

International Workshop on AI-enabled Malaria Control and Prevention

July 8-10, 2019, Hong Kong Baptist University, Hong Kong



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Let's Work Together Towards *Malaria Elimination*: Message from the Organizers

The AI researchers and computer scientists from Hong Kong Baptist University (HKBU), in collaboration with the practitioners from National Institute for Parasitic Diseases, China CDC (Chinese Center for Tropical Diseases Research), have over the past decade strived to tackle real-world challenges in malaria control and prevention. In response to the WHO's call for malaria elimination by 2030, this workshop is both timely and unique in that it provides a golden opportunity that is second to none for all of us to exchange and learn from each other, as well as to share and enrich our AI technologies and experiences in various phases of malaria elimination, with our counterparts from the South East Asia (SEA), the Greater Mekong Subregion (GMS), and other countries. Together, we shall succeed in addressing some of the most challenging, last-mile problems in reducing malaria infection cases to zero with our new technologies and effective public health policies.

Towards this endeavour, we are honoured to have our distinguished guests, representing policy makers, fellow practitioners, researchers, and public health officials from the WHO as well as the SEA and GMS countries (Bhutan, Cambodia, China, France, India, Indonesia, Lao PDR, Sri Lanka, Thailand, and Vietnam), and other countries (France), to join this special workshop and share their region or country-specific challenges, experiences, and insights.

The sessions of the workshop are organically created so as to best help each of the participating countries to systematically benefit from the plenary presentations, AI tools (AIM 1.0) training, problem case studies, and solution development, as well as brainstorming and planning of the corresponding public health policies.

The workshop's AI-centric Technical Sessions will be generally targeting the common challenges, such as heterogeneity of risk-related factors, complexity of mobility patterns of imported cases, and limited anti-malaria surveillance resources, faced by the SEA and GMS countries in public health policy making for malaria control and elimination. The sessions will

introduce the AI-enabled technologies and tools developed by us and the corresponding surveillance strategies. The problem-driven Group Discussions are tailor-made AI-enabled solution tutorial sessions, set up to customize and adapt the AI-enabled techniques introduced in the Technical Sessions to tackle country-specific challenges. The hands-on Practice on AIM 1.0 are practical sessions designed to help further solve the country-specific challenges from a technical perspective.

As a major outcome from the Technical Sessions, Group Discussions, and Practice on AIM 1.0, the specific and customized Solution Planning Sessions will help participants consolidate all the tools and techniques introduced during the workshop, and aid the participating countries in planning comprehensive country-specific AI-enabled solutions, including problem definition, selection of AI-enabled tools, data requirements, and deployment plans, for malaria control and prevention.

We are confident this impactful workshop will serve not only as the beginning for many places of the world to adopt novel AI-enabled technologies in malaria control and prevention, by pooling all our wisdom and experiences together, it shall also drive the innovation of technologies far beyond our imagination, accelerating our pursuit towards malaria elimination by year 2030.

Co-Organizers



智能化疾病监控联合实验室

Intelligent Disease Surveillance Control

Organizing Committee

Prof. Jiming Liu (Chair)

Associate Vice-President and Chair Professor
Department of Computer Science
Hong Kong Baptist University

Dr. William Kwok Wai Cheung

Head and Associate Professor
Department of Computer Science
Hong Kong Baptist University

Prof. Jianliang Xu

Associate Head and Professor
Department of Computer Science
Hong Kong Baptist University

Dr. Yang Liu

Research Assistant Professor
Department of Computer Science
Hong Kong Baptist University

Dr. Kristen Yuanxi Li

Associate Program Director and Lecturer
Department of Computer Science
Hong Kong Baptist University

Prof. Xiao-Nong Zhou (Co-Chair)

Director and Professor
National Institute for Parasitic Diseases
China CDC (Chinese Center for Tropical Diseases Research)

Dr. Shang Xia

Associate Professor
National Institute for Parasitic Diseases
China CDC (Chinese Center for Tropical Diseases Research)

Prof. Benyun Shi

Professor
IDSC Joint Research Laboratory
Hangzhou Dianzi University

Prof. Bo Yang

Professor
College of Computer Science and Technology
Jilin University

Dr. Hechang Chen

Assistant Professor
School of Artificial Intelligence
Jilin University

Support Team (Surname in Alphabetical Order)

Dr. Martin Man Ting Choy, Dr. Liang Lan, Dr. Eric Lu Zhang,

Sophia Ka Lai Cheng, Kenneth Yip Ho Cheng, Jenny Yujin Feng, Zhonglei Gu, Syler Siu Fai Ip, Philip
Ka Yin Lam, Victor Wing Sing Leung, Mutong Liu, Kristina Siu Suet Tsang, Richard Tan Wong,

Wanling Cai, Dan Peng, Dong Qian, Lihong Song, Qi Tan, Colman Chun Hin Tse, Ningxia Wang, Kejing Yin

Invited Participants

Bhutan

- ◆ **Mr. Vishal Chhetri**
Sr. Laboratory Officer
Royal Center for Disease Control, Department of Public Health
Ministry of Health
- ◆ **Mr. Tobgyel Dukpa**
Program Analyst
Vector borne Disease Control Program (VDCP)
Ministry of Health

