Joint International Tropical Medicine Meeting 2018 (JITMM 2018)

“Innovation, Translation, and Impact in Tropical Medicine”

12-14 December 2018
Amari Watergate, Bangkok, Thailand

Program Book

Organizers
✶ Faculty of Tropical Medicine, Mahidol University
✶ SEAMEO TROPMED Network
✶ TROPMED Alumni Association
✶ The Parasitology and Tropical Medicine Association of Thailand

Co-organizers
✶ Department of Disease Control, Ministry of Public Health (MOPH)
✶ Mahidol - Oxford Tropical Medicine Research Unit (MORU)
Acknowledgements
The Organizers of JITMM2018 express sincere appreciation and grateful thanks to all those who have contributed their kind support and cooperation in facilitating this Meeting.

Contributors:

- Department of Disease Control, Ministry of Public Health (MOPH)
- Mahidol - Oxford Tropical Medicine Research Unit (MORU)
- Wellcome Trust
- Mahidol University
- SEAMEO TROPMED Network
- Thailand Convention & Exhibition Bureau (TCEB)
- Seattle Children’s Research Institute
- Faculty of Medicine, Public Health and Nursing Universitas Gadjah Mada
- QIAGEN (Thailand) Ltd.
- Thailand Center of Excellence for Life Sciences (Public Organization)
- Cocksec Chemical Industry Co.,Ltd.
- Hausen Bernstein Co.,Ltd.
- MP Group (Thailand) Co.,Ltd
- KM Biologics Co.,Ltd.
- Siam Commercial Bank PCL.
- Esco Lifesciences (Thailand) Co.,Ltd.
The JITMM2018 Travel Awards, supported by The Wellcome Trust, allows promising early-career researchers from LMICs to participate in Southeast Asia’s largest Tropical Medicine conference. The 33 JITMM2018 Travel Awards winners are:

- **Adam Darsono**
  Yogyakarta, Indonesia

- **Atiqur Rahman**
  Dhaka, Bangladesh

- **Aung Minn Thway**
  Yangon, Myanmar

- **Dearikha Karina Mayashinta**
  Malang, Indonesia

- **Dharm Raj Bhatta**
  Pokhara, Nepal

- **Didi Candradikusuma**
  Malang, Indonesia

- **Eleonor Cervantes**
  Manila, Philippines

- **Flor Marie Immanuelle Pilapil-Amante**
  Batangas, Philippines

- **Gayan Parakrama Wijayapala Kombala Withanage**
  Ragama, Sri Lanka

- **Hammed Mogaji**
  Ekiti State, Nigeria

- **Ko Ko Win**
  Nay Pyi Taw, Myanmar

- **Komal Raj Rijal**
  Kathmandu, Nepal

- **Kshitiz Shrestha**
  Kathmandu, Nepal

- **Linn Htet Aung**
  Nay Pyi Taw, Myanmar

- **Mariah Mikhaela Chua**
  Manila, Philippines

- **Mitesh Shrestha**
  Lalitpur, Nepal
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Nay Pyi Taw, Myanmar

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Rakesh Singh
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Sujata Shrestha
Lalitpur, Nepal

Supriya Sharma
Kathmandu, Nepal

Thu Vo
Ho Chi Minh City, Vietnam

Vikash Paudel
Kathmandu, Nepal

Xiaotao Zhao
Yunnan, China

Zaw Min Tun
Nay Pyi Taw, Myanmar
### Scientific Program of JITMM 2018

#### Wednesday 12 December 2018

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**Opening Ceremony**

**S1** The 24th Chamlong-Thanakich Chaisansuk Lecture “The safe and effective radical cure of malaria” Prof. Ric Price Menzies School of Health Research, Australia University of Oxford, UK

**Coffee break**

**S29** Tackling malaria transmission and infection

**S30** Accelerating access to existing new and old technologies for vector-borne disease elimination in Asia-Pacific (Malaria Consortium)

**S31** Antimicrobial resistance

**S32** Environmental health and toxicology

**S33** Turbo talk II
Wednesday 12 December 2018
9.00-9.45
Watergate Ballroom

Opening Session

▲ Opening Ceremony By Organizers and Co-organizers

* Report by
  Prof. Srivicha Krudsood
  Chair, JITMM2018 Scientific Committee

* Welcome Address
  Dr. Sombat Thanphasertsuk
  Senior Expert in Prevention Medicine, Department of Disease Control,
  Thailand Ministry of Public Health

* Welcome Address
  Mr. David Burton
  Chief Operating Officer, Mahidol-Oxford Tropical Medicine Research Unit (MORU)

* Opening Remarks
  Assoc. Prof. Pratap Singhasivanon
  Chairman, JITMM2018 Organizing Committee

* TROP MED Alumni Award Presentation
  Presented by Assoc. Prof. Supranee Changbumrung

Award Recipients:

* Prof. Akira Kaneko
  Professor of Global Health, Department of Microbiology, Tumor and Cell biology,
  Karolinska Institutet, Sweden

* Prof. Dr. Tawadchai Suppadit
  Vice President, Planning and Development Strategies, Walailak University, Thailand

* Dr. Twatchai Srestasupana
  Director, Maesot General Hospital, Maesot, Tak, Thailand

Prof. Akira Kaneko
Prof. Dr. Tawadchai Suppadit
Dr. Twatchai Srestasupana
The leaders of 18 malaria endemic countries have set ambitious goals to eliminate malaria from the Asia Pacific region by 2030. Whilst there has been significant progress in reducing the burden of malaria, these gains are fragile. The ultimate goal of malaria elimination is threatened by a variety of challenges, particularly the spread of multidrug resistant *P. falciparum* and a rising proportion of infections due to non-falciparum malaria. These challenges highlight the importance of the main themes of this conference: innovation, translation, and impact. The timely elimination of malaria from the Asia Pacific will require expansion of malaria control activities to include active case detection and the widespread implementation of the effective radical cure of malaria, in which all stages of the parasite are targeted. Vivax’s ability to form dormant liver stages (hypnozoites) and to recur weeks to months after a primary infection requires treatment of both the blood and liver stages of the parasite. Currently, the only widely available drug to eliminate hypnozoites from the human host is primaquine a drug that can cause significant risk of haemolysis in individuals with G6PD deficiency. The prolonged treatment course and requirement for G6PD testing are major obstacles to healthcare providers, who are often reluctant to prescribe PQ, and patients, who are reluctant to take a full course of treatment. New tools have been developed to overcome these, including novel point of care devices and short course treatment regimens. These innovations will be discussed with regard to their translation into policy and their impact upon the burden of disease.

