



SOVE

Society for Vector Ecology

SOVE Newsletter

President's Message



Isik Unlu

Dear SOVE Members,

I can't believe it's December and we are leaving another year behind. What a year! We all mastered the skills to attend virtual meetings, shared screens, record our presentations and everything else came that with it. I think we managed well, and proved one more time, that difficult situations only make us stronger. One of the most important additions to SOVE activities, partly because of the Covid-19 pandemic, was the introduction of webinars. I can't say enough about how proud I am that we launched the 2nd webinar series in November: "The role and challenges of surveillance of VBD: what are the lessons learned and are we adapting sufficiently?" A few more highlights to keep membership informed, SOVE is looking for self-nominations for Student Director for 2022 as well as Student Director-elect, who will become the Student Director in

2023. In 2022, Steve Mulligan will be serving as SOVE president; Alexandra Chaskopoulou will be president-elect and Lyric Bartholomay will be incoming vice-president. I would like to thank one more time each board member for their working so well with our executive director Michelle Brown during 2021. Here are some more updates from SOVE board in which membership may be interested:

- Our first Dan Strickman Memorial Student Award winner Michelle Volk from Michigan State.
- Next year's International Congress in Hawaii with the ability to RSVP on the SOVE website.
- The journal's increase in impact factor to 1.671 from 1.442.

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President Message *cont'd from P.1*

- The current application/selection process to add more diversity to the journal's editorial board. (12 applicants from 8 countries).

The webinar series, which was a product of the membership survey, with its OnDemand availability on the website.

- The new website, which came online in 2020, has made membership maintenance and event tracking easier saw an increase of 76% in the number of site sessions for 2021 with unique visitors increased by 46% and new site members increased by 34%.

SOVE's first virtual meeting that is available OnDemand until September of 2022.

Since I feel we have a little bit of a break with Covid-19 Delta Variant, I would like to mention a few research topics closely related to mosquito control operations. These are hot topics such as: "Non-Target Effects", Resistance Monitoring and Association with Disease Transmission". On November 4th, UF/IFAS Communications had a news release and the topic was 'Insecticide targeting juvenile mosquitoes can enhance Zika transmissions.' As you all can imagine, Miami-Dade County received a phone call from Lourdes Mederos, inquiring if we had used pyriproxyfen during the Zika outbreak in 2016 and 2017. Abdullah Alomar, lead author for an article published in PLoS Neglected Tropical Diseases: "The effects of exposure to pyriproxyfen and predation on Zika virus infection and transmission in *Aedes aegypti*. Barry Alto, associate professor at UF/IFAS FMEL, who is one of the co-authors stated that their research provides empirical evidence that exposure to insect growth regulator pyriproxyfen, also known as juvenile hormone analog (JHA), during immature stages can produce adults with higher infection and transmission rates of the Zika virus. He also added that such exposure may also have significant consequences for Zika virus epidemiology. Miami-Dade County responded to inquiry from Ms. Mederos and informed her that we conducted an experiment with traps that contained

pyriproxyfen. The trial took place on a small site (200 acres) just for a short period of time. We currently do not use any pyriproxyfen products. As researcher and as an operations manager I know how important it is to use different active ingredients for immature mosquito control. We definitely need more data and operational research projects on this topic and others. Another very interesting research topic is pyriproxyfen non-target effects. Autodissemination of pyriproxyfen via the use of dissemination stations and directly treating male mosquitoes have shown to be effective at reducing *Aedes aegypti* and *Aedes albopictus* populations by self-delivering lethal doses to cryptic larval habitat. While the direct targeting of cryptic locations via autodissemination may appear to provide a significant advantage over large-scale applications of insecticides, this approach could affect non-target organisms by delivering these highly potent, long-lasting growth inhibitors (such as pyriproxyfen) to the precise locations that other beneficial insects visit, such as nectar sources. On October 14th, Texas Tech University researchers published "Indirect transfer of pyriproxyfen to European honeybees via an autodissemination approach" in PLoS Neglected Tropical Diseases. As part of this work, the authors treated male *Aedes albopictus* with pyriproxyfen and examined for the dissemination to nectar sources and transfer to European Honeybees. Their results demonstrated the inter- and intra- species transfer of pyriproxyfen using Autodissemination approaches. Co-author of the study Corey Brelsfoard stated that: "The transfer of pyriproxyfen to nectar sources and non-target insects related to the use of autodissemination is concerning. However, additional laboratory and field studies are needed to examine if the concentration of pyriproxyfen transferred via these approaches is having any physiological impacts on non-target insects".