Cambodia

- ◆ **Dr. Po Ly**
Vice Chief
Technical Bureau of National Malaria Center
Ministry of Health
- ◆ **Dr. Boukheng Thavrin**
Deputy Director
National Center for Malaria Parasitology and Entomology (CNM)
Ministry of Health

China

- ◆ **Prof. Yayi Guan**
Chief of Global Health Center
National Institute for Parasitic Diseases
China CDC (Chinese Center for Tropical Diseases Research)
- ◆ **Mrs. Ying-Jun Qian**
Programme officer
Global Health Center
National Institute for Parasitic Diseases
China CDC (Chinese Center for Tropical Diseases Research)
- ◆ **Dr. Shao-Sen Zhang**
Associate Professor
Department of Malaria
National Institute for Parasitic Diseases
China CDC (Chinese Center for Tropical Diseases Research)
- ◆ **Dr. Jun Feng**
Associated Professor
Department of Malaria
National Institute for Parasitic Diseases
China CDC (Chinese Center for Tropical Diseases Research)

Invited Participants

France

- ◆ **Prof. Roger Frutos**
Deputy Vice-President, International Relations with Asia
University of Montpellier
- ◆ **Prof. Sylvie Manguin**
Full Research Professor
Institute of Research for Development (IRD)
University of Montpellier

India

- ◆ **Dr. Suman Lata Wattal**
Deputy Director
National Vector Borne Disease Control Program (NVBDCP) and Directorate General of Health Services
Ministry of Health & Family Welfare
- ◆ **Dr. Mrigen Deka**
National Consultant
National Vector Borne Disease Control Program (NVBDCP) and Directorate General of Health Services
Ministry of Health & Family Welfare

Indonesia

- ◆ **Dr. Sri Budi Fajariyani**
Surveillance Data Officer
National Malaria Program
Ministry of Health
- ◆ **Dr. Hanung Adi Nugroho**
Vice Head and Associate Professor
Department of Electrical and Information Engineering
Gadjah Mada University

Lao PDR

- ◆ **Dr. Odai Sichanthongthip**
Technical Officer
Epidemiology Unit
Centre for Malariology, Parasitology and Entomology (CPME)
Ministry of Health
- ◆ **Mr. Phommachanh Phyakeo**
Malaria Program Manager
Health Poverty Action (HPA) in Lao PDR

Invited Participants

Sri Lanka

- ◆ **Prof. Deepika Fernando**
Senior Professor
Department of Parasitology
University of Colombo

Thailand

- ◆ **Dr. Theeraphap Chareonviriyaphap**
Full Professor
Department of Entomology
Kasetsart University
- ◆ **Dr. Darin Areechokchai**
Deputy Director
National Malaria Program
Bureau of Vector Borne Disease
- ◆ **Ms. Sarinee Srithep**
Medical Technologist
Diseases Control Laboratory
Office of Diseases Prevention and Control 1 Chiang Mai
- ◆ **Ms. Suravadee Kitchakarn**
Public Health Technical Officer
Bureau of Vector-Borne Diseases
Ministry of Public Health

Vietnam

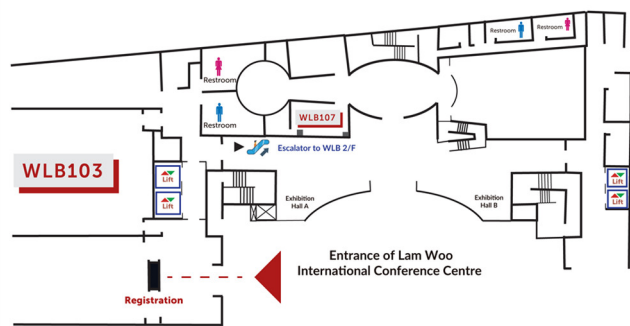
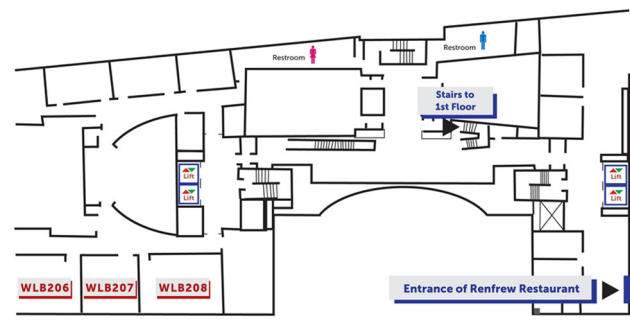
- ◆ **Dr. Nguyen Quang Thieu**
Deputy Director
National Institute of Malariology, Parasitology & Entomology
- ◆ **Dr. Tran Quang Phuc**
Head of Planning Department
National Institute of Malariology, Parasitology & Entomology
- ◆ **Dr. Le Thanh Dong**
Director
Institute for Parasitology - Entomology in Southern Vietnam (IPES)

WHO

- ◆ **Dr. Deyer Gopinath**
Medical Officer
WHO Thailand Office
- ◆ **Dr. Hiro Okayasu**
Coordinator
Mekong Malaria Elimination (MME) Programme
WHO Cambodia Office
- ◆ **Mr. Rady Try**
National Professional Officer
Mekong Malaria Elimination (MME) Programme
WHO Cambodia Office



