvasive cases were reported, with several of our regional states affected (see CDC figures to left). For more information, and to access all graphics and educational material, visit: <https://www.cdc.gov>.

Perhaps some of you, like me, took advantage of working remotely at home to try a new outdoor hobby. For me it was vegetable gardening. During my daily watering routine, I realized many obscure locations for standing water around my garden and, sure enough, over time observed mosquito larvae.

My neighbors were also ‘trying on’ their gardening skills and I took the opportunity to remind them to be aware of the habitats that might be unintentionally created or promoted in our backyards and practices they can implement in preventing these from becoming producers of mosquito vectors. A quick example of how to raise awareness in protecting against arthropod-borne diseases while enjoying the great outdoors.



Have a great autumn and look forward to seeing you in 2021!

Sincerely,

Nicole



## SOUTHEASTERN US

# Rui-Di Xue

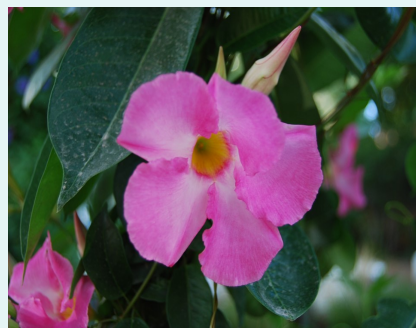
## Regional Director

Dear Colleagues,

Florida is the number 2 state with the highest number of COVID-19 cases and the pandemic has definitely impacted on the mosquito control program activities such as public education, public relation, community outreach, and partial surveillance efforts as the State arbovirus lab was redirected for COVID-19 testing, postponing sentinel chickens and mosquito pool testing for arboviruses for 3 months. Many mosquito control offices were closed to public access and some equipment could not get repaired and several professional conferences were cancelled due to travel limitation. Some programs experienced shortage of workforce due to sick or quarantined employees. Hopefully the pandemic will not affect the property value and the mosquito control revenues in the next few years.

So far in southern Florida, there were 53 locally-acquired dengue fever cases in Miami-Dade and Monroe counties in south Florida; 32 travel-related dengue fever cases, 9 travel-related malaria cases, and 17 West Nile virus cases with 31 asymptomatic WNV-positive blood donors. Three counties (Miami-Dade, Monroe, and Palm Beach) are under a mosquito-borne illness alert. Four counties are under mosquito-borne illness advisory. William R. Eisenstadt, Professor of Electronic Engineering at the University of Florida and Anastasia Mosquito Control District received a CDC grant about smart cage for insecticide

evaluation for the next two years. Anastasia Mosquito Control District received a three-year grant from the Dept of Defense/Armforces Pest Management Board about the threshold for the evidence based decision making. Mark Latham, Director of Manatee County Mosquito Control District retired in late May after many years of service and Chris Lesser, replaced him as the new Director. Dennis Moore retired from Pasco County Mosquito Control District after many years and Adriane Rogers, replaced him as the new Director. Last June, Phil Kaufman, Professor of Entomology left UF and became Chair of the Department of Entomology, Texas A & M University. Phil G. Koehler, Professor of Entomology at UF retired in late June. Yosook Lee of UC Davis joined the UF/Florida Medical Entomology Laboratory as Assistant Professor in Molecular Ecology, Population, Genomics, and Bioinformatics. Steve Peper from Texas joined Anastasia Mosquito Control District as Molecular Entomologist to take charge of the arbovirus surveillance program. Welcome Lee and Peper to the Gator Nation!



## Regional Report



### SOVE Indian Region

## Ashwani Kumar

### Regional Director

Dear colleagues and SOVE Family members!