Prof. Ric Price
Menzies School of Health Research, Darwin, Australia
University of Oxford, United Kingdom

Ric Price is Professor of Global Health at the Menzies School of Health Research in Darwin Australia and Professor of Tropical Medicine at the Centre of Tropical Medicine, University of Oxford, UK. His translational research program focuses on improving the diagnosis and management of multidrug resistant *P. falciparum* and *P. vivax* infections. He is head of the clinical module of the World Wide Antimalarial Resistance Network (WWARN) and co-Chairs the Vivax Working Group of the Asia Pacific Malaria Elimination Network (APMEN).
S2: Ivermectin for malaria elimination

Chairpersons:

Kesinee Chotivanich  Joel Tarning

Invited Speakers:

▼ Ivermectin for malaria elimination - clinical trials .................................................. p. 7
Kevin Kobylinski  
Armed Forces Research Institute of Medical Sciences (AFRIMS)

▼ Evaluating the effect of ivermectin B1a and B1b compounds against the malaria vector  
Anopheles dirus ................................................................. p. 8
Narenrit Wamaket  
Armed Forces Research Institute of Medical Sciences (AFRIMS)

▼ Ivermectin metabolites ....................................................................... p. 9
Phornpimon Tipthara  
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

▼ Ivermectin inhibits  P. cynomolgi  and  P. falciparum  liver stage development .......... p. 10
John Adams  
University of South Florida
S3: Infections and parasitic diseases: put them on the map

Chairpersons:

Serge Morand
Paron Dekumyoy

Invited Speakers:

▼ Evolution of public health prevention of leptospirosis in Mahasarakham Province (Thailand) in a One Health perspective ......................... p. 12
Jaruwan Viroj and Claire Lajaunie
Montpellier University, Mahasarakham University; INSERM, Ceric-DICE CNRS, Aix-Marseille University Marseille, France

▼ Mapping spatio-temporal spread of dengue in Delhi .......................................... p. 13
Olivier Telle
Centre National de la Recherche Scientifique (CNRS)

▼ From citizen science to laboratory verification: distribution of the newly invasive New Guinea flatworm Platydemus manokwari and its role in carrying Angiostrongylus nematode larvae in Thailand ......................................................... p. 14
Kittipong Chaisiri
Department of Helminthology, Faculty of Tropical Medicine, Mahidol University

▼ Planetary changes: challenges for health forecasting ....................................... p. 15
Serge Morand
CNRS-CIRAD, Department of Helminthology, Faculty of Tropical Medicine, Mahidol University
S4: Universal influenza vaccine: where are we?

Chairpersons:

Bruce Innis  Punnee Pitisuttithum

Invited Speakers:

▼ Thailand’s influenza surveillance networks and response for pandemic influenza ..... p. 17

Malinee Chittaganpitch
National Institute of Health, Department of Medical Sciences, Ministry of Public Health, Thailand

▼ Clinical development of universal influenza vaccines: a current perspective ............. p. 18

Bruce L Innis
PATH, Center for Vaccine Innovation and Access, Seattle, WA, USA

▼ Influenza pandemic preparedness: vaccine research and development ............... p. 19

Punnee Pitisuttithum
Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University
S5: Young Investigator Award

Chairpersons:

Saranath Lawpoolsri Niyom
Wirichada Pan-Ngum

Speakers:

▼ A population dynamic model to assess and predict the burden of melioidosis in Thailand........................................................................................................p. 21
Wiriya Mahikul
Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University

▼ The role of cytokines and prediction of dengue complications ....................p. 22
Hisham Imad
Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University

▼ Broad-spectrum monoclonal antibodies targeted chikungunya virus structural proteins: promising candidates for rapid immunochromatographic kit development .......... p. 23
Aekkachai Tuekprakhon
Mahidol-Osaka Center for Infectious Diseases (MOCID), Faculty of Tropical Medicine, Mahidol University

▼ Mechanisms of diabetes mellitus and dengue fever co-morbidity revealed by integrated omics analysis .................................................................p. 24
Nikhil Pathak
TIGP-Bioinformatics, Institute of Information Science, Academia Sinica, Taipei, Taiwan
Lunch Symposium: Tropmed innovation: from research to products

Moderators:

Wang Nguitragool

Maneerat Ekkapongpisit

Panelists’ discussion:

▼ Translational research: from basic to rapid diagnostic kit for melioidosis ….. (no abstract)

Narisara Chantratita

Department of Microbiology and Immunology, Faculty of Tropical Medicine, Mahidol University

▼ Young blood ................................................................. (no abstract)

Jetsumon Prachumsri and Wanlapa Roobsoong

Mahidol Vivax Research Unit (MVRU), Faculty of Tropical Medicine, Mahidol University

▼ Development of Chikungunya virus-specific mouse mAb for advanced diagnosis ......................................................... (no abstract)

Pornsawan Leaungwutiwong

Department of Microbiology and Immunology, Faculty of Tropical Medicine, Mahidol University

▼ Therapeutic human antibodies against dengue virus ................................................................. (no abstract)

Pongrama Ramasoota

Department of Social and Environmental Medicine, Faculty of Tropical Medicine, Mahidol University

▼ Research to IMPACT: bridging the GAP to innovations ................................................................. (no abstract)

Maneerat Ekkapongpisit

Mahidol-Oxford Tropical Medicine Research Unit (MORU)
S6: Antimalarial drug discovery

Chairperson:

John Adams
Sasha Siegel

Invited Speakers:

▼ Malaria egress as a drug target: progress and surprises ........................................ p. 27

Michael Blackman
Department of Pathogen Molecular Biology, London School of Hygiene & Tropical Medicine

