



SOVE Newsletter

President's Message



Uli Bernier

Dear Colleagues,

I am writing this message on a day that the Washington, D.C. area is experiencing some of the warmest weather that we have had since November of last year. As a result of having spent 47 years of my life in Florida with the absence of a true winter, I have no experience using ice scrapers and snow shovels; therefore, I welcome the increase in temperature. Unfortunately, as we move into spring, this means we can expect an increase in activity of vectors. For those of us in this area, there is increased risk of Lyme disease obtained from bites of infected Ixodid ticks. The cases of Lyme disease continue to rise and some of our fellow colleagues are conducting research to mitigate this growing problem. In addition, some of our colleagues continue to conduct surveillance and ecological studies of a new invasive tick, *Haemaphysalis longicornis*, the Asian long-horned tick. This tick was discovered in New Jersey in August 2017 and has been reported in counties located in 9 states. Studies of this tick, which reproduces parthogenetically, indicate that

large populations are present on an infested host. This tick species can be infected with pathogens that are harmful to livestock, other animals, and humans (some of these are *Babesia*, *Ehrlichia*, *Borrelia*, *Anaplasma*, *Rickettsia*, severe fever with thrombocytopenia syndrome). As the year progresses, we are almost certain to hear more reports in the media and at scientific conferences.

On the subject of conferences, the Indian region of SOVE just held their inaugural conference, February 13-16, 2019, in Panaji, Goa, India. The Asian region of SOVE is holding their meeting in conjunction with the 6th International Forum for Surveillance and Control of Mosquitoes and Vector-borne Diseases, and the National Conference of Medical and Veterinary Entomology of the Entomological Society of China. The location is Xiamen, Fujian, China, and the dates are May 27-30, 2019. There is a Vector Management Workshop that follows this meeting, to be held May 31, 2019 in Taipei, Taiwan. The sponsors are the Taiwan Environmental Pest Control Association and the Asian Society of Vector Ecology and Mosquito Control.

.....*President's message contd on p.2*

In this issue

President's message,	1
Regional reports : Southeastern	2
Regional report: Northwestern, Southwestern	3,4
Regional report: European SOVE, Indian Reg SOVE	5,6
Student Page	9
Calendar, jobs, etc.	11
About SOVE, Board, staff	12

Regional Reports



SOUTHEASTERN REGION

Rui-De Xue

Regional Director

In 2019 (by March 8), there was one West Nile virus (WNV) human case in Sumter County which has been under mosquito-illness advisory. One chikungunya, 16 dengue, 5 Zika, and 2 malaria were reported from Florida. All cases are international travel related. There were several sentinel chickens tested positive with WNV, eastern equine encephalitis (EEE) from 7 counties.

The Florida Mosquito Control Association (FMCA) hosted the 85th American Mosquito Control Association (AMCA) annual meeting in Orland, Florida, February 25-March 1, 2019. This was the largest meeting with about 1,200 registrants. The FMCA Dodd short course with more than 400 students was held in Gainesville, FL, in early Feb. The 16th Annual arbovirus surveillance and mosquito control workshop will be held at Anastasia Mosquito Control District (AMCD), St. Augustine, FL, March 26-28, 2019. The Florida Entomology Society's 102nd annual meeting will be held in Jupiter Beach, Florida, July 21-24, 2019.

The AMCD has two new Commissioners and Commissioner Jeanne Moeller got re-elected. Daniel Dixon left AMCD for a post doctoral position at USDA / CMAVE and Caroline Esfathion replaced Dixon from late January.

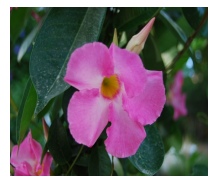
The AMCD finished the construction for a sentinel chicken house, helicopter hangar, a student guest house with 4 bedrooms. Screened enclosures have been busily used and green house and larvicide pools are under construction. The 16th Arbovirus Surveillance and Mosquito Control Workshop will be held at AMCD, March 26-28 and AMCD will celebrate its 70th anniversary service.

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

The North American SOVE meeting will be held September 22-26, 2019 in San Juan, Puerto Rico. Isik Unlu, our SOVE Vice President, is the Program Chair. Please contact her at iunlu@broward.org if you wish to organize a symposium.

We appreciate Isik performing the important task of Program Chair. Prior to being elected our vice president, she served as our Northeastern Director. Due to her transition, Doug Norris has been appointed (and accepted) the position of NE Director.