Campus Map



Program at a Glance

Day 1: Monday, July 8, 2019

9:00-17:00	Registration	
9:30-10:00	Welcome and Opening Ceremony	
10:00-10:45	Plenary Talk I Towards AI-enabled Malaria Elimination: Challenges and Opportunities Venue: WLB103 Speakers: Prof. Jiming Liu and Prof. Xiao-Nong Zhou Chair: Dr. William Kwok Wai Cheung	
10:45-11:15	Coffee Break	
11:15-12:00	Plenary Talk II Burden of Malaria in the South East Asia Region: Challenges and Opportunities Venue: WLB103 Speaker: Dr. Deyer Gopinath Chair: Prof. Xiao-Nong Zhou	
12:00-14:00	Lunch Break*	
14:00-14:45	Technical Session I Assessment of Malaria Transmission Risk Venue: WLB206 Speaker: Prof. Benyun Shi Chair: Dr. Hiro Okayasu	Policy/Management Session I Challenges to Malaria Elimination in Greater Mekong Subregion (GMS) Venue: WLB208 Speaker: Prof. Sylvie Manguin Chair: Dr. Deyer Gopinath
14:45-15:30	Technical Session II Active Surveillance Planning Venue: WLB206 Speaker: Dr. Yang Liu Chair: Mr. Rady Try	Policy/Management Session II Opportunities in Data-Driven Disease Control and Prevention Venue: WLB208 Speaker: Dr. Shang Xia Chair: Prof. Jiming Liu
15:30-16:00	Coffee Break	
16:00-17:30	Group Discussions* AI-enabled Control and Prevention Techniques Venue: AAB302	
	Group 1 PI: Prof. Benyun Shi	Group 2 PI: Dr. Yang Liu
16:00-17:30	Roundtable Session I* Country Actions in Response to Global Technical Strategy for Malaria 2016–2030 Venue: AAB303 Chairs: Prof. Yayi Guan and Prof. Roger Frutos	
17:30-20:00	Reception*	

** By Invitation Only*

Program at a Glance

Day 2: Tuesday, July 9, 2019

9:00-17:00	Registration		
9:30-10:50	Panel Discussion Epidemiology Meets AI – Outlook in Regional Collaboration and Interdisciplinary Personnel Training Venue: WLB103 Panelists: Prof. Yayi Guan, Dr. William Kwok Wai Cheung, Dr. Hiromasa Okayasu, Mr. Rady Try, Dr. Nguyen Quang Thieu, and Dr. Hanung Adi Nugroho Chair: Prof. Xiao-Nong Zhou		
10:50-11:20	Coffee Break		
11:20-12:00	Plenary Talk III Overview of Mekong Malaria Elimination (MME) Programme Venue: WLB103 Speaker: Dr. Hiromasa Okayasu Chair: Prof. Theeraphap Chareonviriyaphap		
12:00-14:00	Lunch Break*		
14:00-14:30	Technical Session III* AI Tools (AIM 1.0) for Malaria Infection Risk Forecast Venue: Collaborative Computer Laboratory, Library Speaker: Dr. Yang Liu	Roundtable Session II* From Existing IT Infrastructure to Future AI-enabled Surveillance and Control Venue: AAB303 Chairs: Prof. Jiming Liu and Prof. Sylvie Manguin	
14:30-15:00	Technical Session IV* AIM 1.0 for Risk Map Visualization Venue: Collaborative Computer Laboratory, Library Speaker: Dr. Yang Liu		
15:00-15:30	Technical Session V* Mobile APP for Proactive Case Detection Venue: Collaborative Computer Laboratory, Library Speaker: Dr. Yang Liu		
15:30-16:00	Coffee Break		
16:00-17:00	Practice on AIM 1.0* Venue: Collaborative Computer Laboratory, Library		Roundtable Session II – Cont'd* From Existing IT Infrastructure to Future AI-enabled Surveillance and Control Venue: AAB303 Chairs: Prof. Jiming Liu and Prof. Sylvie Manguin
	Group 1 PI: Prof. Benyun Shi	Group 2 PI: Dr. Yang Liu	
17:00-17:30	Day 2 Summary Venue: WLB103		
17:30-21:00	Banquet and Social Function*		

** By Invitation Only*

Program at a Glance

Day 3: Wednesday, July 10, 2019

9:00-17:00	Registration	
9:30-10:10	Plenary Talk IV Initiative for GMS Regional Surveillance Database Venue: WLB103 Speaker: Mr. Rady Try Chair: Dr. Shang Xia	
10:10-10:50	Plenary Talk V Dynamic of Aedes-borne Diseases: Current Situation and Challenges Venue: WLB103 Speaker: Prof. Roger Frutos Chair: Dr. Shaosen Zhang	
10:50-11:20	Coffee Break	
11:20-12:00	Plenary Talk VI Entomological Research and Vector Control in GMS Region Venue: WLB103 Speaker: Prof. Theeraphap Chareonviriyaphap Chair: Dr. Shaosen Zhang	
12:00-14:00	Lunch Break*	
14:00-14:45	Country-Specific Solution Planning Session I* Venue: AAB302	
	Group 1 PI: Prof. Benyun Shi	Group 2 PI: Dr. Yang Liu
14:45-15:30	Country-Specific Solution Planning Session II* Venue: AAB302	
	Group 1 PI: Prof. Benyun Shi	Group 2 PI: Dr. Yang Liu
AI-enabled Solution Deployment: Country- Specific Planning* Venue: AAB303 Chairs: Dr. Shang Xia and Dr. Kristen Yuanxi Li		
15:30-16:00	Coffee Break	
16:00-17:00	Workshop Summary Summary and Perspective on AI-enabled Solutions for Malaria Control and Elimination Venue: WLB103	
17:00-17:30	Closing Ceremony	

