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Steve Mulligan

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Norbert Becker, Germany
Ken Linthicum

Mir S. Mulla
Douglas Norris
Rui-De Xue

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Brian Resinger
William Van Dyke

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SCIENTIFIC PROGRAM

6th INTERNATIONAL CONGRESS OF SOCIETY FOR VECTOR ECOLOGY LA QUINTA (PALM SPRINGS), CALIFORNIA SEPTEMBER 22-27, 2013

SUNDAY – SEPTEMBER 22, 2013

12:00 – 6:00 **REGISTRATION**

3:00 – 5:00 **BOARD MEETING**

5:30 – 7:00 **SYMPOSIUM 1 TICK-BORNE DISEASES**

Moderators: Ben Beard cbeard@cdc.gov

Div of Vector-Borne Diseases, Fort Collins, CO

Patrick Guerin patrick.guerin@unine.ch

Institute of Biology, Univ of Neuchâtel, Switzerland

5:30 Emergence of tick-borne diseases in Canada: current status and environmental drivers

Nick Ogden nicholas.ogden@phac-aspc.gc.ca

Public Health Agency of Canada, Quebec

5:45 Diversity of tick-borne pathogens in *Ixodes* spp. and *Dermacentor reticulatus* ticks in Baltic countries

Jana Radzijeuskaja j.radzijeuskaja@bs.vdu.lt and

Algimantas Paulauskas a.paulauskas@bs.vdu.lt and

Olav Rosef orosef@online.no

Vytautas Magnus Univ, Lithuania and Telemark Univ College, Norway

6:00 Ticks and tick-borne diseases in Israel

Kosta Y. Mumcuoglu kostasm@ekmd.huji.ac.il

The Hebrew Univ. of Jerusalem, Israel

6:15 Distribution and variation of bacterial symbionts in *Rhipicephalus turanicus*

Yuval Gottlieb yuvalgd@yahoo.com

The Hebrew Univ of Jerusalem, Israel

6:30 A standardized *in vitro* and *in vivo* test method for evaluating products for personal protection against ticks

Patrick Guerin patrick.guerin@unine.ch,

Thomas Kröber thomas.kroeber@unine.ch

Institute of Biology, Univ of Neuchâtel, Switzerland

6:45 Emerging and novel tick-borne diseases in the U.S.: trends and drivers

Ben Beard cbeard@cdc.gov

Div of Vector-Borne Diseases, Fort Collins, CO

7:00 – 8:30 **WELCOME RECEPTION**

MONDAY – SEPTEMBER 23, 2013

8:00 **OPENING OF THE CONGRESS**

Mir S. Mulla mir.mulla@ucr.edu

President of the Congress

Univ of Calif, Riverside, CA

WELCOME ADDRESS

PRESIDENTIAL ADDRESS

William Walton william.walton@ucr.edu

President of SOVE

Univ of Calif, Riverside, CA

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Corona, CA

SCIENTIFIC PROGRAM

Greg Lanzaro gclanzaro@ucdavis.edu

Program Chair

Univ of Calif, Davis, CA

8:30 **REPORTS FROM OVERSEAS SOVE REGIONS**

EuroSOVE

Eva Veronesi eva.veronesi@pirbright.ac.uk

The Pirbright Institute, Surrey, UK

Brazilian SOVE

Paulo Pimenta pimenta@cpqrr.fiocruz.br

Fundação Oswaldo Cruz, Minas Gerais, Brazil

Asian SOVE

Tongyan Zhao tongyanzhao@126.com

Beijing Institute of Microbiology and Epidemiology, Beijing

9:00 **AWARDS: PRESENTATION**

Bulent Alten kaynas@hacettepe.edu.tr

Vice President of SOVE

Hacettepe Univ, Ankara, Turkey

William Walton william.walton@ucr.edu

President of SOVE

Univ of Calif, Riverside

9:20 **KEYNOTE ADDRESS: INTEGRATED VECTOR MANAGEMENT:
HAS THEORY TURNED INTO PRACTICE?**

Bart Knols bart@in2care.org

In2Care BV, The Netherlands

10:00 – 10:30 **BREAK**

10:30 – 12:00 **SYMPOSIUM 2: STERILE INSECT TECHNIQUE FOR VECTOR
CONTROL**

Moderators: Luke Alphey luke.alphey@oxitec.com

Oxitec Ltd, UK and Univ of Oxford, UK

Nina Alphey nina.alphey@zoo.ox.ac.uk

Univ of Oxford, UK

10:30 *“Wolbachia”* down under: More than just dengue control

Scott A. Ritchie scott.ritchie@jcu.edu.au

James Cook Univ, Australia

10:45 Wolbachia biopesticide as a tool to suppress intractable mosquito
populations: From the bench toward field application

Stephen L. Dobson dobson.stephen@gmail.com

Univ of Kentucky, Lexington, KY

11:00 Classical genetic sterile insect technique for mosquito vector
control: the quantity and the quality

Fabrizio Balestrino f.balestrino@iaea.org

International Atomic Energy Agency, Austria

11:15 Genetic control of *Aedes aegypti*

Luke Alphey luke.alphey@oxitec.com

Oxitec Ltd, UK and Univ Oxford, UK

11:30 Integrating ecology and genetics for insect pest control

Nina Alphey nina.alphey@zoo.ox.ac.uk

Univ of Oxford, UK

11:45 Going beyond the species boundaries: hybridization vs. reproductive isolation in *Anopheles gambiae*

Beniamino Caputo beniamino.caputo@uniroma1.it

Univ di Roma Sapienza, Rome, Italy

12:00 – 1:00 **SYMPOSIUM 3: GENETICALLY MODIFIED VECTORS**

Moderators: Shirley Luckhart sluckhart@ucdavis.edu

Univ of Calif, Davis, CA

Anthony James aajames@uci.edu

Univ of Calif, Irvine, CA

12:00 Transcriptional analyses of the dengue vector *Aedes aegypti* supports a transgenic approach for vector control

Mariangela Bonizzoni mbonizzo@uci.edu

Univ of Calif, Irvine, CA

12:15 Engineering synthetic Medea-based and threshold-dependent underdominance-based gene drive systems in mosquitoes

Omar Akbari oakbari@caltech.edu

Caltech, Pasadena, CA

12:30 Harnessing insulin signaling to manipulate mosquito physiologies

Michael Riehle mriehle@ag.arizona.edu

Univ of Arizona, Tucson, AZ

12:45 Driving "maleness" into mosquito populations to control infectious diseases: power or paradox?

Zhijian (Jake) Tu jaketu@vt.edu

Virginia Tech Univ, Blacksburg, VA

1:00 – 2:00 **LUNCH**

2:00 – 3:00 **SYMPOSIUM 4: CROSS ROADS OF VECTOR GENETICS AND BEHAVIORAL ECOLOGY**

Moderators: L.J. Zwiebel l.zwiebel@vanderbilt.edu

Vanderbilt Univ, Nashville, TN

Willem Takken Willem.Takken@wur.nl
Wageningen Univ, The Netherlands

- 2:00 The molecular genetics and functional biochemistry of vector chemosensory pathways
L.J. Zwiebel l.zwiebel@vanderbilt.edu
Vanderbilt Univ, Nashville, TN
- 2:15 Chemical ecology of mosquito behaviour
Willem Takken willem.takken@wur.nl
Wageningen Univ, The Netherlands
- 2:30 Puzzles and jokes of malaria mosquitoes in the Sahel
Tovi Lehmann tlehmann@niaid.nih.gov
Lab of Malaria and Vector Research NIH, Rockville, MD
- 2:45 Olfactory interactions between tsetse flies and their blood hosts
Steve Torr s.torr@liverpool.ac.uk
Liverpool School of Tropical Medicine, Liverpool, UK
- 3:00 – 3:30 **BREAK**
- 3:30 – 6:10 **SYMPOSIUM 5: STUDENT ORAL PRESENTATIONS (A)**
Coordinators: **Mir S. Mulla** mir.mulla@ucr.edu
Univ of Calif, Riverside, CA
William Walton william.walton@ucr.edu
Univ of Calif, Riverside, CA
Moderators: **Mike W. Dunbar** dunbar@iastate.edu
Bai Li yan_lili407@126.com
- 3:30 Malaria surveillance in Kenya highlands
Ednah N Ototo ednaototo@gmail.com, Andrew K Githeko
githeko@yahoo.com, Christine L Wanjala
ludwin_kristen@yahoo.com, Thomas W Scott
twscott@caes.ucdavis.edu
Centre for Global Health Research, Kenya Medical Research Institute (KEMRI), Kisumu, Kenya
- 3:40 *Aedes japonicus japonicus* in Southwest Germany – surveillance, vector competence and virus screening
Katrin Huber Katrin_huber1@gmx.de, Björn Pluskota
pluskota@kabsev.de, Stefanie C. Becker stefanie.becker@bni-hamburg.de and Norbert Becker norbertfbecker@web.de