Uli



Regional Reports



NORTHWEST REGION

David Sullivan
Regional Director

Greetings!

Last March I wrote “It looks as if winter is almost over in the Northwest, but one never knows for sure. “ That is not the case this year. It is still very much winter. From the west coast of Oregon and Washington to Montana and Wyoming and further East and South there is considerable moisture (rain and/or snow), and extremely low temperatures (record lows in Montana of -40 degrees Fahrenheit to daytime highs of 10 to 20 degrees). Normal highs should be in the mid to high 40’s.

Generally speaking the Northwest had a mild winter with normal or more than normal moisture...until December, when winter hit again. Most of the Northwest was hit by multiple storms from the west coast that increased rain and snow events for the last three months. The Cascade and Rocky Mountains have more snow than in recent years. Weather is projected to be cooler than normal for the next two months. There haven’t been many vector issues this winter and it will probably not start until next May or later.

Meetings:

The Northwest Mosquito and Vector Control Association (NWMVCA) Spring workshop will be held in Richland WA at the Red Lion Inn on April 10 - 11, 2019.

The Montana Mosquito and Vector Control Association (MMVCA) will hold their Spring workshop in Great Falls, Montana in May, 2019.

People News:

Jimmy Lunders manager of Central Point MAD, Oregon had a great birthday present: He was presented with a new baby daughter, Evelyn born on his birthday!

Jason Kinley became president of AMCA and Greg Barron is the Northwest regional director of AMCA.

West Nile Virus Year-end Results

State	State Encephalitis		Total Cases		Fatalities	
	2018	2017	2018	2017	2018	2017
CO	53	29	96	68	3	4
ID	10	14	16	24	1	0
MT	25	3	47	4	1	0
OR	2	3	2	7	0	1
UT	7	39	11	62	0	6
WA	2	10	3	13	0	0
WY	3	4	4	7	1	0
Total	102	98	179	185	6	11

Regional Reports



SOUTH WESTERN US

Fred Steve Mulligan
Regional Director

Greetings,

Congratulations to SOVE on a very successful 50th anniversary conference at the Tenaya Lodge, outside of Yosemite National Park (what a beautiful location for our ecological field trip!). Of course, the conference was held in California, in the SOVE Southwest Region, where SOVE was birthed by visionaries.

Speaking of, or rather writing about, the Southwest; the Pacific Southwest Center of Excellence in Vector-Borne Diseases, more simply PacVec (pacvec.us), held its second annual meeting at UC Davis in late January. Chris Barker reports the PacVec meeting involved almost 100 researchers, public health officials, and vector control professionals from California, Arizona, Nevada, Hawaii, Utah, and CDC. It was great to see so many friends old and new, and we came away very excited about the work planned for 2019!

Invasive *Aedes* and insecticide resistance are two of the many research interests of the PacVec center, and Chris would like to note two new complementary activities that are of broad interest to SOVE members: (1) the recent launch of the *Aedes* Challenge (<https://predict.cdc.gov>), which is a collaborative effort to engage modelers to predict when and where invasive *Aedes* will be found in the continental U.S. in 2019, and (2) training and testing for bottle bioassays through regional workshops in the Pacific Southwest. PacVec's primary

goal is to enhance the capacity of our region to respond to threats from vector-borne diseases through applied research, training, and collaborations.

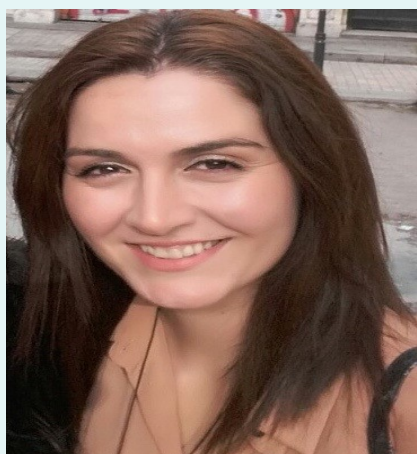
The insecticide resistance element is spearheaded by Anthony Cornel at UC Davis Mosquito Control Research Lab. It involves training of vector control personnel in pesticide assay methods as well as conducting field trials in Arizona, Nevada, Hawaii (must be tough work!), Guam and California. This resistance work is backed by insecticide mechanistic research by the UC Davis labs of Gregory Lanzaro and Geoffrey Attardo.