▼ Structure of malaria parasite enzyme involved in folate synthesis ......................... p. 28

Amit Sharma
ICGEB, New Delhi, India

▼ Cryptic mitochondrial diversity gives rise to atovaquone resistance ....................... p. 29

Sasha Siegel
Wellcome Sanger Institute
S7: Control of parasitic infections, from the bench to the field

Chairpersons:

Poom Adisakwattana
Aaron Jex

Invited Speakers:

▼ Taeniasis and cysticercosis in Asia: is chaotic situation through globalization or local? ................................................................. p. 31

Akira Ito
Asahikawa Medical University, Asahikawa, Japan

▼ ‘Omnics approaches to understanding stress responses and metronidazole resistance in Giardia ...................................................... p. 32

Aaron Jex
The Walter and Eliza Hall Institute of Medical Research

▼ Environmental DNA: a different approach for food/water-borne helminths studies .... p. 33

Marcello Otake Sato
Department of Tropical Medicine and Parasitology, Dokkyo Medical University

▼ Back to the field: ticks species distribution after half century of environmental changes and the risk for tick-borne diseases in Niigata Prefecture, Japan............................. p. 34

Megumi Sato
Graduate School of Health Sciences, Niigata University

▼ Effective, low-cost preservation of human stools for nucleic acid extraction, helminth detection and microbiome investigation ................................................. p. 35

Katharina Stracke
The Walter and Eliza Hall Institute of Medical Research
S8: Mycobacterium: novel approaches for diagnosis and treatment

Chairpersons:

Wirongrong Chierakul  Narisara Chantratita

Invited Speakers

▼ Blood transcriptomics for TB diagnosis and monitoring treatment-response .......... p. 37

Jackie Cliff
London School of Hygiene & Tropical Medicine

▼ Diagnosis for adult-onset immunodeficiency with non-tuberculous mycobacterial infections and autoantibodies against interferon-gamma .......................................................... (no abstract)

Ganjana Lertmemongkolchai
Department of Clinical Immunology, Khon Kaen University

▼ Development of interferon gamma release assay for elephant TB Diagnosis .......... p. 38

Tanapat Palaga
Faculty of Science, Chulalongkorn University

▼ Antitubercular natural products and synthetic agents against clinical multidrug resistant isolates of Mycobacterium tuberculosis ................................................................. p. 39

Prasat Kittakoop
Chulabhorn Research Institute
S9: Helminthiases: rare, ancient and common helminthes

Chairpersons:

Chen Jia-Xu
Paron Dekumyoy

Invited Speakers:

- Status of food-borne parasitic diseases in China ........................................... p. 41
  
  Chen Jia-Xu  
  Chinese Center for Disease Control and Prevention, Shanghai, China

- Cerebral toxocariasis and neurodegenerative diseases ................................. p. 42
  
  Chia-Kwung Fan  
  College of Medicine, Taipei Medical University

- Human fascioliasis in China ................................................................. p.43
  
  Ai Lin  
  Chinese Center for Disease Control and Prevention, Shanghai, China

Speakers:

- Prevalence, intensity and spatial distribution of soil transmitted helminthiasis and water, sanitation and hygiene resource in Ogun State, Nigeria ........................................... p. 44
  
  Mogaji Hammed  
  Federal University Oye-Ekiti, Ekiti, Nigeria

- Community-based intervention using PRECEDE-PROCEED model framework for controlling Opisthorchis viverrini infection: a propensity score matching analysis ..... p. 45
  
  Picha Suwannahitatorn  
  Phramongkutklao College of Medicine

- Dioctophyma renale, the biggest, the oldest and still the most neglected zoonotic nematode ................................................................. p. 46
  
  Yukifumi Nawa  
  Tropical Diseases Research Center, Faculty of Medicine, Khon Kaen University
S10: Malaria elimination task force, malaria elimination on the frontline, impact and challenges (Organized by SMRU)

Chairpersons:

Gilles Delmas
Lorenz von Seidlein

Speakers:

- Introduction to, strategy of METF and impact on malaria elimination: a regional P. falciparum elimination program in Eastern Kayin State, Myanmar: impact of generalized access to early diagnosis and treatment and targeted mass drug administration. p. 48
  
  Gilles Delmas
  Shoklo Malaria Research Unit (SMRU)

- Trends of artemisinin-combination therapy resistance on the Thailand-Myanmar border. p. 49
  
  Aung Pyae Phyo and Aung Myint Thu
  Shoklo Malaria Research Unit (SMRU)

- Community engagement in malaria elimination. p. 50
  
  Ladda Kajeechiwa
  Shoklo Malaria Research Unit (SMRU)

- Importance of monitoring and evaluation to frontline structures. p. 51
  
  Suphak Nosten
  Shoklo Malaria Research Unit (SMRU)

- Entomological determinants of malaria elimination (no abstract)
  
  Victor Chaumeau
  Shoklo Malaria Research Unit (SMRU)

- Malaria elimination task force in silico (Modelling). p. 52
  
  Lisa White
  Mahidol-Oxford Tropical Medicine Research Unit (MORU)

- Scaling up targeted malaria elimination: opportunities and challenges. p. 53
  
  Lorenz von Seidlein
  Mahidol-Oxford Tropical Medicine Research Unit (MORU)
S11: Updates on dengue and Zika virus infections

Chairpersons:

Toshio Hattori
Pornawan Leangwutiwong

Invited Speakers:

▼ Detection of degraded form of matricellular proteins in vitro and in vivo. p. 55
Toshio Hattori
KIBI International University

▼ Performance of a rapid diagnostic test using the single-tag hybridization chromatographic printed array strip format in the detection of dengue infection in the emergency room. p. 56
Maria Luisa Daroy
St. Luke's Medical Center College of Medicine

▼ Two ways that non-coding DENV RNA enhances mosquito transmission. p. 57
Julien Pompon
Duke-National University of Singapore Medical School

▼ A multiplex diagnostic platform for detection of Zika virus infection in a cohort of febrile patients from Thailand. p. 58
Lauren Ching
University of Hawaii at Manoa, Honolulu, Hawaii
S12: Melioidosis: epidemiology, diagnostics and vaccine development

