



MVCAC

Mosquito and Vector Control Association of California

Conference Guide

January 29 – February 1, 2023

Disneyland Hotel
Anaheim, CA

Program sponsored by



91st Annual Conference



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President's Welcome

Welcome to the 91st Annual Conference and Exhibitor Showcase of the Mosquito & Vector Control Association of California (MVCAC). The theme of the conference is "Innovative Control Technologies of the Future," highlighting future needs of our organization. Innovation is key to solving some of the pressing issues of our time to mitigate the impacts of invasive *Aedes* mosquitoes and emerging vector-borne diseases.

I am happy to welcome three plenary speakers to reflect on our industry's current efforts and needs, to take us through the next phase of our mosquito control strategies. Dr. Anthony A. James Professor of Microbiology and Molecular Genetics at University of California Irvine, Dr. Stephen Dobson CEO of MosquitoMate Inc. and Professor at University of Kentucky, and Dr. William A. Donahue of Sierra Research Laboratories Inc. and Trustee at East Side Mosquito Abatement District outline several trajectories of these new innovations and control strategies, showcase the contemporary successes of some of these innovations, today and in the years past.

This conference presents a fantastic program with diverse topics. We have a great slate of Reeves New Investigator presenters along with talks on innovative technologies and operational applications, tick and tick-borne diseases, pesticide use and resistance management, vertebrate and other invertebrate vectors, the menace of unmaintained swimming pools, and public relations and community outreach. A symposium on the history of plague and plague outbreaks in California presents some important research findings previously untold to our contemporaries.

Besides the oral presentations, we have the inaugural poster competition and presentation in honor of Dr. William A. Walton. The poster presenters will appreciate your audience and are eager to answer any of your questions. There are more than 100 oral and 25 poster presentations.

The Trustee program on Sunday has been long in the making and it provides the necessary refresher to our trustees. Efforts by Rick Howard, General Manager at Orange County Vector Control District, and his staff for putting together this program is greatly appreciated. The work of our sponsors and exhibitors at this conference is often understated, please take time, and visit the sponsored events and especially the many booths in exhibit hall.

The COVID-19 pandemic may be over, but local transmissions still occurs. The MVCAC Executive Board and staff considered this issue and recommends that you take personal precautions to be safe and healthy as you conference and visit Disneyland. We all will follow the guidelines of the state and local public health agencies in case there are any recommended changes. Therefore, I welcome you to the 91st Conference of MVCAC and look forward to seeing you all.

Best Regards,

J. Wakoli Wekesa, PhD

*MVCAC President, 91st Conference Program Chair
District Manager, East Side MAD, Modesto*

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Schedule of Events

SUNDAY

10:00 am – **Trustee Session**
4:00 pm **Adventure Room**

2:00 pm **MVCAC 5K Fun Run/Walk**



Thank you to our sponsor



2:00 pm – **Registration Desk Open**
6:30 pm **Disneyland Hotel Exhibit Hall area**

*Thank you to our sponsors
of registration items*



2:00 pm – **Speaker Internet Café
and Registration Open**
6:30 pm **Exhibit Hall**

2:00 pm – **Exhibitor Set Up**
5:30 pm **Exhibit Hall**

4:00 pm – **Moderator Training**
5:00 pm **Ballroom**

6:00 pm – **Exhibitor Show Open**
8:00 pm **Exhibit Hall**

6:00 pm – **President's Welcome Reception**
8:00 pm **Exhibit Hall**

Thank you to our sponsors



MONDAY

7:00 am – **Speaker Ready Internet Café**
4:00 pm **Exhibit Hall**

7:00 am – **Registration Desk Open**
4:00 pm **Exhibit Hall**

*Thank you to our sponsors
of registration items*



8:00 am – **Exhibitor Show Open**
4:00 pm **Exhibit Hall**

8:00 am – **Morning Plenary Session and Reeves
12:00 pm New Investigator Award**
Grand Ballroom

Sessions Sponsored by



12:00 pm – **William Walton Poster Competition
1:15 pm and Poster Presentation Lunch
(lunch provided)**
Exhibit Hall

*Poster presenters will be available during
this lunch break to talk about their posters*

Thank you to our lunch sponsors



MONDAY

1:30 pm – **Afternoon Sessions**
3:30 pm *Sessions Sponsored by*



Innovations in Mosquito Control
South Ballroom

**Operation Applications
in Mosquito Control**
North Ballroom

3:30 pm – **Afternoon Break**
3:45 pm

3:45 pm – **Afternoon Sessions**
5:30 pm **Ticks and Tick-borne Diseases**
South Ballroom

Operation Applications Continued
North Ballroom

5:30 pm **Day Concludes**

MONDAY

Morning Plenary Session Disneyland Hotel Grand Ballroom

8:00 am **Welcome to the MVCAC Conference/
Opening Remarks**
Wakoli Wekesa, MVCAC President

8:15 am **AMCA Update**
Dennis Walette, AMCA President

8:30 am **Genetic approaches to controlling
mosquitoes and mosquito-borne
pathogens**
Anthony A James PhD, Donald Bren
and Distinguished Professor, Depts
of Microbiology & Molecular Genetics
and Molecular Biology & Biochemistry,
University of California, Irvine

**Autocidal approaches for suppressing
populations of *Aedes aegypti* and *Ae.
albopictus* in California**
Stephen Dobson, Ph.D,
MosquitoMate, Inc.

