



# **INTERNATIONAL VECTOR-BORNE DISEASES CONFERENCE (IVBDC)**

21-23 November 2023

**Scientific Programme**

<b>Day 1 – Vector Control Strategies, Vector Dynamics &amp; Disease Transmission</b>	
0830 - 0930	Registration of Participants
0930	<b>Welcome Address by Prof Chng Wee Joo</b> Vice Dean of Research Yong Loo Lin School of Medicine, NUS.
<b>Opening session</b> <b>Chair: Prof. R. Manjunatha Kini</b>	
0945	<b>Keynote speaker: Georges Christophides</b> (Imperial College, UK) Gene drives for vector population replacement and malaria transmission zero
1020	Invited speaker: <b>Chong Chee Seng</b> (Environmental Health Institute, Singapore). Fighting <i>Aedes aegypti</i> with Wolbachia- <i>Aedes aegypti</i>
1045	<b>Guest of Honour: SPS Baey Yam Keng</b> (Ministry of Sustainability and the Environment, Singapore)
1100	<b>Coffee/Tea Break</b>
<b>Session 1: Vector control strategies</b> <b>Chair: Prof. R. Manjunatha Kini</b>	
1130	Invited speaker: <b>Olaf Horstick</b> (University of Heidelberg, Germany) Dengue vector control: what works best? Are there answers from evidence synthesis?
1155	Selected Speaker: <b>Piyatida Leelagud</b> (National Chung Hsing University, Taiwan) <i>Pseudomonas entomophila: a potential alternative for the management of pyrethroid-resistant Aedes aegypti</i>
1220	Invited Speaker: <b>Johanna Fraser</b> (Monash University, Australia) Defining the antiviral mechanisms of Wolbachia; the bacterium protecting communities from mosquito-borne viruses.
1245	<b>Lunch</b>
<b>Session 2: Vector dynamics &amp; Disease transmission</b> <b>Chair: Dr Nalini Puniamoorthy</b>	
1400	<b>Keynote Address: Jason Rasgon</b> (Penn State Uni, USA) Pitfalls and breakdown points in the use of Wolbachia to control vector-borne diseases.
1435	Invited speaker: <b>Jamal I-Ching Sam</b> (University of Malaya, Malaysia) Circulating chikungunya virus variants in Malaysia and potential implications for mosquito vectors and humans
1500	Selected speaker: <b>Kelvin Ho</b> (Animal and Veterinary Service, National Parks Board, Singapore) Tick and canine tick-borne disease biosurveillance in free roaming dogs and animal establishments in Singapore: 2019-2023
1515	Invited speaker: <b>Indra Vythilingam</b> (University of Malaya, Malaysia) Current status of simian malaria and its vectors in Southeast Asia.
1540	Selected speaker: <b>Zhen Yuan Yeo</b> (Department of Physics, NUS, Singapore) Inferring the hidden and long-range dengue transmission routes in Singapore.

1555	Invited speaker: <b>Christopher Ang</b> (Environmental Health Institute, Singapore) Detection and characterisation of the lineage I insect-specific flavivirus, Quang Binh virus, from rural caught mosquitoes in Singapore
16.20	<b>Coffee/Tea break</b>
<b>Session 3: Vector dynamics &amp; Disease transmission</b>	
<b>Chair: Dr Cheong Huat Tan Wilson</b>	
1650	Invited Speaker: <b>Sazaly Bin Abu Bakar</b> (University of Malaya, Malaysia) Dengue Virus, Mosquitoes and Host in Shaping Major Dengue Outbreaks.
1715	Selected speaker: <b>Julie Reveillaud</b> (University of Montpellier, France) Wolbachia plasmid pWCP is widely distributed and highly conserved in <i>Culex pipiens</i> and <i>Culex quinquefasciatus</i> mosquitoes worldwide
1730	Invited Speaker: <b>Nalini Puniamoorthy</b> (NUS, Singapore) Polyandry, population structure and Wolbachia infections in <i>Aedes albopictus</i> across Singapore.
1755	Invited Speaker: <b>Jingwen Wang</b> (Fudan University, China) The influence of tryptophan metabolism on Plasmodium transmission in mosquitoes
1820	<b>End of day 1</b>

## Day 2 - Vector Biology

### Session 4: Vector-pathogen interactions

Chair: Dr Guillaume Carissimo

0900	<b>Keynote Address: Bruce Hay</b> (Caltech, USA) Engineering the composition and fate of wild populations with gene drive
0935	Invited speaker: <b>Leen Delang</b> (Rega Institute, Belgium) Classic and new antiviral strategies to treat infections with mosquito-borne viruses.
1000	Selected speaker: <b>Milly Ming-Ju Choy</b> (Duke-NUS, Singapore) Species- and tissue-specific micro-evolution of dengue virus in <i>Aedes aegypti</i> and <i>Aedes albopictus</i> mosquitoes.
1015	Invited speaker: <b>Claudia Rückert</b> (University of Nevada, USA) Defining mechanisms of viral dsRNA sensing in vector mosquitoes

1040

**Coffee/Tea Break**

### Session 5: Vector Microbiota

Chair: Dr Guillaume Carissimo

1110	Invited Speaker: <b>Cheng Gong</b> (Tsinghua University, China) Skin Microbiota, Host Volatiles and Viral Transmission by Mosquitoes
1135	Invited speaker: <b>Emilie Pondeville</b> (Glasgow University, UK) Microbiota-nutrition-physiology interactions in mosquitoes: treat and trick?
1200	Invited speaker: <b>Wang Si Bao</b> (Shanghai Institutes for Biological Sciences, China) Mosquito Microbiota and Implications for Disease Control
1225	Selected speaker (#22): <b>Cassandra Koh</b> (Institut Pasteur, Université Paris Cité, Paris, France) Exploring the virome of five mosquito genera across diverse geographic regions.