Impact of invasive *Aedes* continues to be a central focus in California and much of the Southwest as these mosquitoes expand their ranges. To combat these vectors, innovative research and studies looking outside the box of conventional control method have revisited sterile insect techniques (SIT). One SIT study, Debug Fresno (www.debugfresno.org), is evaluating the use of *Wolbachia* to suppress *Aedes aegypti* within the Consolidated Mosquito Abatement District in partnership with Verily Life Sciences and MosquitoMate. Studies under a USEPA EUP during 2019 that involved male mosquito releases in residential areas totaling 724 acres and 3,060 households resulted in a 95% suppression of the local female *Aedes aegypti* population.

Lest we forget, studies on mosquito SIT are not

.....*Southwestern report cont'd on p. 7.*

Regional Reports



Dear Colleagues and Friends,

In this issue we have a special guest report by Claire Garros (CIRAD, France) from the Indian Ocean reporting on an intense vector-borne disease season in the Indian Ocean. Per Claire Garros (photo provided below), small tropical islands are not always synonyms of smooth life under a palm tree.

Dengue virus (DENV) transmission in the French Outermost Region Réunion is not unexpected. Over the last ten years, a number of limited dengue outbreaks have been reported on the island. *Aedes albopictus* is considered to be the principal vector of dengue virus and DENV-2 is the suspected associated serotype. However, a dengue outbreak of unusual magnitude compared with the previous outbreaks is currently taking place in Réunion since 2017. The reasons for the sudden upsurge in cases in 2018 are not well understood, but multiple and synergic factors might have played a role in the development of this epidemic. In July 2018, official Health Authorities decided to activate level 4 « Medium intensity outbreak » of the fight against arboviruses. This change was motivated by a high risk of transmission at the beginning of the austral summer (November-December), and justified to reinforce vector-control actions, collective actions, hiring and training additional personnel, communication campaigns to physicians and to the general public via the media. As of today, the epidemic is still ongoing with 100 to 200 confirmed cases per week, with several foci in the south and south-

EUROPEAN SOVE

Alexandra Chaskopoulou
Regional Director

west of the island. Dispersion is important with 19 communes out of 24 having dengue cases for the two past weeks. Since the beginning of the outbreak, 7 803 autochthonous confirmed cases were reported (with 929 cases since 01/01/2019), and 6 fatal cases from which 3 were strictly related to the disease. A local program coordinated by IRD is currently evaluating the feasibility of sterile insect technique as a vector control strategy to reduce mosquito populations.

Claire in exotic Madagascar is collecting mosquitoes, using a CDC light trap.



The second major vector-borne disease event is the reemergence of Rift Valley fever (RVF) in Mayotte, Comoros Archipelago. Human cases of RVF occurred after a 10-year absence of human circulation of the virus and a continuous decrease of the seroprevalence observed in ruminants since 2008. However, in August-September 2018, a screening campaign revealed positive serologies on some animals under 8/9 years old, suggesting a new circulation of the virus within the herd. In addition, an increase in illegal imports of animals (goats, sheep, cows) has been observed for several months and a high positivity rate of RVF has been

—————*-E-SOVE report* cont'd om p. 7.

Regional Reports



Indian Region SOVE

Ashwani Kumar Regional Director

The Indian Region -Society for Vector Ecology (I-SOVE) held its First Inaugural Conference at Hotel Fidalgo, Panaji, Goa, India from February 13-16, 2019. The theme for the conference was 'Lab to public health setting: Control of vectors for elimination of vector-borne diseases.' The conference was attended by 123 delegates consisting of 20 international delegates (Australia, Brazil, Germany, Greece, Lithuania, Malaysia, UK, and USA); 66 Indian attendees; 20 sponsors; and 17 students.

The Inauguration ceremony was graced by Guests of Honor, Nicole Simone Seguy, Team Leader Communicable Diseases, WHO Country Office, New Delhi; Lyle Petersen, Director, Division of Vector-Borne Diseases, Centers for Disease Control and Prevention (CDC), USA; R. C. Mahajan, Professor Emeritus, Post Graduate Institute of Medical Research, Chandigarh; Major S. Dhillon, Executive Director, SOVE, USA; Klaus Horst, German Mosquito Control Association; and O. P. Singh, Director-In-Charge, ICMR-National Institute of Malaria Research, New Delhi. Ashwani Kumar welcomed the guests. On the occasion, the IR-SOVE awarded 'Padmabhushan' Dr. V. P. Sharma oration award for outstanding research in Vector Bio-ecology and Control to R. S. Yadav, Department of NTD, WHO, Geneva, Switzerland, Prof. Mir Mulla Award for Excellence in Vector Biology and Control to Norbert Becker, Director, German Vector Control Association, University of Heidelberg, Germany, Dr. T. R. Ramachandra Rao award for outstanding research in Medical Entomology to P. K. Rajagopalan, former Director, ICMR-Vector Control Research Centre, Puducherry, India; P. B. Deobhankar award for distinguished work in Public Health especially in Municipal bodies and State Govt. programs to Naveen Rai Tuli, Deputy Health Officer, New Delhi Municipal Corporation, Dr. Sushil Kumar Dasgupta Award for rendering