Last but not least, wishing everyone a happy holiday season.

Isik



Dear Colleagues and Friends,

With the rapid development of vaccines against COVID-19 in the later part of 2020, the year 2021 seemed to be the breaking point of successfully fighting the corona virus (SARS-CoV-2). With the availability of 1- and 2-dose vaccines, life seemed to be shaping up close to normalcy. While most of us getting vaccinated, the corona virus itself continued to mutate into variants e.g., beta, delta, and now Omicron. Like every other discipline, our vector ecology and control efforts continued with looming uncertainty driven by the new variants. With the help of CDC and State websites, a brief report on vector-borne disease surveillance in the US Southwest is presented here.

Arizona (www.Azdhs.gov). As of December 14, 2021, Arizona Department of Health Services reported 1507 vector-borne and zoonotic disease (VBZD) in 2021. Mosquito-borne diseases caused by West Nile virus (WNV), Saint Louis encephalitis, dengue, and malaria account for 1,433 (96 deaths), 3, 9, and 26 (travel-related) cases, respectively. Other VBZDs reported in Arizona included Rocky Mountain spotted fever (13), Lyme disease (6), brucellosis (5), Q-fever (3), babesiosis (3), anaplasmosis (2) and typhus (1). The WNV cases (1,433 with 96 deaths) are much higher than 2020 (10) and 2019 (174 with 19 deaths).

California (www.cdph.ca.gov). As of December 14, 2021, California reported the distribution of two invasive mosquito species, *Aedes aegypti* and *Ae. albopictus* —the former found in 21 counties from San Diego and Imperial counties in the south to

SOUTHWEST USA

Lal S. Mian

Regional Director

Shasta county in the north; the latter from 5 counties—San Diego, Orange, Los Angeles, San Bernardino and Shasta. On vector-borne diseases as of December 18, 2021, WNV continued its prevalence in the state with 192 human cases, 341 dead birds, 2,678 positive mosquito pools, 143 sentinel chickens and 20 horses. The virus activity was reported from 38 out of 58 counties with 24 reporting human cases. The 192 human cases lower than last year (225), were below the state 5-year average (425). Since 2003, California has experienced >7K cases with 309 deaths. **Hawaii** (www.health.hawaii.org). The Hawaii Health Department reported no new cases of dengue in 2021. Last year, Hawaii had 5 dengue cases and in 2015-2016 there was a dengue outbreak that sickened 264 cases.

Nevada (www.dhhs.nv.org). The Nevada Department of Health and Human Services reported 1 human case of WNV; they also had positive mosquito pools, birds and sentinel animals.

New Mexico (nmhealth.org). In 2021, the New Mexico Health Department reported 32 WNV cases with 6 deaths. There were no bubonic plague and hantavirus cases reported thus far.