1240

**Lunch**

### Session 6: Vector-Pathogen interactions

Chair: Dr Cai Yu

1400	<b>Keynote Address: Manjunatha Kini</b> (NUS, Singapore) Role of Vector Saliva in Vector-Virus-Host Trilateral Interactions
1435	Invited speaker: <b>Julien Pompon</b> (Institute of Research for Development (IRD); France) Lipids in mosquito saliva enhance transmission for multiple flaviviruses
1500	Invited speaker: <b>Guann-Yi Yu</b> (National Institute of Infectious Diseases and Vaccinology, National Health Research Institutes, Taiwan). Highly pathogenic DENV-2 strain in mosquitoes and mouse models
1525	Selected speaker: <b>Hong-Guan Tee</b> (National Health Research Institutes, Taiwan) The Role of Cryptochrome-1 in Circadian Clock Resetting and Diurnal Motor Activity in <i>Aedes aegypti</i> .

<b>1540</b>	<b>Coffee/Tea break</b>
	<b>1600-1800</b>
	<b>Poster Session</b>
<b>1800</b>	<b>End of Day 2</b>
<b>1830</b>	<b>Gala Dinner (by invitation only)</b>

### Day 3 – Pathogen fitness and virulence in its mammalian host and treatment approaches

#### Session 7: Pathogen fitness and virulence in its mammalian host

Chair: Prof Laurent Renia

0900	<b>Keynote speaker: Sylvie Alonso</b> (Infectious Diseases Translational Research Programme, NUS, Singapore) Viral determinants of DENV fitness and virulence
0935	Invited Speaker: <b>Wan Yue</b> (A*STAR Genome Institute of Singapore, Singapore) RNA structure and interactomes of RNA viruses
1000	Selected Speaker: <b>Yueh Hsin Ping</b> (National Yang Ming Chiao Tung University, Taipei, Taiwan) Uncovering novel roles of Dengue virus-induced autophagy during the early infection stage by single-virus tracking
1015	Invited speaker: <b>Pablo Bifani</b> (Infectious Diseases Translational Research Programme, NUS, Singapore) Rapid selection of drug resistant mutants for target deconvolution and drug discovery in viruses
1040	<b>Coffee/Tea Break</b>

#### Session 8: Pathogen fitness and virulence in its mammalian host

Chair: Prof Laurent Renia

1110	Invited Speaker: <b>Marco Vignuzzi</b> (A*STAR IDLabs) Title TBC
1135	Selected speaker: <b>Ruyue Liu</b> (Pharmacy, NUS, Singapore) Characterization of naturally occurring Flavivirus host-specific mutations.
1150	Invited Speaker: <b>Amit Sharma</b> (All India Institute of Medical Sciences) From structural biology to epidemiology
1215	Selected speaker: <b>Carla Bianca L. Victorio</b> (Cancer & Stem Cell Biology Programme, Duke-NUS, Singapore) Positron emission tomography (PET) imaging biomarkers of dengue and Zika disease in mouse models.
1230	<b>Lunch</b>

#### Session 9: Prophylactic and Therapeutic approaches against Vector-Borne pathogens

Chair: A/P Sylvie Alonso

1400	<b>Keynote speaker: Laurent Renia</b> (Nanyang Technological University, Lee Kong Chian School of Medicine, Singapore) New insights in <i>Plasmodium vivax</i> malaria biology
1435	Selected speaker: <b>Amanda Leow</b> (Nanyang Technological University School of Biological Sciences, Singapore) TNF $\alpha$ promotes sexual conversion of <i>Plasmodium falciparum</i> via PFFIKK12 serine/threonine kinase.
1450	Invited speaker: <b>Jody Peters</b> (University of Queensland, Australia) Harnessing recombinant mosquito-specific viruses to tackle emerging One Health viral diseases.
1515	Selected speaker: <b>Sébastien Nisole</b> (Institut de Recherche en Infectiologie de Montpellier (IRIM), Montpellier University, CNRS, France). Identification of Interferon-stimulated genes that interfere with the replication of West Nile and Usutu virus.
1530	Invited speaker: <b>Julien Lescar</b> (Nanyang Technological University, Lee Kong Chian School of Medicine, Singapore) Identification and structural validation of purine nucleoside phosphorylase from <i>Plasmodium falciparum</i> as a target of MMV00848.
1555	<b>Coffee/Tea Break</b>
1625	<b>Keynote speaker: Paul Pronyk</b> (Centre for Outbreak Preparedness, Duke-NUS) The state of genomic pathogen surveillance in Asia and implications for Vector-borne Diseases
1700	<b>Award Ceremony and Closing Remarks (chairs)</b>
17.15	<b>End of the conference</b>