German Mosquito Control Association and Bernard-Nocht-Institute, Germany

3:50 Chemical induced behavioral responses in *Anopheles epiroticus* in Thailand

Rungarun Tisgratog rungarun_tis@hotmail.com, Wanapa Ritthison ritthison@hotmail.com and Theeraphap Chareonviriyaphap faasthc@ku.ac.th

Dept of Entomology, Kasetsart Univ, Bangkok, Thailand

4:00 Surveillance of mosquitoes in selected areas of Germany and their potential role as vectors for nematodes and protozoan parasites

Christina Czajka cczajka@web.de, Hanna Jöst hanna.joest@gmx.de, Sven Poppert poppert@bni-hamburg.de, Artur Jöst artur.joest@gmx.de, Jonas Schmidt-Chanasit jonassi@gmx.de, Andreas Krüge krueger@bni-hamburg.de, Norbert Becker norbertfbecker@web.de, Egbert Tannich tannich@bni-hamburg.de and Jonas Schmidt-Chanasit jonassi@gmx.de

Bernard Nocht Institute for Tropical Medicine, Hamburg, Germany and German Mosquito Control Association

4:10 Snapshots of the RNA turnover between different behavioral states of the yellow fever mosquito *Aedes aegypti*

Luciano Cosme cosme@tamu.edu and Michel Slotman maslotman@tamu.edu

Texas A&M Univ, College Station, TX

4:20 Reproductive isolation among sympatric molecular forms of *Anopheles gambiae* from south-eastern Senegal

El Hadji Amadou Niang elhadjiamadou.niang@ucad.edu.sn
Senegal, Africa

4:30 Using a new odour-baited device to explore options for luring and killing outdoor-biting malaria vectors: a report on design and field evaluation of the mosquito landing box

Nancy S. Matowo nstephen@ihi.or.tz, Jason Moore jmoore@ihi.or.tz, Salum Mapua mumuchalum@gmail.com, Edith P. Madumla emadumla@ihi.or.tz, Irene R. Moshi imoshi@ihi.or.tz, Emanuel W. Kaindoa ekaindoa@ihi.or.tz, Stephen P. Mwangungulu stephen@ihi.or.tz, Deogratius R.

- Kavishe droman@ihi.or.tz, Robert D. Sumaye rsumaye@ihi.or.tz, Dickson W. Lwetojera dwilson@ihi.or.tz and Fredros O. Okumu fredros@ihi.or.tz
Tanzania, Africa
- 4:40 Bioassay for monitoring resistance to synthetic pyrethroids in *Aedes aegypti* in Thailand
Patcharawan Sirisopa golf_patcharawan@hotmail.com, Kanutcharee Thanispong kanut47@gmail.com, Theeraphap Chareonviriyaphap faasthc@ku.ac.th and Waraporn Juntarajummong waraporn2521@gmail.com
Kasetsart University, Bangkok, Thailand
- 4:50 Assessment of the ecologically dependent post mating isolation between the molecular forms of *Anopheles gambiae*
Abdoulaye Niang bband79@yahoo.fr, Sawadogo Simon sawsimp2005@yahoo.fr, Maiga Hamidou maigahamid@yahoo.fr, Dabiré K Roch dabire_roch@hotmail.com, Tripet Frederic f.tripet@keele.ac.uk, Lehmann Tovi TLehmann@niaid.nih.gov, Diabaté Abdoulaye a_diabate@hotmail.com
Burkina Faso, Africa
- 5:00 Cellular determinants of host-seeking behavior in the mosquito olfactory system
Genevieve Tauxe genevieve.tauxe@email.ucr.edu and Anandasankar Ray anand.ray@ucr.edu
Univ of Calif, Riverside, CA
- 5:10 Sequencing the genome of the neglected malaria vector, *Anopheles aquasalis*: metagenomic, approach to survey the DNA virosphere and microbiota associated with colony reared mosquitoes
Luis Eduardo Martinez Villegas villegas@cpqrr.fiocruz.br, Flavio Araujo araujo@cpqrr.fiocruz.br, Anna Salim anna.salim@cpqrr.fiocruz.br, Guilherme Oliveira oliveira@cpqrr.fiocruz.br, Paulo Pimenta pimenta@cpqrr.fiocruz.br
Centro de Pesquisas Rene Rachou, Oswaldo Cruz-FIOCRUZ, Fundação Oswaldo Cruz, Minas Gerais, Brazil

- 5:20 Molecular mechanisms for the difference of blood-feeding habits of *Cx. pipiens quinquefasciatus* and *Cx. pipiens molestus*
Ting Yan tizi401@126.com, Chunxiao Li aedes@126.com, Yande Dong dongyd99@sina.com and Tongyan Zhao tongyanzhao@126.com
 Beijing Institute of Microbiology and Epidemiology, Beijing, China
- 5:30 Genetics of heat-seeking behavior in the yellow fever mosquito *Aedes aegypti*
Roman A. Corfas rcorfas@mail.rockefeller.edu, Conor J. McMeniman cmcmeniman@mail.rockefeller.edu and Leslie B. Vosshall leslie@mail.rockefeller.edu
 The Rockefeller Univ, New York, NY and Howard Hughes Medical Institute, New York, NY
- 5:40 Analysis of permissive role of *Lutzomyia longipalpis*
Ana Clara Araujo Machado Pires anapires@cpqrr.fiocruz.br and Nagila Francinete Costa Secundino nagila@cpqrr.fiocruz.br
 Centro de Pesquisas Rene Rachou, Oswaldo Cruz-FIOCRUZ, Fundação Oswaldo Cruz, Minas Gerais, Brazil
- 5:50 Molecular characterization of insecticide resistance in *Phlebotomus papatasi* and *Lutzomyia longipalpis* sand flies (Diptera: Psychodidae)
David S. Denlinger david.denlinger@aggiemail.usu.edu, Phillip G. Lawyer PhillipL@niaid.nih.gov, William C. Black IV William.Black@ColoState.EDU and Scott A. Bernhardt scott.bernhardt@usu.edu
 Utah State Univ, Logan, UT, Walter Reed Army Institute of Research and Colorado State Univ
- 6:00 Physiological, morphological and hormonal variation in *Anopheles gambiae* s.l. mosquitoes exposed to the stressful conditions of the dry season in Burkina Faso, West Africa
Mamai Wadaka mwjosephfr@yahoo.fr, Mouline Karine, Dabiré K.Roch, Ouedraogo G.Anicet, Blais Cathérine, Renault David and Simard Frederic
 IRSS, Bobo Dioulasso, Burkina Faso, IRD/MIVEGEC/BEES, Montpellier, Univ Polytechnique de Bobo Dioulasso, Burkina Faso, Univ de Rennes 1/UMR 6553 Ecobio

6:30 – 9:00

RECEPTION AND POSTER SESSION I

P1: Mitochondrial and nuclear genetic differentiation across species belonging to *Albitarsis* complex (Diptera: Culicidae).

Maysa T. Motoki motokim@si.edu, Dept of Entomology, National Museum of Natural History, Smithsonian Institution, Museum Support Center, Suitland, MD, Yvonne M. Linton, Richard C. Wilkerson, Freddy Ruiz, Maria Anice M. Sallum, Tatiane Porangaba and Jan E. Conn

P2: Temporal variation in gene flow from *Anopheles gambiae* to *An. caluzzi*.

Bradley Main bmmain@ucdavis.edu, PMI, UC Davis, CA, Yoosook Lee and Greg Lanzaro

P3: Molecular identification of blood meal sources of mosquitoes from Amazon Basin of Peru

Pedro Palermo ppalermo@utep.edu and Douglas Watts, Univ of Texas, El Paso, TX

P4: Morphological differentiation of two sibling species of the Coronator Group of *Culex* (*Culex*) (Diptera: Culicidae)

Bruna Demari- Silva brunabarrela@yahoo.com.br, Faculdade de Saúde Pública Univ of Sao Paulo, Brazil, Laura Cristina Multini, Lincoln Suesdek, Maria Anice Mureb Sallum and Mauro Toledo Marrelli

P5: Can seasonal changes in photoperiod induce dry-season diapause in the African malaria mosquito?

