

## **Program & Abstracts**

Alfred Medical Research and Education Precinct (AMREP),

The Alfred Hospital,

Melbourne, Australia

14<sup>th</sup> & 15<sup>th</sup> October 2013

## Program at a Glance

#### DAY 1

08:00 - 09:15	Registration
09:15 - 09:30	Welcome and Housekeeping
09:30 - 10:30	Plenary Session 1
10:30 - 11:00	Morning Tea
11:00 - 12:30	Session 1: Epidemiology & Field-based Research I
12:30 - 14:00	Lunch & Poster Session (P1-24)
14:00 - 15:30	Session 2: Malaria in Pregnancy
15:30 - 16:00	Afternoon Tea
16:00 - 17:30	Session 3: Molecular and Cellular Parasitolgy
18:15	Conference Dinner: College Lawn

#### DAY 2

09:00 - 10:45	Session 4: Host/Parasite Interactions & Remodelling
10:45 - 11:15	Morning Tea
11:15 - 12:45	Session 5: Epidemiology & Field-based Research II
12:45 - 14:15	Lunch & Poster Session (P25-48)
14:15 - 15:45	Session 6: Drug Resistance & Drug Discovery
15:45 - 16:15	Afternoon Tea
16:15 - 17:30	Plenary Session 2
17:30	Awards Ceremony
18:00	Come Together at Village

#### Welcome

Dear Malaria in Melbourne 2013 Delegate,

Welcome to *Malaria in Melbourne* 2013, the latest instalment of this successful Conference Series, to be held over the next two days at the Alfred Medical Research and Education Precinct (AMREP), The Alfred Hospital, Melbourne, Australia.

Australia is a major international hub for malaria research, with more than fifty research groups across the country investigating different approaches to finding solutions to this global public health issue. *Malaria in Melbourne* is a unique forum that brings together the Australian malaria research community to present their latest data and facilitate the development of collaborative links between institutes, working towards our common strategic goal of controlling, eliminating and ultimately eradicating malaria. The *Malaria in Melbourne* 2013 program reflects the wide range of disciplines covered by the malaria research community, ranging from basic science through to clinical/epidemiological studies and translational research. This year our plenary speakers reflect the malaria communities research goal with Dr Peter Ryan and Professor Mike Toole who have both made major contributions to the global control of infectious diseases.

The *Malaria in Melbourne* Committee comprises early career malaria researchers representing a number of Medical Research and Academic Institutions. We all warmly welcome you to this meeting and hope you enjoy the scientific and social program!



Freya Fowkes, Chair Burnet Institute



Matt Dixon Co-Chair University of Melbourne



Teresa Carvalho Monash University

Ming Kalanon -

James MacRae University of Melbourne



Louise Randall University of Melbourne



Danny Wilson WEHI



Sophie Zaloumis University of Melbourne

Melbourne

### Program

#### DAY 1

08:00 - 09:15		Registration
09:15 - 09:30		Welcome & Housekeeping
09:30 - 10:30		Plenary Session 1 Sponsored by: Malaria Nexus Chair: Freya Fowkes
	PL1	Using Wolbachia infections to control dengue transmission
		Peter Ryan – Faculty of Science, Monash University
10:30 - 11:00		Morning Tea
11:00 - 12:30		Session 1: Epidemiology & Field-based research I Sponsored by: Medicines for Malaria Venture Chairs: Celine Barnadas and Leanne Robinson
	T1	Can the physical examination facilitate the triage of adults with <i>falciparum</i> malaria?
	Т2	Contribution of <i>P. vivax</i> hypnozoites to the burden of malaria infection and disease in children from Papua New Guinea Leanne Robinson - Infection and Immunity Division, WEHI
	Т3	Prevalence and effects of <i>Plasmodium</i> parasites in pediatric anaemia in Mozambique
	Τ4	Ariel Achtman – Infection and Immunity Division, WEHI Sympatric populations of <i>Plasmodium vivax</i> and <i>Plasmodium</i> <i>falciparum</i> in Papua New Guinea show different patterns of differentiation and genetic structure Charlie Jennison – Infection and Immunity Division, WEHI; Department of Medical Biology, University of Melbourne
	Τ5	Quantifying invasion inhibitory antibodine Quantifying invasion inhibitory antibodies to AMA1 in human populations using transgenic <i>Plasmodium falciparum</i> : Implications for vaccine design Silvia Teguh - Department of Biochemistry and Molecular Biology, Bio21 Institute, University of Melbourne; Department of Medicinal Chemistry, Monash Institute of Pharmaceutical Science
12:30 - 14:00		Lunch & Poster Session (numbers P1-24)