dedicated services (health) in rural area to Ashoka Pais, Medical Officer, Voluntary Health Association of Goa and a Special Award for Journalism on Science and Vector-borne Disease reporting to Shashwat Gupta Ray, Editor Gomantak Times, Panaji, Goa, India. Lyle Petersen presented the key-note address titled 'Global status of arboviral diseases,' Yadav, Becker, Rajagopalan and Tuli delivered orations on topics pertinent to the conference; Pais and Ray also spoke on the occasion.

The second day began with 3 symposia (15 presentations) during the morning session. The first symposium on vector taxonomy, bio-ecology and control was sponsored by Valent Biosciences LL. The second symposium on malaria, filariasis and Kala Azar elimination was sponsored by WHO-country office India and the third symposium on vector control in disease elimination settings: Capacity building and response was sponsored by the National Vector Borne Diseases Control Programme (NVBDCP), Govt. of India. The post-luncheon session consisted of 3 symposia and the first poster session. The topic of symposium 4 was Emerging Vector Borne Diseases, symposium 5 on Impact of Climate Change on Vectors and Vector Borne Diseases, and Symposium 6 on Vector Repellents. The poster session was well attended and duly appreciated. During these symposia, 13 lectures and 15 posters were presented. The Executive Board Meeting of the Society for Vector Ecology Indian Region was held in the evening.

The third day began with excitement as delegates embarked on the Field Ecology tour, which was a boat ride from 9.00 am to 12.00 noon into river Mandovi and the backwaters along the Dr. Salim Ali Bird Sanctuary, Chorao, Crocodile habitats of Kumbharjua, culminating in a lunch break. Post lunch followed the*I-SOVE Region report cont'd on p.8.*

Southwestern report cont'd from p. 4.

new to California, we have a rich foundation. In 1972, Sister Monica Asman, a Franciscan nun with a Ph.D. in mosquito genetics from Notre Dame studying *Aedes aegypti* under a young George Craig, switched to *Culex tarsalis* on advice from Bill Reeves and began investigating genetically modified males as SIT. Unfortunately, Sister Monica has since passed away, as has George Craig and Bill Reeves, profound losses to the mosquito research community.

Sadly, I must also mention the passing of Frank W. Pelsue, former Manager of Southeast MAD now Greater Los Angeles County MVCD, and an early member of SOVE, as well as a friend and gentleman.

E-SOVE report cont'd from p. 5.

detected in controlled animals (intercepted in 2018), particularly in sheep. The outbreak has been ongoing since November 2018. The number of human cases of RVF has increased from 63 to 82 in about 2 weeks. Since the onset of the 1st case in late November 2018, 39 animal outbreaks have been identified, and 82 human cases have been reported.

On the science side, A-2 year WellcomeTrust project named M2MOKA has just started in Madagascar with Pasteur Institute of Madagascar and Luciano Tantely as the principal investigator. This project includes a massive field entomological investigation targeting mosquitoes. A total of 25 sites (3 biotopes per site prospected) distributed in 5 bioclimatic domains will be visited every two months. Moreover, passive traps combined with FTA cards will be set up in cattle market for two weeks to ensure arboviral surveillance and detection. All the results (mosquito presence and abundance, virus detection) will be used to map and model vector dynamics and disease risks.

