



# SOVE

## Society for Vector Ecology

# SOVE Newsletter

## President's Message



Isik Unlu

My Dear Colleagues,

I would like to start my first message by thanking the membership of SOVE for allowing me to serve as the 53rd president of the Society. It has been such a pleasure to work with all board members and our previous president Dr. Lyle Peterson. I will continue to work with everyone to make SOVE a shining example and leader in our field.

While I was scanning previous presidential presentations, I got very jealous with Uli's December 2019 message in which he talked about his trips to Puerto Rico, Brazil, and China. Oh my, did I ever imagine when I wrote up a small paragraph to share my vision with the membership for presidential candidacy and said "think outside the box for challenges in front and ahead of us", one of our biggest challenges would be the COVID-19 pandemic. The life we know has been

changed since March 2020. Just to let know if you have not heard, I am not a Jersey girl anymore, and became the Operations Manager for Miami-Dade County Mosquito Control Division in November 2019. I was just getting comfortable learning about my new program and enjoying so much, when I had the challenge of modifying all of our operations based on Covid-19 safety measures. Responsible for the management of 26 inspectors and ensuring that day-to-day operations run smoothly, I take pride in my vital role with one of the most visible municipalities in the United States. These are very difficult times and we have to be creative to do our jobs and be able to protect public health. It is also one of the most difficult times to be president of SOVE, or any other society in our community. We have to conduct all our meetings virtually.

—President's message *cont'd on p. 4*

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## NORTH CENTRAL US

**Nicole Achee**

Regional Director

Dear Colleagues and Friends,

First, and perhaps most important – I will open with a repeat statement from the previous newsletter in hoping all of you, your friends and family are continuing to stay healthy during the COVID19 pandemic.

Our Region is now in full winter swing, but forecasts for the upcoming 2021 tick season indicate a potential for increased risk of Lyme disease [Kansas City Star, Jul 2020] – Why? 2020 was a ‘huge acorn year’ according to Richard Ostfeld of the Cary Institute of Ecosystems Studies. The abundance of acorns may enhance survival and propagation of rodents and deer that depend on this food source and serve as hosts for ticks (read full story at <https://www.caryinstitute.org>).



Do your part now to bring awareness to your family, friends and community on how to protect themselves

from mosquito and tick exposure, especially as hospitals and health facilities are continuing to manage COVID-19 cases and implementing coronavirus vaccinations. Let's give the first-line health workers a break by making smart decisions on how to enjoy the outdoors and stay healthy!

A ready prevention method includes wearing EPA-registered repellents, and you can find the right repellent for your by using the EPA's ‘search tool’

(<https://www.epa.gov/insect-repellents/find-repellent-right-you>).

Remember, if you are asked whether mosquitoes or ticks can spread the SARS-CoV-2 virus, at this time, the CDC has no data to suggest the coronavirus responsible for the 2020 pandemic is transmitted through this mechanism, but encourage those you know to reach out with such questions, we can all contribute to educating others about arthropod-borne diseases ([see https://www.nature.com/articles/s41598-020-68882-7](https://www.nature.com/articles/s41598-020-68882-7)). We can expect COVID-19 to continue next year and our national health authorities to encourage outdoor activities where social distancing can be more easily maintained.

I hope you find the additional highlights below from our Regional family informative. Have a safe and wonderful holiday season, looking forward to seeing everyone in 2021, whether we gather virtually or in-person.

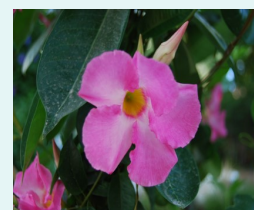
In Memoriam and Retirements from our region, please reach out to share notable passings and retirements from our Region so I can acknowledge in upcoming newsletters!

Also, please share your outreach experiences with me for posting in upcoming newsletters!

I look forward to hearing from you!

Sincerely,

Nicole





## EUROPEAN SOVE

**Filiz Gunay**

**Regional Director**

Dear Colleagues and Friends,

I want to thank Alex very much for her warm and sincere welcome to the SOVE Board in the previous newsletter. Hacettepe University's Vector Ecology Research Group, where I work as a researcher, has been connected to SOVE since Bulent Alten first attended a Conference and became a member 32 years ago. On his first encounter with Dr. Mir Mulla and many other researchers, their passion and fascination on the subject have triggered excitement for his ongoing vector ecology research, and this spirit still influences the whole team. The Society inspires us to work hard, figure out and fill in essential and neglected knowledge gaps. It also gives us the opportunity to collaborate with distinguished colleagues with respect, exchange ideas with excitement, and improve our research by interacting with the international scientific community.

