

SOVE

Society for Vector Ecology

SOVE Newsletter

President's Message



Lyle R. Petersen, MD, MPH

Dear SOVE members,

COVID here. COVID there. COVID everywhere! All other health issues seemingly have been forgotten. But just today I received our weekly West Nile virus report, which already shows West Nile activity in 10 US states with reported human infections in three states. Vector-borne diseases are not going away! Our continuing vector ecology work remains vital to reversing the long-term increasing incidence of vector-borne disease. My aim as SOVE president is to increase SOVE's ability to support that work and its members. Much is happening behind the scenes at SOVE and I would like to highlight a couple of topics here.

First, I would like to acknowledge the generous gift of \$50,000 USD from Dr. Mir S. Mulla to establish the "Dr. Mir S. Mulla Memorial Lecture Fund". The "Dr. Mir S. Mulla Lecture" will be given at the SOVE annual conference/congress in his honor and the fund will provide a stipend to cover expenses for the lecture

speaker. Dr. Mulla's long and distinguished career is certainly one to honor. He was awarded the first-ever lifetime achievement award by SOVE in 2009, the University of California Endowed Chair Edward A. Dickson Professor *Emeritus* in 2008-9, and the medal of honor by the American Mosquito Control Association in 2010 (see Dr. Mulla's gift signing on p. 2).

I would also like to thank the more than 220 persons who responded to the SOVE survey. Your input was fantastic, and I appreciated the very thoughtful comments written by many of you to the open-ended questions. The survey results generated some lively discussion at the first ever virtual SOVE board meeting, which was held this week. Much of the discussion centered on accommodating the expressed desire of the membership

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to have greater opportunity to present and participate actively in other ways at the meeting while maintaining the camaraderie and opportunity to network generated with the current meeting format.

Also, at this week's meeting the SOVE board approved a code of ethics, which can be found on the SOVE website on the Membership Qualifications tab. SOVE is committed to fostering the highest scientific and ethical standards in the practice of vector ecology. SOVE membership should signify a commitment to those standards. In addition, the code of ethics codifies SOVE's desire to create an inclusive and welcoming environment for all who wish to participate in SOVE or any of its sponsored events.

It is disheartening that we cannot host the annual SOVE conference in 2020. In the survey, many of you expressed SOVE's unique ability to foster networking and exchange of relevant scientific information among its members. Despite the limitations imposed by COVID, which is likely to be here for some time, we will seek other opportunities beyond the annual meeting to continue this networking and exchange of information.

I have been working full-time on COVID since March and have personally witnessed its impact on individuals and society. This is something you really do not want to acquire.

Please stay safe.

Sincerely,

Lyle R. Petersen, MD, MPH

SOVE President

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Below Dr. Mir Mulla signing his gift donation agreement of \$50,000 USD to establish the "Dr. Mir S. Mulla Memorial Lecture Fund". Present at the signing are Dr. Mulla's daughter Dr. Shireen Mulla Mooers, co-trustee of Dr. Mulla's Revocable Living Trust and Dr. Major S. Dhillon, Executive Director *Emeritus* of SOVE.



Special Report

Impact of COVID-19 Pandemic on Vector Control Activities and Coping Strategies by West Valley Mosquito and Vector Control District

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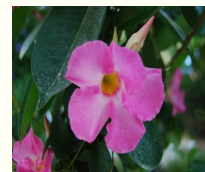
West Valley Mosquito and Vector Control District, Ontario, CA

The impact of COVID-19 over vector control activities ranged widely at varying extents depending on individual agencies or programs. While the COVID-19 response redirected the overall attention and resources away from other health priorities, the West Valley Mosquito and Vector Control District (WVMVCD), as a special local district, has maintained high health and safety standards for its employees, and worked diligently at the same time to fulfill its critical public health function by following the guidelines from the federal, state, and local health and safety authorities. Districtwide, daily sterilization of commonly touched surfaces has been carried out Monday through Friday. Personnel were advised for intensive personal sanitation and precautions. The social distancing was enforced throughout District facility, and face coverings were provided and mandated during operation hours for all staff. When the COVID-19 pandemic often hindered the agencies' ability to hire more staff, caused the programs or agencies unexpectedly short staffed, or even deemed the entire program non-essential, the WVMVCD however has made its best effort to augment and maintain the integrity of the workforce by taking proactive measures in early 2020.