Diana L. Huestis, Diana.Huestis@nih.gov, Laboratory of Malaria and Vector Research, National Institute of Allergy and Infectious Diseases, National Institutes of Health; Monica L. Artis, and Tovi Lehmann

P6: Quantitative measurement of geographical distribution, diurnal activity and the resting sites of *Aedes albopictus* in various natural habitats in Thailand

Uruyakorn Chansang uruyakorn.c@dmsc.mail.go.th, National Institute of Health, Dept of Medical Sciences, Ministry of Public Health, Nonthaburi, Thailand; Chitti Chansang, Ekarat Denchonchai, Piyakan Karaorm, Wannisa Suebsaard, Somchai Sangkitporn and Mir S. Mulla

P7: Nightly biting cycles of malaria vectors in a heterogeneous transmission area of eastern Amazonian Brazil

Robert H Zimmerman rhzimmer@hotmail.com, Florida Medical Entomology Laboratory, Univ of Florida/IFAS, Vero Beach, FL., L Philip Lounibos, Naoya Nishimura, Allan K R Galardo, Clicia D Galardo and Mercia E Arruda

P8: Are tigers in a concrete jungle really diurnal? Diel activity of *Aedes albopictus* determined through human sweep net and rotating trap collections

Ary farajollahi afarajollahi@mercercounty.org, Mercer County Mosquito Control, West Trenton, NJ, James McNelly, Isik Unlu, Nick Indelicato, Garret Dow, Dina Fonseca and Randy Gaugler

P9: Effects of diapause of the excretory physiology of the northern house mosquito, *Culex pippiens*

Liu Yang yang.554@osu.edu, Dept of Entomology, Ohio State Univ, Wooster, OH

P10: Vector competence of *Aedes albopictus* and *Aedes aegypti* to two different Chikungunya strains in Thailand

Chanyapat Nitatsukprasert chanyapatn@afirms.org, Armed Forces Research Institute of Medical Sciences, Dept of Entomology, Vector Biology and Control section, Thailand; Wachiraphan Chittham, Butsaya Thaisomboonsuk, Richard G. Jarman, Jason H. Richardson and Alongkot Ponlawat

P11: Genetic basis of vector competence for field dengue virus isolates in a natural population of *Aedes aegypti*

Thanyalak Fansiri thanyalakf@afirms.org, Armed Forces Research Institute of Medical Sciences, Dept of Entomology, Vector Biology and Control section, Thailand, Albin Fontaine, Laure Diancourt, Valérie Caro, Butsaya Thaisomboonsuk, Richard G. Jarman, Alongkot Ponlawat and Louis Lambrechts

P12: Mosquito and flavivirus surveillance from flood affected areas in Thailand

Wachiraphan Chittham wachiraphanc@afirms.org, Armed Forces Research Institute of Medical Sciences, Dept of Entomology, Vector Biology and Control section, Thailand, Boonsong Jaichapor, Patcharee Khongtak, Thanyalak Fansiri,

Chanyapat Nitatsukprasert, Arissara Pongsiri, Ratre
Takhampunya, Patrick W. McCardle and Alongkot Ponlawat
P13: Tissue tropisms and transovarial transmission potential of
Culex flavivirus in *Culex pipiens*

Rungrat Saiyasombat rungrats@iastate.edu, Dept of Veterinary
Microbiology and Preventive Medicine, College of Veterinary
Medicine, Iowa State Univ, Ames, IA; Lyric C. Bartholomay, and
Bradley J. Blitvich

P14: Rapid discrimination between *Anopheles gambiae* s.s. and
Anopheles arabiensis by High-Resolution Melt (HRM) Analysis

Woodbridge A. Foster foster.13@osu.edu, M. R. Zianni, M. R.
Nikbakhtzadeh, B. T. Jackson and J. Panescu, Dept of Evolution,
Ecology, & Organismal Biology, Ohio State Univ, Columbus, OH

P15: Water agitation stimulates egg hatching of *Anopheles
gambiae*

Babak Ebrahimi ebrahimi.3@osu.edu, Dept of Entomology,
Ohio State Univ, Columbus, OH; S. Shakibi, and W. A. Foster

P16: Growth of *Aedes triseriatus* larvae on single microbial
strains and evidence for the necessity of living microorganisms
in larval development

Michael Kaufman kaufma15@msu.edu, Dept of Entomology,
Michigan State Univ, MI, C. Bateman, S. Ireland, and E. Walker

P17: Targeting residual malaria vectors in communities where
insecticidal bed nets are already widely used

Fredros O Okumu fredros@ihi.or.tz, Ifakara Health Institute,
Environmental Health and Ecological Sciences Thematic Group,
Tanzania

P18: Potential benefits, limitations and target product-profiles
of odor-baited mosquito traps for malaria control in Africa

Fredros O Okumu fredros@ihi.or.tz, Ifakara Health Institute,
Environmental Health and Ecological Sciences Thematic Group,
Tanzania

P19: Mosquitoes as vectors of *Francisella tularensis holarctica* in
Sweden

Jan O. Lundström Jan.Lundstrom@ebc.uu.se, Dept of Ecology
and Genetics, Evolutionary Biology Center, Uppsala Univ,
Uppsala, Sweden, J. Thelau, A-C Andersson, T. Broman, S.

Bäckman, M. Granberg, L. Karlsson, K. Kuoppa, E. Larsson, E. Lundmark, P. Mathisen, J. Näslund, M. Schäfer, T. Wahab and M. Forsman

P20: Pathogens in vectors attacking primates in Tanzania and Central African Republic

Jana Rádřová, vapid@natur.cuni.cz, Faculty of Sciences, Charles Unive, Czech Republic, and Jan Votýpka

P21: Morphological aberration effects and persistence of Lemon Grass (*Cymbopogon citratus*) and Clove (*Syzygium aromaticum*) oils against the larval stages of *Aedes aegypti* and *Anopheles dirus*

Siriporn Phasomkusolsil SiripornP@afirms.org, Dept of Entomology, US Army Medical Component, Armed Forces Research Institute of Medical Sciences, Thailand, Mayura Soonwera, Jaruwan Tawong and Anthony LSchuster

P22: House design modification for mosquito-free home: An innovative, effective and environmental sound alternative to chemical use.

Harrysone E. Atieli etemesi2012@yahoo.com, Masend Univ, School of Public Health and Community Development, Dept of Public Health, Private Bag, Masend, and Collins Ouma

P23: Towards a mask and pull strategy to control *Anopheles gambiae* behavior

Iliano V. Coutinho-Abreu iliang@ucr.edu, Dept of Entomology, Univ of California, Riverside, CA, A. Ray

P24: Relative contributions of carbon dioxide and human skin odor to finding and landing on a host in female *Aedes aegypti*

Emerson S. Lacey eslacey@ucr.edu, Dept of Entomology, Univ of Calif Riverside, CA, A. Ray, and R. T. Cardé

P25: Plant essential oils and their efficacy against adult mosquitoes

Aaron D. Gross adgross@iastate.edu, Pesticide Toxicology Lab, Dept of Entomology, Iowa State Univ of Science and Technology, IA, Edmund J. Norris, Lyric C. Bartholomay, Michael J. Kimber, and Joel R. Coats

P26: Insecticide resistance and speciation in *Anopheles gambiae*

Laura Norris lnorris@ucdavis.edu, Davis, CA; Yoosook Lee and Greg Lanzaro

P27: New and expanding tick-borne pathogens in the Mid-Atlantic

Tyler C. Henning thenning@jhsph.edu, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, John M. Orr, Joshua D Smith, Jorge R. Arias, Jason L Rasgon, Douglas E. Norris

P28: Epidemiology of West Nile Virus in New York City - Analysis of Mosquito Data, 2002- 2012

Waheed Bajwa wbajwa@health.nyc.gov, New York City Dept of Health and Mental Hygiene, NY, and Marcia O'Connor

P29: Surveillance response to the detection of *Aedes aegypti* (Linnaeus) in the Central Valley of California

Charlie Smith csmith@mosquitobuzz.net, J. Holleman, Consolidated Mosquito Abatement District, Selma, CA, A. J. Cornel and S.F. Mulligan

P30: Vector capacity and vertical transmission of dengue virus in *Aedes aegypti*

Barbara Aparecida Chaves ba.chaves@yahoo.com.br, Brazil

P31: The vector competence from *Aedes aegypti* to dengue virus 2: mapping the city of Belo Horizonte, Minas Gerais

Caroline Macedo Gonçalves caroline@cpqrr.fiocruz.br, Brazil

P32: Genetic variation in the sensitivity of *Anopheles gambiae* to DEET

James Ricci jricc001@ucr.edu, Dept of Entomology, Univ of Calif, Riverside, CA

P33: BAC resequencing reveals a strong selective sweep in the TEP anti-pathogen locus (TAPL) of M-form (Mali-NIH) *Anopheles gambiae*

Eric Smith esmit013@ucr.edu, Univ of Calif, Riverside, CA

P34: Characterization of Pfs47 gene in Brazilian lines of *Plasmodium falciparum*