I have always felt welcomed within the SOVE community as a student and a young researcher. The Society has added a large amount of motivation to my scientific career. It is now an incredible honor to be able to serve as the Euro-SOVE Regional Director and contribute to the success of SOVE.

I would like to share this opportunity to briefly introduce myself and share my thoughts and concerns with all of you. I wish I could announce defi-

nite plans for the next ESOVE Conference with inner peace, but we live at a time when only artificial intelligence can calculate the risks. Unfortunately, there's much uncertainty at the moment. I'll keep you posted on the progress. On the flip side, although it doesn't replace meeting in person, we all have familiarized ourselves with web-seminars, online conferences, and so on. In any case, our networking efforts will undoubtedly continue one way or another.

During the pandemic, while working from home became the norm, we've found the opportunity to write quality research articles. Video seminars from VectorNet provided an informative discussion platform for many. In the field, the collaborative AIMSurg Initiation between AIMCOST Action, Mosquito Alert, and AviaGIS encouraged the continuity of mosquito surveillance of *Aedes* invasive species in Europe. Through these challenging times, scientific missions continued within AIMCOST and INFRAVEC2. These are only a few examples from numerous achievements and research groups/projects from this period.

In the light of comparisons made by experts between SARS-CoV-2 and vector-borne viruses, the situation we're in has hopefully opened one's eyes and made people realize the significance of vector-borne diseases even more. This issue gathered attention to the necessity of continuing the surveillance and control of medically important vectors worldwide. Yet vector control has been affected due to travel restrictions on different levels in different countries in Europe. On the other hand, travel limitations might have reduced the passive dispersal of invasive mosquito species and their establishments in new areas, though we do not yet know to the full extent.

... *Filiz cont'd on p. 4*

**President's message** *cont'd from p. 1:*

We do not know when we can have in-person meetings because of constantly changing Covid-19 forecasts. We tried our best to meet in Hawaii for our 2021 International meeting in October; however, so many unknown and new strains of Covid-19 left us no choice but to move forward with planning of a virtual meeting for 2021. We will hopefully have our International Meeting in 2022. Fingers crossed. I would also like to announce that the SOVE board is working on a webinar series. My dear friend Alex Chaskopoulou and I are co-chairing this newly-created committee. Alex has already prepared a phenomenal agenda with the help of Dr. Achee, and Kara Fikrig. International speakers will be presenting talks during this webinar series. The Society embraces its presence internationally and has members all over the world. Our executive director Michelle Brown is helping all committees and myself with every aspect of SOVE business. I would like to thank her from the bottom of my heart for doing so much for the board and the membership. Before I end my report, Michelle also shared increased visibility of SOVE on social media. Our Twitter account now has over 1,200 followers! In the past year, the SOVE website has had 2,967 unique visitors from across many countries. We look forward to an increased partnership and collaborations with AMCA and other scientific communities in the coming years.

It is such an honor to be the president of SOVE and I hope we all keep supporting each other and SOVE during these difficult times.

Isik

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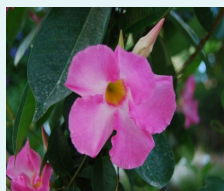
**... Filiz** *cont'd from p. 3*

Another concept that rightfully caught more attention than usual was the One Health. To forecast readiness for a proactive response, early detection with intelligent surveillance, and rapid response with timely and collective control operations is vital to be prepared for a pandemic. Just like vector control is more effective when we integrate different techniques, handling a vector-borne disease requires a collection of approaches that involve contributions from many scientific fields such as medical entomologists, medical experts, microbiologists, virologists, epidemiologist, veterinarians (concerned with domestic and wild animals), ecologists, etc. One Health is the way to move forward, and communication between all stakeholders is an essential step towards this path. From my experience, MediLabSecure represents a victorious One Health network in Europe, and International Atomic Energy Agency supports Laboratories that create new links between all parts towards this goal.

Now it's evident that together globalization with climate change vivifies infectious diseases. We often focus on crucial issues in our research topics as vector ecologists and adjust them according to today's needs. But I also want to reilluminate the idea that, science is loads of fun. There are many ways to look at unexpected findings that result from mistakes or perhaps conflicting opinions. Let's keep on pursuing our paths and be open to different perspectives. Perhaps it will even result in an IgNobel award!