10:00 am **Morning Break**
Break Sponsored by



10:30 am **A sterile insect technique success
story: The history of the primary
Screw Worm Fly and the cattle
industry**
Bill Donahue, Ph.D, President/
Laboratory Director, Sierra Research
Laboratories, Inc.

MONDAY

Morning Plenary Session
Disneyland Hotel Grand Ballroom

11:15 am **Reeves New Investigator**

Effect of Bed Bug (*Hemiptera Cimicidae*) aldehydes efficacy of fungal biopesticides

Presenter: Mark Dery, UC Riverside and Kern MVCD; Authors: Mark Dery and Dong Hwong-Cho, UC Riverside

Modeling mosquito abundance near rice fields in Placer County

Presenter: Esmeralda Mendoza, UC Berkeley; Authors: Esmeralda Mendoza, UC Berkeley; Mary Sorenson, Jake Hartle and Joel Buettner, Placer MVCD

Socioeconomic and environmental factors associated with the risk of Dengue Fever incidence in Guatemala

Presenter: Kasem Umer Salim, UC Merced; Authors: Kasem Umer Salim, Colleen Naughton, Alec M. Chan-Golston and Ricardo Cisneros, UC Merced; Samuel Alvarez, University of El Salvador; Andrea Joyce, UC Merced

12:00 pm – **Visit the Exhibitors/William Walton**
1:15 pm **Poster Competition/Posters/Lunch**
Exhibit Hall

Thank you to our lunch sponsors



MONDAY

Afternoon Sessions
Disneyland Hotel Grand Ballroom

Continued

1:30 pm – **Concurrent Sessions**
3:30 pm *Sessions Sponsored by*



Innovations in Mosquito Control
South Ballroom

**Operation Applications
in Mosquito Control**
North Ballroom

3:45 pm – **Concurrent Sessions**
5:30 pm **Ticks and Tick-borne Diseases**
South Ballroom

Operation Applications Continued
North Ballroom

5:30 pm **Day Concludes**

Session A
South Ballroom

1:30 pm –
3:30 pm



**New Innovations in
Mosquito Control**

*Moderators: Mustapha Debboun,
Delta MVCD and Angela Caranci,
Northwest MVCD*

**Is Texas relevant to California? A
summary of prior Wolbachia field
trial results against *Aedes* mosquito
populations**

Presenter: Stephen Dobson,
MosquitoMate; Author(s): Stephen
L. Dobson and James W Mains,
MosquitoMate

**Temperature and Wolbachia
infections in *Culex pipiens*
mosquitoes: Implications for novel
mosquito controls**

Presenter/Author: Andrea Joyce,
UC Merced

**Generation and mass production
of a universally incompatible *Culex
quinquefasciatus* line for Wolbachia-
based sterile insect technique**

Presenter/Author: Sara N Mitchell,
Verily LLC

**The University of California Malaria
Initiative: Genetically engineered
Anopheles Malaria vectors for Malaria
eradication in Africa**

Presenter/Author: Gregory Lanzaro,
UC Davis

**Preparation for targeted sterile
insect technique to control invasive
mosquitoes in California: Mosquito
colonization, gender emergence ratio
and separating the males**

Presenter: Solomon Birhanie, West
Valley MVCD; Author(s): Solomon
Birhanie, Jennifer Castellon and
Michelle Brown, West Valley MVCD

Southern California SIT joint pilot project: Partnering for the future of mosquito control

Presenter: Amber Semrow, Orange County MVCD; Author(s): Amber Semrow, Orange County MVCD; Steven Vetrone, Greater Los Angeles County VCD; Tim Morgan and Sokanary Sun, Orange County MVCD; Nicolas Tremblay, Greater Los Angeles County VCD

Precision-guided Sterile Insect Technique (pgSIT): A novel biotechnology platform for safe and efficacious mosquito control.

Presenter: Nikolay Kandul, UC San Diego; Author(s): Nikolay Kandul and Omar S. Akbari, UC San Diego

Field application and results of the Oxitec self-limiting gene technology against *Aedes aegypti* in Florida

Presenter/Author: Rajeev Vaidyanathan, Oxitec Ltd

Collaborative efforts with Oxitec and Delta Mosquito & Vector Control District in the Central Valley of California

Presenter/Author: Mustapha Debboun, Delta MVCD

Session A
South Ballroom3:45 pm –
5:30 pm**Ticks and Tick-borne Diseases***Moderator: Sarah Wheeler,
Sacramento-Yolo MVCD***The who, what, and where of California's Environmental Tick Surveillance Program**

Presenter: Megan E. M. Saunders, CDPH-VBDS; Author(s): Megan E. M. Saunders and Mary Joyce Pakingan, CDPH-VBDS

Tick surveillance in Marin and Sonoma counties: Past, present, and future

Presenter/Author: Kelly Liebman, Marin/Sonoma MVCD

Tick borne disease surveillance in Alameda County in 2021

Presenter: Wade Lee, Alameda County VCS; Author(s): Wade Lee and Natalia Fedorova, Alameda County VCS

The past, present, and future of ticks at the San Mateo County Mosquito and Vector Control District

Presenter: Angie Nakano, San Mateo County MVCD; Author(s): Angie Nakano, San Mateo County MVCD; Tara Roth, Theresa Shelton and Arielle Crews, San Mateo County MVCD

Tick surveillance and testing methods used to evaluate tick-borne pathogen risk in Sacramento and Yolo Counties