The SOVE (Indian Region) continues its endeavor to promote scientific research, dialogue and discussion, exchange of ideas for better understanding of vector ecology and for effective control of vectors and vector borne diseases (VBDs). In tune with this, we have launched a new lecture series on VBDs, called SOVE lect, using digital platform, considering the ongoing COVID-19 pandemic. Till this date four lectures of 10 minutes each have been launched on WhatsApp, Twitter and Facebook/ Youtube. The topics covered so far are:

- 1) Vector Borne Diseases in Kerala (N. Pradeep Kumar, formerly of ICMR-Vector Control Research Centre Field Unit, Kottayam, Kerala, India) [https://youtu.be/e\\_eftTkVEyl](https://youtu.be/e_eftTkVEyl)
- 2) Malaria Elimination in India: Where do we stand? (S S Sahu, ICMR-VCRC Field Unit, Koraput Orissa, India) <https://youtu.be/ka1b8AwVhRw>
- 3) *Mesocyclops aspericornis*: A biocontrol agent of dengue spreading *Aedes aegypti* (Devinder Kaur Kochar, Punjab Agriculture University, Ludhiana, India), <https://youtu.be/wLVeGUSEt4I>
- 4) Crimean Congo Haemorrhagic Fever (CCHF)-An overview (K. Athisaya Mary, ICMR-VCRC, Puducherry, India). [https://youtu.be/CUZQXyKO\\_YE](https://youtu.be/CUZQXyKO_YE)

The membership of the SOVE Indian Region, in recent times, has improved from 65 to 92. Currently, there are 75 regular, 11 retired, 5 students and 1 institutional member. Efforts are underway to increase the membership further to at least 100 cov-

ering across the country, following which efforts shall be made to enroll members from the neighboring countries of the region.

With 75,760 new cases on August 27, 2020, the COVID-19 case count in India scaled to 3,310,235 including 725,991 active cases and 2,523,772 cured/discharged. Fortunately, the mortality rate stands at 1.5% in India, one of the lowest in the world. As India deals with this pandemic, which has impacted the VBDs' surveillance machinery across the country, dengue, chikungunya and malaria are showing signs of incline. The elimination of malaria is envisaged by 2027 to be achieved in three phases 2020 in 15 states, 2022 in 11 states and 2027 in the remaining 11 states, which have traditionally faced a high burden of disease. The aim is to attain WHO certification by 2030. The ongoing COVID-19 pandemic challenges the timely malaria elimination goal in the country. The highest endemic state of India (Odisha) which contributed about one-third of the cases in the country has shown a remarkable decline (85% cases), during 2017 to 2019 with rollout of 11.3 million LLINs, distributed throughout the state and introduction of mass active screening of population followed by treatment of asymptomatic and symptomatic cases. Here too are reports of rise in malaria cases in certain pockets. Similarly, there are reports of a dengue surge in some parts under the overall impact and sheer focus of health sector on managing COVID-19 pandemic, given its scale and vastness of the country.

**SOVE Indian Region cont'd on p. 8**



## Shifting tick communities: More ticks, more pathogens, in more places...

Maria Diuk-Wasser

*Depart of Ecology, Evolution and Environmental Biology, Columbia Univerty, New York, NY 10027*

Tick-borne diseases continue to emerge globally, with the number of annual reports of tick-borne bacterial and protozoan diseases in the United States doubling between 2004 and 2016 (Rosenberg et al. 2018). While *Ixodes*-borne *Borrelia burgdorferi* causes ~300K cases of Lyme disease/year in the United States and continues to dominate the scene, pathogens transmitted by other vectors are emerging. Tick vectors increasing in abundance and geographic range include the lone star tick *Amblyomma americanum*, the Gulf Coast tick *A. maculatum* and the American dog tick *Dermacentor variabilis*. To complete the picture, the recent introduction of the Asian longhorned tick *Haemophysalis longicornis*, originally from Asia, rises public health concern although no human pathogens have been identified to date. Partially driven by changes in climate, land use, host community composition and people's behaviors, we are facing an increasingly dynamic situation; do we have the right tools for the job?

While the risk of coinfections with multiple *Ixodes*-borne pathogens is increasingly acknowledged, the 15 potential pathogens transmitted by coexisting tick vectors require attention (Eisen and Paddock, 2020). An interesting question is whether tick biological interactions may shape their geographic spread e.g., do ticks compete for resources or instead facilitate each other's feeding through host immune suppression? However, before assuming interactions among ticks, we need to characterize the ticks' niche overlap, that is, to what extent they share similar climate, habitat and hosts.