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

Please stay healthy and safe,

Cordially,

Lal





SOVE –INDIAN REGION

Ashwani Kumar Regional Director

Dear Colleagues,

The Society for Vector Ecology (SOVE)-Indian Chapter is in pursuit to promote scientific research, dialogue, discussion, exchange of ideas and training for better understanding of vector ecology and for effective control of vectors and vector borne diseases (VBDs). A virtual local executive meeting was on October 2, 2021, to explore the possibility of holding an international conference in 2022. The meeting chaired by Ashwani Kumar, President/Director was attended by NandiniKorgaonkar, Member, Deeparani Prabhu, Member, Sandeep Garg, Treasurer, Ajeet Mohanty, Secretary. A. N. Shriram, Scientist and K. H. K. Raju, Technical Officer from Puducherry. The members were unanimous in their opinion that in the last few years, the world has witnessed a significant increase in the outbreaks and frequency of VBD and the risk of resurgence of arboviral pathogens now looks ever more imminent.

Therefore, SOVE-Indian Chapter in collaboration with Indian Council of Medical Research-Vector Control Research Centre (ICMR-VCRC) will be organizing a four-day international conference at Puducherry on the theme entitled “A dialogue on the progress of VBD elimination in India in the face of ever-increasing threat of vector-borne zoonotic diseases, and perspectives of One Health in the pursuits of Bio-safety and Bio-security” to be held in the month of April 16-19, 2022 in the hybrid mode. This international conference will aim to bring together leading academic scientists, and research scholars to exchange and share their experiences and research results on different aspects of VBDs, Public Health challenges from the invasive vector species and pathogens posing

threat to the biosecurity and biosafety. It would also provide an interdisciplinary platform for basic science researchers, vector biologists, public health/medical entomologists and disease epidemiologists to present and discuss the most recent innovations, trends, and concerns as well as practical challenges faced and solutions adopted in the domain of VBDs.

Fortunately, as of Nov. 26, 2021, the second wave of COVID-19 pandemic in India has descended to a total COVID-19 case load of 34,555,431, including 1,10,133 active cases, 33,977,830 cured/discharged, and 467,468 deceased. The COVID-19 vaccination stands at 1,202,703,659 individuals who received COVISHIELD, COVAXIN and SPUTNIK vaccine. The Government of India (GOI) is taking all necessary steps to ensure that we are well prepared well to face the challenge posed by the growing pandemic caused by the Corona virus and its mutants. The Ministry of Health and Family Welfare, Govt. of India, is empowering citizens with the right information, advisories and precautions to be taken in preventing the spread of the virus.

The ICMR-VCRC at Puducherry, located in southeastern part of India, is currently the second home for the SOVE-Indian Chapter. The active cases in the Union Territory of Puducherry, have also dropped to less than 400. The territory reported 14 fresh cases on November 26, 2021, as 33 patients recovered bringing the active cases to down to 318. Hence, we encourage overseas delegates to attend the forthcoming SOVE-Indian Chapter meeting in Puducherry in-person if they so wished, provided that the situation continues to improve.

All the field projects/activities, which were grounded due to the second wave of the pandemic have picked up momentum. . . *Kumar cont'd on p. 6*



First Latin American SOVE 2022 Newsletter

Christina McCarthy, National University, La Plata, Argentina

We are pleased to invite you to the upcoming II Latin American Society for Vector Ecology Congress (LA SOVE 2022), to be held next year in La Plata, Argentina, from the October 29 to November 3, 2022 at the National University of La Plata (UNLP) Graduate and Convention Center - Karakachoff Building.

The upcoming II LA SOVE Congress is endorsed by the Faculty of Natural Sciences and Museum (National University of La Plata, UNLP), and we are expecting about 200 participants in addition to those who will connect remotely. The scientific program covers neglected zoonotic and vector-borne diseases, including (but not limited to) mosquito-borne diseases, Chagas, leishmaniasis, tick-borne diseases, viral haemorrhagic fevers, rabies, and leptospirosis, which especially affect the health of our Latin American people and the economy of our countries. Moreover, global warming, wildfires, habitat fragmentation, international travel and, last but not least, the current COVID-19 pandemic, are impacting the establishment of vectors in new regions and the emergence of epidemics, though we do not yet know to what extent. It is our objective to share state-of-the-art research and the current status for each of these diseases and aspects.