In the effort to mitigate COVID-19 spread, the routine public outreach and education was reduced due to social distancing. In response, full advantages of social media and website were taken at WVMVCD to disseminate educational and informational materials remotely to the communities for their engagement. In the view of cancellation or postponement for numerous scheduled training events and conferences pertinent to vector control and vector-borne disease management, emphasis was given to internal training and information sharing. By implementing personal protection and one person per truck policy, source inspection and treatments have been in almost full swing. Protocols for service requests from taking, performing, to finalizing the request during COVID-19 was established and implemented – the requests were serviced in a

contactless manner. As in other agencies, the aerial surveillance on unattended swimming pools that is routinely conducted to tackle the mosquito breeding problems was suspended for 2020. It was not surprising to observe that vector surveillance and pathogen testing were halted at some agencies because of decreased capacity and competition of test supplies with COVID-19. Vector and disease surveillance at the WVMVCD, however, remained largely intact for mosquitoes and arboviruses in terms of trap deployment, laboratory testing and information sharing, by exercising extra precautions and securing needed supplies. Additionally, help was continuously rendered in pathogen detection testing to neighboring agencies as usual. Other surveillance activities on rodents and ticks were also undertaken in a timely manner. The tradition of doing applicable research to improve vector surveillance, pathogen detection and vector control was concurrently conducted during the challenging COVID-19 time. The internship program associated with local educational institutions has been mostly saved by early initiation and remote instructions. When facing the shortage of personal protection equipment due to prioritization for COVID-19, the WVMVCD made all possible efforts to secure the supplies and manage the distribution and uses while avoiding competition with health care professionals.

The long-term impacts from this pandemic for vector control agencies remains uncertain at this time, including but not limited to, revenue losses, stability in supplies and tools that are needed for vector control operations and vector and disease surveillance, vulnerability of human populations to vector-borne pathogens due to exposure to COVID-19, and lost focus on vectors and vector-borne diseases by the public.

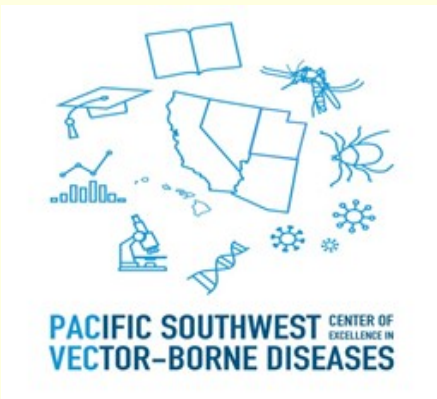


PacVec Awards Training Grants for 2020-2021

William Walton, Christopher Barker and Celia Chen

The Pacific Southwest Center of Excellence in Vector-borne Diseases (PacVec) is one of five regional Centers of Excellence in Vector-Borne Diseases (CoEs) established in 2017 by the Centers for Disease Control and Prevention to strengthen the United States of America’s ability to prevent and rapidly respond to current and emerging vector-borne disease (VBD) threats. The other CoEs include the Northeast Regional Center of Excellence at Cornell University, the Midwest Center of Excellence at the University of Wisconsin, the Southeastern Center of Excellence at the University of Florida and the Western Gulf Center of Excellence at the University of Texas Medical Branch. The CoEs combine innovative applied research and educational programs with public health expertise and practice to support the vector-borne disease workforce through workshops, resources, and networks. Each CoE has different resources and areas of expertise in vector biology and vector-borne diseases tailored to address the vectors and arthropod-borne pathogens found in the geographic region served by the CoE. The CoEs work towards enhancing prevention of and response to VBD challenges in their regions by coordinating efforts with public health agencies and institutions, building partnerships across state lines, as well as synergizing activities among CoEs when faced with similar VBD challenges.

PacVec serves a broad geographic region with diverse ecological landscapes ranging from dry hot deserts to cool montane forests, and from warm tropical islands to cool maritime-influenced subarctic habitats, that support diverse arthropod vectors. Tourism and centers of international commerce make the region highly susceptible to invasive vectors, exotic pathogens such as Zika virus, and several endemic pathogens transmitted by mosquitoes and ticks. PacVec is centered at the University of California, Davis and the University of California, Riverside. In 2018, the Center primarily served California, Arizona, Nevada, Hawaii, Utah and the U.S.-affiliated Pacific Islands (Guam, American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Republic of the Marshall Islands and the Republic of Palau). PacVec offers a training grant program that supports applied research on detection,



prediction, and control of vectors or vector-borne diseases. This past year, the training grant program was expanded to include Oregon, Washington, Idaho and Alaska.