In our region, the upcoming meetings are as follows:

1. Global Vector Control Response Conference – The Way Forward, Wageningen, 11-13 June 2019 (Information provided by Sander Koenraadt, Wageningen University). Triggered by the unprecedented global spread of dengue and chikungunya viruses and outbreaks of Zika virus disease and yellow fever in 2015-2016, the World Health Organization developed the Global Vector Control Response (GVCR) as a strategic guidance to countries and development agencies for the strengthening of vector control as a fundamental approach to preventing disease and responding to outbreaks. The World Health Assembly unanimously endorsed the GVCR in 2017. To evaluate the GVCR progress, and to discuss further strengthening of the approach, a conference will be held in Wageningen, the Netherlands, 11-13 June 2019. The conference will be organized jointly by WHO and Wageningen University & Research. The conference program and information on registration can be found here: <https://www.gvcr-2019.com>.
2. Biological Work Shop – High Virulent Agents & their Vectors, Czech Republic, 23-25 April, 2019, (Information provided by Vit Dvorak, Charles University). The 4th Biological Conference (organized by Military Health Institute, Military Medical Agency, Ministry of Defence, Department of Infectious Diseases, First Faculty of Medicine, Charles University and Military University Hospital Prague) is scheduled to take place in the beautiful city of Komorní Hradek, 41 km from Prague. The workshop will address the traditional main topic of host-pathogen interaction including other aspects of the analysis of biological material. For more information contact the organizer: Lt. Martin Chmel, Military Health Institute, Martin.Chmel@lf1.cuni.cz), and
3. European Mosquito Control Association Conference – Mosquito Control without Borders, La Rochelle, France, 11-14 March 2019. The IXth International conference of the European Mosquito Control Association is scheduled to take place in mid-March in La Rochelle, at the west coast of France. The conference will focus on harmonization of control strategies in European countries as well as new standards for techniques beyond the borders of classical mosquito control methods in order to spur on the exchange of knowledge among research institutions, the mosquito control industry and policy makers. ***E-SOVE report cont'd on p.8.***

E-SOVE Region report cont'd from p. 6.....

<https://ecdc.europa.eu/sites/portal/files/documents/Vector-control-Aedes-aegypti-Aedes-albopictus.pdf>

Warmest wishes from a freezing Thessaloniki,

Alex

=====

I- SOVE report cont'd from p. 6.

second poster session during which 15 posters were presented. Both poster sessions were adjudged by a panel of 3 judges. Moving forward, symposium 7 on proteogenomics of disease vectors; symposium 8 on vector control tools by industry (sponsor's sessions) and symposium 9 on vector resistance and its management/IVM with 20 lectures all together, were presented. The General Body Meeting of the I-SOVE was convened during the evening. The day ended with a relaxing gala dinner at a picturesque location Ritz Classic at Panjim Gymkhana.

The fourth and final day began with symposium 10 which was a panel discussion on Women in Vector Science where the women delegates and students discussed the challenges and opportunities faced by these groups. Symposium 11 was on vector control tool development and deployment, household pest/vector management industry and community engagement. Finally, symposium 12 was a session for Young Scientists' award. Altogether 9 lectures were presented.

The conference concluded with a valedictory function which began with introduction of the dignitaries, Chief Guest Prof. R. C. Mahajan, Prof. Emeritus PGIMER, Chandigarh, India, Guests of Honour Major S. Dhillon, Norbert Becker, and Prof. Paulo Pimenta, Fiocruz, Belo Horizonte, Minas Gerais, Brazil. The I-SOVE Young Scientist Awards for man and woman were awarded to Gourav Dey and Poonam Singh, respectively. Thereafter, the poster awards were presented. The five best poster awards went to Anju Viswan 1st Prize, Tammanna Sahrawat, 2nd Prize, Bhavna Gupta 3rd Prize, and the two consolation prizes went to Deeparani Prabhu and Naren Babu. Finally, a vote of thanks was proposed by Ashwani Kumar, Director Indian Region SOVE .

The conference photographs are available at: www.soveindia.org.

BRIEF COMMENTARY

As a Patron to the first inaugural conference of the I-SOVE , it is my humble opinion that Ashwani Kumar did an outstanding job in organizing the Conference. The quality of scientific program, the venue selection, the field ecology day were of the highest quality that one can expect. Above all, the attendance by the exceptionally reputed scientists of India, WHO, CDC , and other foreign researchers gave a unique image to this conference. It was also brought to my attention that Ashwani had to limit the number of attendees due to space limitation. We look forward to a very successful future of I-SOVE.