The congress will consist of symposia, round tables, conferences, posters, and a field trip to a marginal jungle. To summarise, a platform and environment where students, young and senior scientists, healthcare professionals and policy makers, can freely debate and deliberate on issues of common interest. We have high expectations for this second LA SOVE meeting, as it will be the consolidation of a partnership between zoonoses policy makers, technicians, scientists, and students from different countries. There is a great need for initiating dialogues conducive to forging collaborations and sharpening the focus for reducing the burden of these neglected diseases, and we are certain that during this congress we will witness the crystallization of international collaboration initiatives among participants from Latin America and other continents. Finally, contributing to the elimination of zoonotic and vector-borne diseases and to sustainable vector control, is the main focus of this and future LA SOVE meetings. Guidelines and dates for abstract submission and registration will soon be posted.

In Spanish:

Nos complace invitarles al II Congreso del Latin American Society for Vector Ecology (LA SOVE 2022) que se realizará el año que viene en La Plata, Argentina, desde el 29 de Octubre al 3 de Noviembre, en el Centro de Posgrado y Convenciones – Edificio Karakachoff de la Universidad Nacional de La Plata (UNLP).

Este II Congreso de LA SOVE cuenta con el aval de la Facultad de Ciencias Naturales y Museo (Universidad Nacional de La Plata, UNLP), y esperamos recibir cerca de 200 participantes, sumado a las y los que se conectarán de manera remota. El programa científico incluye enfermedades desatendidas zoonóticas y transmitidas por vectores, incluidas (pero no limitadas a) enfermedades transmitidas por mosquitos, Chagas, leishmaniasis, enfermedades transmitidas por garrapatas, fiebres hemorrágicas virales, rabia y leptospirosis. Estas enfermedades afectan especialmente la salud de nuestro pueblo latinoamericano y la economía de nuestros países. Sumado a esto, el calentamiento global, los incendios forestales, la fragmentación del hábitat, los viajes internacionales y, por último, pero no menos importante, la actual pandemia de COVID-19, están afectando el establecimiento de vectores en nuevas regiones y la aparición de epidemias, aunque todavía no sabemos en qué medida. **LA-SOVE cont'd on p. 9**

Dear Colleagues,

The National Institutes of Health (NIH) launched the UNITE initiative in March of 2021 to address structural racism in the biomedical research enterprise. Through this initiative, NIH is holding a series of listening sessions to learn from external stakeholders about the full range of issues and challenges in advancing racial and ethnic equity in the biomedical research enterprise. Some issues include:

- Changing culture to promote equity, inclusivity, and justice
- Improving policies, transparency, and oversight
- Strengthening career pathways, training, mentoring, and the professoriate
- Ensuring fairness in review and funding deliberations
- Enhancing funding and research support for diverse institutions and historically under-resourced research areas
- Structural racism in the biomedical research enterprise

The insights shared during these listening sessions will help to identify priorities for UNITE and inform the development of an NIH action plan.

We recognize that we share common interest in these areas and hope you will join us in these discussions. We look forward to working with you to learn more about efforts at your organization and your unique perspectives as we seek to advance these goals across the biomedical research enterprise.

Sincerely,

Mia Rochelle Lowden on behalf of UNITE Committee

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Kumar *cont'd from p. 4:* Vector biologists, like others, are increasingly participating in online webinars, which have become an order of the day. The teaching of M.Sc. Public Health Entomology course has also resumed and the second semester exams have just been completed in VCRC, which augurs for well for the progress of the current academic session.

As a country, I believe we are prepared to tackle this imminent exigency. Undoubtedly as in other walks of life elsewhere, the pandemic has been a serious obstacle in VBD research, surveillance and control. As an optimist, I believe, there is now a real hope that vaccines will help end the pandemic soonest. But until it is over, we must stay vigilant and continue to protect our loved ones by wearing masks, physically distancing, washing hands and ensure that the eligible people in our contact are vaccinated.