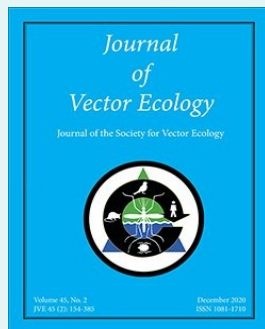
Stay safe. I'm looking forward to seeing you soon.

Filiz Gunay





## ***Journal of Vector Ecology—Editor's Report***



There have been some changes in the journal beginning this year that reflect the changes that have been taking place in the publishing industry. *JVE* discontinued its print edition and went fully on-line as an open access journal in 2008, publishing with Wiley On-Line and BioOne. However, Wiley recently informed us that in order to remain with them, it would be necessary to significantly increase our publication charges to authors and drop our open access status. Rather than continuing with them under these circumstances, we chose to end our affiliation with Wiley as of 1 March 2021 and publish exclusively on BioOne. With BioOne, we can maintain our low publication charges, list publications on indexing and abstracting services, and still receive annual subscription payments that support the society. Journal issues will be available from libraries that subscribe to BioOne and they can be accessed freely if anyone has an affiliation with those institutions. However, as we will no longer be an open access journal, SOVE members who cannot access institutional libraries will be provided with a password to log on to the BioOne site. Publication charges will not be increased for SOVE members, but as an encouragement to join SOVE, non-member charges have been increased by US\$100.

Soon approaching a half-century of publication by the Society, the *Journal of Vector Ecology* ranks 43<sup>rd</sup> of 101 entomology journals with an Impact Factor of 1.357, and for total citations, ranks at 47. It has among the lowest charges for publication by members and offers reduced charges for members and non-members from developing countries. Time from manuscript submission to acceptance, dependent on the speed of peer review, has been less than two months. We welcome your manuscript submission at <https://mc.manuscriptcentral.com/jve>. Please feel free to contact me at [editor@SOVE.org](mailto:editor@SOVE.org).

Marc J. Klowden

Editor, Journal of Vector Ecology

### **Infravec2 BSL3 Survey**

Infravec2 has created a survey aimed to improve standardization and harmonization of standard operating procedures (SOPs) for personnel working with infected live arthropods within laboratory Containment Level 3 (CL3). The results of this document will help us strengthen our advice on arthropods' infection biosafety with stakeholders, academic and non-academic institutions.

We would appreciate it if you could please take five minutes to complete this survey, and share it with your colleagues and who work in CL3 environments: <https://tinyurl.com/AssessInfravec2BSL3WorkFlow>. You are welcome to contact us regarding any questions or suggestions for its implementation (<https://infravec2.eu/contact-us/>)

Thank you in advance for your time and contribution.

Ken Vernick, Scientific Coordinator, [info@infravec2.eu](mailto:info@infravec2.eu)

## Students ' Corner



Kyndall Braumuller  
kyndallb@email.sc.edu

### Student Director

Hello all! I would like to formally introduce myself as your current (2021-2022) SOVE Student Director. I am a current second year PhD Student at the University of South Carolina, studying epidemiology of vector-borne disease at the Arnold School of Public Health. I am a medical entomologist by training, and I am looking forward to combining my entomology skills and knowledge with a doctoral degree in epidemiology. Currently, I participate in research regarding investigating autochthonous cases of Chagas disease in patients in the southwestern US and tick-borne disease and tick surveillance in the state of South Carolina. My main focus is Spotted Fever Group Rickettsioses (SFGR). Our laboratory works closely with the state department of health and with the CDC Southeastern Center of Excellence for Vector-Borne Disease for these projects. We should have results for our first year's worth of data very soon!

I am so thankful to be able to serve as your Student Director this year—I was able to learn so much from following Kara Fikrig's footsteps over the past year. As you all know, due to the COVID-19 pandemic, we were not able to have a SOVE meeting in 2020. This year, however, we will be having a virtual meeting for SOVE 2021! Dates and specific details are being worked out at the moment, but we are

very much looking forward to presenting this year's Student Symposium, ironing out details for additional student involvement, and getting to see you all once again (even if it's virtually). Please be on the lookout for more details regarding the Student Symposium and the virtual SOVE Meeting. In addition, voting for the next Student Director Elect is happening at the moment, and more details will be coming out very soon for the next Student Director for 2022.