Major Dhillon
Executive Director
SOVE



From *Montana*
Courtesy of
David Sullivan

Students' Page

Bethany McGregor Student Representative



I would like to begin by thanking Professor Michael Kaufman for his efforts to arrange a meeting of the SOVE student and post-doctoral members in Yosemite. At this inaugural meeting, we laid the foundation for an official student organization within the society. Student involvement is already increasing as many student and post-doctoral members have volunteered to participate as reviewers for the Journal of Vector Ecology and the governing board has voted to include a student representative on the board with full voting rights. In the upcoming months, efforts will be made to begin the democratic process of electing future student representatives. The student membership of SOVE is very appreciative of the active role that the society is taking to further include students and young professionals

Nine students received travel grants to attend and present at this year's SOVE student symposium in Yosemite. The symposium, organized and moderated by Casey Parker, was very successful and featured presentations on a wide variety of topics ranging from classroom outreach to axenic mosquitoes. Below are some comments by participants in this year's student symposium:

"Speaking at SOVE for the last few years has allowed me to share my research with a diverse group of vector biologists and receive feedback on the research I am conducting. Additionally, being the moderator for the past 2 years has introduced me to new students who are the future of our industry. It's very rewarding to see the student symposium come together and to see the other student presenters do an incredible job communicating their science. I love SOVE and the relationships I have formed through the organization and am proud to be a student member!"

-Casey Parker, PhD student, University of Florida

"The student travel grant with SOVE gave me my first opportunity to give an invited presentation on my MS research. It was an exciting experience to get to meet so many leaders in the field of vector ecology as the smaller atmosphere allowed me to interact with other attendees on a more personal level than I have previously been able to at conferences. Perhaps most importantly, I was able to meet my peers from all over the continent and find out about the exciting and diverse research projects they are working on."

-Kristin Sloyer, PhD student, University of Florida

"Participating in the Student Symposium of SOVE was an extremely rewarding and fun experience. Not only do we get to report our results and show how exciting our research is, but we get to present our research to some of the top names in the field. It felt surreal (and somewhat nerve-wracking) to be able to present my research to leaders in the field as well as connect with them after my talk. My experience at SOVE was marked with getting to know my fellow student presenters, meeting new and seasoned researchers, and participating in the field day from SOVE, all of which made this conference unforgettable. I highly recommend students to present at SOVE in the future because of the intimate setting between you and other researchers as well as learning from leading labs and agencies throughout the country."

-Karen Poh, Post-doctoral Scholar, Penn State University

Finally, we have recently reactivated the SOVE Facebook page! This platform will allow us another avenue to reach current and potential members with our newsletter, journal, and announcements. In addition to SOVE materials, we are posting interesting vector ecology news items and jobs. Please subscribe to the SOVE Facebook and check in for new content often!

This is a big year for the students of SOVE as plans for the SOVE student group are beginning to take shape. We have begun to compile a listserv of SOVE students, but the information we have is limited. If you'd like to be added to our listserv of SOVE students, please send the following information to bmcgreg1@gmail.com: 1) Name, 2) University affiliation, 3) Degree you are pursuing, and 4) Whether you are an active, paid member of SOVE (if not, now is a great time to join!). Expect to see more from the SOVE student group in the very near future!

I would like to dedicate the rest of this section to SOVE students who will be graduating this spring. Student life is transient and fleeting, with many challenges and rewarding experiences along the way. The culmination of the work and sacrifices of graduate life should be recognized and appreciated in those students who are nearing completion of their graduate journey. Please join me in congratulating Emily Dinh and Dan Peach! Below are brief sections from each student on their graduate research and plans moving forward after graduation!*Student report cont'd on p. 10.*

Student report cont'd from p. 9.

Emily Dinh, University of Florida

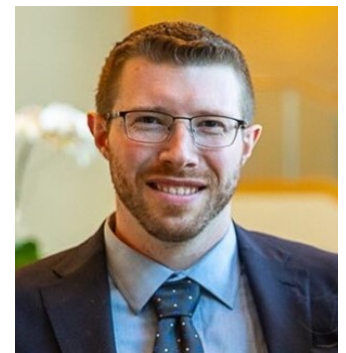
“My broad research interests include the spatial epidemiology, health/medical geography, and disease ecology of vector-borne and zoonotic diseases. My current doctoral research on vector ecology focuses on investigating vector abundance trends relative to disease transmission risk. *Culicoides stellifer* is a candidate vector of epizootic hemorrhagic disease virus (EHDV) to white-tailed deer in Florida. However, the midge species' life history is poorly known. I seek to characterize what habitat this species prefers and predict where locally abundant, persistent populations occur on the landscape during the EHDV transmission season. Revealing these aspects of this candidate vector's ecology may then enable targeted vector control efforts and add more evidence towards incrimination. Additionally, I captured and outfitted deer with GPS telemetry collars to track their movements during the EHDV transmission season. I seek to understand how deer home range behaviors may contribute to their risk of acquiring EHDV. The overall aim of my doctoral research is to link host animals' movement behavior to vector abundance patterns so that I may assess disease transmission risk and reveal poorly known aspects of EHD ecology.