Fabrcio Freire de Melo fabricao.melo@cpqrr.fiocruz.br, Brazil

P35: The role of mosquitoes in the transmission of avian malaria in Central California

Jenny S. Carlson jencarlson@ucdavis.edu, Univ of Calif, Riverside, CA

P36: Immature morphology of the principal US bluetounge virus vector, *Culicoides sonorensis*

Lucy Gagnon lgagn001@ucr.edu, Univ of Calif, Riverside, CA

P37: Species determination of *Culicoides* biting midges using shotgun mass mapping (SMM)

Katrin Uhlmann katrin.uhlmann@ufz.de, Helmholtz Centre for Environmental Research, Germany

P38: Modelling the seasonal activity and abundance of biting midges (*Culicoides* spp), vector species of bluetongue virus in Spain

Carlos Barceló Seguí carlos.barcelo@uib.es, Univ of the Balearic Islands

P39: The *Culicoides* species (Diptera: Ceratopogonidae) of Senegal: towards identifying the vectors of African horse sickness virus, 40 years after the first studies

A.G. Fall agueyefall@yahoo.fr, M. Fall, M.T. Bakhoum, C. Garros, N.D. Diouf, M.T. Seck, J. Bouyer, M. Ndao, A.-M. Dusom, M. Diarra, T. Baldet, T. Balenghien, J.-C. Delécolle, Institut Sénégalais de Recherches Agricoles (ISRA), Dakar, Sénégal

P40: Desiccation tolerance in the eggs of *Culicoides sonorensis*: Implications for vector persistence

Emily McDermott mcdermott@email.ucr.edu, Dept of Entomology, Univ of Calif, Riverside, CA, Bradley Mullens

P41: Impact of increased insulin signaling in the fat body of *Anopheles stephensi*

Lewis Vibul Hun Lewisvibulhun@email.arizona.edu, Univ of Arizona, AZ

P42: Characterization of sand fly breeding sites in vertisols in NW Ethiopia

Aviad Moncaz adi.moncaz@mail.huji.ac.il, Dept of Microbiology and Molecular Genetics, The Institute of Medical Research Israel-Canada, The Faculty of Medicine, the Hebrew Univ, Hadassah Medical School, Jerusalem, Israel; Moshe Shenker, Araya Gebre Sellassie, Oscar Kirstein, Teshome Gebre-Michael, Asrat Hailu and Alon Warburg

P43: Identifying oviposition attractants in *Phlebotomus papatasi*: the effect of rearing-substrate succession stages

Fadi Marayati b_maraya@uncg.edu, Biology Dept, Univ of North Carolina, Greensboro, NC

P44: Phylogenetic relationships of *Bartonella* spp. isolated from *Oropsylla montana* fleas collected from geographically distinct populations across the Western United States

Ryan Keweshan ryan.keweshan@usu.edu, Utah State Univ, Ogden, UT, Kenneth L. Gage, Michael Kosoy, Laine Anderson and Scott A. Bernhardt, Bacterial Diseases Branch, Division of Vector-Borne Diseases, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention, Fort Collins, Colorado

P45: Behavioral assays to examine house fly (*Musca domestica* L.) attraction to honeydew

Kim Hung Kim.hung@ucr.edu, Dept of Entomology, Univ of Calif, Riverside, CA, Alec Gerry

P46: Northern Flies at Southern Latitudes: Investigations of Range, Abundance, and Diapause of *Musca autumnalis* in Southern California

Fallon Fowler fallon.fowler@email.ucr.edu, Univ of Calif, Riverside, CA

P47: What's New in California: Public Health Implications of Two New Tick-Borne Diseases

Anne Kjemtrup anne.kjemtrup@cdph.ca.gov, Calif Dept of Public Health, Vector-Borne Disease Section, Sacramento, CA, C. Porse, K. Padgett, D. Bonilla, R. Hu and V. Kramer

P48: Modeling *Dermacentor variabilis* burden on *Peromyscus leucopus*

Hailey Cahill hec8855@truman.edu, **Eli Jackson** etj8864@truman.edu, Stephanie Foré sfore@truman.edu and Hyun-Joo Kim, Dept of Biology and Dept of Statistics, Truman State Univ, Kirksville, MO

P49: Effect of removal sampling on number of active *Amblyomma americanum* adults and nymphs

Alex Volstromer ajv8551@truman.edu, Stephanie Foré sfore@truman.edu, Dept of Biology, Truman State Univ, Kirksville, MO

TUESDAY – SEPTEMBER 24, 2013

8:00 – 10:00 SYMPOSIUM 6: STUDENT ORAL PRESENTATIONS (B)

Coordinators: Mir S. Mulla mir.mulla@ucr.edu

Univ of Calif, Riverside, CA

William Walton william.walton@ucr.edu

Univ of Calif, Riverside, CA

Moderators: Genevieve Tauxe genevieve.tauxe@email.ucr.edu

Jawien Piotr piroksen@wp.pl

8:00 Microbial community and nutrient dynamics in experimental mesocosms following a biorational larval mosquito control application

Dagne Duguma ddemi002@student.ucr.edu, Michael Hall, Paul Rugman-Jones, Josh D. Neufeld, Richard Stouthamer, William E. Walton william.walton@ucr.edu

Univ of Calif Riverside, CA, Univ of Waterloo, Canada

8:10 Effects of larval temperature and nutrition on dengue-1 virus vertical transmission by *Aedes albopictus* mosquitoes

Eva A. Buckner eva.buckner@ufl.edu, Barry W. Alto bwalto@ufl.edu and L. Phillip Lounibos lounibos@ufl.edu

Florida Medical Entomology Laboratory, Univ of Florida, Vero Beach, FL

8:20 *Wolbachia* does not inhibit West Nile virus (WNV) in the mosquito *Culex tarsalis*

Brittany L. Dodson bld25@psu.edu, Grant L. Hughes glh20@psu.edu, Oluwatobi Paul o11@umbc.edu, Amy C. Matarachiero acm04@health.state.ny.us, Laura D. Kramer ldk02@health.state.ny.us and Jason L. Rasgon jlr54@psu.edu

Dept of Entomology, Pennsylvania State Univ, University Park, PA, Center for Infectious Disease Dynamics, Pennsylvania State Univ, University Park, PA, Dept of Biological Sciences, Univ of Maryland Baltimore County, Baltimore, MD, Arbovirus Laboratories, Wadsworth Center, New York State Dept of Health, Slingerlands, NY, School of Public Health, State Univ of New York at Albany, Albany, NY

- 8:30 Effects of *Wolbachia* bacterium on the host-seeking and mating success of the dengue vector, *Aedes aegypti*
Andrew Turley Andrew.turley@uq.edu.au, Scott O'Neill scott.oneill@monash.edu and Elizabeth McGraw beth.mcgraw@monash.edu
 The Univ of Queensland, Brisbane, Australia and Monash Univ, Melbourne, Australia
- 8:40 *Wolbachia* invades *Anopheles stephensi* populations and induces refractoriness to *Plasmodium* infection
Peng Lu lupeng1@msu.edu, Guowu Bian guowub@msu.edu, Yuemei Dong ydong@jhsph.edu, Deepak Joshi djoshi@msu.edu, Guoli Zhou zhoug@msu.edu, Xiaoling Pan xpan@msu.edu, George Dimopoulos gdimopou@jhsph.edu, Zhiyong Xi xizy@msu.edu
 Michigan State Univ, East Lansing, MI, Sun Yat-Sen Univ, Dept of Molecular Microbiology and Immunology, John Hopkins Univ and Joint Center for Tropical Diseases, Guangdong, China
- 8:50 Understanding the ecological importance of mosquitoes to insectivorous bats and the implications for mosquito-borne disease management in coastal Australia
Leroy Gonsalves Leroy.gonsalves@acu.edu.au, Bradley Law brad.law@dpi.nsw.gov.au, Cameron Webb cameron.webb@swahs.health.nsw.gov.au, Vaughan Monamy vaughan.monamy@acu.edu.au and Brian Bicknell brian.bicknell@acu.edu.au
 School of Arts and Sciences, Australian Catholic Univ, Australia, Forest Science Centre, Dept of Primary Industries, Australia, Dept of Medical Entomology, Westmead Hospital and Univ of Sydney, Westmead, Australia
- 9:00 Dog heartworm in the US: an ecological approach for vector incrimination; dog heartworm disease prevalence; and residents' knowledge, attitudes, and practices
Nicholas Ledesma nal24@cornell.edu, Laura C. Harrington lch27@cornell.edu, Phillip E. Kaufman pk Kaufman@ufl.edu, and Rui-De Xue xueamcd@gmail.com
 Cornell Univ, Ithaca, NY, Univ of Florida, Gainesville, FL and Anastasia Mosquito Control District, FL