Chairpersons:

Yuvadee Mahakunkijcharoen  Narisara Chantratita

Invited Speakers:

▼ Presence of environmental *Burkholderia pseudomallei* and burden of melioidosis in Thailand........................................................................................................................... p. 60

Viriya Hantrakun  
*Mahidol-Oxford Tropical Research Unit (MORU)*

▼ Detection and quantification of capsular polysaccharide of *Burkholderia pseudomallei* in melioidosis patient urine samples ........................................................................... p. 61

David AuCoin  
*Department of Microbiology and Immunology, University of Nevada Reno School of Medicine, USA*

▼ Identification of antigens for the development of melioidosis vaccines and diagnostics .................................................................................................................. p. 62

Mary Burtnick  
*Department of Microbiology and Immunology, University of Nevada Reno School of Medicine, USA*

▼ Optimization of glycoconjugate vaccines for immunization against melioidosis...... p. 63

Paul Brett  
*Department of Microbiology and Immunology, University of Nevada Reno School of Medicine, USA*
S13: Free paper: malaria

Chairpersons:

Wang Nguitragool
Rapatbhorn Patrapuvich

Speakers:

▼ Drug quantification using dried blood spots – advantages and challenges .......... p.65
Daniel Blessborn
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

▼ Eponemycin in silico: a potential antimalarial candidate by inhibiting ubiquitin proteasome system of Plasmodium falciparum ......................... p. 66
Kana Mardhiyyah
Faculty of Medicine, Universitas Brawijaya

▼ Artemisinin resistance in Plasmodium falciparum in malaria endemic areas, Lao PDR .............................................................. p. 67
Sengdeuane Keomalaphet
Institut Pasteur du Laos

▼ The role of AcylCoA binding proteins (ACBPs) and lysophopholipases (LPLs) in lipid recycling and trafficking for membrane biogenesis, and remodelling in Apicomplexa parasites and their host cell ................................. p. 68
Serena Shunmugam
Université Grenoble Alpes, France
An overview of scientific publishing including the latest trends in e-publishing, and content innovation within manuscripts. What are the things that an editor looks out for?

Speaker:

Andrew Thompson

*Editor-in-Chief, International Journal for Parasitology: Parasites and Wildlife*
S14: Current status of antimalarial resistance and its impact on clinical practice
(Sponsored by MORU)

Chairpersons:

Mallika Imwong  Arjen Dondorp

Speakers

▼ Update on antimalarial drug resistance in the Greater Mekong Subregion... (no abstract)

Arjen Dondorp  
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

▼ Seasonal malaria shifting trends and implications for malaria elimination program in Thailand.................................................. p. 71

Prayuth Sudathip  
Bureau of Vector-Borne Diseases, Disease Control Department Ministry of Public Health

▼ Triple artemisinin-based drug combinations to combat multi-drug resistant  
P. falciparum malaria ................................................................. p. 72

Mehul Dhorda  
Worldwide Antimalarial Resistance Network

▼ Molecular and in vitro surveillance of artemisinin combination therapy (ACT)  
partner drug efficacy in the Greater Mekong Subregion .................................................. p. 73

Suttipat Srisutham  
Mahidol-Oxford Tropical Medicine Research Unit (MORU)
S15: Foods for health and prevention

Chairpersons:

Karunee Kwanbunjan

Pattaneeya Prangthip

Invited Speakers:

▼ Foods and nutrition in health promotion and chronic disease prevention................ p. 75

Karunee Kwanbunjan

Department of Tropical Nutrition and Food Science, Faculty of Tropical Medicine, Mahidol University

▼ Current status of genetic improvement for low GI/GL and insulin insensitivities
in rice........................................................................................................................................ p. 76

Apichart Vanavichit

Rice Science Center, Kasetsart University

▼ Thai rice and non-communicable diseases prevention .................. (no abstract)

Ratchanee Kongkachuichai

Institute of Nutrition, Mahidol University
Chairpersons:

Steffan Kappe  Jetsumon Prachumsri

Speakers:

▼ Ferroptosis-like signaling facilitates a potent innate defense against *Plasmodium* infection ........................................................................................................... p. 78

Alexis Kaushansky
Seattle Children’s Research Institute

▼ Human PDGFR-beta is a new host receptor interaction for *Plasmodium falciparum* protein PfTRAP ................................................................................................. p. 79

Noah Sather
Seattle Children’s Research Institute

▼ Towards generating a genetically-engineered replication-competent whole *Plasmodium falciparum* parasite vaccine that confers broad and durable protection against infection ............................................................................. p. 80

Stefan Kappe
Seattle Children’s Research Institute

▼ Discovery of radical cure drugs for *P. vivax* latent infection ................................. p. 81

Erika Flannery
Novartis Institute for Tropical Diseases, Novartis Institute for Biomedical Research, USA
S17: Vivax malaria elimination: a real possibility

Chairperson:

Srivicha Krudsood

Invited Speakers:

▼ Primaquine resistance situation...........................................(no abstract)

Srivicha Krudsood
Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University

▼ The potential contribution of tafenoquine to radical cure in vivax malaria elimination.... p. 83

Andy Walker
Global Health, GSK

▼ Quantitative POC testing for G6PD deficiency to support vivax malaria elimination .. p. 84

Germana Bancone
Shoklo Malaria Research Unit (SMRU)
Thursday 13 December 2018
9.00-10.30
Room E

**S18: Thai-cave flooding rescue, emergency public health response and infection control**
(Sponsored by MOPH)

Chairperson:

**Pornpitak Panlar**

Speakers:

▼ **An overview of Thai-cave flooding rescue, emergency public health response** ........................................ (no abstract)

**Pramote Imwattana**
**Armed Forces Research Institute Of Medical Sciences (AFRIMS)**

▼ **Medical operation in Thailand cave rescue: navy medicine perspective** .......... (no abstract)

**Natthasak Woracharonesri**
**Somdej Pranangchao Sirikit Hospital (Naval Medical Department)**

▼ **Experience of EID management from the cave to hospital, Chiangrai Prachanukroh Hospital** ........................................ (no abstract)