The membership of SOVE - Indian Chapter, in recent times, has swelled to 102. Currently, there are 79 regular, 12 retired, 10 students and 1 institutional member. Efforts are underway to increase the membership further to cover the length and breadth of the country, with an ultimate aim of PAN India presence, following which efforts shall be made to enrol members from the neighbouring countries of the region. To run up for the forthcoming meeting in April 2021, we envisage organizing webinars on important themes ranging from detection and monitoring insecticide resistance in vector mosquitoes, state of the art application of molecular tools in the realm of VBDs and time management. We very much look forward to you attending the SOVE - Indian Chapter International Conference 2022 at Puducherry.

Friends! Stay focused, stay safe and healthy and we shall soon overcome this pandemic and say it a goodbye to never come again! The key to safety is in our own hands! Ashwani Kumar =====

Niamh Quinn , UCANR South Coast Research & Extension Center, Irvine, California

It is hard to believe that we know more about polar bears than we do about commensal rodents. But this is where we are today. Because of this, we are missing vital information to inform mitigation measure when it comes to nontarget exposure. Where is rodenticide exposure in wildlife coming from? Is it from illegal use from homeowners or from illegal marijuana growers? Is it coming from legal applications from qualified applicators? This is definitely an ag problem, right? These questions are being asked by state legislators and regulators, special interest groups, and state pest associations across the country. In California, legislators placed a moratorium on almost all uses of second-generation anticoagulant rodenticide.

In California, researchers at the University of California Agriculture and Natural Resources Division have been examining some of these questions over the past seven years. Researchers have looked at urban coyotes exposure to anticoagulant rodenticides (ARs), active ingredients they were exposed to, and amounts of AR exposure. Almost all coyotes that were examined by the Quinn Lab at the UCANR South Coast Research and Extension Center in Irvine had been exposed to at least one anticoagulant rodenticide and more likely, multiple active ingredients. Some were exposed to low amounts of ARs and some were exposed to very high levels. However, less than 1% of the coyotes submitted had died from AR exposure. Recent studies on the sublethal effects of exposure are struggling to find any clear links between AR exposure and sublethal impacts (such as reduced body condition or parasite load) and there is no link between AR exposure and mange in coyotes in urban southern California. Roger Baldwin from UC Davis has been examining AR exposure in coyotes in agricultural areas, and it appears that the instances of AR exposure are much lower.

The diet of the urban coyote in southern California was questioned, specifically “Do they eat roof rats and is this a route of exposure?” It turns out that coyotes do eat rats (Fig. 1). They eat a whole lot of other things too, but rats are among their preferred mammalian prey items (along with rabbits and domestic cats).

In one of the first studies of its kind, the Quinn Lab, in cooperation with Cal State Fullerton, started to examine what was actually visiting bait stations. We were surprised to find that in southern California, it is mostly roof rats. In urban southern California, less than 1% of mammals entering bait stations were nontarget wildlife. This is good news! However, if pest management professionals are doing their job when they choose to use anticoagulant rodenticide and are poisoning just roof rats and coyotes are eating said rats, does this mean that legal applications are responsible for the urban coyote AR exposure?

Another interesting finding from these studies concerned how rats use bait stations. We photographed rats entering only 59–70% of the bait stations, suggesting that roof rats may be reluctant to enter bait stations, even when no rodenticide was present. Non-toxic baits were used during this study. Even in yards where rats eventually entered stations, it took about 7–8 days for them to first encounter the bait directly. Because the first mortalities from anticoagulant rodenticide might not occur for several more days, pest management professionals should be prepared to communicate these possible delays to their customers to prevent them from becoming impatient and taking more drastic (and potentially illegal) measures if results are not immediate

Tracing applications of anticoagulant rodenticide

How to trace the applications of anticoagulant rodenticides has been quite the mystery for some time, but the Quinn Lab may have cracked it. We have developed a bait that may be traced up multiple levels of the food chain.