Presenter: Kara Kelley, Sacramento-Yolo MVCD; Author(s): Kara Kelley and Sarah S. Wheeler, Sacramento-Yolo MVCD

Tick surveillance, testing and outreach by the San Diego County Vector Control program

Presenter: Saran Grewal, San Diego County VCP; Author(s): Saran Grewal, Scott Vo, Jessica Diekmann, Allison Bray and Nikos Gurfield, San Diego County VCS

Tick-related services offered by MVCAC member agencies survey results

Presenter/Author: Paula A Macedo, Contra Costa MVCD

Sentinel surveillance for ticks and tick-borne pathogens in China Camp State Park, 2019–2022

Presenter: Christopher Kilonzo, CDPH-VBDS; Author(s): Christopher Kilonzo, Megan Saunders, Hannah Romo, Mary Joyce Pakingan and Tina Feiszli, CDPH-VBDS

Investigating the effects of prescribed fire on tick abundance in Santa Clara County grasslands

Presenter: Victoria Phillips, Santa Clara County VCD; Author(s): Victoria Phillips, Christopher Rocha, Noor Tietze, Nayer Zahiri, Santa Clara County VCD

Leveraging host community ecology to understand and control vector-borne disease

Presenter/Author: Andrea Swei, San Francisco State University

Brown dog tick and *Rickettsiae* outreach and surveillance

Presenter: Janet Foley, UC Davis; Author(s): Janet Foley, Laura Backus, Kathleen Walker, Dawn Gouge and Luci Li, UC Davis PacVec

Modeling Rocky Mountain Spotted Fever transmission in dog populations to protect human health

Presenter: Laura Backus, UC Davis; Author(s): Laura Backus, UC Davis; Patrick Foley, CSU Sacramento; Andreas Lopez and Janet Foley, UC Davis

One health, one world: The changing epidemiology of Rocky Mountain Spotted Fever in California

Presenter/Author: Anne Kjemtrup, CDPH-VBDS

A rare occurrence of the brown dog tick (*Rhipicephalus sanguineus*, Latreille, 1806) in Alameda County

Presenter: Augustine De Villa, Alameda County VCSD; Author(s): Augustine De Villa and Flora Kwan, Alameda County VCSD

Session B
North Ballroom

1:30 pm –
5:30 pm



Operations and Applications

Moderator: Mark Daniel, Greater Los Angeles County VCD

**Rice field mosquito control:
Challenges and strategies**

Presenter: Sarah Wheeler, Sacramento-Yolo MVCD; Author(s): Sarah Wheeler, Steve Ramos and Gary Goodman, Sacramento-Yolo MVCD

**Surveillance for Mosquito-borne
Encephalitis Virus activity in
California, 2022**

Presenter: Hannah Romo, CDPH-VBDS; Author(s): Hannah Romo, Tina Feiszli, Mary Beth Danforth, Leslie Foss and Jody Simpson, CDPH-VBDS

**Measuring and distributing workload
in mosquito abatement: Analysis
for Alameda County Mosquito
Abatement District**

Presenter: Sky Mihaylo, Alameda County MAD; Author(s): Sky Mihaylo, Eric-Haas Stapleton, Joseph Huston and Ryan Clausnitzer, Alameda County MAD

**WNV resource allocation in the age of
Aedes: An operations perspective**

Presenter/Author: Mark A. Daniel, Greater Los Angeles County VCD

**Stopping the spread—A district
wide response to preventing a
local outbreak of Dengue, Zika, and
Chikungunya**

Presenter/Author: Maritza Olmos, Greater Los Angeles County VCD

**Efficacy of wide-area truck mounted
larval and adult mosquito control in
urban Orange County, California, 2021**

Presenter: Timothy Morgan, Orange County MVCD; Author(s): Timothy Morgan, Sokanary Sun, Xiamoing Wang, Cassandra Reyes and Amber Semrow, Orange County MVCD

Evaluation of In2Care mosquito traps for area-wide control of *Aedes aegypti* in Orange County, California

Presenter: Laura Krueger, Orange County MVCD; Author(s): Laura Krueger, Steve Shepherd, Nathan Dingman, Tim Morgan and Amber Semrow, Orange County MVCD

Teamwork, tech, and taxes to tackle tidal mosquitoes

Presenter: Sarah Lawton, Alameda County MAD; Author(s): Sarah Lawton, Michelle Robles, Mark Weiland, Joseph Huston and Ryan Clausnitzer, Alameda County MAD

***Aedes taeniorhynchus* control efforts in the coastal salt marshes of Greater Los Angeles County**

Presenter/Author: David Lopez, Greater Los Angeles County VCD

Control efforts in marsh areas of the Salton Sea in the Coachella Valley

Presenter: Ryan Gonzalez, Coachella Valley MVCD; Author(s): Ryan Gonzalez, Roberta Dieckmann and Oldembour Avalos, Coachella Valley MVCD

Larvicide applications with unmanned aircraft systems in Placer County

Presenter: Scott Schon, Placer MVCD; Author(s): Scott Schon, Ev Ortiz and Joel Buettner, Placer MVCD

Big and small: A Sac-Yolo Mosquito and Vector Control District comparison of air tractor and drone larvicide applications over rice fields

Presenter: Steven Ramos, Sacramento-Yolo MVCD; Author(s): Steven Ramos, Sarah Wheeler, Mario Novelo Canto and Briana Belanger, Sacramento-Yolo MVCD

Naled (Dibrom) dispersal modeling, sampling, health impact assessments, and scoping literature review