**Supalert Nedsuwan**
**Chiangrai Prachanukroh Hospital**

▼ **Infectious control and disease: lessons learned from Thailand cave rescue** . (no abstract)

**Visal Moolasart**
**Department of Disease Control, Ministry of Public Health (MOPH)**
Chairpersons:

Jaranit Kaewkungwal  Charin Modchang

Invited Speakers:

- Immunogenetics: studying host-malaria parasite genetic interactions using trans-species expression quantitative trait loci (Ts-eQTL) analysis............................................................... p. 87
  Su Xinzhuan
  National Institutes of Allergy and Infectious Diseases, National Institutes of Health, USA

- Drug resistance mediated by the CRT genes of Plasmodium species ....................... p. 88
  Thomas E. Wellems
  National Institutes of Allergy and Infectious Diseases, National Institutes of Health, USA

- From patient to policy: genetic surveillance as a tool for malaria control and elimination........................................... (no abstract)
  Chris Jacob
  Wellcome Sanger Institute
S20: *Plasmodium knowlesi*: case study from Thailand (Presentation in Thai) (MOPH)

**Chairpersons:**

Kesinee Chotivanich  
Wang Nguitragool

**Panelists’ discussion:**

- **Tips and tricks in microscopic diagnostic of** *Plasmodium knowlesi*  
  (no abstract)

  **Wanlapa Roobsong**  
  *Mahidol Vivax Research Unit, Faculty of Tropical Medicine, Mahidol University*

- **Update on molecular diagnostic of** *Plasmodium knowlesi*  
  (no abstract)

  **Wang Nguitragool**  
  *Molecular Tropical Medicine and Genetics Department, Faculty of Tropical Medicine, Mahidol University*

- **Case study of patients from Uthai Thani Province**  
  (no abstract)

  **Office of Disease Prevention Control 3, Nakhonsawan (สคร.3)**

- **Case study of patients from Songkhla Province**  
  (no abstract)

  **Office of Disease Prevention Control 12, Songkhla (สคร.12)**
S21: Illnesses associated with caves (Organized by PTAT)

Chairpersons:

Padet Siriyasatien
Alongkot Ponlawat

Invited Speakers:

- Cave diving ................................................................................................................ p. 91
  
  Chamchan Chanchang  
  Naval Medical Department

- Cave bats and viruses ............................................................................................... p. 92
  
  Supaporn Wacharapluesadee  
  WHO Collaborating Centre for Research and Training on Viral Zoonoses,  
  King Chulalongkorn Memorial Hospital, Faculty of Medicine, Chulalongkorn University

- Arthropod borne infections associated with cave .................................................... p. 93
  
  Pathamet Khositharattanakool  
  School of Medicine, Mae Fah Luang University, Chiang Rai, Thailand
Thursday 13 December 2018 | 11.00-12.30 | Room D

S22: Medical entomology impacts in tropical medicine

Chairpersons:

Rutcharin Potiwat
Jiraporn Ruangsittichai

Invited Speakers:

▼ Breeding site of Schoengastia chigger mites as potential vector of scrub typhus in Vientiane (Lao PDR) ......................................................... p. 95

Rawadee Kumlert
Department of Disease Control, Ministry of Public Health, Thailand

▼ 360° vector control: tools and engagement, imperative steps for combatting emerging tropical diseases ....................................................... p. 96

Su Yee Lim
Bayer Thai Co., Ltd.

▼ Geometric morphometrics: a quantitative tool for modern taxonomists ......................... p. 97

Suchada Sumruayphol
Department of Medical Entomology, Faculty of Tropical Medicine, Mahidol University

▼ Insecticide resistance of Aedes aegypti in Singapore – a comprehensive study ........ p. 98

Sin Ying KOOU
Department of Environmental Health Institute, National Environment Agency, Singapore
S23: Integration of disease control in prison: experience from Thailand
(Sponsored by MOPH)

Chairperson:

Nakorn Premsri

Speakers:

▼ General health problem in Thai prison .............................................. (no abstract)
Chutarut Chintakanont
Bureau of Penology, Department of Corrections

▼ Review of disease outbreaks in prisons for prevention and control measures ........................................................................................................ (no abstract)
Nakorn Premsri
Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health (MOPH)

▼ Success story of prevention and control in prison ..................................... (no abstract)
Phalin Kamolwat
Bureau of Tuberculosis, Department of Disease Control, Ministry of Public Health (MOPH)

▼ Development of integrated screening system for identification of important communicable and non-communicable diseases among prisoner inmates at admission, transfer, and release .............................................................. (no abstract)
Arjin Cholapand
Rajprachasamasai Institute, Department of Disease Control, Ministry of Public Health (MOPH)
S24: Genome editing of malaria parasites

Chairpersons:

John Adams
Nonlawat Boonyalai

Invited Speakers:

▼ Recent advances in conditional gene disruption in *Plasmodium falciparum*: new insights into new and old targets ................................................................. p. 101

**Michael Blackman**

*Department of Pathogen Molecular Biology, London School of Hygiene & Tropical Medicine*

▼ Molecular epidemiology of *Plasmodium falciparum* drug resistance in the Greater Mekong Subregion ................................................................. p. 102

**Liwang Cui**

*University of South Florida*

▼ Validation of *Plasmodium falciparum* deoxyhypsine synthase as an antimalarial target ................................................................................. p. 103

**Philip Shaw**

*National Center for Genetic Engineering and Biotechnology (BIOTEC)*
S25: Entrepreneurship in diagnostic, pharmaceutical and healthcare

Chairpersons:

Santi Maneewatcharangsri  
Supachai Topanurak

Invited Speakers:

▼ Therapeutic human monoclonal antibodies against dengue virus; towards the industrial production and commercialisation ................................................................. p. 105

Pongrama Ramasoota  
*Department of Social and Environmental Medicine, Faculty of Tropical Medicine, Mahidol University*

▼ Cancer precision medicine in Thailand ................................................................. p. 106

