

#### SEMINAR REPORT

OMI VIETNAM GLOBAL HEALTH: VECTOR-BORNE DISEASES

November 12-16, 2023







3 conferences on dengue, vaccine development, and emergences prediction of vector-borne diseases (VBD)



8 faculty members from Cambodia, France, Laos, and Vietnam



14 didactic lecture



4 round tables on Asia as a hotspot of VBD emergences, vaccination, vector control, and community engagement, VBD emergences prediction, and the impact of climate change and human activities on VBD

# GROUP PHOTOS







# OMI Vietnam Institut Pasteur Seminar in Global Health: Vector-Borne Diseases Sunday, November 12 – Thursday, November 16, 2023

		Sunday	Monday	Tuesday	Wednesday	Thursday
		12/11/2023	13/11/2023	14/11/2023	15/11/2023	16/11/2023
07:00	08:00		BREAKFAST	BREAKFAST	BREAKFAST	BREAKFAST
08:00	09:00		Introductions Pre-Seminar Test	Malaria Vectors and Transmission	Animal Reservoirs and Risk of Spillovers	Tick and Pathogen Transmission
				Nguyen Hoan Phu, MD, DTM&H, PhD	Khamsing Vongphayloth, MD	Khamsing Vongphayloth, MD
09:00	10:00		Vector-Borne Diseases in Asia	Anti-Malarial Treatments and Resistance	The One Health Approach	Tick Prevention and Control Methods
			Anna-Bella Failloux, PhD	Nguyen Hoan Phu, MD, DTM&H, PhD	Claude Flamand, PhD	Khamsing Vongphayloth, MD
10:00	10:30		COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
10:30	11:30		The Threat of Arboviral Diseases in Asia	Sand Flies: Bioecology and Transmission of Pathogens	Role of Social Sciences in Understanding VBD Transmission	Resistance to Insecticides
			Anna-Bella Failloux, PhD	Khamsing Vongphayloth, MD	Xavier de Lamballerie, MD, PhD	Huynh Thi Thuy Trang, PhD
11:30	12:30		The Fear of Yellow Fever	Japanese Encephalitis: An Asian Specificity?	Conference: Predicting Emergences of VBD	Interrupt Dengue Using Wolbachia and the Mosquito World Program
			Anna-Bella Failloux, PhD	Dao Huy Manh, PhD	Claude Flamand, PhD	Luong Chan Quang, MD, MSc
12:30	14:00		LUNCH	LUNCH	LUNCH	LUNCH
14:00	15:00		Conference: Dengue Remains the Most Important Arboviral Disease in Asia	Conference: An Update on Vaccine Development Against VBD	Round Table: How to Predict VBD Emergences	Round Table: Impact of Climate Change and Human
			Luong Chan Quang, MD, MSc	Xavier de Lamballerie, MD, PhD		Activities on VBD
15:00	16:00		Round Table: Asia, a Hot Spot of VBD Emergence	Round Table: Vaccination, Vector Control, Community Engagement		Post-Seminar Test Evaluation & Discussion
16:00	17:00			How to Better Prevent and Control VBD?		GRADUATION CEREMONY Certificates Awarded
17:00	18:00					
18:00	19:00	FACULTY MEETING TO REVIEW THE WEEK				
19:00	20:00	DINNER	DINNER	DINNER	DINNER	DEPARTURES



#### Wolfgang Aulitzky, MD

CEO | Open Medical Institute

American Austrian Foundation

Associate Dean and Gerhard Andlinger Professor International Medicine and Distance Learning Adjunct Professor of Clinical Urology Adjunct Professor of Clinical Reproductive Medicine Weill Cornell Medicine