Presenter: Ary Faraji, Salt Lake City MAD; Author(s): Ary Faraji, Salt Lake City MAD; Daniel Mendoza, University of Utah; Greg White, Salt Lake City MAD

Comparing two baits to attract gravid females

Presenter: Gabriela Perezchica-Harvey, Coachella Valley MVCD; Author(s): Gabriela Perezchica-Harvey, Mike Esparza, Kim Y Hung and Jennifer A. Henke, Coachella Valley MVCD

The design and use of an economical gravid mosquito trap for West Nile Virus surveillance

Presenter: Robert Cummings, Orange County MVCD; Author(s): Robert Cummings, Xiaoming Wang and David Taylor, Orange County MVCD

To abate or not that is the question: Abatement process and practice for Greater L.A. County VCD

Presenter/Author: Mark A. Daniel, Greater Los Angeles County VCD

Quantifying and characterizing mosquito production in subsurface utility enclosures

Presenter: Jodi Holeman, Consolidated MAD; Author(s): Jodi Holeman and Steve Mulligan, Consolidated MAD

Madera County Mosquito & Vector Control District—PG&E substructure: utility vault summary

Presenter: Trinidad Reyes, Madera County MVCD; Authors: Trinidad Reyes, Teresa Hamilton, Andrea Ginder, Istvan Menyhay, Chris Munoz, Juan Martinez, Ralph Ochoa, Javier Hernandez and Kevin Bare, Madera County MVCD; Sarah Wheeler and Mario Novelo, Sacramento-Yolo MVCD

TUESDAY

7:00 am – **Speaker Ready Internet Café**
2:00 pm **Exhibit Hall**

7:00 am – **Registration Desk Open**
2:00 pm **Exhibit Hall**

*Thank you to our sponsors
of registration items*



8:00 am – **Exhibitor Show Open**
2:00 pm **Exhibit Hall**

8:00 am – **Concurrent Sessions**
10:00 am *Sessions Sponsored by*



Pesticide and Pesticide Use
South Ballroom

Unmaintained Swimming Pools
North Ballroom

10:00 am – **Break**
10:15 am **Exhibit Hall**

TUESDAY

10:15 am – **Concurrent Sessions**

12:00 pm *Sessions Sponsored by*



Vectors and Vertebrate Vectors
South Ballroom

**Operations—New Techniques
and Innovations**
North Ballroom

12:00 pm – **Lunch Break (on own)**

1:15 pm

1:30 pm – **Concurrent Sessions**

3:30 pm *Sessions Sponsored by*



**A 100 Years of Responding to
Plague in Humans, Animals,
and Fleas in California**
South Ballroom

Community Outreach
North Ballroom

5:00 pm **Social Reception/Managers Photo**
Central Ballroom

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6:00 pm **Dinner and Evening Program**
Central Ballroom

TUESDAY

6:00 pm – **MVCAC Awards Banquet**

9:00 pm

Join fellow district managers, trustees, board members, and President Ken Klemme as they recognize committee members, sponsors and key volunteers that helped shape 2022 into a successful year in vector control and look toward 2023. William C. Reeves New Investigator award recipients will be named, along with the presentation for Honorary Membership and Service With Distinction.

Ticket required for admission

Thank you to our sponsors



Session A
South Ballroom

8:00 am –
10:00 am

Pesticides and Pesticide Use

Moderator: Chris Barker, UC Davis



What leads to pyrethroid resistance in *Culex tarsalis*?

Presenter: Tara Thiemann, University of the Pacific; Author(s): Tara Thiemann, Sumiko De La Vega, Bonnie Ryan and Billy Mortola, University of the Pacific

Knockdown resistance mutations in California: Monitoring insecticide resistance in *Culex tarsalis*

Presenters: Eric Moyung and Anna Cutshall, University of the Pacific; Author(s): Eric Moyung, Anna Cutshall and Tara Thiemann, University of the Pacific

Assessing permethrin resistance for *Culex tarsalis* in Southern California

Presenter: Julie Tsecouras, UC Riverside; Author(s): Julie Tsecouras, UC Riverside; Tara Thiemann, University of the Pacific; Kim Y Hung and Jennifer Henke, Coachella Valley MVCD

Low-dose effects of bifenthrin exposure on *Culex quinquefasciatus* permethrin resistance

Presenter: Nathan Sy, UC Riverside; Author(s): Nathan Sy and Jay Gan, UC Riverside

Inhibition of the pentose phosphate pathway to interfere with metabolic mechanisms of insecticide resistance: Evaluation of a potential pyrethroid synergist

Presenter: Erin Taylor Kelly, UC Davis; Author(s): Erin Taylor Kelly and Geoffrey Attardo, UC Davis

A milligram of sugar alcohol helps the toxicant go down

Presenter: Greg White, Salt Lake City MAD; Author(s): Gregory S. White, Ary Faraji, Christopher Bibbs and Kobi Baker, Salt Lake City MAD

What aduicticides should the district use? An analytical method for aduicticide resistance bottle bioassays to direct field product rotation

Presenter: Kim Y. Hung, Coachella Valley MVCD; Author(s): Kim Y. Hung, Melissa Snelling, Jacob Tarango, Gerald Chuzel, Arturo Gutierrez, Gabriela Harvey and Jennifer A. Henke, Coachella Valley MVCD

Evaluation of a novel long-term treatment station in sensitive species tidal zones