Rats, Rodenticides and Research cont'd on p. 8

Therefore, we will be able to finally trace the rodenticide bait from its point of application to see if a legal application of anticoagulant rodenticide ends up in multiple levels of the urban and suburban food chain.

Research has been conducted to look at where animals exposed to anticoagulant rodenticides die and who scavenges them. Two separate studies looked at these issues. One was conducted by Baldwin in an agricultural setting and one by Paul Stapp from Cal State Fullerton in the suburban environment. Baldwin discovered that ground squirrels exposed to first generation anticoagulant rodenticides were mostly dying below ground. Stapp discovered that rats left in backyards are scavenged on by all sorts of animals included crows, skunks, opossums, and the domestic cat. After 7 days, almost all (65%) of the carcasses had been either partially removed or removed completely.

What is next for rodenticide research?

In cooperation with NWRC and with support from the Anticoagulant Taskforce, we are developing methods to try to monitor for rodenticide exposure in wildlife in a more meaningful way. The Quinn Lab and other institutions are working on developing methods to sample for rodenticide in live mammals and birds of prey with the aim of being able to detect population level impacts of rodenticide exposure, if they exist. These methods will provide a mechanism by which rodenticide exposure can be monitoring in live populations.

There is a huge need for data-driven mitigation measures in California. The Quinn Lab has been testing the efficacy of different management practices. We are testing trapping only, second generation anticoagulant only, and a mix of both trapping and anticoagulant rodenticide. Using a combination of tracking rodents by collaring them and measuring how long it takes them to die, and using tracking tunnels, we are measuring how quickly and how effectively these management options manage roof rat populations in southern California.

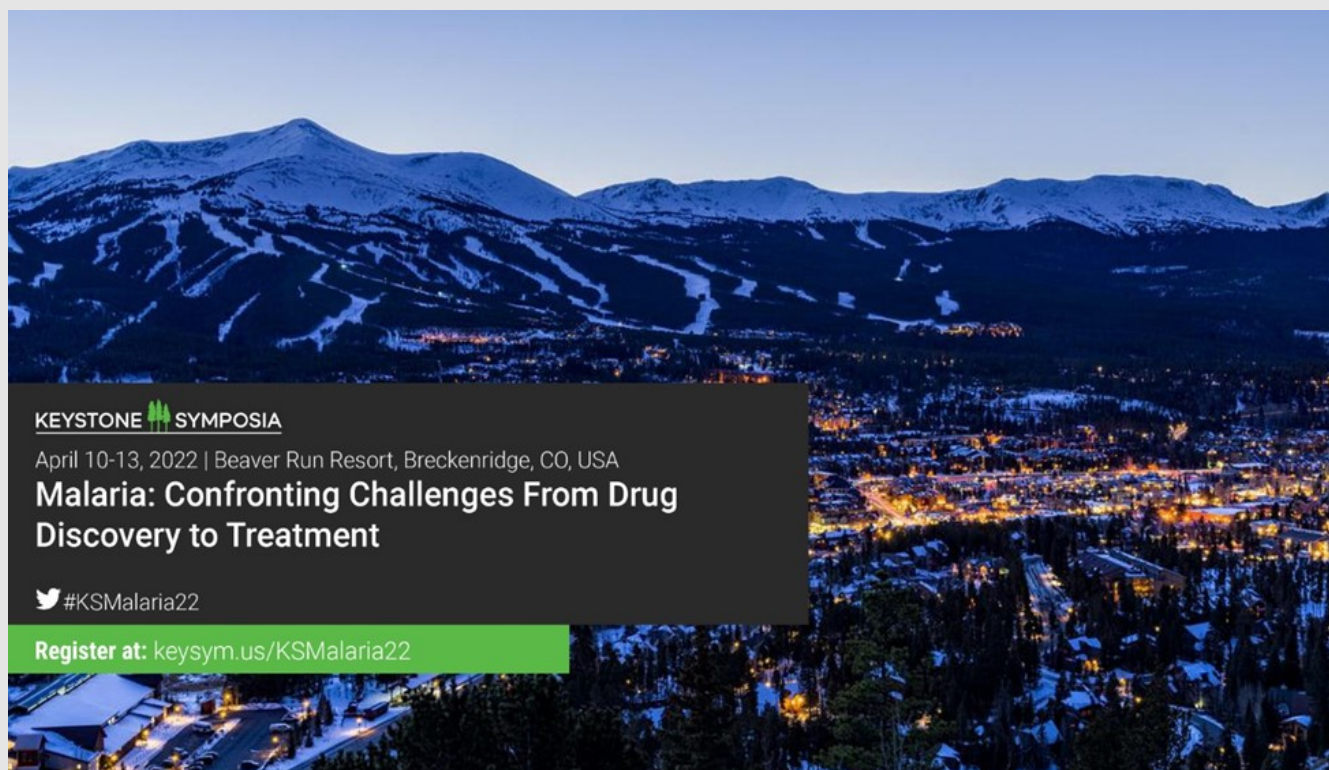
A mutation associated with second generation anticoagulant rodenticide resistance, the y25F mutation, has been found in roof rats in California. We don't know what this discovery means for rats in California. We need to explore more and find out to what extent they are resistant. Resistance management is essential for prolonging the life of all pesticide active ingredients.