Training grants are intended to provide career development opportunities for individuals interested in public-health-relevant research on vector-borne diseases and to enable additional research and training opportunities that will be sought from other sponsors. Most of the projects include collaboration of an academic institution with public health or vector control agencies, matching funds from collaborating agencies or the investigators’ institution, and a clearly defined career plan in public health that would be enabled by the proposed training.

Twelve training grants were awarded for 2020-2021. This year’s training grants include the following topics, investigators and institutions:
"Improving public health surveillance of *Onchocerca lupi* through increased host and vector screening" Chandler Roe (trainee) and Jason Sahl (advisor) at Northern Arizona University;
"*Culex tarsalis* insecticide resistance" Billy Mortola and Sevi Djalilova (trainees) and Tara Thiemann (advisor) at The University of the Pacific;
"Strengthening vector management in the US Affiliated Pacific Islands" US-affiliated Pacific Islands’ Vector Management Supervisors (trainees) and Limb Hapairai (advisor) through Pacific Island Health Officers Association (PIHOA);
"Tortoises, ticks, and tick-borne pathogens of the Mojave Desert" Molly Bechtel (trainee) and Jeffrey Foster (advisor) at Northern Arizona University;
"Molecular and serological investigations of the potential vertebrate reservoir host of the emerging tick-borne pathogen, *Rickettsia philipii* (364D)" Marie Lilly (trainee) and Andrea Swei (advisor) at San Francisco State University;
"Identifying biomarkers of pyrethroid resistance in*Pac Vec* cont’d on p. 5.

PacVec cont'd from p. 4.

wild *Aedes aegypti* from California" Taylor Kelly (trainee) and Geoffrey Attardo (advisor) at University of California, Davis;

"Flea-borne typhus in California, a multi-year review: 2011 – 2019" Kyle Yomogida (trainee) and Beatriz Martinez-Lopez (advisor) at University of California, Davis;

"Comparative genomics of *Aedes albopictus* in Kwajalein Atoll for developing arbovirus vector dispersal models" Adam Vorsino (trainee) and Joanna Chiu (advisor) at University of California, Davis;

"Understanding the role of veterinary personnel and pet travel in regards to ticks and tick-borne disease in Alaska" Gale Disleer and Renate Schlaht (trainees) and Micah Hahn (advisor) at University of Alaska-Anchorage;

"Developing high-resolution risk maps of West Nile virus in Coachella Valley using ECOSTRESS data" Matthew J. Ward (trainee) and Meytar Sorek-Hamer (advisor) at Universities Space Research Association (USRA) at NASA Ames Research Center;

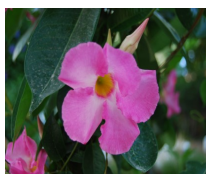
"Orientation behavior of western tree hole mosquitoes, *Aedes sierrensis* (Ludlow)" Kristen Meredith (trainee) and Neil J. Vickers (advisor) at University of Utah; and

"Population genetic structure of the western black-legged tick, *Ixodes pacificus*" Fiza Arshad (trainee) and Monika Gulia-Nuss (advisor) at University of Nevada, Reno.

If you would like to join PacVec's mailing list, attend virtual seminars presented during the academic year (October through June) or explore the recorded presentations and resources available to vector ecologists, then please visit <https://pacvec.us/>.



Attendees at the third annual meeting of the Pacific Southwest Center of Excellence in Vector-borne Diseases at UC Riverside, February 2020.



VBDN Report

Vector-Borne Diseases Network (VBDN) Pushes for Greater Federal Support for Vector Management

Erin Cadwalader, PhD,
Director of Strategic Initiatives,
Entomological Society of America

Although an ounce of prevention may be worth a pound of cure, it takes time and energy to make that case to Congressional policymakers in a data-driven way. The Centers for Disease Control and Prevention (CDC) has received less than \$8 billion per year in recent years, a small amount relative to the breadth of priorities for which the agency is responsible. Between 2004 and 2017, reported human disease cases in the U.S. resulting from bites from arthropods tripled, and nine new diseases spread by ticks and mosquitoes emerged in that same timeframe. Furthermore, the current Covid-19 pandemic shows we've learned very little from the Zika crisis in 2016. Out of this need for effective, collective advocacy for vector research and management arose the Vector-Borne Disease Network (VBDN).