** By Invitation Only*

Program Schedule

Program of Day 1 (Monday, July 8, 2019)

Welcome and Opening Ceremony

Time: 9:30-10:00

Venue: WLB103

Master of Ceremony: Dr. Kristen Yuanxi Li

Speakers: Prof. Rick Wong, Prof. Xiao-Nong Zhou, Dr. Deyer Gopinath, Dr. Po Ly

Plenary Talk I

Time: 10:00-10:45

Venue: WLB103

Speakers: Prof. Jiming Liu and Prof. Xiao-Nong Zhou

Title: Towards AI-enabled Malaria Elimination: Challenges and Opportunities

Chair: Dr. William Kwok Wai Cheung

Plenary Talk II

Time: 11:15-12:00

Venue: WLB103

Speaker: Dr. Deyer Gopinath

Title: Burden of Malaria in the South East Asia Region: Challenges and Opportunities

Chair: Prof. Xiao-Nong Zhou

Lunch Break

Time: 12:00-14:00

Venue: Renfrew Restaurant

Technical Session I: Evaluation of Malaria Transmission Risk

Part 1: Impact of Vectorial Capacity (VCAP) in Malaria Transmission

Time: 14:00-14:20

Venue: WLB206

Speaker: Prof. Benyun Shi

Chair: Dr. Hiro Okayasu

Part 2: Population Mobility and Malaria Case Importation

Time: 14:20-14:45

Venue: WLB206

Speaker: Prof. Benyun Shi

Chair: Dr. Hiro Okayasu

Policy/Management Session I

Time: 14:00-14:45

Venue: WLB208

Speaker: Prof. Sylvie Manguin

Title: Challenges to malaria elimination in Greater Mekong Subregion

Chair: Dr. Deyer Gopinath

Program of Day 1 (Monday, July 8, 2019)

Technical Session II: Active Surveillance Planning

Tutorial 3: Malaria Infection Risk Forecast for Active Surveillance Planning

Time: 14:45-15:05

Venue: WLB206

Speaker: Dr. Yang Liu

Chair: Mr. Rady Try

Tutorial 4: Resource Allocation for Effective Surveillance

Time: 15:05-15:30

Venue: WLB206

Speaker: Dr. Yang Liu

Chair: Mr. Rady Try

Policy/Management Session II

Time: 14:45-15:30

Venue: WLB208

Speaker: Dr. Shang Xia

Title: Opportunities in Data-driven Disease Control and Prevention

Chair: Prof. Jiming Liu

Group Discussions

Time: 16:00-17:30

Venue: AAB302

1. Introduction: A brief introduction to the grouping information and the issues to be discussed, by Dr. Yang Liu.
2. Group Discussions: Each group has a PI to coordinate the discussion of country-specific issues in malaria infection risk estimation and effective surveillance, as well as the possible AI-based solutions.
 - a) Each participant presents the country-specific situations
 - b) Group discussion: The PI will lead the participants to identify the category of the situations, and suggest possible solutions adapted from the learned AI/data-driven techniques
 - c) Summary Preparation: The PI will organize all the participants in the group to summarize the discussed content

Program Schedule

Program of Day 1 (Monday, July 8, 2019)

Grouping information

Group I:

Participating Countries: Sri Lanka, Bhutan, India, Indonesia

PI: Prof. Benyun Shi

Supporters: Dr. Li Tao, Miss Mutong Liu, Mr. Qi Tan

Group II:

Participating Countries: Cambodia, Lao PDR, Thailand, Vietnam

PI: Dr. Yang Liu

Supporters: Mr. Zhonglei Gu, Dr Hechang Chen, Mr. Jinfu Ren

Roundtable Session I

Time: 16:00-17:30

Venue: AAB303

Participants: Representatives from all participating countries

Theme: Country Actions in Response to Global Technical Strategy for Malaria 2016–2030

Chairs: Prof. Yayi Guan and Prof. Roger Frutos

Reception Dinner

Time: 17:30-20:00

Venue: 11/F, Communication and Visual Arts Building, Baptist University Road, Hong Kong Baptist University

Program Schedule

Program of Day 2 (Tuesday, July 9, 2019)

Panel Discussion

Time: 9:30-10:50

Venue: WLB103

Panelist: Prof. Ya-Yi Guan, Dr. William Kwok Wai Cheung, Dr. Hiromasa Okayasu, Mr Rady Try, Dr. Nguyen Quang Thieu, Dr. Hanung Adi Nugroho

Theme: Epidemiology Meets AI – Outlook in Regional Collaboration and Interdisciplinary Personnel Training

Chair: Prof. Xiao-Nong Zhou

Plenary Talk III

Time: 11:20-12:00

Venue: WLB103

Speaker: Dr. Hiromasa Okayasu

Title: Overview of Mekong Malaria Elimination (MME) Programme

Chair: Prof. Theeraphap Chareonviriyaphap

Lunch Break

Time: 12:00-14:00

Venue: Bistro Bon, Hong Kong Baptist University

Technical Session III: AI Tools (AIM 1.0) for Malaria Infection Risk Forecast

Time: 14:00-14:30

Venue: Collaborative Computer Laboratory (L4), Library

Speaker: Dr. Yang Liu

Content: a) Matlab GUI

b) Data format

c) How to import data?

d) How to manipulate the interface for forecasting?

