

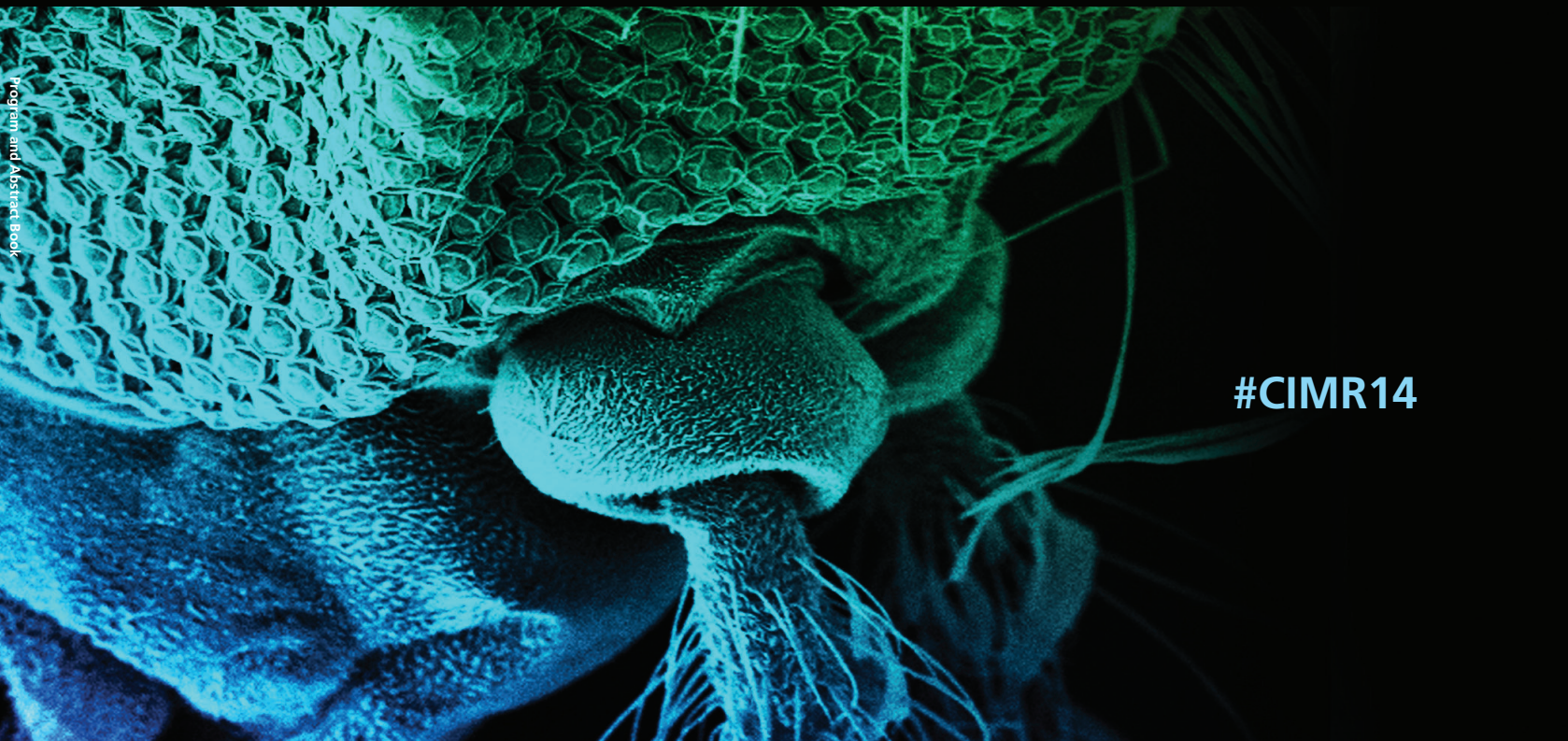
Challenges in Malaria Research

Core science and innovation

www.challenges-in-malaria-research.com/2014

22-24 September 2014
University of Oxford, UK

Program



Program and Abstract Book

#CIMR14



Conference sponsors:



CONFERENCE PROGRAM

DAY ONE: MONDAY 22 SEPTEMBER 2014

- 11:00 Registration
- 12:00 Lunch
- 13:00 Welcome remarks by the organizers
- Presentation of the Odile Bain Memorial Prize for research in medical parasitology to Dr Stefanie Knopp (Swiss Tropical and Public Health Institute, Basel and Natural History Museum, London).
The award is sponsored by *Parasites & Vectors* and Meril, and the selection committee is chaired by Prof Domenico Otranto, Bari.