Manop Pithukpakorn  
*Faculty of Medicine Siriraj Hospital, Mahidol University*

▼ Lateral flow test kits for small molecules and viruses: an example work from basic research to innovation ................................................................. p. 107

Kiattawee Choowongkomon  
*Faculty of Science, Kasetsart University*

▼ Combination of PCR and dual nanoparticles for malaria detection ....................... p. 108

Kulachart Jangpatarapongsa  
*Faculty of Medical Technology, Mahidol University*
S26: Free paper: microbiology and immunology

Chairpersons:

Muthita Vanaporn
Nathamon Kosoltanapiwat

Speakers:

Safety and immunogenicity of AGS-v, a mosquito saliva peptide vaccine: a randomized, double-blind, placebo-controlled Phase 1 trial
Jessica Manning
National Institute of Allergy and Infectious Diseases, National Institutes of Health, USA

Molecular detection and characterization of serotypes and virulence factors of Klebsiella pneumoniae from mastitic dairy cattle of Batangas, Philippines
Flor Marie Immanuelle Pilapil-Amante
College of Veterinary Medicine, University of the Philippines, Los Baños

Anti-fungal study of a medicinal compound from Bidens pilosa, cytopiloyne
Meng-Ting Yang
Agricultural Biotechnology Research Center, Academia Sinica, Taiwan

Antibiotic resistance, biofilm formation and virulence factors among enterococci clinical isolates collected from two tertiary care hospitals, Thailand
Seinn So Lwin
Faculty of Science, Prince of Songkla University, Thailand

Structural basis for DNA recognition and transduction activation by the response regulator OmpR
Sushant Sadotra
Chemical Biology and Molecular Biophysics, Taiwan International Graduate Program, Academia Sinica, Taipei, Taiwan

Molecular approach to identify mosquito species in Sri Lanka
Gayan Parakrama Wijayapala Kombala Withanage
Molecular Medicine Unit, Faculty of Medicine, University of Kelaniya, Sri Lanka
Thursday 13 December 2018  |  14.00-15.30  |  Room D

**S27: Protozoa**

**Chairpersons:**

Aongart Mahittikorn  
Supaluk Popruk

**Invited Speaker:**

- **Trichomonas vaginalis** infections in the Philippines.............................. p. 117
  
  **Windell Rivera**
  
  *Institute of Biology, College of Science, University of the Philippines, Diliman*

**Speakers:**

- **Trypanosomes and biosecurity** ................................................................. p. 118
  
  **RC Andrew Thompson**
  
  *Veterinary and Life Sciences, Murdoch University, Perth, Western Australia*

- **Effect of Toxoplasma gondii** profilin exposure on high density lipoprotein (HDL) level in normal and hypercaloric diet induced *Rattus norvegicus* wistar strain rats .. p. 119
  
  **Yulia Dwi Setia**
  
  *Faculty of Medicine, Universitas Brawijaya, Indonesia*

- **Difference in the infection pattern of two transgenic Trypanosoma cruzi strains, Tulahuen luc2 and Y02 luc2, detected by in vivo imaging and blood parasite monitoring in murine model** .......................................................... p. 120
  
  **Eleonor Cervantes**
  
  *Research Institute for Tropical Medicine, Department of Health, Philippines*

- **Molecular detection of Leishmania donovani** in blood samples collected from program and non-program districts of Nepal .......................................... p. 121
  
  **Mitesh Shrestha**
  
  *Nepal Academy of Science and Technology, Khumaltar, Lalitpur, Nepal*
Thursday 13 December 2018  |  14.00-15.30  |  Room E

S28: Turbo talk I

Chairpersons:

Srivicha Krudsood  Mathirut Mungthin

Speakers:

- Parasite clearance and post-treatment submicroscopic parasitemia in patients treated with Atovaquone-Proguanil in combination with Artesunate .................. (Poster No.1 page 175)

  Panita Gosi
  Armed Forces Research Institute of Medical Science, Bangkok, Thailand

- Spatiotemporal modeling of relative risk of malaria infection along Thailand-Myanmar border: the Hlaingbwe Township and Tha-Song-Yang District .................. (Poster No.2 page 176)

  Aung Minn Thway
  Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University

- Relapse pattern in vivax malaria in Nepal .................................................. (Poster No.3 page 177)

  Komal Raj Rijal
  Central Department of Microbiology, Tribhuvan University, Nepal

- How are the village health volunteers delivering malaria testing and treatment services and what are the challenges they are facing? – a mixed methods study in Myanmar ................................................................................. (Poster No.4 page 178)

  Nay Yi Yi Linn
  Vector Borne Disease Control Program, Ministry of Health and Sports, Nay Pyi Taw, Myanmar

- FTY720 restores endothelial cell permeability induced by malaria sera .................................................. (Poster No.5 page 179)

  Supattra Glaharn
  Department of Tropical Pathology, Faculty of Tropical Medicine, Mahidol University
S28: Turbo talk I

▼ Spatio-temporal analysis of malaria cases along China-Myanmar border ......................................................... (Poster No.6 page 180)

Xiaotao Zhao
Faculty of Tropical Medicine, Mahidol University; Yunnan Institute of Parasitic Diseases, Puer China

▼ Antimicrobial susceptibility patterns of Salmonella species in a tertiary care hospital of Western Nepal: are first line antibiotics still effective? ........................................ (Poster No.7 page 181)

Dharm Raj Bhatta
Manipal College of Medical Sciences, Pokhara, Nepal

▼ Investigating of knockdown resistance (Kdr) mutation in dengue vector Aedes aegypti cypermethrin resistant from dengue endemic area in Medan City, North Sumatera Province, Indonesia .......................................................... (Poster No.8 page 182)

Ledy Afrida Sinaga
Faculty of Medicine, Public Health, and Nursing, Gadjah Mada University, Indonesia
S29: Tackling malaria transmission and infection

Chairperson:

Wai-Hong Tham

Invited Speakers:

- ▼ Glycobiology of malaria parasite host infection .............................................. (no abstract)
  Justin Boddey
  Walter and Eliza Hall Institute of Medical Research, Victoria, Australia