- What if there is no imported case?
- What if there is no socio-economic or temperature/rainfall data?
- What if the prediction results are not as good as expected?

Technical Session IV: AIM 1.0 for Risk Map Visualization

Time: 14:30-15:00

Venue: Collaborative Computer Laboratory (L4), Library

Speaker: Dr. Yang Liu

Content: a) Tableau GUI

b) Data format

c) How to import data

d) How to visualize the historical cases at different locations

e) How to visualize the forecast results

f) How to visualize the related factors of the forecast results

Program Schedule

Program of Day 2 (Tuesday, July 9, 2019)

Technical Session V: Mobile APP for Proactive Case Detection

Time: 15:00-15:30

Venue: Collaborative Computer Laboratory (L4), Library

Trainer: Dr. Yang Liu

Content: a) How to download and install the APP, both front-end and back-end, on the Android phone
b) How to open the web version of the APP, if not using Android phone
c) Who will use the front-end and back-end
d) How to collect the data from people in highly risk group using the APP
e) How to view and manage the collected data in the back-end

Practice on AIM 1.0

Time: 16:00-17:00

Venue: Collaborative Computer Laboratory (L4), Library

Each group will have a PI and several supporters to train each of the participants to use the software step by step:

Group 1: PI: Prof. Benyun Shi, Supporters: Dr. Li Tao, Miss Mutong Liu, Mr. Qi Tan

Group 2: PI: Dr. Yang Liu, Supporters: Mr. Zhonglei Gu, Dr. Hechang Chen, Mr. Jinfu Ren

Roundtable Session II

Time: 14:00-15:30; 16:00-17:00

Venue: AAB303

Participants: Representatives from all participating countries

Theme: From Existing IT Infrastructure to Future AI-enabled Surveillance and Control

Chairs: Prof. Jiming Liu and Prof. Sylvie Manguin

Day 2 Summary

Time: 17:00-17:30

Venue: WLB103

Banquet

Time: 17:30-20:00

Venue: Sportful Garden Restaurant (陶源酒家) 24/F, iSQUARE, 63 Nathan Road, Tsim Sha Tsui

Social Function

Time: 20:30-21:30

Activity: Private Harbour Night Cruise by Aqua Luna



Private Harbour Night Cruise by Aqua Luna

Program Schedule

Program of Day 3 (Wednesday, July 10, 2019)

Plenary Talk IV

Time: 9:30-10:10

Venue: WLB103

Speaker: Mr. Rady Try

Title: Initiative for GMS Regional Surveillance Database

Chair: Dr. Shang Xia

Plenary Talk V

Time: 10:10-10:50

Venue: WLB103

Speaker: Prof. Roger Frutos

Title: Dynamic of Aedes-borne Diseases: Current Situation and Challenges

Chair: Dr. Shaosen Zhang

Plenary Talk VI

Time: 11:20-12:00

Venue: WLB103

Speaker: Prof. Theeraphap Chareonviriyaphap

Title: Entomological Research and Vector Control in GMS Region

Chair: Dr. Shaosen Zhang

Lunch Break

Time: 12:00-14:00

Venue: Bistro Bon, Hong Kong Baptist University

Country-Specific Solution Planning Session I

Time: 14:00-14:45

Venue: AAB302

Content: Summarizing, confirming, and writing up the content from group discussion on Day 1

Program Schedule

Program of Day 3 (Wednesday, July 10, 2019)

Country-Specific Solution Planning Session II

Time: 14:45-15:30

Venue: AAB302

Content: Summarizing, confirming, and writing up the content from practice on AIM 1.0 on Day 2

AI-enabled Solution Deployment: Country-Specific Planning

Time: 14:00-15:30

Venue: AAB303

Chairs: Dr. Shang Xia and Dr. Kristen Yuanxi Li

Workshop Summary

Time: 16:00 – 17:00

Venue: WLB103

Theme: Summary and Perspective on AI-enabled Solutions for Malaria Control and Elimination

Closing Ceremony

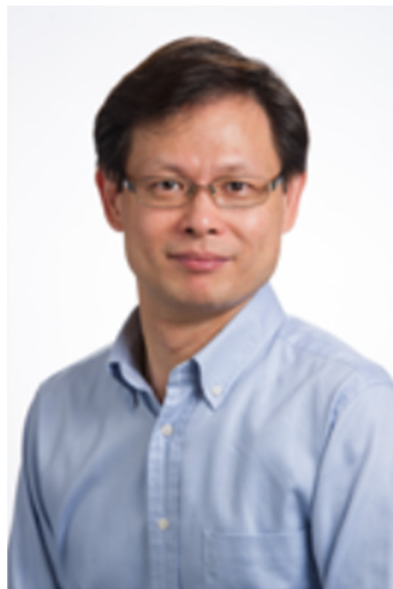
Time: 17:00-17:30

Venue: WLB103

Plenary Talk Speakers

Jiming Liu is Chair Professor of Computer Science and Associate Vice-President (Research) at Hong Kong Baptist University (HKBU), where he directs Centre for Health Informatics and Joint Research Laboratory for Intelligent Disease Surveillance and Control, a partnership between Computer Science Department at HKBU and National Institute of Parasitic Diseases (NIPD) in Chinese Center for Diseases Control and Prevention (China CDC). He received the M.Eng. and Ph.D. degrees in Electrical Engineering from McGill University, following the B.Sc. in Physics from East China Normal University and the M.Arts from Concordia University. Professor Liu's research interests are in the areas of Data-Driven Modeling, Healthcare Informatics, Computational Epidemiology, Machine Learning, Web Intelligence, Complex Networks, and Multi-Agent Autonomy-Oriented Computing. He was named IEEE Fellow in 2011 for original contributions to Multi-Agent Autonomy-Oriented Computing (AOC) and Web Intelligence (WI).