Presenter: Jessica Dieckmann, County of San Diego VCP; Author(s): Jessica Dieckmann and Chris Conlan, County of San Diego VCP

Evaluating the effectiveness of aduictiding to reduce West Nile Virus transmission risk in California, 2009-2018

Presenter: Mary E. Danforth, CDPH-VBDS; Author(s): Mary E. Danforth, CDPH-VBDS and Emma Lonstrup, UC Davis

Session A
South Ballroom

10:15 am – **Vectors and Vertebrate Vectors**
12:00 pm



*Moderator: Jamesina Scott,
Lake County MVCD*

Rat race: Norway Rat movements in Alameda County from 2018–2021

Presenter/Author: Michelle Meas,
Alameda County VCSD

Paw-sible knowledge: Differentiating common vector tracks

Presenter: Bridget Mooney, Alameda County VCSD; Author(s): Macy Wannamaker and Bridget Mooney, Alameda County VCSD

Turkestan Cockroaches in Alameda County

Presenter: Stephanie Kurniawan, Alameda County VCSD; Author(s): Stephanie Kurniawan and Kimberly Daum, Alameda County VCSD

Discovery of a new Black Fly Species *Simulium ustulatum* (Diptera: Simuliidae) from San Joaquin County, California

Presenter: Shaoming Huang, San Joaquin County MVCD; Author(s): Shoaming Huang, San Joaquin County MVCD; Peter H. Adler, Department of Plant and Environmental Sciences, Clemson University

Sacramento-Yolo MVCD program overview for culturing *Gambusia affinis*

Presenter/Author: Tony Hedley, Sacramento-Yolo MVCD

**Dog Heartworm (*Dirofilaria immitis*)
in Mosquitoes of Orange County,
California**

Presenter: Daisy Flores Rangel, Orange County MVCD; Author(s): Daisy Flores Rangel, Brenda Velis, Julia Ly, Kasandra Reyes and Amber Semrow, Orange County MVCD; Phillip Spinks, Placer MVCD; Tara Thiemann, University of the Pacific

**Updates and improvements to the
caged Mosquito Field Trial**

Presenter: Andrew Rivera, Clarke Mosquito Control Products; Author(s): Andrew Rivera and Kattie Morris, Clarke Mosquito Control Products

**Mind the gap: lessons learned from
an expanded mosquito surveillance
program**

Presenter: Crystal Grippin, Delta MVCD; Author(s): Crystal Grippin, Andrea Troupin, Mark Nakata and Javier Valdivias, Delta MVCD

**Are you growing invasive
mosquitoes in your backyard?: First
detection of *Aedes aegypti* in Contra
Costa County**

Presenter: Steve Schutz, Contra Costa MVCD; Author(s): Steve Schutz, Eric Ghilarducci, Damien Clauson, Josefa Cabada and David Wexler, Contra Costa MVCD

**The third time is not a charm:
The third year with *Aedes aegypti*
in Moab, Utah**

Presenter: Michele Rehbein, Salt Lake City MAD; Author(s): Michele Rehbein and Ary Faraji, Salt Lake City MAD; Andrea Gloria-Soria, The Connecticut Agricultural Experiment Station, Department of Entomology; Shanon Amsberry, Moab MAD

Thermal preferences of *Aedes aegypti* mosquitoes in California's central valley alters relative transmission risk

Presenter: Olivia C. Winokur, UC Davis;
Author(s): Olivia C. Winokur, UC Davis;
Trinidad Reyes, Madera MVCD; Sara
Abusaa, UC Davis; Claire Chapman, UC
San Diego; Christopher M. Barker,
UC Davis

Lunch Break

Session A
South Ballroom

1:30 pm –
3:30 pm



100 years of Responding to Plague in Humans, Animals and Fleas in California

Moderators: Laura Krueger and Bob Cummings, Orange County MVCD

Plague, politics and race: The San Francisco Bubonic Plague Epidemics 1900–1909

Presenter/Author: Nayan Shah,
University of Southern California

Black death in the city of the future: Plague in Los Angeles, 1924

Presenter/Author: William Deverell,
University of Southern California

The archaeology of Macy Street and the 1924–1925 Los Angeles Plague Outbreak

Presenter/Author: Marc A. Beherec,
Michael Baker International

A Forty-year (1983–2022) review of environmental surveillance and ecology of Plague in California

Presenter/Author: Gregory M. Hacker,
CDPH-VBDS

The history of plague surveillance in Alameda County, California

Presenter/Author: Adena Why,
Alameda County VCD

The Los Angeles County Agricultural Commissioner's response to plague past and present

Presenter/Author: Jim Hartman

A recent history of plague activity in South Lake Tahoe

Presenter: Bryan T. Jackson, CDPH-VBDS; Author(s): Bryan T. Jackson and Gregory M. Hacker, CDPH-VBDS; Stefan Sielsch, El Dorado County VCD; Mark G. Novak, CDPH-VBDS; Karen Bender, El Dorado County VCD; Vicki Kramer, CDPH-VBDS

Session A
South Ballroom

**Sylvatic plague outside California:
Lessons from prairie dogs in the
Great Plains**

Presenter/Author: Paul Stapp,
CSU Fullerton

**Bubonic Plague Disease ecology in
urban-wildland interfaces in Orange
County, California**

Presenter: Robert Cummings, Orange
County MVCD; Author(s): Robert
Cummings, Kiet Nguyen and Laura
Krueger, Orange County MVCD

Session B
North Ballroom8:00 am –
10:00 am**Inspection and Enforcement of
Unmaintained Swimming Pools**