- 9:10 Using digital image analysis to estimate *Culicoides sonorensis* abundance and parity
Cameron Osborne cjosborne@ucdavis.edu, C. E. Mayo, B. A. Mullens and N. J. MacLachlan, Dept of Entomology, Univ of Calif, Riverside, CA
- 9:20 Microsatellite development for population structure analysis of *Phlebotomus ariasi*, main vector of *L. infantum* in the region of Montpellier
Jorian Prudhomme jorian.prudhomme@hotmail.fr
 Univ Montpellier, Unit of Medical Parasitology, Univ of Lisboa and Hacettepe Univ, Turkey
- 9:30 Mosquito, Bird and Human Surveillance of Usutu Virus In Germany In 2011 And 2012
Hanaa Jöst hanna.joest@gmx.de, Norbert Becker norbertfbecker@web.de, Martin Eiden martin.eiden@fli.bund.de, Ute Ziegler ute.ziegler@fli.bund.de, Ludger Allering ludger_allering-allering@web.de, Marcus Graeber-Gerberding graeber-gerberding@bni-hamburg.de, Stefan Bosch stefan-bosch@web.de, Stephan Günther guenther@bni-hamburg.de, Martin Groschup martin.groschup@fli.bund.de, Jonas Schmidt-Chanasit jonassi@gmx.de
 German Mosq Control Assoc, Waldsee, Germany, Friedrich Loeffledr Inst, Riems, Germany, Bernard Nocht Inst for Trop Medicine, Hamburg, Germany, Nature and Biodiversity Conservation Union, Stuttgart, Germany
- 9:40 Behavioral resistance in mosquitoes
Peter Matheri Wamai pmwamai@yahoo.com
 Centre for Global Health Research, Kenya Medical Research Institute (KEMRI), Kasumu, Kenya
- 9:50 DNA barcoding facilitates new species and distribution records in Turkey and unequivocally incriminates West Nile virus (WNV) vectors in NW and Southern Turkey
Feliz Gunay gunay@gmail.com, Özge Erişöz Kasap ozgeerisoz@yahoo.com, Kerem Öter keremoter@hotmail.com, Koray Ergünay ekoray@hacettepe.edu.tr, Aykut Özkul aykut.ozkul@ankara.edu.tr, Yvonne-Marie, Linton

linton.yvonne3@gmail.com, Bülent Alten
kaynas@hacettepe.edu.tr

Hacettepe Univ, Istanbul, Ankara Univ, Walter Reed Army
Institute of Research

10:00 – 10:30 **BREAK**

10:30 – 12:30 **SYMPOSIUM 7: STUDENT ORAL PRESENTATIONS (C)**

Coordinators: **Mir S. Mulla** mir.mulla@ucr.edu

Univ of Calif, Riverside, CA

William Walton william.walton@ucr.edu

Univ of Calif, Riverside, CA

Moderators: **Andrew Turley** andrew.turley@uq.edu.au

Univ of Queensland, Brisbane, Australia

Suwannapa Ninphanomchai

ninphanomchai@gmail.com

10:30 Evaluation of four bed bug traps with attractant augmentation
for capturing brown dog ticks

Lucas P. Carnohan carnohan@ufl.edu, Emma N. I. Weeks,
Phillip E. Kaufman and Sandra A. Allan

Univ of Florida, Gainesville, MAVE, ARS, USDA, Gainesville, FL

10:40 Diversity of Mosquitoes and Potential Risk of Vector-Borne
Diseases Across Different Ecological Settings on Koh Chang,
Thailand

Supaluk Khaklang s.khaklang@gmail.com and Pattamaporn
Kittayapong pkittayapong@msn.com

Center of Excellence for Vectors and Vector-Borne Diseases

Faculty of Science, Mahidol University, Salaya Campus, Thailand

10:50 Geographical heterogeneity of malaria vector dynamics and
bionomics during the wet season in Nchelenge District, Zambia

Smita Das smdas@jhsph.edu and Douglas E. Norris

dnorris@jhsph.edu

John Hopkins Bloomberg School of Public Hlth, Baltimore, MD

11:00 Ecological analyses of adult mosquito (Diptera: Culicidae)
communities in Iowa

Mike W. Dunbar dunbar@iastate.edu, Brendan M. Dunphy

bmdunphy@iastate.edu, Ignacio Alvarez-Castro

- ialvarez@iastate.edu, Paul M. Airs pairs@iastate.edu and Lyric C. Bartholomay lyricb@iastate.edu
Iowa State Univ, Ames, IA
- 11:10 The impacts of climate change on vector-borne diseases and its implications for adaption in China
Bai Li yan lili407@126.com and Qiyong Li liugiyong@icdc.cn
Chinese Center for Disease Control and Prev, Beijing, China
- 11:20 New taxonomic attributes in the taxonomy of subfamily Anophelinae from Punjab
Shipali Rani shifali267@gmail.com
Punjab Univ, Patiala, Punjab, India
- 11:30 The biology, distribution and genetics of *Culex molestus* in Australia
Nur Faeza A Kassim aija81@msn.com, Cameron Webb cameron.webb@swahs.health.nsw.gov.au and Richard Russell richard.russell@sydney.edu.au
Univ of Sydney, Westmead NSW, Australia
- 11:40 A Question of Questing: Geographic Origin Contributes to Variation in Host-seeking Behavior of *Ixodes scapularis* Nymphs in Outdoor Arenas
Isis M. Kuczaj isisk487@gmail.com, Graham J. Hickling ghicklin@utk.edu and Jean I. Taso tsao@msu.edu
Michigan State Univ, East Lansing, MI, Univ of Tennessee, Knoxville, TN and Dept of Large Animal Clinical Sciences, East Lansing, MI
- 11:50 Application of the GPS/GIS technique in the mosquito control program in Wroclaw Poland
Jawien Piotr piroksen@wp.pl and piotr.jawien@microb.uni.wroc.pl, Katarzyna Rydzanicz katarzyna.rydzanicz@microb.uni.wroc.pl, Norbert Becker norbertfbecker@web.de and Elżbieta Lonc elzbieta.lonc@microb.uni.wroc.pl
Univ of Wrocław, Institute of Genetics and Microbiology, Dept of Microbial Ecology and Environmental Protection, Wrocław, Poland and German Mosquito Control Association (KABS), Waldsee, Germany

- 12:00 Potential risks of vectors-borne diseases in relation to land use and climatic factors in a global outreach tourist setting in Thailand
Suwannapa Ninphanomchai ninphanomchai@gmail.com, Chitti Chansang chitti.c@dmsc.mail.go.th and Pattamaporn Kittayapong pkittayapong@msn.com
Center of Excellence for Vectors and Vector-Borne Diseases
Faculty of Science, Mahidol University, Salaya Campus, Thailand and NIH, DMSC, Min of Pub Hlth, Nonthaburi, Thailand
- 12:10 Agricultural use of insecticide influences on resistance in mosquitoes
Fiacre R. Agossa rofargossa@yahoo.fr, Roseric Azondékon roseric_2000@yahoo.fr and Martin Akogbéto akogbetom@yahoo.fr
Benin, Africa
- 12:20 Seasonal abundance and diurnal activity of stomoxiine (Diptera: Muscidae) in Thailand
Vithee Muenworn vithee_m@live.com, Gerard Duvallet gerard.duvallet@univ-montp3.fr and Theeraphap Chareonviriyaphap faasthc@ku.ac.th
Dept of Entomology, Fac of Agr, Kasetsart Univ, Bangkok, Thailand, Centre d'Ecologie Fonctionnelle et Evolutive, Univ Paul-Valéry, Montpellier, France
- 12:30 – 1:30 **LUNCH**
- 1:30 – 3:30 **SYMPOSIUM 8: REPELLENTS AND NEW PRODUCTS**
Moderators: Ulrich R. Bernier Uli.Bernier@ars.usda.gov
USDA-ARS, Gainesville, FL
Dan Kline Dan.Kline@ars.usda.gov
USDA-ARS, Gainesville, FL
- 1:30 Behavior modification of mosquitoes through CO₂ receptor agonists and antagonists
Michelle Brown mbrown@olfactorlabs.com
Olfactor Laboratories, San Bernardino, CA
- 1:45 The green chemistry approach to vector control