14:00 - 15:30		Session 2: Malaria in Pregnancy Sponsored by: Burnet Institute Chairs: Louise Randall and Philippe Boeuf
	Т6	Evaluating rapid diagnostic tests for suspected malaria in pregnancy
	Т7	Alex Umbers – Department of Medicine, University of Melbourne Antibodies to malaria in pregnancy and birth outcomes: a longitudinal study in PNG Alistair Meleon – Burnet Institute
	Т8	The effect of interactions between iron deficiency and malaria in pregnancy on adverse birth outcomes Kerryn Moore – Centre for Molecular, Environmental, Genetic and Analytical
	Т9	Placental mTOR signaling and foetal growth restriction on placental malaria
	T10	Kris Dimasuay - Department of Medicine, University of Melbourne <b>The materno-foetal transfer of antimalarial antibodies</b> Asha Herten-Crabb – Burnet Institute
15:30 - 16:00		Afternoon Tea
16:00 - 17:30		Session 3: Molecular and Cellular Parasitology Sponsored by: Australian Society of Parasitology Chairs: Nicholas Proellocks and Catherine Nie
	T11	Diverse cellular sources of CXCL10 modulate different processes involved in the development of severe malaria
	T12	Carbonic anhydrase, a non-essential enzyme in rodent malaria
	T13	Identification of gene regulatory elements in the malaria parasite <i>Plasmodium falciparum</i> Jingvi Tang – Department of Medicine, University of Melbourne
	T14	High-throughput analysis of the regulation of alternative splicing in <i>Toxoplasma gondii</i> Lee Yeoh – Department of Biochemistry and Molecular Biology, Bio21
	T15	Institute, University of Melbourne; School of Botany, University of Melbourne Coronin is a regulator of actin filament bundling at the cell cortex of the motile <i>Plasmodium</i> and <i>Toxoplasma</i> parasite cell Maya Olshina – Infection and Immunity Division, WEHI; Department of Medical Biology, University of Melbourne

18:15 Conference Dinner Sponsored by: Beckman Coulter College Lawn Map in program

09:00 - 10:45		Session 4: Host/Parasite Interactions & Remodeling Sponsored by: CXS Chairs: Ming Kalanon and Xavier Sisquella
	T16	PfMSPDBL1 and PfMSPDBL2 – novel members of the major Merozoite Surface Protein 1 complex in <i>Plasmodium falciparum</i>
	T17	Clara Lin - Infection and Immunity Division, WEHI <b>Phosphorylation of</b> $\alpha$ <b>Snap is required for secretory organelle</b> <b>biogenesis in</b> <i>Toxoplasma gondii</i> Pebecca Stewart Infection and Immunity Division WEHI
	T18	Elucidating protein transport in <i>P. falciparum</i> : the role of chaperones
	T19	Characterising a novel component of the malaria translocon
	T20	Apical complex protein RNG2 implicates the apical polar ring in the
	T21	regulated secretion of micronemes Nicholas Katris – School of Botany, University of Melbourne Characterisation of a lysine-rich membrane-associated PHISTb protein of <i>P. falciparum</i> Nicholas Proellocks – Department of Microbiology, Monash University
10:45 - 11:15		Morning Tea
11:15 - 12:45		Session 5: Epidemiology & Field-based research II Sponsored by: School of Medicine, Deakin University Chairs: Alicia Arnott and Sophie Zaloumis
	T22	Impaired red cell deformability in <i>knowlesi</i> malaria in proportion to disease severity
	T23	Bridget Barber – Menzies School of Health Research, Darwin <b>Opsonising antibodies to</b> <i>P. falciparum</i> merozoites associated with immunity to clinical malaria Danika Hill - Infection and Immunity Division, WEHI; Department of Medical
	T24	Biology, University of Melbourne Identifying key targets of antibodies to <i>P. falciparum</i> -infected erythrocytes using genetically-modified parasites with disrupted surface antigen expression
	T25	The role of binding inhibitory antibodies for <i>Plasmodium falciparum</i> erythrocyte binding antigen (EBA175) in protecting children from symptomatic malaria
	T26	High blood-stage parasitaemia and age are the main determinants of <i>Plasmodium falciparum</i> and <i>P. vivax</i> gametocyte prevalence Christian Koepfli - Infection and Immunity Division, WEHI; Department of Medical Biology, University of Melbourne