Lastly, I wanted to reach out to chat about being productive during this crazy time in our careers. COVID-19 has impacted every single person differently, and I know it has impacted us graduate students in regard to conducting research, classwork, and even the social aspect of graduate school. As we navigate this new normal, please remember that it is completely ok to feel even more stressed out, overwhelmed, and maybe a little less productive than usual. We are in a global pandemic—everything is stressful! Everyone is struggling in different ways right now. It is important to recognize that we are not operating at 100% and to set realistic goals for yourself during this time. Don't compare yourself to pre-COVID-19 you! I have found that trying to keep a somewhat structured \*new\* routine that is COVID-safe and allows social distancing has permitted me to stay somewhat productive. Structured times like scheduling writing hours, joining virtual writing groups, or planning out socially-distant lab times can be great motivators and act to keep us all accountable. In addition, don't hesitate to reach out to your mentor, fellow lab mates, and even fellow students about what you are struggling with. Again—we are all working through this together. Please take care of yourself (self-care is self-love!), practice social distancing, and don't be too hard on yourself if you feel underproductive in classes and in your research.

Looking forward to hearing from you all and seeing you at this year's virtual SOVE 2021!!

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## Insect vector ecology and control in Egypt: History, Current Status, Challenges and Future Perspectives—A Short report

Emad Khater, Ph.D.  
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Faculty of Science, Ain Shams University, Egypt

### 1. Introduction and historical notes on insect vectors and vector-borne diseases in Egypt

In Egypt, insect vectors of parasitic and arboviral diseases have been endemic since ancient times, with records in pharaonic papyrus and temples. This report focuses on mosquitoes as the most important and diverse group of insects, and summarizes their current taxonomy, ecology, and control.

The mosquito fauna of Egypt has affinities to those in the east Afrotropical, Palaearctic and Oriental regions. An estimated 40 species belonging to five genera (*Anopheles*, *Aedes*, *Culex*, *Culiseta*, *Uranotaenia*) and their discrepancies in taxonomy of the closely-related species or species complexes. They are widely but variably distributed in the Nile Delta and Valley (ND&V), Suez Canal Zone (SCZ) and the Red Sea Governorate (RSG)(from Hurghada to Sudan northern borders), western desert regions (WDOs), Upper Egypt and Sinai Peninsula.

### 2. Mosquito species

#### *Anopheles* species and malaria transmission

Of approximately 18 *Anopheles* species reported in Egypt, five in subgenus *Cellia*, are particularly important, three native, *An. pharoensis*, *An. sergentii* and *An. multicolor*, and two introduced, *An. arabiensis* and *An. stephensi*. *Anopheles pharoensis* and *An. sergentii* are the most common anophelines all over Egypt, and the major malaria vectors, in Faiyoum (Nile Delta) and WDOs, the only malaria foci in Egypt for decades. Larvae of these species have wide preference of water habitats including clear or brackish stagnant or slow-moving water, rice and sugar cane fields, agricultural irrigation and drainage canals, and seepage water, with various types of vegetation. *Anopheles multicolor* is a suspected malaria vector in Egypt, and usually found associated with other species in their larval habitats or noticed in adult collections.

*Anopheles arabiensis* (= *An. gambiae* B) is a major Afrotropical malaria vector in the *An. gambiae* complex. It invaded Upper Egypt from northern Sudan and caused serious malaria epidemics in 1940-1950s. It is successfully eradicated from Egypt during malaria control. *Anopheles stephensi*, was first identified as larvae from Ras Shoeqeir, RSG on the Suez Gulf, but later it was identified as a new species, *An. ainshamsi*. The identity of the other *Anopheles* species in Egypt remains questionable, such as *An. dthali*, *An. superpictus*, and *An. hispaniola* (*An. cinereus hispaniola*).

#### *Aedes* species and dengue fever virus transmission

Four *Aedes* species reported in Egypt: *Ae. (Stegomyia) aegypti*, *Ae. (Aedes) cinereus*, *Ae. (Ochlerotatus) caspius* s.l. and *Ae. (Ochlerotatus) detritus*. *Aedes aegypti*, has been endemic in Egypt but was eradicated during malaria control in 1942-1945. However, recent scattered reports suggested its re-introduction in RSG (few larvae reported). *Aedes caspius* was collected from high-salt water habitats, and usually associated with other culicine species in Faiyoum, RSG and Al-Areesh (N. Sinai). It was suspected of disseminating RVF virus among livestock during RVF outbreak in Egypt in 1993.