Prof. Jiming Liu



Prof. Xiao-Nong Zhou

Xiao-Nong Zhou Ph.D, Professor, Director of NIPD, China CDC, Director of WHO Cooperation Centre for Malaria, Schistosomiasis and Filariasis, Vice Chairman of the Expert Committee of the Disease Control and Prevention for National Health and Family Planning Commission (NHFPC, former MOH), Chairman of the Prevention and Control Committee for Schistosomiasis and Parasitic Disease, NHFPC. He has had long-term cooperation experiences with WHO both on research project and serving as members in some international expert committee, for instance, the member of the WHO S&T Advisory Committee of NTD, member of the WHO Food-borne Diseases Epidemiological Evaluation on Burden of Diseases, member of the S&T Advisory Committee for WHO/TDR. He is acting as Editor-in-Chief of 'Infectious Diseases of Poverty (BioMed Central Publisher)', and Associated Editor of 'PLoS Neglected Tropical Diseases'. He has published more than 100 papers in the international journals, including New England Journal of Medicine, Lancet, etc., and published more than 6 books on relevant fields. He has been PIs for more than 10 national research projects, such as the National Science and Technology Key Project on Major Infectious Diseases, Science and Technology Support Program, The Key programme of the National Natural Science Fund projects, as well as more than 10 international cooperation projects supported from IDRC (Canada), WHO/TDR, DANIDA (Denmark), respectively. He has got several prizes due to his research achievements, including one first grade, 5 second grade and 1 third grade of prizes at provincial or ministerial level. He has supervised more than 30 students at MSc and PhD levels, as well as 10 post-doctorial fellows including 2 from Switzerland and 2 from Cameroon.

Plenary Talk Speakers



Dr. Deyer Gopinath

Born in Malaysia and having completed my early education there, I obtained my medical degree (MBBS) from India and masters in public health (MMed MPH) from the National University of Singapore. My initial working career was with the Ministry of Health in Malaysia in East Malaysia over almost 10 years in various positions from medical residency, rural health officer and district maternal child health medical officer, district health officer and as state TB and Leprosy Assistant Director. I have worked with the World Health Organization (WHO) as a malaria scientist in the Solomon Islands in 1999 and thereafter in 2004 with an international NGO on the Thai-Myanmar border as a program manager overseeing an infectious disease control project among Burmese migrants. I served as the Medical Officer for WHO in Lao PDR for 8 years (2006-2013) overseeing Malaria and other as the WHO Malaria and

Border Health officer for the Greater Mekong Sub-region based in Bangkok in support of the Emergency Response to Artemisinin Resistance (ERAR) project focusing among migrant and mobile populations in the 6 countries of the Greater Mekong Sub-region (GMS) (Myanmar, Thailand, Cambodia, Lao PDR, Viet Nam and Yunnan, China). Since 2017, I am the Medical Officer for WHO in Thailand supporting the country's Malaria elimination, TB, HIV and Neglected Tropical Diseases programs.

Dr. Hiro Okayasu

He is a Coordinator, WHO Mekong Malaria Elimination (MME) Programme, based in WHO Cambodia. He joined in the WHO in 2009, first working at Polio Eradication Department, WHO HQ as a team leader, product development and innovation. Prior to WHO, he has worked as a management consultant at McKinsey and Company in Tokyo, Japan and New Jersey, USA. He earned MD from Keio University, Japan (1999) and MBA from Stanford University (2005).



Plenary Talk Speakers

Mr. Rady Try

Mr Try is a National Professional Officer for the WHO Mekong Malaria Elimination (MME) Programme in the WHO Cambodia Office. Since 2016, he has managed MME's regional data-sharing platform (RDSP), which helps the six countries of the Greater Mekong Subregion (GMS) to map and analyze the malaria disease burden. His work involves surveillance data collection, validation and analysis, as well as technical support for strengthening GMS surveillance systems. He has led multiple trainings and workshops on data analysis and utilization on RDSP throughout the GMS. Prior to his work with WHO, he worked for six years on a variety of information system projects in the private and public sectors.



Prof. Roger Frutos

collaborations on health and infectious diseases. He is also Invited Professor at Universitas Gadjah Mada in Indonesia and at Mahidol University in Thailand. His research activity covers several viral diseases such as dengue, malaria, chikungunya, malaria, scrub typhus influenza, etc. and encompass the modeling of the dynamic of infectious diseases. Roger Frutos has maintained some activities on Bacillus thuringiensis and works on the fate of BT toxins in the environment. Roger Frutos has been involved in the creation and management of the international Master curricula MIVA (France-Thailand) and EPID (France-Indonesia) and is currently building the international Master DYNAMID (France, Poland, Thailand, Indonesia, Malaysia).