Session 1: Vectors – a special session in memory of Mario Coluzzi. Chair: Nora Besansky

- 13:15 **The *Anopheles gambiae* 1000 genomes project**
Martin Donnelly, Liverpool School of Tropical Medicine, UK
- 13:45 **Phenotypic divergence among the members of the African malaria mosquitoes and strategies of persistence throughout the dry season**
Tovi Lehmann, LMVR, NIAID, National Institutes of Health, Maryland, USA
- 14:15 **A phylogenomic portrait of introgression in the *Anopheles gambiae* complex**
Nora Besansky, University of Notre Dame, Indiana, USA
- 14:45 **Selected talk - Mechanisms of reproductive isolation between incipient species in the *Anopheles gambiae* species complex**
Gabriela Gibson, Natural Resources Institute, University of Greenwich, Kent, UK
- 15:00 **Selected talk - Assessing the impact of vector control interventions by measuring their effectiveness - what has been done in Madagascar**
Thomas Kesteman, Institut Pasteur de Madagascar, Antananarivo, Madagascar
- 15:15 Coffee break

Session 2: Cutting edge in cell biology. Chair: Jake Baum

- 15:45 **The ins and outs of sporozoite biology in the dermis**
Photini Sinnis, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA
- 16:15 **Can we stop malaria parasites in the skin?**
Friedrich Frischknecht, University of Heidelberg, Germany
- 16:45 **Selected flash talks**
- Sex, power & drugs: The murky world of malaria parasite mitochondria [P11]**
Giancarlo Bagini, Liverpool School of Tropical Medicine, UK
- Discovery of chemically diverse compounds targeting the *Plasmodium falciparum* coenzyme A pathway [P34]**
Sabine Fletcher, Griffith University, Brisbane, Queensland, Australia
- Haemozoin enhances MMP-9 production through MAPK p38-dependent mechanisms in human adherent monocytes [P73]**
Mauro Prato, Università di Torino, Torino, Italy
- Functional characterisation of cytochrome P450s involved in insecticide resistance in major malaria vector *Anopheles funestus* across Africa [P46]**
Sulaiman Ibrahim, Liverpool School of Tropical Medicine, UK
- Identification of *Plasmodium* PI4 kinase as target of MMV390048 by chemoproteomics [P38]**
Sonja Ghidelli-Disse, Cellzome GmbH, Heidelberg, Germany
- Remodelling of the erythrocyte cytoskeleton during *P. falciparum* merozoite invasion [P96]**
Elizabeth Zuccala, Walter & Eliza Hall Institute of Medical Research & University of Melbourne, Australia

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Characterization of Anopheline unique peroxidase and its role in regulation of Plasmodium development [P49]

Mithilesh Kajla, Birla Institute of Science and Technology, Pilani, Rajasthan, India

Quantitative proteomics for the analysis of *Plasmodium falciparum* and its red blood cell host - a preliminary study [P74]

Tiago R Vaz, Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Lisboa, Portugal

Manipulation of host cell signaling pathways by *P. falciparum* erythrocytic stages [P21]

Teresa Carvalho, Monash University, Clayton, Victoria, Australia,

Molecular basis of extreme resistance in *Plasmodium falciparum* to atovaquone and other mitochondrial inhibitors [P81]

Sasha Siegel, University of South Florida, Tampa, Florida, USA

Controlled human malaria infections using aseptic, purified cryopreserved *Plasmodium falciparum* sporozoites administered by needle and syringe [P12]

Peter Billingsley, Sanaria Inc., Rockville, MD, USA

An immunoproteomic approach reveals a different pattern of non-infected erythrocyte membrane protein recognition by antibodies from non-anemic and anemic patients with patent *Plasmodium vivax* infection [P17]