I received my BS degree in entomology from Texas A&M University and MSPH degree from the University of South Florida. I will culminate my education with a PhD in geography from the University of Florida in May 2019. After I earn my doctoral degree, I wish to pursue a public health career specializing in vector-borne and zoonotic diseases. I aim to serve my community as a scientist, so I am currently seeking opportunities in which I take a functional role in solving important public health problems. I hope to help creatively expand the capacity needed to meet increasing public health demands from emerging infectious diseases. My background as a multilingual entomologist, public health scientist, and medical geographer provides me with a unique skillset. I am optimistic that this will put me in an exceptional position to be a valuable team member contributing towards positive societal change by reducing disease burden.”

Dan Peach, Simon Fraser University, Canada

Dan is a PhD candidate in the Gries Lab at Simon Fraser University (SFU), where he researches the ecology of mosquito phytophagy, focusing on chemical ecology, and provides teaching and mentorship to undergraduates. Dan has won several awards, including the SFU Provost's Prize of Distinction, a Natural Sciences and Engineering Research Council of Canada (NSERC) Postgraduate Doctoral Scholarship, and the Entomological Society of Canada John H. Borden Award, among others.



Dan's research explores the ancient relationship between mosquitoes and flowers, including mosquito pollination, to better understand mosquito ecology and develop new mosquito management tools. After establishing that mosquitoes pollinate tansy, *Tanacetum vulgare*, Dan and his colleagues demonstrated attraction of *Culex pipiens* and *Aedes aegypti* to tansy inflorescence odorants. They then collected and identified tansy floral odorants and found many were also known from humans. A complete synthetic blend of the inflorescence odorants was attractive to mosquitoes, but a synthetic blend of just the shared odorants was also attractive. Inspired by these shared odorants, Dan realized that plants cease diurnal photosynthesis at dusk and become net producers of CO₂. When he added a biologically-relevant CO₂ flow to a source of inflorescence odorants, Dan found it increased mosquito attraction. During the research Dan and his colleagues also found that tansy inflorescence odorants were more attractive when mosquitoes could see tansy inflorescences. Dark coloration is more attractive than light coloration to vertebrate-seeking mosquitoes. However, tansy inflorescences are yellow and field observations often report mosquito visitation to light-colored flowers. Many pollinators are attracted to patterns of ultraviolet (UV) coloration on inflorescences, and Dan's research demonstrated that UV-dark inflorescence cues provide the visual component of mosquito attraction during floral foraging.

Plant cues, particularly phytochemicals, have been proposed as lures to attract both male and female mosquitoes and would attract young females that may not have begun host-seeking. The pollination function of mosquitoes is often overlooked, but by studying the ecology of mosquito phytophagy we can better understand how mosquitoes locate plants, as Dan's research demonstrates.

Dan is defending his PhD thesis in April and hopes to continue researching the sensory ecology of mosquitoes and other vectors. Dan also wants to branch out into mosquito distribution and habitat modeling.

=====

For Your Calendar

The 85th Annual Meeting of the American Mosquito Control Association will be held February 26—March 2, 2019 in Portland, Oregon.

The 10th International Symposium of Phlebotomine Sand Flies.

The San Francisco de Quito University (USFQ) in cooperation with the USFQ's Galapagos Academic Institute for the Arts and the Sciences (GAIAS) is organizing the 10th International Symposium of Phlebotomine Sand flies. The symposium will be held from July 15-19 at San Cristobal, Galapagos Islands. The program of symposia will address the topics of modern tools for sand fly studies, ecology and epidemiology, systematics and phylogeny, vector and parasite interactions, and vector control. It is worth noting that the symposium will be held a few meters from where Charles Darwin landed, on September 16th, 1835, as part of one of the most fruitful journeys in the history of science. For more information about the conference, please visit the website: <http://www.usfq.edu.ec/eventos/isops/Paginas/default.aspx> (reporting Alex Chaskopoulou).

Latin American SOVE meeting will be held November 24-27, 2019 in Manaus, Brazil. For more info contact Major Dhillon at mdhillon@northwestmvd.org.