*Moderated by: Eric Haas-Stapleton,
Alameda County MAD and Marty
Scholl, Sacramento-Yolo MVCD*

*Panelists: Mark Daniel, Greater Los
Angeles County VCD; Robert Ferdan,
Alameda County MAD; Dan Fisher,
Sacramento-Yolo MVCD; Marty Scholl,
Sacramento-Yolo MVCD; Steve
Shephard, Orange County MVCD*

Symposium Description: As aerial, inspection, and notification technologies continue to improve and evolve, so do the mosquito control programs that are needed to access and control mosquitoes in backyard unmaintained swimming pools. This symposium will explore several defined and critical aspects of backyard unmaintained pool programs across California to include: visual and aerial imagery acquisition, notification, inspection, enforcement/abatement and warrant processes, followed by a moderated panel with MVCAC professionals. Discussions will include successes; lessons learned and where we're going from here.

Session B
North Ballroom

10:15 am – **New Techniques and Innovations
in Operations**
12:00 pm



*Moderator: Peter Bonkrude,
Shasta MVCD*

**CalSurv adventure: A review of
bulk data entry methods and data
extraction tools**

Presenter: Kurt Johnson, DART Lab, UC
Davis; Author(s): Kurt Johnson, Lincoln
Wells, Tim Valdepena, Jody Simpson,
Shawn Ranck, Christina De Cesaris and
Christopher M. Barker, DART Lab,
UC Davis

**Be our guest: Open access to CalSurv
data for research**

Presenter: Christina De Cesaris, DART
Lab, UC Davis; Author(s): Christina De
Cesaris, Shawn Ranck, Tim Valdepena,
Jody Simpson, Kurt Johnson, Lincoln
Wells, Christopher M. Barker, DART
Lab, UC Davis

**A whole new world: The present and
future of CalSurv**

Presenter: Tim Valdepena, DART Lab,
UC Davis; Author(s): Tim Valdepena,
Jody Simpson, Kurt Johnson, Shawn
Ranck, Lincoln Wells, Christina De
Cesaris, Christopher M. Barker, DART
Lab, UC Davis

**Implementation of an automated
mosquito identification and sorting
system at the Sacramento-Yolo
Mosquito and Vector Control District:
Challenges and implications for
vector surveillance and control**

Presenter: Mario Novelo Canto,
Sacramento-Yolo MVCD; Author(s):
Mario Novelo Canto, Sarah Wheeler
and Gary Goodman, Sacramento-
Yolo MVCD

Creating and sharing data using Google My Maps

Presenter/Author: Ruben Rosas, Sacramento-Yolo MVCD

Web GIS: How a single source of information benefits your organization

Presenter: Linda Glover, Frontier Precision, Inc.; Author(s): Linda Glover and Chad Minter, Frontier Precision, Inc.

Assessing the outcomes of production mapping for mosquito disease and high abundance impacted areas: Improving GIS deliverables

Presenter/Author: Conner Schaak, Consolidated MAD

Utilizing data analysis tools to maximize mosquito control efforts in underground storm drain systems

Presenter: Ryan L. Amick, Greater Los Angeles County VCD; Author(s): Ryan L. Amick and Rudy Serrano, Greater Los Angeles County VCD

Cloud based tool to characterize larvicide droplet parameters

Presenter: Haley Johnson, Valent BioSciences; Author(s): Haley Johnson, Leanne Lake and Katie Williams, Valent BioSciences

Efficacy and safety of Takeda's Tetravalent Dengue Vaccine Candidate (TAK-003) after 4.5 years of follow-up

Presenter: Katherine S. Lee, Takeda Pharmaceuticals USA, Inc.; Author(s): Katherine S. Lee, Vianney Tricou and Nicolas Folschweiller, Takeda Pharmaceuticals International AG; Eric Lloyd, Takeda Vaccines Inc.

TUESDAY

B

Session B
North Ballroom

**No code, no problem: A year with a
homemade mobile app**

Presenter/Author: Ryan Wagner,
Sacramento-Yolo MVCD

Lunch Break

TUESDAY

Session B
North Ballroom

1:30 pm –
3:30 pm



Community Outreach

Moderator: Nola Woods, Contra Costa MVCD

Did we change behavior? Find out by using strategic planning for PR measurement

Presenter/Author: Nola Woods, Contra Costa MVCD

Measuring behavior change

Presenter/Author: Tammy Gordon, Coachella Valley MVCD

How do we know when our outreach efforts meet our objectives?

Recommended practices applied to PacVec tick education projects

Presenter: Carla M. Strickland-Hughes, University of the Pacific; Author(s): Carla M. Strickland-Hughes and Tara Thiemann, University of the Pacific

Building EXTRA-ordinary campaigns: Best practices to enhance fight the bite messaging

Presenter/Author: Luz Maria Robles, Sacramento-Yolo MVCD

Lightning in a bottle—When earned media truly pays off

Presenter/Author: Andrew Pierce, Contra Costa MVCD

All aboard the campaign train: Getting cities en route to effective mosquito control

Presenter: Heather Hyland, Orange County MVCD; Author(s): Heather Hyland and Lora Young, Orange County MVCD