- ▼ Identifying cases of malaria and asymptomatic infections along the Vietnam-Cambodia border using loop-mediated isothermal amplification (LAMP) and geospatial localization ........................................................................................................... p. 125
  Ricardo Ataíde
  Burnet Institute, Victoria, Australia

- ▼ The dynamic nature of malaria transmission in Papua New Guinea .................. p. 126
  Dr. Leanne Robinson
  Burnet Institute, Victoria, Australia

- ▼ Combatting residual malaria transmission on islands in Vanuatu .................... p. 127
  Prof. Akira Kaneko
  Karolinska Institutet, Stockholm, Sweden
S30: Accelerating access to existing new and old technologies for vector-borne disease elimination in Asia-Pacific (Organized by Malaria Consortium)

Chairpersons:

James Tibenderana  Jason Nash

Speakers:

▼ Wolbachia establishment: its potential for dengue blocking and its risk on mosquito fitness ................................................................. p. 129

Eggi Arguni
World Mosquito Project (WMP) in Yogyakarta

▼ Challenges facing vector-borne disease control, collaboration, and the role of the private sector ........................................................................................................ p. 130

Jason Nash
Bayer (Southeast Asia) Pte Ltd

▼ Challenges and opportunities in reaching remote and mobile populations with malaria services in Cambodia ........................................................................................................ p. 131

Yves Bourny
Malaria Consortium

▼ Impacts of existing vector control tools in Africa in the context of expanding insecticide resistance: findings from studies in Uganda ................................................................. p. 132

Tarekegn Abeku
Malaria Consortium
Thursday 13 December 2018
16.00-17.30
Room C

S31: Antimicrobial resistance

Chairpersons:

Direk Limmathurotsakul
Ben Cooper

Invited Speakers:

▼ Antibiotic knowledge, attitudes, and practices: new insights from representative social surveys in low- and middle-income Southeast Asia................................. p. 135
Marco J Haenssgen
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

▼ Generating isolate-based, specimen-based and case-based antimicrobial resistance surveillance reports from readily available data sets using an open-access, offline and easy-to-use application................................................................. p. 136
Cherry Lim
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

▼ Global antimicrobial resistant Neisseria gonorrhoea. Is the cat out of the bag?....... p. 137
Eileen Dunne
Thailand MOPH - U.S. CDC Collaboration

▼ Applications of causal inference to hospital epidemiology ...................... p. 138
Yin Mo
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

▼ Modelling the nosocomial transmission of multi-drug resistant Enterobacteriaceae ......................................................... p. 139
Thomas Crellen
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

▼ Upper respiratory tract infections among febrile patients attending primary care in Southeast Asia ............................................................. p. 140
Thomas Althaus
Mahidol-Oxford Tropical Medicine Research Unit (MORU)
S31: Antimicrobial resistance

▼ Modelling the selection of AMR at multiple scales .................................................... p. 141

Ben Cooper  
*Mahidol-Oxford Tropical Medicine Research Unit (MORU)*

▼ How people are measuring global and national burden of antimicrobial resistance.  
Do we need a better model? .................................................................................... p. 142

Direk Limmathurotsakul  
*Mahidol-Oxford Tropical Medicine Research Unit (MORU)*
S32: Environmental health and toxicology

Chairpersons:

Kraichat Tantrakarnapa  
Suwalee Worakhunpiset

Invited Speakers:

▼ Health impact assessment from long-term exposure to outdoor air pollution in Thailand .............................................................. p. 144

William Mueller  
Research Division, Institute of Occupational Medicine, Edinburgh, UK

▼ Impact of biomass combustion on indoor air quality in developing countries .......... p. 145

Kiyoung Lee  
Graduate School of Public Health and Institute of Health and Environment, Seoul National University, Seoul, Korea

▼ Heavy metals; a possible health risk through free grazing duck farm in Thailand ... p. 146

Phitsanu Tulayakul  
Department of Veterinary Public Health, Faculty of Veterinary Medicine, Kasetsart University

Air quality forecasting system for haze episode in the upper north of Thailand ........ p. 147

Kraichat Tantrakarnapa  
Department of Social and Environmental Medicine, Faculty of Tropical Medicine, Mahidol University
Thursday 13 December 2018 | 16.00-17.30 | Room E

S33: Turbo talk II

Chairpersons:

Srivicha Krudsood  Mathirut Munthin

Speakers:

▼ Knowledge, attitude and stigma of leprosy: a community based cross-sectional study in Nepal. .......................................................... (Poster No.9 page 183)

Rakesh Singh
Patan Academy of Health Sciences

▼ Prevalence and associated factors of Enterobacteriaceae producing extended spectrum beta-lactamase carriers in Thai rural area, 2018. ................. (Poster No.10 page 184)

Rinrada Vanavanitkun
Phramongkutklao College of Medicine

▼ Development of dengue virus serotype specific non-structural protein 1 (NS1) capture immunochromatographic assay. ....................... (Poster No.11 page 185)

Emi Nakayama
Osaka University

▼ Expression of gene encoding merozoite surface protein 1 Plasmodium falciparum (PIMSP1-19kDa) in Escherichia coli BL21 (DE3) ....................... (Poster No.12 page 186)

Tanti Rahayu
Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada

▼ Malaria case investigation review in Thailand, 2012-2017 .............. (Poster No.13 page 187)

Julien Zwang
Inform Asia: USAID’s Health Research Program, RTI International, Research Park Triangle, NC, USA

▼ Health problems among Myanmar and Laos workers in Samut Sakhon, Thailand .......................................................... (Poster No.14 page 188)

Peyawadee Petchprapakorn
Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University
S33: Turbo talk II

Optimal target concentrations of piperaquine against placental malaria

Palang Chotsiri
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

Susceptible status and resistance mechanism of Aedes aegypti to malathion and cypermethrin in endemic dengue area from Palu City, Central Sulawesi, Indonesia

Purwaningsih Binti Sapar
Faculty of Medicine, Public Health and Nursing, Universitas Gadjah Mada

Human population movement patterns in malaria hotspots on the Thai-Myanmar border

Sayambhu Saita
Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University

Expression, purification and activity assay of trehalose phosphate phosphatase from Burkholderia pseudomallei

Sarocha Suthisawat
Department of Microbiology and Immunology, Faculty of Tropical Medicine, Mahidol University
Controlled human infection studies in LMICs: opportunities to accelerate vaccine development

Chairperson:

Pratap Singhasivanon

Invited Speakers:

PV CHIM in Thailand

(no abstract)

Nicholas PJ Day and Jetsumon Prachumsri
Mahidol-Oxford Tropical Medicine Research Unit (MORU) and Faculty of Tropical Medicine Mahidol, University

Establishing controlled human dengue infections: balancing risks and benefits

(no abstract)

Bridget Wills
Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam

Community Engagement: how important for the vaccine?