Member News

None

Resources

BEI Resources – Vector Resources, beyond the microbes

The Biological and Emerging Infections Resources Program (BEI Resources) was developed by the National Institute of Allergy and Infectious Diseases (NIAID) as a centralized bioresource for research reagents to the scientific community (www.beiresources.org). The primary role of BEI Resources is the acquisition and authentication of several categories of materials for registered scientists, with a focus on emerging and re-emerging infectious diseases.

tious diseases.

BEI Resources has built a large repository of materials available to the vector resource community free of charge. The resources include over 60 colonies of mosquitoes as well as adult and larval ticks, sand flies, and triatomines. These vectors are competent hosts for transmission of blood-borne arbovirus, parasitic and rickettsial diseases including Dengue, Zika, Rocky Mountain Spotted Fever, Lyme borreliosis, Chagas and malaria. The Vector Resources page hosts freely-downloadable insectary protocol manuals for each of these vector species, providing a rich array of insectary management, safety and experimental approaches for Vector Biology. These resources are available free of charge (shipping and handling may apply) to REGISTERED users in domestic and foreign institutions and NIH grant funding is not required. For information on all vector resources for researchers provided by DMID, visit the DMID Resources for Researchers website.

BEI Resources would like to highlight phlebotomine sand flies resources for leishmaniasis, bartonellosis, and papatasi fever research. BEI Resources and NIAID have an established partnership with the Walter Reed Army Institute of Research to distribute a limited number of Sand Fly Larval Pots and Adult flies to qualified researchers. All vectors are competent for transmission studies. This valuable and limited resource will be offered to qualified researchers to promote the research and development of products to reduce the risk of vector-borne diseases.

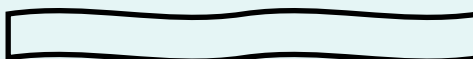
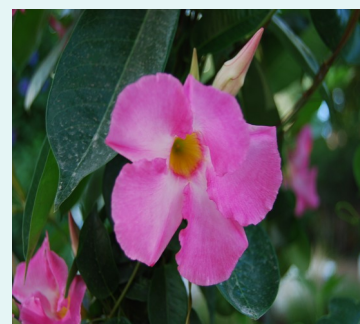
For a complete list of sand fly vectors available, please visit our website at www.BEIResources.org.

<https://www.beiresources.org/Collection/28/Vector-Resources.aspx?page=1>

<https://www.beiresources.org/Catalog/VectorResources.aspx>

Adriana Costero, PhD

Email: acostero@niaid.nih.gov





Society for Vector Ecology

1966 COMPTON AVENUE
CORONA, CA 92881-3318

Phone: 951-340-9792
Fax: 951-340-2515
Valerie Montigney
valerie@sove.org

Newsletter Editor
Lal S. Mian, Ph.D.
lmian@csusb.edu

We are on the Web!
www.sove.org

About SOVE

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

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

SOVE Board Members, Editors, Webmaster

2019 SOVE BOARD

President

Uli Bernier, Ph.D.
uli.bernier@ars.usda.gov

President-Elect

Lyle Petersen, MD, MPH
lpx2@cdc.gov

Vice-President

Isik Unlu, Ph.D.
iunlu@mercercounty.org

Past-President

Lal Mian, Ph.D.
lmian@csusb.edu

Executive Director

Major S. Dhillon, Ph.D.
mdhillon@northwestmncd.org

BOARD MEMBERS- REGIONAL DIRECTORS US REGIONS

Northeastern USA
Doug E. Norris, Ph.D.
douglas.norris@jhu.edu

Southeastern USA

Rui-De Xue, Ph.D.
xueamcd@gmail.com

North Central USA

Nicole Achee Ph.D.
nachee@nd.edu

South Central USA

Melissa Nolan, Ph.D.
mnolan@bcm.edu

Northwestern USA

David Sullivan
zanusco1@msn.com

Southwestern USA

Steve Mulligan
conmad@pacbell.net

OVERSEAS REGIONS

Asian-SOVE

Gunter Muller, Ph.D.
guntermuller@hotmail.com

European-SOVE

Alex Chaskopoulou, Ph.D.
achaskopoulou@ars.ebcl.org

Indian Region-SOVE

Ashwani Kumar, Ph.D.
ashwani.kumar@gmail.com

Latin American-SOVE

Paulo Pimenta, Ph.D.
pimenta@cpqrr.fiocruz.br

EDITORS

Journal Editor

Marc J. Klowden, Ph.D.
mklowden@uidaho.edu

Newsletter Editor

Lal S. Mian, Ph.D.
lmian@csusb.edu

Webmaster

William Van Dyke, MPH
bvandyke@northwestmncd.org