On a large spatial scale, the 'climatic envelope' of many emerging tick species indicates extensive potential for species range overlap, as can be observed in areas of New Jersey and New York (Sonenshine et al. 2018). On a local scale, co-occurrence of multiple ticks depends on the overlap in their habitat and microclimatic niches (suitable

conditions for off-host development, questing and survival) and host niches (vertebrates used for feeding, mating and transportation). While the habitat niche of blacklegged ticks is mostly restricted to forested sites, other vectors occupy a wide range of habitats, with the Asian longhorned tick found from forests to grass/soil patches on sidewalks! Forest-grassland ecotones may offer the largest range of habitats suitable for diverse tick communities. Overlap in host niches is poorly understood, with small mammals hosting blacklegged tick immatures but not fed upon by Asian longhorned ticks; mesomammals and white-tailed deer hosting multiple vector species and stages (Tufts et al. 2000). These hosts vary widely in their abilities to acquire and transmit different pathogens. Much remains to be learned about tick (and pathogen) niches and their overlap.

In areas with multiple tick vectors, people's potential for exposure to bites from multiple tick species also depends on our habitat and host niches. Habitat niches that expose us to various tick communities include backyard gardening or hiking in grassy or forested areas; host niches include pet ownership and presence of wildlife in our backyards. Furthermore, exposure to multiple tick species may influence people's attitudes and practices, depending on their ability to distinguish between them. Because most people do not distinguish among tick species (unpub.), finding *Asian* longhorned ticks in their lawn may increase overall tick awareness and motivate protective behaviors against all ticks (the positive scenario) or, conversely, may reduce their trust in public health messaging about risk concentrated in tall grass or leaf litter. We may need to carefully tailor our public health messaging as the tick community shifts to avoid confusion and distrust.

**Diuk-Wasser cont'd on p. 7**

## Vector Briefs:

### Of ticks research and COVID-19 Pandemic

**Andrea Swei**

*Department of Biology, San Francisco State University  
San Francisco, CA*

The last six months have been challenging on an unprecedented scale as the world has dealt with the worst pandemic in over a century. Although the disease now referred to as COVID-19 first emerged in December 2019 in China, it wasn't until early March 2020 that many countries throughout the world began to personally experience an exponential rise in cases and suffer from overwhelmed hospitals and mounting COVID-19 related deaths. As a result, many areas started to shut down in mid-March to control the spread of COVID-19. The precise timing and nature of shut-down or shelter-in-place varied from state to state and even county to county in the United States but for many tick researchers, shelter-in-place meant a major disruption to research activities. The reason for this is that nymphal *Ixodes* spp. that transmit the majority of Lyme disease begin to emerge in March and April in many regions of the United States so the sudden shut down of many universities and institutions halted or delayed many field seasons and planned research projects that focus on collecting and studying this disease vector.

Watching the pandemic unfold from Madrid, Spain where I was on sabbatical, I started to worry in early March that the pandemic would become much worse in California where I teach Biology at San Francisco State University. My students and lab were preparing for a busy field season of collecting ticks and sampling vertebrate reservoir hosts for infection prevalence with *Borrelia burgdorferi* and other tick-borne pathogens as part of a research program to determine the ecological drivers of disease risk. However, it soon became apparent that COVID-19 cases were mounting in the US and a normal field season was not going to be possible. On March 13, San Francisco ordered a shelter in place order to slow the spread of COVID-19, our university moved all classes to remote learning, and all on campus and field research ac-

tivities were cancelled. In the western United States, larval ticks also emerge in April, synchronously with the nymphs. My research often focuses on studying the distribution of where these larval ticks take their blood meal to help understand disease prevalence. This component of the field season had to be completely cancelled but by May, the university was starting to grant permission for field research so my students and I were able to collect ticks in late May and early June with new safety protocols. Although this was not the field season that was planned, I was grateful to be able to salvage some field data. We were able to sample 14 field sites from throughout the San Francisco Bay Area and collected 1,077 ticks. The timing of tick collection was later than most years due to delays in getting permission to conduct fieldwork but tick densities appeared to be lower than last year by approximately 30%. My students can now conduct lab research on a limited capacity and are working to identify these samples to species and will begin pathogen testing soon.