Roger Frutos received his PhD in Pathology and Parasitology at University Montpellier 2 in 1988. After 3 years of post-doc at University of California, Riverside, in the Department of Entomology, Roger Frutos was appointed research Scientist at CIRAD (International Center for Research in Agronomy) in Montpellier. At CIRAD he worked on the genetic engineering of Bacillus thuringiensis but also on the genetics of plant and animal pathogens. He was then for three years Director of a joint Private/Public R&D unit in Biotechnology and involved in Intellectual Property Rights. Roger Frutos is now focusing on medical research and on human emerging and infectious diseases. He retains a position of Research Director at Cirad and is Professor at University of Montpellier in "Dynamic of infectious diseases". Prof. Roger Frutos is Deputy Vice-President for International relations at University of Montpellier in charge of Asia where he has several active research

Dr. Theeraphap Chareonviriyaphap

Dr. Theeraphap Chareonviriyaphap is currently a Full Professor at the Department of Entomology, Faculty of Agriculture, Kasetsart University, Bangkok, Thailand. His researches are focused on the blood sucking insects affecting human and livestock. His current works include bionomics of vectors of human diseases, vector incrimination and vector competence studies; vector behavior in response to insecticides used in control interventions and in response to the use of repellents and candidate botanicals and some works on vector population genetics. One of his major accomplishments is the patenting of the "Excito-Repellency Box" (PATENT NO. 19319 on Excito-Repellency Escape Chamber for Behavioral Test in Mosquito Vectors) which is considered as one of the standard procedures in determining avoidance behavior of mosquito vectors to insecticides.

He has produced voluminous publications from that patent. His other works centered on mosquito behavior using other systems as High Throughput Screening System (HITTS) and use of experimental huts. Currently, he is the coordinator of the nationwide network for the monitoring of insecticide susceptibility of malaria and dengue vectors in Thailand. He has been appointed as a network leader for the Mae-Kong Malaria Outdoor Transmission Network (MMOTN), Asia Pacific Malaria Elimination Network (APMEN).



Technical Session Speakers



Prof. Benyun Shi

Benyun Shi is currently a "Qianjiang" distinguished professor at School of Cyberspace, Hangzhou Dianzi University, China. He received his M.Phil and Ph.D. degrees in Computer Science from Hong Kong Baptist University in 2008 and 2012. Before 2015, he served as a research assistant professor at department of computer science, Hong Kong Baptist University. His research interests include data analytics and engineering, complex systems/networks modeling, autonomy-oriented computing, and computational epidemiology and healthcare. He has published more than 40 papers in PLoS Neglected Tropical Diseases, Scientific Reports, Infectious

Diseases of Poverty, Malaria Journal, International Journal of Electrical Power & Energy Systems, IEEE Transactions on Systems, Man, and Cybernetics: Part B, Soft Computing, AAI, and so on. He is or was the committee member of many international conferences, e.g., CBCB'219&2020, MDM'2019, DSS'2018, CBMS'2013-2015. He has also served as reviewers for many international journals.

Dr. Liu is currently a Research Assistant Professor in the Department of Computer Science at Hong Kong Baptist University. He received his B.Eng. and M.Eng. degrees in Automation from National University of Defense Technology in 2004 and 2007, respectively. He received the Ph.D. degree in Computing from The Hong Kong Polytechnic University in 2011. Between 2011 and 2012, he was a Postdoctoral Research Associate in the Department of Statistics at Yale University. Before joining HKBU, Dr. Liu was a Research Fellow and the Coordinator of Cognitive Computing Lab in the Department of Computing at PolyU. His research interests include health informatics, computational epidemiology, machine learning, and complex network analysis.



Dr. Yang Liu



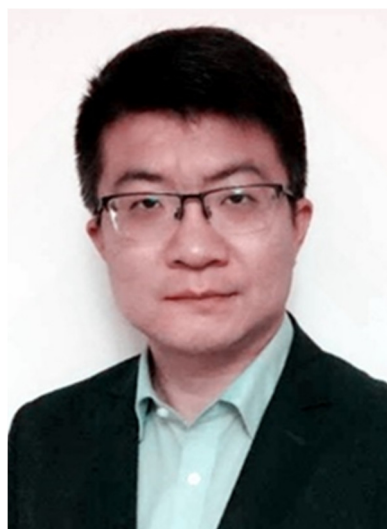
Prof. Sylvie Manguin

Sylvie Manguin is a Full Research Professor at the Institute of Research for Development (IRD), based at the University of Montpellier, France. She is a leading medical entomologist and academician researcher whose main interest concerns mosquitoes and vector-borne diseases such as malaria and dengue. She has developed studies on Anopheles mosquitoes from three continents (Asia, Africa, Americas) including molecular species identification, population genetics, phylogenetic, vectorial capacities, spatial surveillance, midgut microbiota biodiversity, salivary immunological markers and vector control approaches. She is the author of 90 indexed publications, six book chapters, three books including “Anopheles mosquitoes: New insights into malaria vectors” for which she is the Editor (InTech Open Access) and “Biodiversity of malaria in the World” (John Libbey Ed.), respectively published in 2013 and 2008.