#### *Culex* species and arbovirus and parasitic d transmission

In Egypt, approximately 16 *Culex* species belonging to five subgenera were reported, of which eleven species (in subgenus *Culex*) are natives. Three species, *Cx. pipiens*, *Cx. antennatus*, and *Cx. perexiguus* are the most important, with wide distribution, and proven/suspected vectorial status of lymphatic filariasis, RVF and WNV. *Culex (Culex) pipiens* Linnaeus, 1758, is one of the oldest and most studied mosquito species and occurs throughout Egypt. Some authors identified samples as synonyms or bioforms of *pipiens*: *Cx. molestus* Forskål, 1775, *Cx. pipiens molestus*, or *Cx. pipiens pipiens* Linnaeus. In Egypt, the concept of *pipiens* complex (or bioforms) was confused by the uncertain status of "molestus" or presence of *Cx. quinquefasciatus*. However, one recent study identified few *pipiens/quinquefasciatus* intermediate (hybrid) forms from Cairo (by DV/D ratio and RT-PCR), although none was identified as *quinquefasciatus*.

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

## Paper Invitation

Mosquito-Borne Virus Ecology [#mdpiviruses](https://mdpi.com/si/47902) via [@VirusesMDPI](https://twitter.com/VirusesMDPI) invites articles for the Special Issue in Viruses by **April 15, 2021!**

[https://www.mdpi.com/journal/viruses/special\\_issues/Mosquito\\_Virus\\_Ecology](https://www.mdpi.com/journal/viruses/special_issues/Mosquito_Virus_Ecology)

Colleagues from Czech Republic (Vit Dvorak) and Portugal (Carla Maia) are co-editors of a new special issue of the journal Pathogens entitled "Sand fly-borne diseases" invite papers in the following areas:

1) Sand fly-borne diseases: New approaches to understanding their epidemiology, causative agents and vectors; 2) Novel methods of sand fly-borne disease diagnostics and their application; 3) Leishmaniases: Old and new foci, old and new species incriminated; and 4) Phleboviruses: detection, pathology, transmission.

Detailed information can be found on the webpage of the special issue open to submissions until the end of February 2022: [https://www.mdpi.com/journal/pathogens/special\\_issues/Sand\\_Fly\\_Born\\_Disease](https://www.mdpi.com/journal/pathogens/special_issues/Sand_Fly_Born_Disease).

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Cont'd from *Khater* p. 7

*Culex pipiens* immature stages live in highly polluted cesspits with high sewage content, clear water pools and containers, spring water, irrigation and drainage canals and rice fields. Larvae are also found in underground drains, wells, and septic tanks. In urban planned areas of Greater Cairo, *Cx. pipiens* larval habitats were most associated with seepage water from intense construction activities or underground water; while in semi-urban unplanned areas, drainage canals and cesspools were the most abundant sources. *Culex antennatus* and *Cx. perexiguus* are suspected vectors of arboviruses (RVF, WNV) in Egypt, based on natural and laboratory infection. These two species are usually associated with *Cx. pipiens*. *Culex tritaeniorhynchus*, is an important Oriental region vector of Japanese encephalitis virus complex in Asia. However, its presence in Egypt is questionable, and it might be confused with other species such as *Cx. univittatus*.

The following species presence of in Egypt is uncertain and questionable: *Culex* (*Cx.*) *univittatus*, *Cx.* (*Cx.*) *vagens*, *Cx.* (*Lasiosiphon*) *adairi*, *Cx.* (*Mailloti*) *arbieeni*, *Cx.* (*Maill.*) *deserticola*, *Cx.* (*Neoculex*) *martini*, and *Cx.* (*Barraudius*) *pusillus*. *Culex pusillus* is a species restricted to the RSG; where larvae were mostly collected from salt water and from greater Cairo, from water habitats of other culicine species. In Egypt, *Cx. univittatus* was collected from ND&V, SCZ, Upper Egypt.

### 3. Vector control

Most mosquito control measures are executed through the national control campaigns by the Ministry of Health. The best example was the "Malaria (*Gambiae*) Eradication Campaign" (1942-1945) in Upper Egypt that led to the successful eradication of *An. arabiensis* through intensified larviciding with Paris green. The second was the Sergentii Campaign that controlled *An. sergentii*, the main oasis malaria vector in 1946-1947, using larviciding and house spraying with DDT in fuel oil was very effective and led to the disappearance of mosquitoes for two years. In Faiyoun, control of *An. pharoensis* and *An. sergentii* was carried out by weekly larviciding of oil with Triton X, as a dispensing agent to most breeding sites. In 2010-2014 after enrolling of Egypt under the WHO-RBM campaign, malaria cases have decreased to few cases in small foci in Faiyoun, and Egypt was considered by the WHO as a country at the phase of prevention-of-reintroduction of malaria.