Many researchers and vector biologists around the country experienced similar disruptions and delays to their tick monitoring programs and research projects. Neeta Connally's university, Western Connecticut State University, switched to virtual learning in mid-March. Eventually, Connally received permission to continue field research with several modification, which included wearing gloves, masks, social distancing, and driving in separate vehicles to field sites. Laboratory activities were mostly suspended during the spring and early summer. Field work for the Connally group involved visits to homes for an integrated tick management project that was funded by the CDC. Normally, encounters with homeowners are rare but this season, interns were met with homebound residents who had a lot of questions and often did not wear masks adding a new element to their work.

For Samniqueka Halsey, at the University of Missouri, this was her first field season in Missouri. She was still able to conduct her field season by adopting

*Swei cont'd on p. 7*

**Diuk-Wasser** *cont'd from p. 5:*

More ticks in more and new places calls for sustained, standardized surveillance to enable comparisons across sites and over time. We also need novel, more dynamic methods to monitor the changing eco-epidemiology of the system; counting reported human cases is not enough. Where are people encountering different tick species and their pathogens? In which regions, habitats, in their backyard, neighborhood park or natural area? While performing which activities? New tools are emerging to explore the dynamics of human-tick contact. The COVID-19 epidemic has spurred interest and generate platforms to examine people's movements (facebook, google, etc); smartphone apps (Bron et al. 2020) and citizen science approaches are opening up new sources of information (Eisen and Eisen 2000). Let's harness the best of these new tools and combine them with traditional and carefully standardized methods to help curb the epidemic of tick-borne diseases.

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**Swei** *cont'd from p. 6:*

similar social distancing and safety protocols to protect wildlife from SARS-CoV-2 transmission though this was done in limited capacity due to restrictions in recruiting undergrad research technicians. Halsey's research focused on small mammal trapping and tick collections in prairie and forested landscapes throughout Missouri.

In the foothills of the Sierra Nevada Mountains in California, Elizabeth Andrews, an Associate Public Health Biologist with the California Department of Public Health, was still able to finish up her tick collections as part of a three-year project to study elevational trends in *Ixodes pacificus* nymph abundance and infection prevalence. She contacted her sites directly and received permission to enter the areas, occasionally walking longer distances than usual since gates and parking lots were closed. Preliminary observations suggest that there were fewer nymphs this year

**Swei** *cont'd on p. 8*

## World Mosquito Control Association

Ashwani Kumar

*Director, SOVE Indian Region*

Recently the World Mosquito Control Association (WMCA) had the election for new officers (effective from October 1) as the following: President: Ashwani Kumar; Immediate Past President: Steve Mulligan; Past President: Norbert Becker; Executive Director: Rui-De Xue; Board Members: Major Dillon, Tong-Yan Zhao, Paulo Pimenta, and Charles Mbogo. Usually the WMAS holds the Board meeting during the AMCA and SOVE annual meetings. The officer election is held every two years. Currently the new Board restores the WMCA website, updates the bylaws and future direction. The WMCA is an association of all national and regional mosquito control associations / societies worldwide.