What does the future of rodent management look like?

With expanding restrictions on management tools, expansion of difficult to manage populations like roof rats, and a dearth of applied research on commensal rodents, it may become more and more difficult to manage these populations. In order to solve these issues, we must find more sustainable and effective management practices. We also need to understand the interactions of commensal rodents with human diseases and allergens.



Fig. 1. A trail camera captures a coyote scavenging a dead rat in a suburban backyard.



Malaria: Confronting Challenges From Drug Discovery to Treatment

Date: April 10 - 13, 2022

Scholarship Deadline: December 16, 2021

Link: <https://keysym.us/KSMalaria22>

#KSMalaria22

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LA-SOVE *cont'd from p.5*: Nuestro objetivo es compartir los últimos avances en investigación y el estado de situación para cada una de estas enfermedades y aspectos.

El congreso constará de simposios, mesas redondas, conferencias, posters, y un viaje de campo a la selva marginal. En resumen, una plataforma y un entorno en el que estudiantes, científicas y científicos jóvenes y *senior*, profesionales sanitarios y formuladores de políticas podrán debatir y deliberar libremente sobre cuestiones de interés común. Tenemos grandes expectativas para este segundo encuentro de LA SOVE, ya que será la consolidación de una asociación entre responsables de políticas de zoonosis, técnicas, técnicos, científicas, científicos, y estudiantes de diferentes países de América Latina. Es muy necesario iniciar diálogos propicios a forjar colaboraciones y agudizar el enfoque para reducir la carga de estas enfermedades desatendidas, y no nos cabe duda que durante este congreso se cristalizarán iniciativas de colaboración internacional entre las y los participantes de América Latina y otros continentes. Finalmente, contribuir a la eliminación de enfermedades zoonóticas y transmitidas por vectores y al control sostenible de vectores, es el foco principal de esta y futuras reuniones de LA SOVE. Las pautas y fechas para el envío de resúmenes e inscripción se publicarán a la brevedad. =====

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. 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

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

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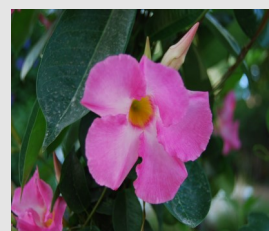
History of the World's Only Extant Black Fly Colony

In 1981, Cornell University established a colony of *Simulium vittatum*. In 1991 Dr. Ray Noblet used eggs from the Cornell strain to establish a Clemson University colony, and then moved it to the University of Georgia in 1999 when he joined the Entomology faculty there. Mr. Elmer Gray has published a history of this 40-year-old black fly colony in the Georgia Mosquito Control Association's *Newsletter* (Vol. 12, Issue 2, November 2021) <https://www.gamosquito.org/resources/newsletters/DIDEEDBYCHA24.pdf>.

