Scientific Organizers:
Maureen Coetzee, University of Witwatersrand, South Africa
Josiane Etang, Institut de Recherche de Yaoundé, Cameroon
Stephen Torr, Liverpool School of Tropical Medicine, UK
Scott L. O’Neill, Monash University, Australia

Part of the Keystone Symposia Global Health Series, supported by the Bill & Melinda Gates Foundation

The elimination or eradication of several vector-borne diseases – including malaria, lymphatic filariasis, onchocerciasis and trypanosomiasis – is high on the agenda of the World Health Organization. Sustainable vector control is currently the only mass prevention strategy. However, success is hampered by many challenges posed by both the vectors and the pathogens. These challenges include insecticide resistance in mosquitoes and drug resistance in parasites, with little on the immediate horizon to alleviate these problems. Insecticide and drug resistance are two parallel phenomena in vectors and parasites. While combination drugs have been developed to overcome parasite resistance to monotherapies, only four classes of insecticides are available for vector control. The unexpected emergence of arboviruses, such as Zika in Brazil and southeast Asia, yellow fever in southern Africa, and Dengue and Chikungunya, pose their own unique challenges. This conference will address the difficulties in “going the final mile” to achieve elimination, in terms of surveillance, capacity and funding. Key goals of the conference are to: 1) Review the latest scientific knowledge on vectors and pathogens that are responsible for emerging or re-emerging diseases; 2) Address innovative methods for the control or elimination of vector-borne diseases; and 3) Enhance awareness of the landscape of vector-borne diseases and related new scientific knowledge aimed at improving the health of vulnerable human populations. It also seeks to break down the “insect silos” in which the vector-borne disease research community too commonly operates, providing a forum for researchers to interact, create networks and partnerships, exchange ideas, and think creatively across disciplines.

Session Topics:

• Workshop 1: Is Climate Change Really Affecting Vectors?
• Vector-Pathogen Interactions
• Aedes-Borne Viruses
• Workshop 2: Vector Biology – Do We Really Know Enough?
• Trypanosomiasis and Filariasis
• Insecticide and Drug Resistance
• Other Vector-Borne Diseases
• New Developments in Vector-Borne Disease Control I & II
• Workshop 3: Arbovirus Disease Around the World – What Is the True Burden?

Scholarship Application & Discounted Abstract Deadline: May 11, 2017
Abstract Deadline: June 13, 2017
Discounted Registration Deadline: July 11, 2017

Note: A limited number of subsidized registrations covering just the registration fee but not travel or lodging will be available for local participants based in South Africa who can commute to the conference. Scholarships are available for graduate students and postdoctoral fellows. Global Health Travel Awards are for LMIC investigators. Abstracts submitted by the abstract deadline will be considered for short talks on the program.

Meeting Hashtag: #KSvector

www.keystonesymposia.org/17T1
SUNDAY, SEPTEMBER 10
Arrival and Registration

MONDAY, SEPTEMBER 11
Welcome and Keynote Address
Dirk Engels, World Health Organization, Switzerland
Overview of Trends in Vector-Borne Diseases

Josiane Etang, Institut de Recherche de Yaoundé, Cameroon
Malaria, Decreasing or Increasing?

Stephen Torr, Liverpool School of Tropical Medicine, UK
Contributions of Vector Control to the Elimination of Human African Trypanosomiasis

Neil Ferguson, Imperial College London, UK
Modelling P. falciparum Transmission in Africa: Feasibility of Elimination

Short Talk(s) Chosen from Abstracts

Workshop 1: Is Climate Change Really Affecting Vectors?

Vector-Pathogen Interactions

Anna Cohuet, Institut de Recherche pour le Développement, France
Despite Insecticide Resistance, Malaria Vector Control Still Matters

Marcelo Jacobs-Lorena, Johns Hopkins Bloomberg School of Public Health, USA
Fighting Malaria with Engineered Symbiotic Bacteria from Vector Mosquitoes

Flaminia Catteruccia, Harvard School of Public Health, USA
Determining the Physiological Processes Regulating Plasmodium Development in the Anopheles Mosquito

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, SEPTEMBER 12
Aedes-Borne Viruses

Birkinesh Ameneshewa, World Health Organization, Congo, Republic of the
Arboviral Transmission Risk and Recent Outbreaks in the African Region

Speaker to be Announced

Matthew B. Thomas, Pennsylvania State University, USA
The Influence of Environment on Transmission

Scott L. O’Neill, Monash University, Australia
The Use of Wolbachia to Control the Transmission of Aedes Aegypti associated Viruses: The Eliminate Dengue Program

Short Talk(s) Chosen from Abstracts

Poster Session 2

Workshop 2: Vector Biology – Do We Really Know Enough?

Trypanosomiasis and Filariasis

Lisa Reimer, Liverpool School of Tropical Medicine, UK
Lymphatic Filariasis Transmission Ecology and Vector Behavior

Annette MacLeod, University of Glasgow, UK
The Skin Is a Significant but Overlooked Anatomical Reservoir for Vector-Borne African Trypanosomes

Enock Matovu, Makerere University, Uganda
Human African Trypanosomiasis

Short Talk Chosen from Abstracts

WEDNESDAY, SEPTEMBER 13
Insecticide and Drug Resistance

Karen I. Barnes, University of Cape Town, South Africa
Sustaining Malaria Treatment Efficacy in the Shadow of Increasing Antimalarial Drug Resistance

Immo Kleinschmidt, London School of Hygiene & Tropical Medicine, UK
Assessing the Impact of Insecticide Resistance on Malaria Vector Control

Martin James Donnelly, Liverpool School of Tropical Medicine, UK
New Mechanisms of Insecticide Resistance in Malaria Vectors

Maureen Coetzee, University of Witwatersrand, South Africa
Insecticide Resistance and Surveillance

Short Talk(s) Chosen from Abstracts

Poster Session 3

Other Vector-Borne Diseases

Paul A. Bates, Lancaster University, UK
Advances in Sandfly Research and Leishmaniasis Control

Matthew Baylis, University of Liverpool, UK
Impact of Climate on the Transmission Risk of Culicoides-Borne Viruses

Chris Drakeley, London School of Hygiene & Tropical Medicine, UK
Plasmodium Knowlesi – Epidemiology of a Zoonotic Malaria from a Multidisciplinary Study

Short Talk Chosen from Abstracts

THURSDAY, SEPTEMBER 14
New Developments in Vector-Borne Disease Control I

Lizette Leonie Koekemoer, University of the Witwatersrand, South Africa
Will SIT Really be Useful as a Vector Control Tool?

Stephen L. Dobson, University of Kentucky, USA
Autocidal Techniques against Aedes Mosquitoes in the USA

Nick Hamon, Innovative Vector Control Consortium, UK
What’s New on the Horizon of Innovative Vector Control?

Austin Burt, Imperial College London, UK
Modified Mosquitoes for Malaria Control – Current Status, Requirements for Success, and a Step-Wise Approach for Getting There
Short Talk(s) Chosen from Abstracts

Workshop 3: Arbovirus Disease around the World – What Is the True Burden?

New Developments in Vector-Borne Disease Control II

Gerry F. Killeen, Liverpool School of Tropical Medicine, UK
Made-to-Measure Vector Control Packages for Eliminating Malaria Transmission

Marc F. Schetelig, Justus-Liebig University Giessen, Germany
Molecular Strategies to Compare and Improve Genetic Vector Control Systems

Stephanie L. James, Foundation for the National Institute of Health, USA
Creating a Supportive Environment for Novel Vector Control Technologies

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

FRIDAY, SEPTEMBER 15

Departure