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### ***Indian Region Report cont'd from p. 4:***

The Union Territory of Puducherry which is the southeastern part of the country, has reported 17.3% test positivity rate (population= 1.5 million), second only to Maharashtra state. With >500 new cases daily, the COVID-19 case count in Puducherry continues to raise, with so far 11,930 confirmed cases, 4264 active cases, 7486 recovered cases and 180 deceased. In the grim circumstances, the field activities of ICMR-VCRC, Puducherry is jeopardized. However, the laboratory experimentation and studies are in full swing, with scientists putting their heart and soul in publishing their earlier and current findings and filing patents of their innovative discoveries. The vector scientists, like others, are increasingly participating in online webinars, which have become order of the day. Quite recently, one of the scientists A. N. Shriram from the Centre and also an active member of the SOVE (Indian Region) delivered an excellent webinar on "Mosquito Surveillance and Control" to commemorate the World Mosquito Day on August 20, 2020, organized by the Puducherry Pollution Control Committee, Ministry of Environment, Forests and Climate Change.

Amidst all this, there are efforts to initiate new

SOVE activities in India in the coming weeks. It is a pleasure to thank WMCA board for electing me as President for 2021-22 tenure. My job is cut out as the responsibility is onerous and I promise to deliver my best.

Friends! Stay focused, safe and healthy and we shall soon overcome this pandemic hopefully soon!

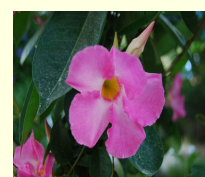
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### ***Swei cont'd from p. 7:***

compared to 2019, perhaps due to a drier winter this past year. Preliminary infection prevalence also seemed to drop from 6% last year to 5% this year, but these results still need to be finalized. Andrews also encountered more people on hiking trails in the course of her field work in March and April and noted many atypical groups on trails such as large groups of young adults and families with small kids. These hikers became less common in May and June.

Were there more tick encounters this spring due to an increase in hikers during shelter-in-place? It is unclear but Angie Nakano, Laboratory Director with San Mateo County Mosquito and Vector Control District, located south of San Francisco, did not observe a change in public tick reports this spring. Tick surveillance was scaled back this year but mosquito surveillance largely proceeded as planned with safety modifications such as wearing masks and minimizing contact with the public during pest removal projects.

Across the country, many tick-related research programs were delayed and disrupted but many researchers were able to conduct their field work with extra paperwork and safety precautions. Hopefully, important long-term field and lab data will not be negatively affected by the COVID-19 pandemic and next field season goes more smoothly.





## IN REMEMBRANCE

Sadly, on August 13, 2020, our friend and colleague Minoo B. Madon died at age 81. Minoo was hospitalized with Covid-19 pneumonia on July 8th where he remained on a ventilator and sedated until his passing. A Parsi (Persian Zoroastrian), Minoo was born on March 6, 1939 in Secundrabad, India. As a young man he emigrated to the United States, attended and completed college at University of Arizona, and eventually naturalized as a U. S. citizen.

With several coworkers, Minoo was one of the founders and earliest members of SOVE. His efforts in helping establish SOVE, tireless work assisted by Jack Shanafelt in editing and printing the Society's incipient years of scientific publications and newsletters, and his continuous work in helping grow and evolve the domestic and international SOVE organization, has led to its immeasurable success today. The history of SOVE is well documented and authored by Minoo and Dr. Cluff Hopla in the June 2005, volume 30, no. 1 of the Journal of Vector Ecology. In that publication, one can see the extensive involvement Minoo had in the formative and later years of the Society.

Minoo was an outstanding field biologist and vector ecologist. His many years spanned various careers in biology. Initially, as entomologist for a pest control company, he soon left that career to become a biologist for the California Department of Public Health, Vector-borne Disease Section (VBDS), where he stayed with the official title of Senior Public Health Biologist until his retirement in 1998. In the many years he worked at the VBDS, Minoo was regarded with high praise and well-respected for his knowledge and experience in the field surveillance of vector-borne diseases and control and abatement of spiders, rodents, mosquitoes, and pests in general. Not one to rest on his professional laurels, shortly after his retirement from VBDS, Minoo accepted the position of Director of Scientific Technical Services for the Greater Los Angeles County Vector Control District (GLACVCD)—his final professional career. As General Manager of the District, and knowing Minoo for the many years he previously worked for VBDS, I was well-rewarded for his years of experience, work ethic, and accomplishments during his 10 years with GLACVCD. After GLACVCD, Minoo joined Avatar Meher Baba Center, a cultural Indian organization, becoming one of its Board of Directors and hands-on volunteer.