Established in May 2019, the VBDN is a stakeholder group of nonprofit organizations (including professional associations like the SOVE), vector control groups, and research and outreach groups such as the CDC Regional Centers of Excellence (COEs) for Vector-Borne Diseases, all of whom recognized the need for a strong, shared voice for funding to support research and management of vector-borne disease (VBD). The coalition also connects the community of vector professionals and envisions a world where human suffering from insect disease vectors is reduced. The Entomological Society of America (ESA) leads the effort and assumes an organizing role in developing and sustaining the network, but the participation of a diverse set of member organizations is what is making an impact.

In 2019, the VBDN provided suggestions that added more of a vector-management focus to legislation that came to be known as the *Kay Hagan Tick Act*. This bill was initially introduced in the U.S. Senate in May 2019 by Senators Susan Collins (R-ME) and Tina Smith (D-MN). Among the priorities in the legislation were the reauthorization of the regional COEs for five years at \$10 million per year as well as the authorization of the CDC Epidemiology and Laboratory Capacity (ELC) grants at \$20 million per year.

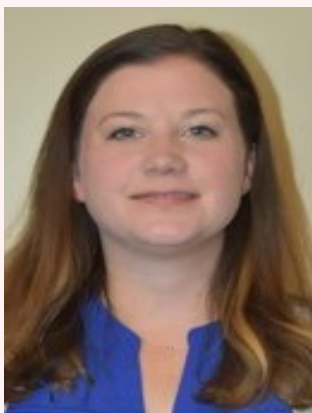
The VBDN subsequently developed a letter supporting the legislation which, many coalition members joined as signatories. Several organizations individually and jointly

met with Congressional staff to discuss the importance of vector management as a strategy for preventing the spread of vector-borne diseases and the growing threat they pose to their constituents. The investment of time and energy paid off, and the *Kay Hagan Tick Act* was signed into law in December 2019.

In addition to the *Tick Act*, Congress also passed the Strengthening Mosquito Abatement for Safety and Health (SMASH) Act as part of the *Pandemic and All-Hazards Preparedness and Advancing Innovation Act of 2019* last summer. The passage of these laws demonstrates strong bipartisan support for public health and preparedness. However, passing authorizing legislation is only half the battle, and funding has yet to be appropriated. Consequently, the VBDN has been sending letters and meeting with key Congressional staff to continue to make the case for fully funding these bills. The VBDN is asking for \$30 million for the *Tick Act* on top of the President's budget request for the CDC's Division of Vector-Borne Diseases (VBDN) for fiscal year (FY) 2021 of \$66.2 million.

In addition to the regular FY 2021 appropriations for the CDC, the VBDN continues to identify other ways to bolster public health infrastructure through legislation. In March, in response to Covid-19, Congress passed the *Coronavirus Aid, Relief, and Economic Security (CARES) Act*, which included \$500 million for the Data Modernization Initiative at the Centers for Disease Control and Prevention (CDC). This funding can be spread out over several years and addresses a collective priority that emerged in the first meeting of the VBDN members in December 2019 around the need for greater data collection, coordination, and sharing. Additionally, Reps. Diana DeGette (D-CO) and Fred Upton (R-MI) are looking to introduce an update to the *21st Century Cures Act*, legislation they authored that was initially passed in 2016. Currently, vector-borne disease is not a part of the concept paper that was introduced this spring, but the VBDN sent a letter to those legislators and will meet with staff to try to ensure it is not left out of any new iterations of that legislation.

All of this represents strong progress and value in the first year of the VBDN's existence, and we're just getting started. For more information and updates on VBDN activity, please visit <https://www.entsoc.org/vbdn-active-issues-and-activities-2020>.



Vector Briefs: Of ticks and tick-borne diseases —An update

by

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involvement in tick control efforts.

A common through-line in several recent publications considers the level of responsibility placed on individuals for the protection from ticks and tick-borne diseases, and the integration of locally conducted surveillance and control programs. While not a new discussion for vector control agencies that have struggled in that balance with respect to mosquito surveillance and control for decades, a pivot toward a more programmatic attack on tick-borne disease transmission can and should learn from the path (and often the struggle) of mosquito programs. Continuity in funding, adaptability in a changing landscape, emergency response management, and stability of community engagement are all challenges with which public health and vector control agencies have struggled.