The proof is in the pole banners

Presenter/Author: Meagan Luevano, Placer MVCD

TUESDAY

Session B
North Ballroom

**Teaching in a virtual world:
Measuring learning environments
on Zoom**

Presenter/Author: Hester "Fritz"
Petropoulos, Orange County MVCD

**Enriching practical learning resources
for entomological, medical, and one-
health curricula**

Presenter: Olivia Winokur, DART Lab,
UC Davis; Author(s): Olivia Winokur
and Christopher M. Barker, DART Lab,
UC Davis

**Beyond the booth: Increasing
engagement through interactive
activities**

Presenter: Lora Young, Orange County
MVCD; Author(s): Lora Young, Heather
Hyland, Hester "Fritz" Petropoulos and
Brian Brannon, Orange County MVCD

**Using TikTok to connect and engage
students with mosquito control**

Presenter/Author: Liliana Moreno,
Greater Los Angeles County VCD

**Increase your Instagram engagement
15 seconds at a time**

Presenter/Author: Pablo Cabrera,
San Gabriel Valley MVCD

WEDNESDAY

9:00 am – **MVCAC Board of Directors Meeting**
11:00 am **Castle Room**

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1:00 pm – **Workshop: Insect Photography on**
4:00 pm **February 1, 2023, 1-4 PM**

Want to take better pictures of insects but don't know what to do? Bring your cameras to the workshop hosted by the MVCAC Laboratory Technologies Committee and Orange County Mosquito and Vector Control (OCMVCD). Workshop topics will include the fundamentals of photography and how to take pictures of insects. There will be time for hands on experiences with live insects and demo camera equipment. Representatives from Olympus will be demonstrating their gear. Space will be limited. All camera types are welcome!

**Additional fee*

If interested, please visit the registration desk to see if space is still available

William Walton Poster Competition

Efficacy of bacterial larvicides in *Bromeliad phytotelmata* for control of *Aedes* mosquitoes

Presenter: Benjamin Nyman, UC Riverside; Author(s): Benjamin Nyman, UC Riverside; Aviva Goldmann, West Valley MVCD; Jennifer Henke, Coachella Valley MVCD; Kurt Anderson, UC Riverside

ARGO trailer nurse tank for extended larvicide applications at remote sites

Presenter/Author: Mark Wieland, Alameda County MAD

Taking flight: Utilizing unmanned aircraft systems in Delta Mosquito and Vector Control District

Presenter Hector Cardenas, Delta MVCD; Author(s): Hector Cardenas and Mustapha Debboun, Delta MVCD

Finding the right mix: A comparison of yeast fermentation solutions as an alternative carbon dioxide source for BG-Sentinel traps

Presenter: Mark Nakata, Delta MVCD; Author(s): Mark Nakata, Andrea Troupin, Javier Valdivias, Crystal Grippin and Mustpha Debboun, Delta MVCD

Testing artificial intelligence accuracy in mosquito identification

Presenter: Anam Meiraj Safoora, Alameda County MAD; Author(s): Anam Meiraj Safoora, Eric Haas-Stapleton, Dereje Alemayehu and Miguel Barretto, Alameda County MAD

Evaluation of a handheld device for ovicidal treatment of invasive *Aedes aegypti* eggs

Presenter: Sumiko De La Vega, San Joaquin County MVCD; Author(s): Sumiko De La Vega, Shaoming Huang, Omar Khweiss, and John Fritz, San Joaquin County MVCD

Truck-mounted wide area larviciding treatments for *Aedes aegypti* control in Northern Tulare County

Presenter: Javier Valdivias, Delta MVCD; Author(s): Javier Valdivias, Mark Nakata, Andrea Troupin, Crystal Grippin and Mustapha Debboun, Delta MVCD

A valiant attempt at surveying mosquito district practices of California

Presenter: Andrea Troupin, Delta MVCD; Author(s): Andrea Troupin, Mark Nakata, Javier Valdivias, Crystal Grippin and Mustapha Debboun, Delta MVCD

Evaluation of adulticide application in vegetation dense areas using an unmanned aerial system

Presenter: Crystal Grippin, Delta MVCD; Author(s): Crystal Grippin, Hector Cardenas, Mark Nakata, Javier Valdivias, Andrea Troupin and Mustapha Debboun, Delta MVCD

Tailoring communication strategies to respective communities within Delta Mosquito and Vector Control District

Presenter: Erick Arriaga, Delta MVCD; Author(s): Erick Arriaga, Crystal Grippin and Mustapha Debboun, Delta MVCD

Urban flea-borne Typhus: Can rodent birth control be part of the solution?

Presenter: Liya Chiu, Santa Clara County VCD; Author(s): Jenny Liu, Richard Shatzel and Nayer Zahiri, Santa Clara County VCD

Does the diversity of West Nile Virus positive dead bird species detected during outbreak and non-outbreak years impact the transmission of West Nile Virus to humans?