- Joel R. Coats** jcoats@iastate.edu
Iowa State Univ, Ames, IA
- 2:00 Development of synthetic contact repellents for protection of humans
- Ulrich R. Bernier** Uli.Bernier@ars.usda.gov
USDA-ARS, Gainesville, FL
- 2:15 Development of novel insecticides with minimized non-target risk
- Jeffrey R. Bloomquist** jbquist@epi.ufl.edu
Univ of Florida, Gainesville, FL
- 2:30 Highly conserved receptors for human skin odor, repellents and attractants: odorants for a mask, push and pull strategy
- Anandasankar Ray** anand.ray@ucr.edu
Univ of Calif, Riverside, CA
- 2:45 Development of push-pull methods for protection of humans
- Ulla Obermayr** ulla.obermayr@biogents.com
Biogents AG, Regensburg, Germany
- 3:00 Repellent products and strategies for protection of humans
- Gunter Muller** guntercmuller@hotmail.com
Kuvim Centre, Hebrew Univ, Jerusalem, Israel
- 3:15 Semifield and field evaluations of spatial repellents
- Daniel L. Kline** dan.kline@ars.usda.gov
USDA-ARS, Gainesville, FL
- 3:30 Spatial repellents for the African malaria mosquito
- Patrick Guerin** patrick.guerin@unine.ch,
Thomas Kröber thomas.kroeber@unine.ch, Maria
Konstantopoulou mkonstan@bio.demokritos.gr,
Kostas Iatrou iatrou@bio.demokritos.gr, Samson Awolola
awololas@hotmail.com
Institute of Biology, Univ of Neuchâtel, Switzerland
National Centre for Scientific Research “Demokritos”, Athens,
Greece, Nigerian Institute of Medical Research, Lagos, Nigeria
- 3:45 – 4:00 **BREAK**

4:00 – 5:30 **SYMPOSIUM 9: VECTOR TRAPPING TECHNOLOGIES -
CURRENT STATUS AND FUTURE TRENDS**

Moderators: **Ulla Obermayr** ulla.obermayr@biogents.com

Biogents AG, Regensburg, Germany

Dan Kline Dan.Kline@ars.usda.gov

USDA-ARS, Gainesville, FL

- 4:00 Trapping technology: past, present and future
Daniel L. Kline dan.kline@ars.usda.gov
USDA-ARS, Gainesville, FL
- 4:15 Collecting mosquitoes with BG-Sentinel traps: the capture rate is key
Martin Geier martin.geier@biogents.com
Biogents AG, Regensburg, Germany
- 4:30 Blinded by the light: using insect's love of light to produce novel mosquito traps
Scott A. Ritchie scott.ritchie@jcu.edu.au, **Alvaro Eiras**
alvaro@icb.ufmg.br
James Cook Univ, Townsville, Australia and Univ Federal De Minas Gerais, ICB Parasitology, BRAZIL
- 4:45 What are the limitations of light-suction trapping as a surveillance tool for *Culicoides* biting midges?
Andrew Hope andrew.hope@pirbright.ac.uk
The Pirbright Institute, Surrey, UK
- 5:00 Molecular techniques to monitor suppression of *Aedes aegypti* with RIDL
Derric Nimmo derric.nimmo@oxitec.com
Oxitec Ltd, Abingdon, UK
- 5:15 Evaluation of traps for monitoring higher Diptera
Jerry Hogsette jerry.hogsette@ars.usda.gov
USDA-ARS, Gainesville, FL
- 5:30 **BUSINESS MEETING:**
William Walton william.walton@ucr.edu
President of SOVE
Univ of Calif, Riverside, CA
Major S. Dhillon mdhillon@northwestmvcd.org

SOVE Secretary-Treasurer
Corona, CA

WEDNESDAY – SEPTEMBER 25, 2013

9:00 – 4:00 **ECOLOGICAL FIELD EXCURSION:**
Joshua Tree National Park – Lunch provided

6:00 – 8:00 **HOSTED BARBEQUE DINNER**

THURSDAY – SEPTEMBER 26, 2013

7:30 – 9:00 **CONTINENTAL BREAKFAST AND POSTER SESSION II**

P50: Interspecific mating between *Aedes aegypti* and *Aedes albopictus* and its contribution to the decline of *Aedes aegypti*
María C. Carrasquilla mccarrasquilla@ufl.edu, Univ of Florida, FL

P51: A method for defining quantitative trait loci involved in hybrid male sterility in hybrids between the malaria vectors *Anopheles gambiae* and *An. Merus*

Raissa Green rgree005@ucr.edu, Univ of Calif, Riverside, CA

P52: Effects of larval habitat density and ITN/LLIN use on the spatial distribution of malaria vectors

Robert S. McCann rseanm@gmail.com, Michigan State Univ, East Lansing, MI

P53: Powassan virus activity in New York State, 2007-2013

Alan P. Dupuis II apd05@health.state.ny.us;

izzyzpop@yahoo.com, Wadsworth Center of the NY State Dept of Health

P54: Dengue in Pan America 2001-2010: Trends in Imported Cases into the United States

Caitlin van Dodewaard

vandodewaardc12@students.ecu.edu,ast, East Carolina Univ, NC

- P55:** Characterization of circulating arboviruses in the Magdalena and Guajira Regions of Colombia
James Weger-Lucarelli weger@wisc.edu, Univ of Wisconsin, Madison, WI
- P56:** Effects of phosphorus on the growth and evolution of West Nile Virus
Gabriela Blohm gblohm@ufl.edu, Dept of Biology, Univ of Florida, FL
- P57:** Transgenerational effects of parental larval nutrition in *Aedes aegypti*
Kylie Zirbel zirbelke@ufl.edu, Kansas State Univ, City, KS
- P58:** Association mapping of the genetic basis of *Anopheles arabiensis* feeding behavior
Deodatus Maliti dmaliti@ihi.or.tz, Univ of Glasgow, UK
- P59:** Irritancy and repellency of *Aedes albopictus* to three essential oils in Thailand
Sabrina White sabrinawhite@ufl.edu, College of Agricultural and Life Sciences, Univ of Florida, FL
- P60:** Piwi gene expression characterization in the human malaria vector *Anopheles stephensi*
Vanessa Macias maciasv@uci.edu, Univ of Calif, Irvine, CA
- P61:** Temporal genetic changes in *Aedes aegypti* dengue mosquito population in Cebu City, Philippines
Stephanie L. Sayson, Yale Univ, New Haven, CT
- P62:** Towards improvement of genetics tools for mosquito research: development and application of the GAL4/UAS system in *Aedes aegypti*
Bo Zhao nkzhaobo@gmail.com, Univ of Calif, Riverside, CA
- P63:** Genetic analysis of California *Aedes aegypti*
Andrea Gloria-Soria andrea.gloria-soria@yale.edu and J.R. Powell, Dept of Ecology and Evolutionary Biology, Yale Univ, Environmental Science Center, New Haven, CT
- P64:** The genetics of foraging behavior in the *Aedes aegypti*
Andrea Gloria-Soria andrea.gloria-soria@yale.edu, A. d'Souza and J.R. Powell
Dept of Ecology and Evolutionary Biology, Yale Univ, Environmental Science Center, New Haven, CT

- P65:** A history of Invasive mosquito species in Iowa
Brendan M. Dunphy bmdunphy@iastate.edu, Iowa State Univ,
Dept of Entomology, IA
- P66:** Inter- and intra-seasonal variation in the age structure of
Aedes aegypti populations
Eileen H. Jeffrey Gutierrez ejeffrey@email.arizona.edu,
Univ of Arizona, AZ
- P67:** Detrimental effect of cypermethrin treated nets on
Culicoides populations (Diptera; Ceratopogonidae) and non-
targeted fauna in livestock farms
M.A. Miranda ma.miranda@uib.es, Laboratory of Zoology,
Univ of the Balearic Islands (UIB), Spain, R. del Río, C. Barceló,
and J. Lucientes
- P68:** Mosquito collection rates using varied CO2 concentrations
Lee McPhatter lmcp001@ucr.edu, Univ of California,
Riverside, CA
- P69:** Investigating the human and avian biting activity of farm-
associated UK mosquitoes, with relevance to potential arbovirus
transmission
Victor Brugman victor.brugman@pirbright.ac.uk, The Pirbright
Institute, UK
- P70:** Using parish-level prevalence data within a GIS
Environment to understand and predict malaria activity foci in
the Province of Esmeraldas, Ecuador
Miguel Reina Ortiz mreina@health.usf.edu, Univ of South
Florida
- P71:** The distribution of three La Crosse encephalitis vectors
along a forest-to-field ecotone in Western NC
Marcelo Schwarz m_schwar@uncg.edu, Biology Dept, Univ of
North Carolina, Greensboro, NC
- P72:** Relative abundance and gonotrophic status of native and
invasive La Crosse virus vectors in fragmented and
unfragmented forests within an ongoing housing development
in Western North Carolina
Leland Shockley lashockley1@catamount.wcu.edu, Western
Carolina Univ, Cullowhee, NC