*Culex* mosquitoes are routinely controlled due to insecticidal applications to cotton fields by the Ministry of Agriculture, using various insecticides (as recommended by WHOPES) including insect growth regulators, organophosphates, pyrethroids, carbamates, and biocontrol agents. Unfortunately, some of these practices have led to the development of resistance in different species, especially *Cx. pipiens*. Since 2000, Egypt applied a successful nation-wide multi-drug administration campaign to control filariasis.

### 4. Challenges and future perspectives for mosquito research and control

In Egypt, the presence, uncertain status, and geographic range expansion of mosquitoes are major problems in their control, especially the native or introduced/re-emerging vectors. Quality mosquito surveillance and supported by species identification using both pictorial keys, molecular assays and cutting-edge single mosquito and population genomics are highly important for mosquito research and training in Egypt.



## **Vector-Borne Diseases Network (VBDN) Seeks Robust Federal Support for Public Health Infrastructure**

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

One year into the pandemic, the importance of sustained investment in public health has perhaps never seemed more apparent. Many have been taking proactive steps to protect themselves from the severe acute respiratory syndrome - corona virus - 2 (SARS-CoV-2) by masking up and maintaining social distancing. However, there has been concern from the vector surveillance and management community that with more people spending time outside, the same level of diligence may not be applied to personal protection from ticks and mosquitoes. Furthermore, the majority of public health labs reported in 2020 that their ability to test for vector-borne diseases (VBD) has been impacted by corona virus disease-19 (COVID-19), leading experts at the Centers for Disease Control and Prevention (CDC) to express concerns that there will be a significantly negative impact on VBD surveillance data.

Consequently, the advocacy by the Vector-Borne Disease Network (VBDN) remains all the timelier and more important. The VBDN is a coalition of nonprofits (including professional associations like the SOVE), vector control groups, and research and outreach organizations 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 VBD. For fiscal year (FY) 2022, the VBDN's top priority is securing Congressional funding of the amounts authorized in the *Kay Hagan Tick Act*, which was passed as part of the FY 2020 minibus. This includes \$10 million per year for the regional COEs as well as \$20 million per year for the CDC Epidemiology and Laboratory Capacity (ELC) grants. In the FY 2021 appropriations, Congress included an additional \$6 million in the CDC's budget for Lyme disease and other tick-borne illnesses. This year the VBDN is advocating for the additional \$24 million to get to the authorized level for a total of \$82.603 million for the CDC's Division of Vector-Borne Diseases.

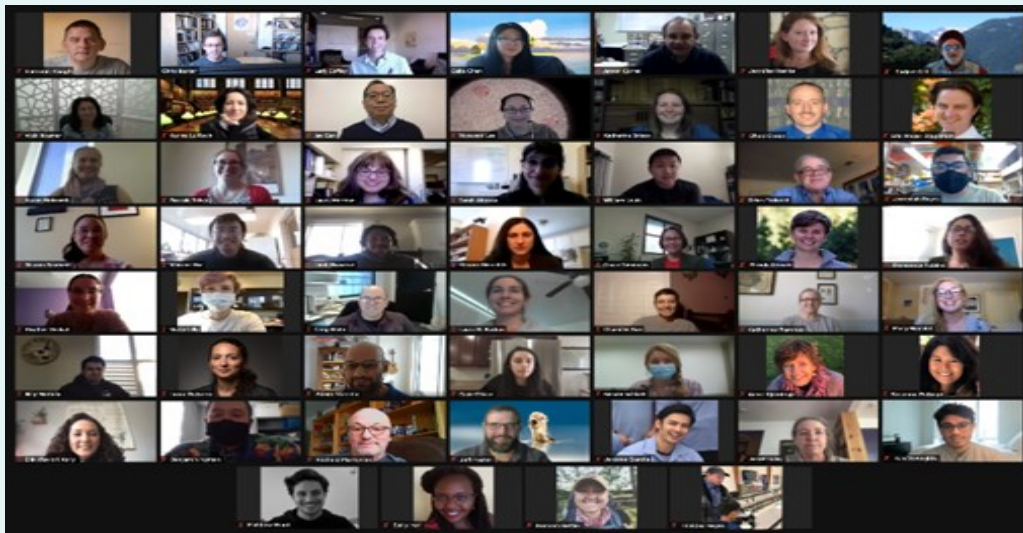
In addition to reauthorizing the COEs and ELC grants, the *Kay Hagan Tick Act* also included language directing the Secretary of the Department of Health and Human Services (DHHS) to develop and implement a national strategy for VBD prevention and control. "A National Public Health Framework for the Prevention and Control of Vector-Borne Diseases in Humans" was released in October 2020 and details how DHHS will work with other federal agencies with the vision of a future where VBD no longer threaten human health. The framework lays out five goals for the agencies to address the increasing risk Americans are at for contracting VBD. Efforts are underway to develop a coordinated interagency approach beyond the initial framework.