- **12:45 14:15** Lunch & Poster Session (numbers P25-48)
- 14:15 15:45 Session 6: Drug Resistance and Drug Discovery Sponsored by: International Journal of Parasitology: Drugs and Drug Resistance Chairs: Danny Wilson and Belinda Morahan
  - T27 Immunity to malaria and the assessment of emerging artemisinin resistance in Thailand Rosanna Powell – Burnet Institute
  - T28 Transition state mimetic inhibitors of Plasmepsin V from Plasmodium falciparum and Plasmodium vivax
    Brad Sleebs Infection and Immunity Division, WEHI; University of Melbourne
    T20 High throughput correcting reveals different chemosensitivities of
  - T29 High-throughput screening reveals different chemosensitivities of *Plasmodium falciparum* developing gametocytes and asexual blood stages

Leonardo Lucantoni - Discovery Biology, Eskitis Institute for Drug Discovery, Griffith University

T30 High-throughput screening for antimalarial drugs using metabolomic approaches

Charlie Chua – Department of Biochemistry and Molecular Biology, Bio21 Institute, University of Melbourne

- T31 Profiling compound stage of effect against *Plasmodium falciparum* asexual stages Sandra Duffy – Discovery Biology, Eskitis Institute for Drug Discovery, Griffith University
- **15:45 16:15** Afternoon Tea

16:15 - 17:00 Plenary Session 2 Sponsored by: Monash University Chair: Matthew Dixon

PL2 Closing Address

Mike Toole - Burnet Institute

 17:00 Awards Ceremony Sponsored by:
 17:30 Come Together at Village

## Plenary Lecture 1: Using *Wolbachia* infections to control dengue transmission

Dr Peter Ryan Program Manager, Eliminate Dengue, School of Biological Sciences, Monash University

Dengue fever is an emerging insect-transmitted disease causing an estimated 390 million human infections each year. Currently there are no effective treatments beyond prevention measures that focus on reducing population abundance of the main mosquito vector, *Aedes aegypti*. These strategies



are failing to reduce dengue incidence in tropical communities and there is an need effective alternatives. The Eliminate urgent for Dengue Program (www.eliminatedengue.com) is examining the potential use of inherited bacterial symbionts of insects known as Wolbachia as a novel method to interfere with dengue transmission. This work is now moving from basic bench studies into open field trials in Australia, Vietnam and Indonesia. The presentation will give an overview of Wolbachia-mosquito-pathogen interactions as well as results from open field trials involving releases of Wolbachia infected Aedes aegypti mosquitoes.

Professor Michael Toole AM, Deputy Director, Burnet Institute.

Prof. Mike Toole has spent over 40 years working on a range of international health areas such as communicable disease control (including HIV and malaria), maternal and child health and nutrition, and public health in emergency settings. Working for eight years in Thailand, two years in Somalia, and ten years at the CDC in Atlanta, Prof. Toole has undertaken projects in more than 30 countries in five continents. A founding member of Medecins sans Frontieres Australia, Prof. Toole is also a



member of the Global Fund Technical Review Panel, the Board of the Three Diseases Fund for Burma, and the Independent Monitoring Board of the Global Polio Eradication Initiative. In 2013 Professor Mike Toole was awarded a Member of the Order of Australia for significant service to international health, particularly through leadership in medical research.

#### **Parents Room**

We have a private parent's room with refrigeration facilities available for attendees to use in the Burnet Institute - next door at 85 Commercial Road. Please see the receptionist for details.

#### Conference Dinner – College Lawn Sponsored by Beckman Coulter





# Malaria in Melbourne 2013 would like to acknowledge the generous support of our sponsors





