- P73:** Post-disaster implications of policy changes to North Carolina mosquito control programs
Jonathan Harris harrisjon@ecu.edu, East Carolina Univ, NC
- P74:** Disastrous floods in Bohemia (Czech Republic) in June 2013 caused massive development of nuisance mosquitoes
Frantisek Rettich rettich@szu.cz, National Institute of Public Health, Czech Republic
- P75:** Knowledge and attitudes towards dengue and their effect on mosquito breeding-site prevention practices in Key West, FL.
Steven D. Haenchen shaenchen@email.arizona.edu, Univ of Arizona, Mel and Enid Zuckerman College of Public Health
- P76:** Microbial ecology and vector competence of *Culicoides sonorensis* for EHDV-2
Dinesh Erram derram@k-state.edu, Kansas State Univ, KS
- P77:** Cutaneous leishmaniasis extravanza in Israel: Characterization of a novel unique focus
Roy Faiman rf386@cornell.edu, Cornell Univ, Ithaca, NY
- P78:** Attraction of colonized sand flies *Phlebotomus papatasi*, *P. duboscqi*, and *Lutzomyia longipalpis* (Diptera: Psychodidae) to honeys using a 3 chamber-in-line olfactometer
Gideon Wasserberg g_wasser@uncg.edu, Dept of Biology, Univ of North Carolina at Greensboro, Greensboro, NC, P. Kirsch, and E. D. Rowton
- P79:** Sub-additive effect of conspecific eggs and frass on oviposition rate of *Lutzomyia longipalpis* and *Phlebotomus papatasi* (Diptera: Psychodidae)
Gideon Wasserberg g_wasser@uncg.edu, Dept of Biology, Univ of North Carolina at Greensboro, Greensboro, NC; and E. Rowton
- P80:** Attempts to feed larval ticks *Amblyomma maculatum* Koch and *Amblyomma americanum* (L.) (Acari: Ixodidae) on two arthropod hosts
Jose Santos Portugal III jsp281@msstate.edu, Mississippi State Univ, MS
- P81:** Statewide hantavirus surveillance and prevention program in California, USA

Sarah A. Billeter Sarah.Billeter@cdph.ca.gov, Marco E. Metzger, Renjie Hu and Vicki L. Kramer, Calif Dept of Public Health, Vector-Borne Disease Section, Sacramento, CA

P82: Electronic microarray detection of high consequence Swine Viruses

Oliver Lung oliver.lung@inspection.gc.ca, A. E. Erickson, D. Hodko, J. Pasick, A. Ambagala, Z. Zhang, D. King, T. Furukawa-Stoffer, M. Fisher and C. Buchanan, Canadian Food Inspection Agency, National Centres for Animal Disease, Lethbridge Laboratory, Lethbridge, Alberta, Canada

P83: Microarray for identification of Chiropteran (bat) species in Canada

Oliver Lung oliver.lung@inspection.gc.ca, S. Nadin-Davis, M. Fisher, A. Erickson, T. Furukawa-Stoffer, M. K. Knowles, A. Ambagala, C. Buchanan and C. Fehlner-Gardiner, Canadian Food Inspection Agency, National Centres for Animal Disease, Lethbridge Laboratory, Lethbridge, Alberta, Canada

P84: The statistical ecology of vector surveillance: Optimizing sample size and strategy in space and time

George W. Peck george.w.peck8.ctr@mail.mil, Walter Reed Army Institute of Research, Silver Spring, MD

P85: Comparative genomic analysis glutathione-S-transferase supergene family derived from nine insect species and one arachnid species

Niranjan Reddy bp.niranjanreddy@outlook.com, Jiwaji UniV, India

P86: Management of Tropical Bio-geo-resources through Integrated Bio-Cycle Farming System for Sustainable Ecosystem and Life

Cahyono Agus cahyonoagus@gadjahmada.edu and Bambang H Sunarminto, Faculty of Forestry and KP4 Univ Farm Universitas Gadjah Mada, Indonesia

P87: Effects of Pathogen Infection on Arthropod Feeding Responses to DEET, Permethrin Treated Uniform Material and Bednets

Edgar D. Rowton edgar.d.rowton.civ@mail.mil, Kevin Kobylnski, Tobin Rowland, Silas Davidson and Jason Richardson

Entomology Branch, Walter Reed Army Institute of Research
P88: Ticks Associated with Western Fence Lizards in Chino Hills State Park and its Vicinities in Southern California (2010 – 2013)

Quan Vong qvong@wvmvcd.org, Jennifer Thieme, Min-Lee Cheng and T. Steven Su

West Valley Mosquito and Vector Control District, Ontario, CA

P89: Overwintering survival of adult American dog tick, *D. variabilis*, in a second winter at the northern limit of its range in Manitoba, Canada

Matthew Yunik umyunik@cc.umanitoba.ca
University of Manitoba, Canada

9:00 – 10:15 **SYMPOSIUM 10: ZOOONOTIC DISEASES**

Moderators: Anthony J Cornel ajcornel@ucanr.edu
Univ of Calif, Davis, CA

9:00 Latest developments and gaps in our knowledge of RVF transmission

Kenneth J. Linthicum Kenneth.Linthicum@ars.usda.gov
USDA, Gainesville, FL

9:15 Entomologic and serologic surveillance for cache valley virus and other orthobunya viruses in the Yucatan Peninsula of Mexico

Bradley Blitvich blitvich@iastate.edu, Maria Lorono maria.lorono@gmail.com, Rungrat Saiyasombat rungrats@iastate.edu, Julian Garcia julian.garcia.rejon@gmail.com, Karin Dorman kdorman@iastate.edu and Jose Arturo Farfan jafarfan@gmail.com

Iowa State Univ, Ames, IA, Univ Autonoma de Yucatan, Mexico

9:30 Investigation into the highland distribution of human plague in Madagascar using satellite-derived environmental data

Katharina Keppel katharina.keppel@glasgow.ac.uk,
Mathew Baylis mathew.baylis@liverpool.ac.uk

Univ of Glasgow, Institute of Biodiversity, Animal Health and Comparative Medicine, Glasgow, Inst of Infection and Global Health, Univ of Liverpool, Liverpool

- 9:45 Temporal aspects of avian malaria in vectors and songbirds in a riparian habitat in Central California
Anthony J Cornel ajcornel@ucanr.edu
 Univ of Calif, Davis, CA
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 Ravinder N M Sehgal sehgal@sfsu.edu
 San Francisco State Univ, CA
 Erika Walthers mockier21@gmail.com
 San Francisco State Univ, CA
- 10:00 – 10:45 **BREAK**
- 10:45 – 12:15 **SYMPOSIUM 11: POPULATION GENOMICS**
Moderators: **David Weetman** d.weetman@liverpool.ac.uk
 Liverpool School of Tropical Medicine, London, Uk
Bradley White bradley.white@ucr.edu
 Univ of Calif, Riverside, CA
- 10:45 Evolutionary genetics and history of *Aedes aegypti*
Jeffrey Powell jeffrey.powell@yale.edu
 Yale University, New Haven, CT
- 11:00 Ecology and genetics of *Culex pipiens* forms: the role of hybridization in southern Europe
Bruno Gomes bsilva@ihmt.unl.pt
 CMDT/IHMT/UNL, Lisbon, Portugal
- 11:15 Digging deeper into the *Anopheles gambiae* complex: speciation within *Anopheles melas*?
Michel Slotman maslotman@ag.tamu.edu
 Texas A&M Univ, College Station, TX
- 11:30 Evolutionary adaptation in temperate environments: a population and quantitative genomic approach
Kevin Emerson kjemerson@smcm.edu
 Saint Mary's College of Maryland, MD
- 11:45 Gaps in results from GWAS studies of insecticide resistance in *Anopheles gambiae*: missing heritability, missing markers or missing ecology?
David Weetman d.weetman@liverpool.ac.uk

Liverpool School of Tropical Medicine, London, UK

12:00 High throughput quantitative and population genomics in *Anopheles gambiae*

Bradley White bradley.white@ucr.edu

Univ of Calif, Riverside, CA

12:15 – 1:15 **LUNCH**

1:15 – 2:45 **SYMPOSIUM 12: GENOMICS/BIOINFORMATICS -
CONNECTING VECTOR ECOLOGY AND GENOMICS/BIOINFORMATICS**

Moderators: Yoosook Lee yoosook.lee@gmail.com

Univ of Calif. Davis, CA

Kitsos Louis louis@imbb.forth.gr

Univ of Crete, Greece

1:15 Gene expression analysis in vector mosquitoes

Anthony James ajames@uci.edu

Univ of Calif, Irvine, CA

1:30 Using data and models to enhance surveillance for West Nile virus

Chris Barker cmbarker@ucdavis.edu

Univ of Calif, Davis, CA

1:45 Mapping the dominant vectors of malaria at the global scale

Nick Golding nick.golding@zoo.ox.ac.uk

Univ of Oxford, Oxford, UK

2:00 Molecular basis of insecticide resistance in the malaria mosquito *Anopheles funestus*