Erika Braga, Universidade Federal de Minas Gerais, Minas Gerais, Brazil

Keynote Lecture. Chair: Marcel Hommel

- 17:15 **The role of genetics in the variable clinical response to different forms of malaria**
David Weatherall, MRC Weatherall Institute of Molecular Medicine, Oxford, UK
- 18:00 **Poster Session 1 with Welcome Reception**

DAY TWO: TUESDAY 23 SEPTEMBER

Keynote Lecture. Chair: Simon Hay

- 08:30 **Malaria 2050: from science to strategy; from evidence to eradication**
Richard Feachem, University of California, San Francisco, USA

Session 3: G6PD deficiency. Chair: Chris Drakeley

- 09:15 **G6PD deficiency and diagnostics**
Gonzalo Domingo, PATH, Seattle, WA, USA
- 09:30 **On the association of African Glucose-6-phosphate dehydrogenase alleles with protection from severe and asymptomatic malaria in northeast Tanzania**
Nuno Sepúlveda, London School of Hygiene and Tropical Medicine, UK
- 09:45 **Review of the interactions between G6PD deficiency and primaquine therapy for malaria control and elimination**
Rosalind Howes, University of Oxford, UK
- 10:15 **Selected talk - Establishing a unique specimen repository with characterized G6PD enzyme activity for the development of new G6PD point-of-care tests**
Maria Kahn, PATH, Diagnostic Technologies, Seattle, WA, USA
- 10:30 **Selected talk - Epistasis and the sensitivity of phenotypic screens for beta thalassaemia**
Bridget Penman, University of Oxford, Oxford, UK
- 10:45 **Coffee break**

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Session 4: Mathematical modeling. Chair: David Smith

- 11:15 **Challenges in malaria modeling**
David L Smith, John Hopkins Malaria Research Institute (JHMRI), Baltimore, USA
- 11:45 **Modeling to inform strategies for malaria eradication**
Steven E Kern, Bill & Melinda Gates Foundation, Seattle & University of Utah, USA
- 12:15 **Selected talk - Age-shifting in malaria incidence upon cessation of interventions: a simulation study**
Peter Pemberton-Ross, Swiss Tropical and Public Health Institute & University of Basel, Switzerland
- 12:30 **Selected talk - Modeling the spatio-temporal dynamics of malaria parasite population genetics**
Edward Wenger, Institute for Disease Modeling, Bellevue, WA, USA
- 12:45 **Lunch**

Session 5: New issues in clinical malaria and pathology. Chair: Peter Kremsner

- 14:00 **Early phase antimalarial product evaluation in malaria endemic countries in Africa**
Bernhards Ogutu, INDEPTH Network, & Kenya Medical Research Institute, Kenya
- 14:30 **Science and innovation in malaria diagnostics**
Sanjeev Krishna, St George's, University of London, UK
- 15:00 **Selected talk - Persistent sub-microscopic parasitaemia after ACT treatment of African children**
Colin Sutherland, London School of Hygiene & Tropical Medicine & Hospital for Tropical Diseases, London, UK
- 15:15 **Selected talk - Disentangling malaria anaemia**
Kathrin Schuldt, Bernhard Nocht Institute for Tropical Medicine, Hamburg, Germany
- 15:30 **Coffee break**

Session 6: *Plasmodium vivax* epidemiology. Chair: Richard Price

- 16:00 ***Plasmodium vivax* Duffy binding protein: understanding targets of protective immunity**
John H Adams, University of South Florida, USA
- 16:30 **Overcoming challenges to discover drugs for liver stages of *Plasmodium vivax***
Dennis E Kyle, University of South Florida, USA
- 17:00 **Selected talk - Dynamics of *P. vivax* clones in a cohort of children with or without primaquine treatment at baseline**
Rahel Wampfler, Swiss Tropical and Public Health Institute & University of Basel, Switzerland
- 17:15 **Selected talk - Therapeutic disruption of *Plasmodium vivax* infected red cell deformability**
Bruce Russell, National University of Singapore, Singapore
- 17:30 **Poster Session 2 with Pre-dinner drinks**
- 19:15 **Conference Dinner**