Another key priority for VBDN advocacy in FY 2022 is support for data modernization at the CDC. Congress has previously appropriated \$50 million in FY 2020 and 2021, and \$500 million was included in last year's CARES Act. The FY 2021 appropriations package authorized \$100 million a year for the next five years for data infrastructure. As the current pandemic has demonstrated, the need for sustained support for data infrastructure is critical to modernize healthcare because public health data currently remains siloed from other healthcare data. Connecting public health labs to other parts of the healthcare system is essential to our ability to respond to future outbreaks in real-time and thus respond accordingly to an emerging public health threat. And that investment, in conjunction with continued support for the coordination between academic institutions and state and local departments of health, will help ensure that if the next major disease outbreak is spread by things with six legs, we'll be in a better position to rapidly detect it and respond. As diseases and insects don't respect county, state, or territorial boundaries, a robust and sustained public health infrastructure will be the only way to meaningfully protect the U.S. against future biological threats.

## Pacific Southwest Center of Excellence in Vector-Borne Diseases: An Update

Chris Barker, Center Co-Director, University of California, Davis

**Annual Meeting** – The Pacific Southwest Center of Excellence in Vector-borne Diseases (PacVec) hosted its fourth annual meeting as a virtual conference on February 17-18, 2021. The meeting brought together over 200 trainees, academic faculty, vector control and public health professionals, and CDC program advisors, to present and discuss research and surveillance from around the region and to find more ways to continue to strengthen the community of practice to address vector-borne diseases. Meeting recordings are available to those who are interested. If you would like to access the recordings, please email PacVec at [questions@pacvec.us](mailto:questions@pacvec.us).



Caption for the figure (left): Attendees at the fourth annual meeting of the Pacific Southwest Center of Excellence in Vector-borne Diseases held via Zoom, February 2021.

**Training Grant Program** – PacVec offers an annual training grant program that supports applied research on detection, prediction, and control of vectors or vector-borne diseases. Training grants are intended to provide career development opportunities for individuals interested in public-health-relevant research on vector-borne diseases and collaboration with partners in vector control or public health is strongly encouraged. PacVec released the fourth annual call for training grant proposals in January (<https://pacvec.us/fundingopportunities/>), and proposals are due Thursday, March 18, 2021 by 11:59 pm PDT. Proposals are invited from investigators at academic institutions within the following states and territories: California, Nevada, Arizona, Hawaii, Utah, Washington, Oregon, Alaska, Idaho, and the US-affiliated Pacific Islands. Twelve training grants were awarded this past year, and you can read up on the center's funded projects at <https://pacvec.us/training-grants-2020/>.

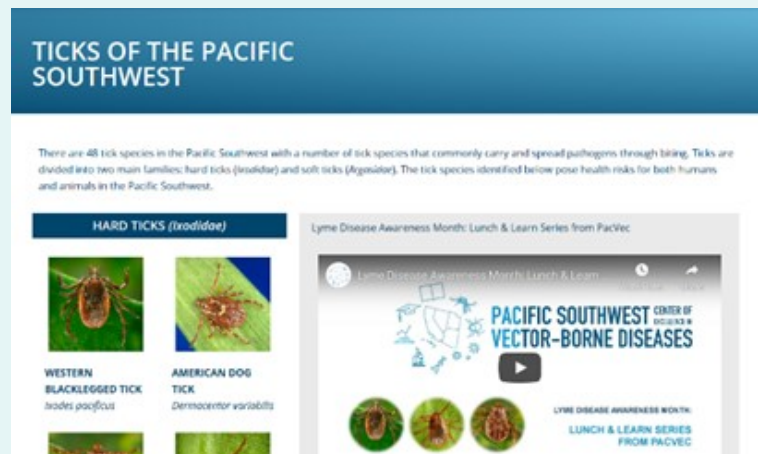
**Regional Training Needs Assessment** – PacVec aims to increase the capacity of the southwestern United States and Pacific Islands to respond to vector-borne disease threats by developing a short-course training curriculum for vector control and public health professionals in the region. The center conducted a needs assessment this past fall to understand the perceived gaps in training and workforce needs relating to vector-borne disease and public health. The needs assessment was distributed to vector control and public health professionals working in state, county, and local vector control and public health agencies throughout the Pacific Southwest and US-affiliated Pacific Islands.