Charles Wondji c.s.wondji@liverpool.ac.uk

Liverpool School of Tropical Medicine, Liverpool, UK

2:15 Every genome deserves a home: genomic databases for the vector biologist

Dan Lawson lawson@ebi.ac.uk

European Bioinformatics Institute, Cambridgeshire, UK

2:30 The impending role of bio-informatics in the management of the dengue and yellow fever vector *Aedes aegypti*

Saul Lozano-Fuentes lozano.saul@gmail.com

Colorado State Univ, Colorado

2:45 – 3:15 **BREAK**

3:15 – 4:45 **SYMPOSIUM 13: BLUETONGUE**

Moderators: Eva Veronesi eva.veronesi@pirbright.ac.uk

The Pirbright Institute, Surrey, UK

N. James MacLachlan njmaclachlan@ucdavis.edu

Univ of Calif, Davis, CA

3:15 Phenotype implications in *Culicoides* and sheep after infection with parental and re-assortment strains of BTV

Eva Veronesi eva.veronesi@pirbright.ac.uk

The Pirbright Institute, Surrey, UK

3:30 Genomics of *Culicoides* vectors and its potential for disease

Mark Fife mark.fife@pirbright.ac.uk

The Pirbright Institute, Surrey, UK

3:45 Variation in vectorial capacity for bluetongue in Alberta

Timothy Lysyk tim.lysyk@agr.gc.ca

Agriculture and Agri-Food Canada

4:00 The unexplored realm of *Culicoides* immature ecology: gateway to understanding and control

Bradley Mullens bradley.mullens@ucr.edu

Univ of Calif, Riverside, CA

4:15 *Drosophila* as a model-system for bluetongue virus replication and cell tropism

Frederick Arnaud frederick.arnaud@univ-lyon1.fr

Univ de Lyon, France

4:30 The use of vaccine for BTV control and possible risks associated with their re-assortment

Giovanni Savini g.savini@izs.it, A.Lorusso a.lorusso@izs.it,

S. Sghaier sghaiersoufien@yahoo.fr, A. Di Gennaro

a.digennaro@izs.it and L. Teodori l.teodori@izs.it

Istituto Zooprofilattico Sperimentale IZSA&M, Italy

4:45 – 6:35 **SYMPOSIUM 14: INTEGRATED VECTOR MANAGEMENT**

Moderators: Robert J Novak rnovak@health.usf.edu

Univ of South Florida, Tampa, FL

Steve Lindsay s.w.lindsay@durham.ac.uk

Durham Univ, Durham, UK

4:45 From IPM to IVM: are we there yet?

- Robert J Novak** rnovak@health.usf.edu
Univ of South Florida, Tampa, FL
- 4:55 Integrated vector management and the way ahead in vector control programs
- Raman Velayudhan** VelayudhanR@who.int
World Health Organization, Geneva, Switzerland
- 5:05 Integrated vector management: the future?
- Steve Lindsay** s.w.lindsay@durham.ac.uk
Durham Univ, Durham, UK
- 5:15 Integrated vector management: malaria a curable and preventable disease
- Manuel Lluberas** lluberas@hdhudson.com
HD Hudson Manufacturing Company, Chicago, IL
- 5:25 I dropped my watch in sheep dip: is there a better way to stop tick-borne pathogens?
- Daniel Strickman** daniel.strickman@ars.usda.gov
USDA-ARS, Washington, DC
- 5:35 What tools work best for integrated vector management?
- Anne Wilson** anne.wilson@durham.ac.uk
Durham Univ, Durham, UK
- 5:45 Application of mosquitocidal *Bacillus sphaericus* and the resistance management in China
- Yuan Zhiming** yzm@wh.iov.cn
Wuhan Institute of Virology, China
- 5:55 Best management practices for integrated mosquito management at Anastasia Mosquito Control District, St. Augustine, Florida
- Rui-De Xue** xueamcd@gmail.com
AMCD, St. Augustine, FL
- 6:05 St. Tammany Parish Mosquito Abatement District: An integrated mosquito management approach for suppressing vector and nuisance mosquito populations
- Charles T. Palmisano** chuck_palmisano@yahoo.com
St. Tammany Parish Mosquito Abatement District, Slidell, LA
- 6:15 Insect bytes: using computers to support vector control
- Ian Brooks** ian@ncsa.illinois.edu
National Center for Supercomputer Application, Univ of Illinois

- 6:25 Integrating global positioning systems and personal digital assistant mobile field data collections within ArcGIS actionable platforms for optimizing integrated vector control operations
Benjamin G. Jacob bjacob@uab.edu
Univ of South Florida, Tampa, FL

FRIDAY – SEPTEMBER 27, 2013

- 8:00 – 8:30 **KEYNOTE ADDRESS: GLOBAL STRATEGY FOR THE PREVENTION AND CONTROL OF DENGUE**
Raman Velayudhan VelayudhanR@who.int
World Health Organization, Geneva, Switzerland
- 8:30 – 9:45 **SYMPOSIUM 15: DENGUE AND CHIKUNGUNYA**
Moderators: Pattamaporn Kittayapong
pkittayapong@msn.com
Center of Excellence for Vectors and Vector-Borne Diseases, Faculty of Science, Mahidol University, Salaya Campus, Thailand
Douglas Norris dnorris@jhsph.edu
John Hopkins Univ, Baltimore, MD
- 8:30 Reproductive competition between invasive DENV and CHIKV vectors
L. Philip Lounibos lounibos@ufl.edu, Irka Bargielowski irka@ufl.edu and María C. Carrasquilla mccarrasquilla@ufl.edu
Univ of Florida, Vero Beach, FL
- 8:45 Innovative tools for dengue vector surveillance
Luke Alphey luke.alphey@oxitec.edu
Oxitec Ltd, UK and Univ Oxford, UK
- 9:00 Using *Wolbachia* infections to control dengue transmission
Peter Ryan peter.a.ryan@monash.edu
Monash Univ, Australia
- 9:15 Vector competence of Brazilian *Aedes aegypti* populations for dengue virus and a potential new vector, *Aedes albopictus*
Paulo Pimenta pimenta@cpqrr.fiocruz.br
Fundação Oswaldo Cruz, Minas Gerais, Brazil

- 9:30 Application of an eco-bio-social approach to DENV and CHIKV surveillance, prevention and control in Thailand
Pattamaporn Kittayapong pkittayapong@msn.com
Center of Excellence for Vectors and Vector-Borne Diseases
Faculty of Science, Mahidol University, Salaya Campus, Thailand
- 9:45 – 10:15 **BREAK**
- 10:15 – 11:45 **SYMPOSIUM 16: LEISHMANIASIS**
Moderators: **Nágila Secundino** nagila@cpqrr.fiocruz.br
Fundação Oswaldo Cruz, Minas Gerais, Brazil
Alon Warburg alonw@ekmd.huji.ac.il
The Hebrew Univ of Jerusalem, Israel
- 10:15 Distinct sources of blood-meals affect the development of *Leishmania (braziliensis) braziliensis* in the sand fly *Lutzomyia intermedia*
Nágila Secundino nagila@cpqrr.fiocruz.br
Fundação Oswaldo Cruz, Minas Gerais, Brazil
- 10:30 The vector competence of *Phlebotomus orientalis* for *Leishmania donovani*
Jan Votypka vapid@natur.cuni.cz and
Peter Volf volff@cesnet.cz
Charles Univ, Prague, Czech Republic
- 10:45 Phlebotomine sand flies on the crossroads of Anatolia: transmitted diseases and vector
Bulent Alten kaynas@hacettepe.edu.tr
Hacettepe Univ, Ankara, Turkey
- 11:00 The development of *Leishmania chagasi* in its natural vector *Lutzomyia longipalpis*: A distinct process from the Old World parasite-vector pair
Paulo Pimenta pimenta@cpqrr.fiocruz.br
Fundação Oswaldo Cruz, Minas Gerais, Brazil
- 11:15 On the epidemiology of visceral leishmaniasis in Northern Ethiopia
Alon Warburg alonw@ekmd.huji.ac.il
The Hebrew Univ of Jerusalem, Israel

11:30 Understanding the molecular ecology of the *Lutzomyia longiplapis* sex pheromone is key to its use as a component of a VL vector control program

Gordon Hamilton j.g.c.hamilton@keele.ac.uk

Centre for Applied Entomology and Parasitology,

University of Keele, Staffordshire, England, ST5 5BG

11:45 **CLOSING OF THE CONGRESS**