Adjunct Professor of Pediatrics

Perelman School of Medicine | Children's Hospital of Philadelphia

Associate Professor of Urology **Medical University of Innsbruck** 

Wolfgang Aulitzky, MD is the Medical Director of the American Austrian Foundation. He is the Associate Dean of International Medicine and Distance Learning, Adjunct Professor of Clinical Urology, and Adjunct Professor of Clinical Reproductive Medicine at Weill Cornell Medicine. In 2016, he was appointed as an Adjunct Professor of Pediatrics in the Associated Faculty of the Perelman School of Medicine at the Children's Hospital of Philadelphia. He is also an Associate Professor of Urology at the Medical University of Innsbruck and a Visiting Professor at the Medical University of Vienna. Amongst others, he is a member of the American, German, and Austrian Societies of Urology and was awarded the Zuckerkandlpreis of the Austrian Society of Urology in 1989. He received the Silver Medal in 1995, the Golden Medal for Merits to the Republic of Austria in 2007, and the Cross of Honor of the Land Salzburg in 2014. As Director of the Medical Program of the American Austrian Foundation, he initiated the Open Medical Institute, a scientific and educational collaboration of Weill Cornell Medicine, Children's Hospital of Philadelphia, Duke University, Columbia University, Cleveland Clinic, and leading hospitals in Austria. Dr. Aulitzky earned his medical degree at the University of Innsbruck in 1977, was a research associate at the University of Uppsala, Sweden and Rockefeller University, New York. He received his education as a urologist at the University of Innsbruck and the General Hospital of Salzburg. He is the author of more than 140 publications on Urology, Andrology and Health Care issues, and is the coauthor of books on basic and clinical urology/andrology.





#### Anna-Bella Failloux, PhD (Course Director)

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Anna-Bella Failloux, PhD is a professor of medical entomology and chief of the unit "Arboviruses and Insect Vectors" in the department of virology at the Institut Pasteur in Paris. Her work mainly focuses on arbovirus-mosquito interactions to decipher the factors leading to the viral emergence. She develops three complementary lines of research: (i) answering to emergence by replicating carefully the complex conditions encountered in nature (using biological material recently collected from the field, reproducing environmental conditions close to the field), (ii) deciphering molecular mechanisms underlying observations brought out from the multiple back-forth between the field and laboratory, and (iii) proposing selective control strategies to mitigate insecticide-based control measures. She did her first move in medical entomology at the Institut Louis Malardé in French Polynesia with a PhD in Ecology/Entomology from Orsay University (Paris XI) on the adaptation of the vector Aedes polynesiensis to local parasite populations of the filaria Wuchereria bancrofti. After graduating with her PhD in 1994, she secured a postdoctoral fellowship with the Institut Pasteur to develop studies on the genetic structure of the mosquito Aedes aegypti, which is the primary dengue vector worldwide, being the most important arboviral disease affecting humans. In 2011, she became the head of an independent group (tenured in 2014). She has extended expertise on vectors of alphaviruses, flaviviruses, and phleboviruses. Her team develops double expertise in both entomology and virology, serving as a focal point for studies on vector-borne diseases in collaboration with institutes of the Pasteur Network (33 institutes covering five continents). She also participates actively in teaching medical entomology as director of several courses (Institut Pasteur, Pasteur Network, OMI Institut Pasteur seminars in Global Health) and the MOOC "Medical Entomology".



Dao Huy Manh, PhD

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Dao Huy Manh, PhD is currently working at the arbovirus laboratory of the Institut Pasteur in Ho Chi Minh City. He has more than 10 years of experience in research on arboviruses, especially dengue, Japanese encephalitis, chikungunya and zika in Vietnam. In 2014, he was awarded a Leading Program scholarship to participate in a biomedical doctorate training course at Nagasaki University, Japan. In 2018, he graduated with a doctorate in infection research. Since the COVID-19 burden in Vietnam, he led the SARS-CoV-2 whole genome sequencing team at the Institut Pasteur in Ho Chi Minh City. To date, this team using the Miseq Illumina and Nanopore system has sequenced more than 2000 samples of SARS-CoV-2. The NGS team also successfully sequenced the first identified MPV sample in Vietnam and dengue, zika, chikungunya samples. He has published 13 scientific papers in the last 5 years.