Presenter: Laura Krueger, Orange County MVCD; Author(s): Caleb Empig and Laura Krueger, Orange County MVCD

Testing artificial intelligence accuracy in mosquito identification

Presenter: Anam Meiraj Safoora, Alameda County MAD; Author(s): Eric Haas-Stapleton, Dereje Alemayehu and Miguel Barretto, Alameda County MAD



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MVCAC Poster Session

Topographic-based assessment for density of adult *Ixodes pacificus* and *Dermacentor occidentalis* and prevalence of *Borrelia burgdorferi* and *Borrelia miyamotoi* on hiking trails in Santa Clara County

Presenter: Noor Tietze, Santa Clara County VCD;
Author(s): Noor Tietze and Babak Ebrahimi, Santa Clara VCD

Resistance in the marsh: Methoprene and *Aedes dorsalis*

Presenter: Erick Caesar-Martin Gaona, Alameda County MAD; Author(s): Erick Caesar-Martin Gaona, Sarah Lawton, Ryan Clausnitzer, Joseph Huston and Eric Haas-Stapleton, Alameda MAD

Outbreak of caterpillar-associated rash due to the Western Tussock Moth (*Orgyia vetusta*) at an Orange County elementary school, May 2022

Presenter Laura Krueger, Orange County MVCD;
Author(s): Laura Krueger, Scott Chambers, John Drews and Dave Taylor, Orange County MVCD

Newly emerging Rickettsial Disease (364D) surveillance: Santa Clara County

Presenter: Sachi Hwangbo, Santa Clara County VCD;
Author(s): Regina B. Williams, Victora Phillips, Lewis Hun and Nayer Zahiri, Santa Clara VCD

Comparing the efficacy of Bti and Spinosad at a Santa Clara County water treatment plant

Presenter: Efrain Ayala, Santa Clara County VCD;
Author(s): Andrew Garcia, Yutaka Rodriguez, Miguel Cardenas and Lewis Hun, Santa Clara VCD

Outreach improvements during high West Nile Virus season in Santa Clara County

Presenter: Beverly Perez, Santa Clara County VCD;
Author(s): Beverly Perez, Chris Rocha, and Nayer Zahiri, Santa Clara VCD

Implementing a grid-based adult mosquito trapping scheme for Santa Clara County Vector Control District

Presenter: Noor Tietze, Santa Clara County VCD;
Author(s): Noor Tietze and Nayer Zahiri,
Santa Clara VCD

Modification of the Gravid trap for improved survival, collection, and quality of mosquitoes in support of mosquito surveillance program in Santa Clara County

Presenter: Brenton McFarland, Santa Clara County VCD; Author(s): Bao Pham, Lewis Hun, Noor Tietze and Nayer Zahiri, Santa Clara VCD

History, biology, and control of House Mice (*Mus musculus*) in Alameda County

Presenter: James Bohn, Alameda County VCD;
Author(s): James Bohn and Alexander Regent, Alameda County VCD

Spatial and temporal trends of *Aedes aegypti* in the West Valley region of the San Bernadino County

Presenter: Quan Vong, West Valley MVCD; Author(s):
Quan Vong, Solomon Birharnie, Jennifer Castellon and
Michelle Brown, West Valley MVCD

Exhibitors/Sponsors

Exhibitor Showcase

The Exhibitor Showcase takes place over two and a half days, allowing all attendees the opportunity to conduct business with exhibitors. Exhibitors play a major part in our ability to offer quality educational programs. Please support MVCAC exhibitors by visiting their booths and thanking them for their support.

Exhibitor Showcase Hours

Disneyland Hotel Exhibit Hall

Monday January 30

6:00 pm – 8:00 pm

Wednesday February 1

8:00 am – 2:00 pm

Tuesday January 31

8:00 am – 4:00 pm

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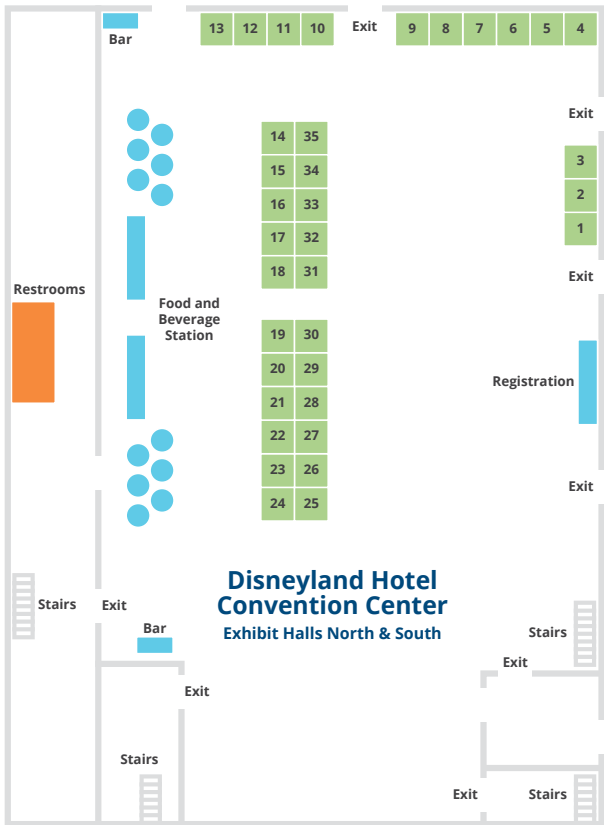
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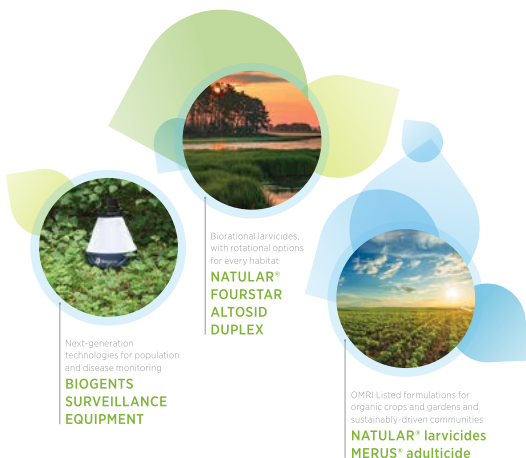
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