It is with that hopeful spark, encouraged by the formation of the Vector-Borne Disease Network and publicly available campaigns such as the Centers of Excellence's recent Lyme Disease Awareness Month Lunch & Learn Series, that agencies can begin to seek out opportunities to integrate tick and tick-borne disease surveillance and control programs in a coordinated effort with stakeholders at the national, state, and local levels. Each stakeholder, when armed with adequate best practices tools, objective-driven protocols, and adequate resources, can help fulfill the vision of a national strategy.

References:

- Beard CB, Visser SN, Peterson, LR. 2019. The need for a national strategy to address vector-borne disease threats in the United States. *J Med Entomol* 56:1199-203.
- Eisen L. 2020. Stemming the rising tide of human-biting ticks and tickborne disease, United States. *Emerg Inf Dis* 26: 641-647.
- Mader EM, Ganser C, Geiger, A, Harrington LC, Foley J, Smith RL, Mateus-Pinilla N, Teel PD, Eisen RJ. 2020. A survey of tick surveillance and control practices in the United States. *J Med Entomol* doi. 10.1093/jme/tjaa094
- NIH [National Institutes of Health]. 2019. NIH strategic plan for tickborne disease research. <http://www.niaid.nih.gov/sites/default/files/NIH-Strategic-Plan-Tickborne-Disease-Research-2019.pdf>

A Push for Putting the Integrate into Integrated Pest Management With the passing of the Kay Hagan Tick Act in December 2019, the expectation of additional funding and focus on tick-borne disease transmission in the US has come as fulfillment of decades long campaigning for some, and as a hopeful spark to ignite crucial infrastructure shifts to many. Even in the face of unprecedented closures, a push of publications and seminars centered on tick control and surveillance practices has stoked the fires and bolstered momentum thus far in 2020. Building off of large-scale calls to action and deliverables put forth by the Tick-Borne Disease Working Group (2018), Health and Human Services National Strategy to Address Vector-Borne Disease Threats in the US (Beard et al. 2019), and NIH Strategic Plan for Tick-borne Disease Research (NIH 2019) among many other published strategies and position statements, universities, public health professionals, and control agencies are taking stock of tick surveillance and control practices nationwide (Eisen 2020). To what extent have our institutions integrated tick surveillance and control into our programmatic planning?

A recent publication from Mader et al. (2020) offered a stark update on that very question. According to the research group's results from surveying 140 public health and vector control entities, while the majority of agencies reported some level of tick surveillance (97% of respondents that could comment on surveillance), the trend seemed to favor state-level organizations with regards to ongoing surveillance programs supported in part by partnerships with academic institutions. Detecting the presence of ticks was by far the most commonly reported program objective, with more complex objectives such as monitoring the abundance of species, monitoring the emergence of new species, and evaluating prevalence of pathogens in reservoir hosts increasingly less common. In all, only 12% of the survey respondents indicated direct

Regional Report



SOVE Indian Region

Ashwani Kumar

Regional Director

Dear colleagues and SOVE Family members!

I earnestly hope that you and your dear ones are safe and fine during these COVID-19 Pandemic times. As of June 15, India reported 332,424 COVID-19 cases with 9,520 deaths @2.9%. Total samples tested till date were 5,774,133. COVID-19 has eclipsed all other diseases including vector-borne diseases. Due to the extended national lockdown in India since March 25 till June 1, vector surveillance and control activities were virtually halted and the incidence of these diseases have shown a rising trend in several states of India. India, in the recent years, is working towards elimination of visceral leishmaniasis, lymphatic filariasis and malaria. Due to the current situation, there is certainly a setback to these efforts. It is hoped that the world will get respite from the COVID-19 pandemic soon.

SOVE Indian Region organized a “National Workshop for Entomological Capacity Building/ Strengthening” March 9-13, 2020 at Puducherry, India. Although, the workshop was conducted under the shadow of COVID-19 pandemic and needless to mention that the workshop was a resounding success due to a splendid team effort. A total of 22 State Entomologists hailing from different states of India and two graduate students from the Department of Epidemiology and Public Health, Central University of Tamil Nadu, Tiruvarur received training in the workshop.

Briefly, there were 26 resource persons/faculty from different parts of the world who delivered their expert talks either in person or remotely. Mr. Steve Mulligan attended the workshop and delivered

two outstanding lectures. He was accompanied by his wife Susan Mulligan. The faculty extended their fullest co-operation and were in sync with the organizers throughout the workshop. Altogether, there were 16 sessions and four key note addresses, in the 5-day workshop. During these 16 sessions, 24 lectures covering LF, malaria, arboviral infections, scrub typhus, KFD and visceral leishmaniasis were delivered by eminent speakers of National and International repute. Ten practical sessions were conducted. There were three remote presentations *via* Zoom from WHO Geneva by Dr Raman Velayudhan and Dr Rajpal Singh Yadav, and by Dr. Norbert F. Becker from Germany. Besides, there were four sponsors' lectures on different vector control products and appliances.