Aside from a fiercely dedicated, bright, and talented professional, Minoo, was a man of genuine humility and humor. Among his friends and closest colleagues he was known affectionately as "Mad Dog". The moniker presumably stemmed from his last name, but Minoo was the antithesis of that characterization. His surviving two daughters and four adult grandchildren knew him as kind and warm-hearted— and generous to the point of sacrificing his time and material things for them. Likeable, self-effacing, and instantly recognizable, with flowing silver-grey hair and matching beard, his presence was unmistakable in a roomful of peers. Many may particularly remember him as always the jovial consummate hospitality bartender at SOVE conferences and events. I remember him respectfully and affectionately as a dear friend who, unnecessarily, passed too soon and will be missed terribly.

Jack Hazelrigg

Retired General Manager

Greater Los Angeles County Vector Control District

## For Your Calendar

The 86th Annual Meeting of the American Mosquito Control Association will be held March 1–5, 2021 in Salt City, Utah.

Latin American SOVE Meeting will be held October 30 – November 3, 2021 in La Plata, Argentina.

## Resources

BEI Resources for Vector Biology Research NIAID's BEI Resources program ([www.beiresources.org](http://www.beiresources.org)) 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.

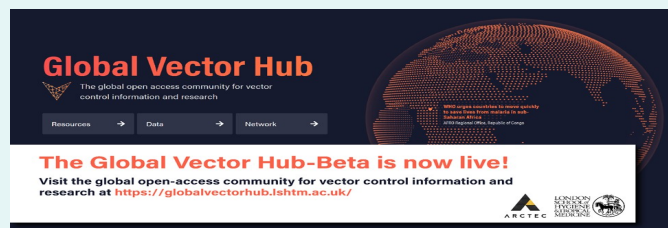
BEI Resources arthropod colonies are made available by the deposit contributions of investigators throughout the world. Deposited materials undergo review by NIAID prior to acceptance. Please notify BEI Resources through the Suggest A Reagent Form if you have a request for inclusion or the Deposit Inquiry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

There are two announcements that may be of interest to SOVE membership:

1) VectorBase is now combined with EupathDB to form a Bioinformatics Resource Center (BRC) called VEuPathDB: <https://beta.veupathdb.org/veupathdb.beta/app/> For questions regarding this BRC please contact [help@vectorbase.org](mailto:help@vectorbase.org),

2) There will be a Keystone Symposium on February 15-18,



2021 in Colorado, on the topic of Vector Biology: Emerging Concepts and Novel Technologies. Here is the link : <https://www.keystonesymposia.org/ks/Online/Events/2021Q6/Details.aspx?EventKey=2021Q6>

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## Job Opportunity

John Hopkins University

Bloomberg School of Public Health – Director

Closing Date: Open until filled

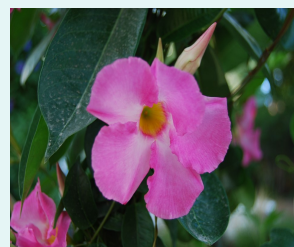
Location: Baltimore, MD

The Johns Hopkins Bloomberg School of Public Health invites applications from individuals with research expertise in tick-borne diseases for the Director of a new institute, the Lyme and Tick-borne Disease Institute for Research and Education. This academic tenure-track faculty position will have a primary appointment in the W. Harry Feinstone Department of Molecular Microbiology and Immunology.

For a detailed job description, please visit:

<https://>

[Home/](#)  
[reqId=A-](#)



[facultytjobs.jhu.edu/Position?72716-4](https://facultytjobs.jhu.edu/Position?72716-4)



## Society for Vector Ecology

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**www.sove.org**

### About SOVE . . . . .

The Society for Vector Ecology is a 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 and 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 integration of control elements, such as environmental management, biological control, public education, and appropriate chemical control technology.

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 distributes a periodic newsletter and holds an annual conference in the months of September/October.

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