. . . **PacVec** cont'd on p. 11

***PacVec cont'd from p. 10.***

Information gained from the needs assessment is being used to develop a PacVec short-course training curriculum to be initiated in 2021 to meet the needs of vector control and public health agencies and to expand the potential recruitment pool for the vector control workforce.

**Ticks! and Mosquitoes!** - PacVec recently published new [tick web pages](#) that describe the hard and soft tick species that pose health risks for both humans and animals in the Pacific Southwest. On the website, you can read up on where key tick species live, pathogens that they can spread, and their life cycles and hosts. Tick bite prevention and tick removal resources can also be found on the website, along with links to great information from our regional public-health partners. If mosquitoes are your thing, you can also find an [interesting video on \*Aedes aegypti\*](#) that was produced by KQED Public Radio working with PacVec investigators and vector control partners this past year.



**All-CoE Seminar Series** – PacVec is excited to be a part of a 5-part seminar series hosted by CDC and the Regional Centers of Excellence (CoE) in Vector-Borne Diseases. Seminars started in January 2021 and are held the last Thursday of each month via Zoom, highlighting applied research projects completed through our programs across the US. The third seminar is scheduled for Thursday, March 25, 2021, focusing on “Building the Vector-Borne Disease Force” from 11:30 – 1:00 PM PDT. This session will feature next generation public health entomology workforce training provided by each of the CoEs and a trainee panel discussion. To register for the seminar series:

[https://cdc.zoomgov.com/webinar/register/WN\\_Z5z1mafYTceV4mSY4tHbbg](https://cdc.zoomgov.com/webinar/register/WN_Z5z1mafYTceV4mSY4tHbbg).

If you would like to join PacVec’s mailing list, attend virtual seminars or explore the recorded presentations and other resources the center provides, please visit <https://pacvec.us/>.



## Calendar

The University of Idaho Center for Health in the Human Ecosystem (CHHE) is hosting its annual Biology of Vector-borne Diseases six-day course, Sunday through Friday, June 20-25, 2021, on the UI campus in Moscow, Idaho. This course provides accessible, condensed training and "knowledge networking" for advanced graduate students, postdoctoral fellows, new faculty and current professionals to ensure competency in basic biology, current knowledge and cutting edge technology for U.S. and global vector-borne diseases of plants, animals and humans. This course seeks to create an enduring community of participants and instructors who understand the biological connections across diverse vector-borne diseases to expand the impact and sustainability of integrated solutions to their control in complex human ecosystems. Applications will be reviewed starting December 1, 2020, and applicants will be notified of their acceptance for the course in Spring 2021.

For more information, contact Anna Duron (aduron@uidaho.edu).

## Job Opportunities

Please go to: <https://www.sove.org/opportunities>

## 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. 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. For more information contact:

Adriana Costero-Saint Denis, PhD

Vector Biology Program, NIH,

Phone: 240-292-4284

Email: [acostero@niaid.nih.gov](mailto:acostero@niaid.nih.gov)

<https://www.niaid.nih.gov/research/vector-bio>

## World Malaria Day Symposium Malaria Vector Biology and Control

Friday, April 23, 2021 | Free Registration

The full-day virtual scientific symposium commemorating World Malaria Day begins at 9 a.m. ET. **Submit abstracts before the March 31st deadline** to be considered for three-minute *Lightning Talks* (150-word maximum). *Lightning Talks* will be held midday, approximately 12:40 to 1:20 p.m. ET.

For registration go to:

<https://malaria.jhsph.edu/conferences/2021-world-malaria-day-symposium>

**Johns Hopkins Bloomberg School of Public Health**

Malaria Research Institute

John Hopkins University





## Society for Vector Ecology

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**www.sove.org**

### 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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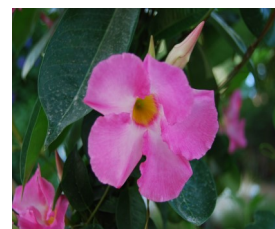
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