DAY THREE: WEDNESDAY 24 SEPTEMBER

Session 7: Trends and impacts. Chair: Peter Gething

- 08:30 **Measuring malaria transmission reduction en route to elimination**
Richard Steketee, PATH, Seattle, WA, USA
- 09:00 **Are investments in malaria control saving the lives of children? Challenges in using all-cause child mortality for measuring the impact of malaria control programs**
Thomas Eisele, Tulane School of Public Health and Tropical Medicine, New Orleans, USA
- 09:30 **Challenges in assessing the causal attribution of scaling-up malaria control interventions on child survival in sub-Saharan Africa**
Achuyt Bhattarai, US Centers for Disease Control and Prevention, Atlanta, USA

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- 10:00 Selected talk - Insecticide-treated nets (ITNs) in Africa 2000 - 2016: coverage, system efficiency and future needs for achieving international targets
Peter Gething, University of Oxford, UK
- 10:15 Selected talk - Measure the path towards malaria elimination
Thomas Churcher, Imperial College London, UK
- 10:30 Coffee break

Session 8: Vaccines. Chair: Adrian Hill

- 11:00 Towards a multi-antigen multi-stage malaria vaccine
Adrian Hill, The Jenner Institute, University of Oxford, UK
- 11:30 Methods, markers and mechanisms for protective immunity in the controlled human malaria infection model
Robert Sauerwein, Radboud University Medical Center, Nijmegen, Netherlands
- 12:00 Selected talk - Controlled human malaria infection in Kenyan adults: A safe model that could accelerate assessment of novel drugs and vaccines in malaria endemic populations
Susanne Hodgson, The Jenner Institute, University of Oxford, UK
- 12:15 Selected talk - Progress with PfSPZ Vaccine, a radiation attenuated *Plasmodium falciparum* sporozoite vaccine
Peter Billingsley, Sanaria Inc., Rockville, MD, USA
- 12:30 Lunch

- 13:15 Sponsored talk – Lunch-hour discussion: Factors affecting drug efficacy in clinical trials
Worldwide Antimalarial Resistance Network (WWARN)

Session 9: New clues for drug development. Chair: Alan Magill

- 14:00 Drugs for malaria elimination: what do we have now and what do we need?
Dennis Shanks, Army Malaria Institute & The University of Queensland, Australia
- 14:30 Antimalarial drug development - defining and overcoming parasite resistance roadblocks
David A Fidock, Columbia University, New York, USA
- 15:00 Selected talk - A first-in-human randomized, double-blind, placebo-controlled, single- and multiple-ascending oral dose study of novel spiroindolone KAE609, to assess the safety, tolerability and pharmacokinetics in healthy adult volunteers
Joel Leong, Novartis Institute for Tropical Diseases, Singapore
- 15:15 Selected talk - A Phase IIa clinical trial using the Induced Blood Stage Malaria System to define the minimum gametocidal dose of primaquine
James McCarthy, QIMR Berghofer Medical Research Institute & University of Queensland, Brisbane, Australia
- 15:30 Coffee

Session 10: Genome mapping and molecular epidemiology. Chair: Dominic Kwiatkowski

- 16:00 Unravelling the genetic architecture of artemisinin resistance in *Plasmodium falciparum*
Olivo Miotto, University of Oxford, UK & Mahidol-Oxford Tropical Medicine Research Unit, Thailand
- 16:30 Relevance of K13 mutations for malaria control and elimination program
Frederic Ariey, Institut Pasteur, Paris, France
- 17:00 Selected talk - Genomic analyses of complex *P. vivax* infections
David Serre, Cleveland Clinic, Cleveland, Ohio, USA
- 17:15 Selected talk - Multi-agent modeling and simulation of *Plasmodium falciparum* dynamics considering sulfadoxine-pyrimethamine resistance and environmental factors
Daniela Zaffalon Gomez, Universidad Nacional de Colombia, Bogotá, Colombia
- 17:30 Closing remarks