Arbovirus Surveillance and Mosquito Control Workshop

The 17th Arbovirus Surveillance and Mosquito Control Workshop in conjunction with the Navy Entomology Center of Excellence Equipment Demo will be held in-person at Anastacia Mosquito Control District, 120 EOC Drive, St. Augustine, Florida, March 29-31, 2022. For more information about the workshop, please visit the website at www.amcdsjc.org or contact Taylor Ballantyne at tballantyne@amcdfl.org

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Job Opportunity

Academic Job Announcements

California State University San Bernardino

Department of Health Science and Human Ecology invites applications from a diverse group of qualified applicants for the following positions:

1. Tenure-track Assistant Professor in Environmental Health to begin August 2022. Requires a Ph.D. in Environmental Health/Occupational Health or a related field. Candidates with Registered Environmental Health Specialist or Certified Industrial Hygienist credentials will be given preference. The successful candidate will be expected to demonstrate excellence in teaching, to develop an externally funded research program involving student participation, and to participate in service activities. Teaching responsibilities could include undergraduate and/or graduate courses in environmental health science, occupational health, industrial hygiene, core public health, as well as courses in health and human ecology. The successful candidate will be expected to advise undergraduate students.

Application review will begin **January 07, 2022** and the position will remain open until filled. For a detailed job description, please use the following link: <https://careers.csusb.edu/en-us/job/504985/assistant-professor-department-of-health-science-&-human-ecology>. Salary is commensurate with experience.

2. Tenure-Track Department Chair and Associate or Full Professor to begin August 2022. Requires a Ph.D. in Health Sciences with preference to applicants from Environmental Health Science, Health Service Administration, Nutrition and Food Sciences, and Public Health. Candidates should be capable of appointment at the level of Professor. The successful candidate should have demonstrated excellence in teaching, leadership, have a record of scholarship and experience obtaining external funding, and have a commitment to working with a diverse body of students, faculty, and staff. We par-

ticularly invite applications from candidates with administrative experience as a department chair and/or other supervisory/leadership experience. Given the need for high level of collaboration among programs in the Department of Health Science and Human Ecology, the ideal candidate should exhibit excellent communication skills, and be able to thrive in an interdisciplinary environment.

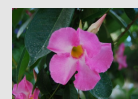
Application review will continue and the position will remain open until filled. For a detailed information on the position and application process, please visit: <https://careers.csusb.edu/en-us/job/501966/health-science-and-human-ecology-department-chair-tenured-full-or-associate-professor>.

Salary is commensurate with experience.

The Department serves over 1,000 students majoring in 4 undergraduate (environmental health science, health care management, nutrition and food sciences, public health education) and 2 graduate programs (Master in Public Health, Master of Science in Health Service Administration). The newly hired faculty member would join a well-established department of 13 full-time and over 20 adjunct faculty members.

Training Opportunities

The Center for Health in the Human Ecosystem which hosts the Biology of Vector-borne Diseases Course has recently moved to an Institution. We are now the Institute for Health in the Human Ecosystem! Along with some of the changes, we had our website redirected so the previous link to the Biology of Vector-borne Diseases Course has moved. We would really appreciate sharing the newest link to our course and encouraging others to apply: <https://www.uidaho.edu/research/entities/institute-for-health-in-the-human-ecosystem/education/vector-borne-diseases>





Society for Vector Ecology

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We are on the Web!
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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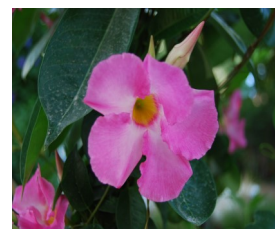
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