An excellent news to share with the SOVE family is that the membership of SOVE Indian Region has increased from 55 to 91 during the last 4 months, thanks to the sincerity of Dr A. N. Shriram and Dr. K.H.K. Raju who left no stone unturned in achieving this fete. We have set a target of 100 SOVE members in the coming three months.

Recently, Indian SOVE has planned to start SOVE/lect series whereby, members and experts have been invited to record lectures for 5, 7 or 10 minutes on different aspects of VBDs and submit them to SOVE. After quality check and making necessary modifications, the lectures shall be released to the world.

At the end, I wish all of you safe and healthy days ahead. =====

MEMBER NEWS

Reporting Major Dhillon, ede

A new fast and inexpensive molecular diagnostic test for COVID-19 is approved for use in Argentina

Dr. Carolina Carrillo*, who works at the César Milstein Institute for Science and Technology (CONICET-Fundación Pablo Cassará), co-lead the scientific project which developed NEOKIT-COVID-19, a new diagnostic kit for COVID-19 - low cost and very easy to use -, with her colleague Adrián Vojnov. The test indicates whether a person is infected or not with the SARS-CoV-2 Coronavirus in little more than an hour.

The group of researchers lead by Drs. Carolina Carrillo and Adrián Vojnov was working on the development of a similar test for dengue when the pandemic started, and they quickly reoriented their focus towards COVID. This allowed them, with the support of the Ministry of Science and Technology, to develop the test in just 60 days. During its development, the test was validated with clinical samples and then evaluated by the health authority (National Administration of Drugs, Food and Medical Technology, ANMAT), who finally granted marketing registration on May 15, 2020.

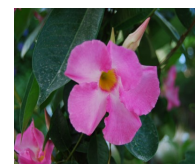
NEOKIT-COVID-19 uses RNA previously purified from nasopharyngeal, buccopharyngeal, sputum, and saliva swab samples. This new diagnostic kit is based on the loop-mediated isothermal amplification (LAMP) technology and, like reverse transcriptase-polymerase chain reaction (RT-PCR), works on the principle of multiplying the number of copies of a certain fragment of RNA. The big difference is that the entire reaction takes place at constant temperature (64 °C) in a heating device capable of maintaining a constant temperature, such as a water bath, and thus no thermocycler is required. The kit's sensitivity limit was determined at 12.5 copies of the viral genome. "Five microliters of the sample are placed in a reaction tube and, after the reagents are added, the solution is a purple color. This solution is then heated for one hour at 64 °C and the resulting color is then observed: if it is still purple the reaction is negative, that is, there is no presence of SARS-Cov-2 virus in that sample; but if it changes to blue or light blue, the result is positive due to molecular amplification. The entire process takes just over an hour, while the RT-PCR takes four hours," explains Carrillo. She also adds that "another very important factor is that each reaction costs 25% to 50% less than an RT-PCR reaction."

So far, the test requires that the RNA be previously extracted from the patient's sample, the same way that occurs with the RT-PCR technique but, explains Carrillo, their research group is currently working to find a way to avoid the RNA purification step.

*Dr. Carolina Carrillo is a member of SOVE and LA SOVE; she presented her work on a diagnostic kit for detecting Chagas in neonates during the first LA SOVE meeting held in Manaus, Brazil, in November 2019.



From right to left: Adrián Vojnov and Carolina Carrillo, who co-lead this scientific project; Roberto Salvarezza, Minister of Science, Technology and Innovation; Alberto Fernández, President of Argentina; Ana Franchi, President of CONICET (National Council for Scientific and Technological Research); and Ginés González García, Minister of Health.



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) 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,

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>

Adriana

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Job Announcements

John Hopkins University

Bloomberg School of Public Health – Director

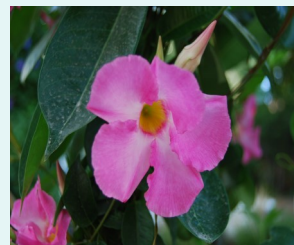
Closing Date: Open until filled

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://facultyjobs.jhu.edu/Home/Position?reqId=A-72716-4>





Society for Vector Ecology

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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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