(no abstract)

Phaik Yeong Cheah
Mahidol-Oxford Tropical Medicine Research Unit (MORU)

Perspective from EC on controlled human infection study

(no abstract)

Jaranit Kaewkungwal
Faculty of Tropical Medicine, Mahidol University
S34: Dengue: clinical presentation, vector situation, and the role of implementation research in control program (Sponsored by Universitas Gadjah Mada)

Chairpersons:

Elsa Herdiana Murhandarwati  
Ida Safitri Laksanawati

Speakers:

- Organ dysfunction in dengue infection................................................................. p. 153
  Ida Safitri Laksanawati
  Master Program of Tropical Medicine; Department of Child Health, FK-KMK UGM, Indonesia

- Insecticide resistance in mosquito vectors of dengue virus in Indonesia............ p. 154
  Tri Baskoro Tunggul Satoto
  Master Program of Tropical Medicine; Department of Parasitology, FK-KMK UGM, Indonesia

- Implementation research in dengue control......................................................... p. 155
  Riris Andono Ahmad
  Implementation Research Program (WHO-TDR), Department of Public Health, FK-KMK UGM, Indonesia

- The implementation research on tropical diseases in South East Asia: Lessons learnt and way forward................................................................. p. 156
  Ari Natalia Probandari
  Implementation Research Program (WHO-TDR), Department of Public Health, FK-KMK UGM, Indonesia
S35: Machine learning in public health

Chairpersons:

Saranath Lawpoolsri  Wirichada Pan-ngum

Invited Speakers:

¬ Large-scale detailed mapping of dengue vector breeding sites using street view images .................................................. p. 158
Peter Haddawy
Faculty of Information and Communication Technology, Mahidol University, Thailand

¬ Mapping malaria risks by drone: case studies using aerial and satellite-based data in Southeast Asia and Africa .................................................. p. 159
Kimberly Fornace
London School of Hygiene and Tropical Medicine

¬ Bayesian network decision model for supporting dengue diagnosis ................. p. 160
Saranath Lawpoolsri
Department of Tropical Hygiene, Faculty of Tropical Medicine, Mahidol University, Thailand
S36: Systems biology and innovative healthcare for tuberculosis

Chairpersons:

Supachai Topanurak
Wirongrong Chierakul

Invited Speakers:

▼ WGS of *M. tuberculosis* reveal strong associations between genotypes and ethnicity: Its implication in TB control ......................................................... p. 162

Prasit Palitapongarnpim
Department of Microbiology, Faculty of Science, Mahidol University

▼ Integrated human and pathogen genomic information for tuberculosis control ................................................................. (no abstract)

Surakameth Mahasirimongkol
Department of Medical Sciences, Ministry of Public Health

▼ Mining through gene expression profiles for novel biomarkers for tuberculosis .... p. 163

Nusara Satproedprai
Department of Medical Sciences, Ministry of Public Health

▼ Whole genome sequencing for detection and surveillance of drug-resistant tuberculosis ................................................................. p. 164

Areeya Disratthakit
Department of Medical Sciences, Ministry of Public Health
New tools in the NTDs armoury

Chairperson:

Pratap Singhasivanon

Keynote Speaker:

Prof. Donald Peter McManus
QIMR Berghofer Medical Research Institute, Brisbane, Australia

The Neglected Tropical Diseases (NTDs) are a group of parasitic/bacterial diseases that cause substantial morbidity for more than one billion people globally. Affecting the world's poorest people, NTDs cause severe disability, hinder growth, productivity and cognitive development, and often end in death; children are disproportionately affected. Asia is a NTD hot spot claiming some of the highest infection rates in the world, second only to that of sub-Saharan Africa. Approximately one-third of the world's parasitic worm infestations occur in this region. In this Keynote Address I will provide an overview of my past nearly 50 years' research to find the way to prevent and control helminthiases of humans and animals. My visionary approach continues to link basic and applied research, and my commitment to international field and laboratory studies with a multi-skilled team has translated into workable, innovative and practical control strategies for parasitic worm infections. I will emphasise my laboratory’s recent studies on the development of novel interventions for the control of schistosomiasis and intestinal worm infections in Asia, tools that are important for the integrated control of these insidious diseases. My group’s research in pathogen genomics, vaccine development/trialling, molecular diagnostics, and the outcomes of a successful video-based health educational intervention package (“The Magic Glasses”), tested in cluster-randomised controlled trials in China, the Philippines and Vietnam, will be featured. With decades of transformative-research contributions, my ultimate goal is the global elimination of these parasitic worms that are the cause of such extensive human suffering.

Professor McManus has an outstanding reputation in respect of the excellence of his research and his distinguished sustained contributions to the field of eliminating parasitic helminth diseases. He has spent the past nearly 50 years’ research to find the way to prevent and control helminthiases of human and animals. He was recognized as a key of discovered virulence molecules derived from Schistosoma japonicum and others that may advantage for drug and vaccine development. His visionary approach continues to link basic and applied research, and his commitment to international field and laboratory studies with his multi-skilled team has translated into workable, innovative and practical control strategies. With decades of transformative-research contributions, Professor McManus’s ultimate goal is the global elimination of diseases which are the cause of extensive human suffering.
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<td>Determination of primaquine and carboxyprimaquine in breast milk by using LC-MS/MS</td>
<td>Warunee Hanpithakpong</td>
</tr>
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