She is also the Secretary General of the International Federation of Tropical Medicine (IFTM) <http://www.iftm-hp.org/board.html>, member of the Editorial Boards of the Malaria Journal and Acta Tropica and she serves as reviewer in several international institutions and more than 20 scientific journals.

Dr. Shang Xia

Shang XIA is currently an Associate Professor at the National Institute of Parasitic Diseases, Chinese Center for Diseases Control and Prevention (NIPD, China CDC), which is also recognized as the Chinese Center for Tropical Diseases Research (CTDR), and WHO Collaborating Centre for Tropical Diseases. He is the committee member of International Society of Geospatial Health (GnosisGIS). He has served as the section editors of BMC Infectious Diseases of Poverty (IDP), and Climate Change Research (in Chinese). Shang XIA received his Ph.D degree in Computer Science from Hong Kong Baptist University (HKBU) in Hong Kong, having obtained M. Eng. and B. Eng. degrees from Shanghai Jiao Tong University (SJTU) in Shanghai, China. He has completed his Postdoctoral Research Program in the Chinese Center for Diseases Control and Prevention (China CDC) in Beijing, China. Shang XIA current research focuses on 1) Intelligent Health Information System (iHIS); 2) Spatial and Computational Epidemiology; 3) Data-Driven Complex Systems Modeling; 4) Infectious Disease Tempo-Spatial Analytics.



Transportation

FROM KOWLOON TONG MTR STATION TO HONG KONG BAPTIST UNIVERSITY
Hong Kong Baptist University (Shaw Campus) is close to the [Kowloon Tong MTR Station](#). You could reach the workshop venue on foot, by mini bus or by taxi.



Walk to HKBU (~ 800 meters)

Public Light Bus (Green MiniBus) Route 25MS



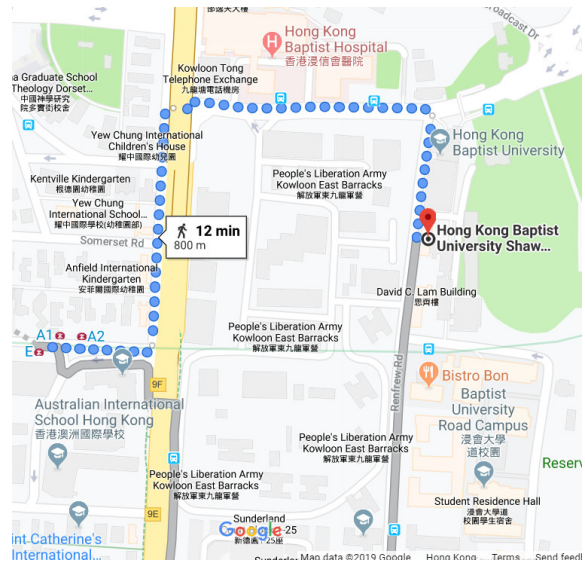
(Circular Line between Kowloon Tong MTR Station and HKBU) Fare: HK\$ 4.7

Boarding stop : Public Transport Interchange (MTR Exit D or B2) (Chinese: **九龍塘(沙福道)公共運輸交匯處**)

Drop-off stop : Baptist University Road Campus, Baptist University Road (Chinese: **浸會大學道, 浸會大學浸會大學道校園**) [4th station]

After get off, cross the road and walk along Renfrew Road (~ 1 minute) to reach the workshop venue

Note: On weekdays (**outside 0700-1100 only**), you may take Route 25M (Direction: Tung Tau Estate) alternatively. (Boarding and Drop-off stops are the same, fare is HK\$ 5.9)



Take Urban Taxi (Red Taxi)

Fare: ~HK\$ 24

A Taxi Stand is available on **To Fuk Road**, next to **Kowloon Tong MTR Exit F**

FROM HONG KONG INTERNATIONAL AIRPORT TO HONG KONG BAPTIST UNIVERSITY



Bus E22 (operated by Citybus)

Bus E22 (operated by Citybus)

Fare : HK\$ 18

Direction: Lam Tin (North) (Chinese: **藍田(北)**)

Boarding stop : Airport (Ground Transportation Centre) (Chinese: **機場(地面運輸中心)**)

Drop-off stop : Kam Shing Road, Junction Road (Station 17) (Chinese: **金城道, 聯合道**)

After get off, cross Junction Road and walk along

Renfrew Road to reach the workshop venue



Take Urban Taxi (Red Taxi)

Fare: ~HK\$ 270



Online Transportation Guide

<http://impact.hkbu.ai/transportation.php>

Shuttle Bus Schedule

Date	Pick up Time	From	To
8-Jul	08:30	Royal Plaza Hotel, Prince Edward	WLB roundabout, HKBU
8-Jul	20:30	CVA, HKBU	Royal Plaza Hotel, Prince Edward
9-Jul	08:30	Royal Plaza Hotel, Prince Edward	WLB roundabout, HKBU
9-Jul	17:30	WLB roundabout, HKBU	Sportful Garden Restaurant (24/F, iSQUARE, 63 Nathan Road, Tsim Sha Tsui)
9-Jul	21:45	Tsim Sha Tsui Pier	Royal Plaza Hotel, Prince Edward → NTT, HKBU
10-Jul	08:30	Royal Plaza Hotel, Prince Edward	WLB roundabout, HKBU
10-Jul	17:30	WLB roundabout, HKBU	Royal Plaza Hotel, Prince Edward

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