#### Xavier de Lamballerie, MD, PhD

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Xavier de Lamballerie, MD, PhD is a professor of medicine at Marseille University, France, and head of Medical Virology department at the Marseille University Hospital. He is also a director of the UVE (Unité des Virus Émergents), a research unit dedicated to the study of emerging viral diseases. He created the European Virus Collection (EVA) and participated in over 20 research projects funded by the European Commission. His favourite field is arboviruses, in which he was trained by Prof. Ernest Gound at Oxford University. He created Arbo-France, a French multidisciplinary research network dedicated to human and veterinary arboviruses and is President of the European Society of Arbovirology. Dr. de Lamballerie has worked on various aspects of arbovirology, including genomics, evolution, natural history, epidemiology, diagnostics, and treatments. For decades, he championed a transdisciplinary approach that includes the human and environmental sciences, in addition to biological, epidemiological, and medical approaches. Passionate about public health, he is also a member of the French government's committee for the surveillance and anticipation of health risks.



#### Claude Flamand, PhD

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Claude Flamand, PhD is a research biostatistician and epidemiologist specializing in tropical and emerging infectious diseases. He has a strong academic background, holding a master's degree in biomathematics and biostatistics, as well as a PhD in epidemiology and public health from the University of Paris-Saclay. He initiated his career at the French Public Health Agency, where he served as the leader of the regional epidemiology unit for French Guiana. In this capacity, he managed infectious disease surveillance and played a critical role in responding to health emergencies in challenging tropical environments. In 2013, he joined the Pasteur Network as the head of the epidemiology unit at the Institut Pasteur in French Guiana. Since 2022, he has been the head of the epidemiology and public health unit at the Institut Pasteur du Cambodge. His primary research focus centers on unraveling the intricate dynamics of transmission in infectious and tropical diseases, with a notable emphasis on arboviruses and viral and bacterial zoonoses within communities. He has successfully led numerous projects, cementing his invaluable expertise and leadership across a diverse range of multidisciplinary fields, including epidemiology, surveillance, biostatistics, mathematical modeling, public health policy, and science outreach.



#### **Huynh Thi Thuy Trang, PhD**

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**Huynh Thi Thuy Trang**, **PhD** is a researcher at the department of Medical Entomology and Zoonotics in the Institut Pasteur in Ho Chi Minh City, Vietnam. She is also a regional member of the Rapid Response Team. Her work is focused on mosquito vector surveillance and control and has led field trials in national and international projects. She has been involved in the outbreak response team to evaluate outbreak response activities and has shared her experience with local communities in Southern Vietnam.

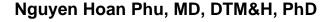


#### **Luong Chan Quang, MD, MSc**

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Nguyen Hoan Phu, MD, DTM&H, PhD specializes in infectious diseases and tropical medicine. Dr. Phu graduated from the University of Medicine and Pharmacy of Ho Chi Minh City, Vietnam in 1983 and completed his diploma in tropical medicine and hygiene at the London School of Hygiene and Tropical Medicine, UK in 1996. He completed his doctoral thesis on clinical and pathophysiological aspects of severe falciparum malaria at the Open University, UK in 2009. He worked at the Hospital for Tropical Diseases of Ho Chi Minh City, Vietnam from 1983 to 2019. He has worked for the Oxford University Clinical Research Unit, Vietnam as clinical researcher since 1991. Dr. Phu's research interests include malaria pathophysiology, malaria treatment, and tuberculous meningitis. Most publications include severe malaria and central nervous system infections. He used to work for WHO as short-term consultant on vivax malaria in North Korea. Dr. Phu is also currently a clinical lecturer in infectious diseases and tropical medicine at the School of Medicine, Vietnam National University Ho Chi Minh City. He lives in Ho Chi Minh City.



#### Khamsing Vongphayloth, MD

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Khamsing Vongphayloth, MD is a medical entomologist working on systematics and bioecology of medically important vectors such as mosquitoes, sandflies, ticks, and other hematophagous arthropods in Laos. He graduated from the Lao University of Health Science and then attained his master's degree in tropical medicine and international health at the "L'Institut de la Francophonie pour la Médecine Tropicale (IFMT)" in Vientiane, Laos. Dr. Vongphayloth's research interests include taxonomy, bio-ecology, and related pathogens of hematophagous arthropods as well as other reservoirs of zoonotic diseases. Recent publications include the update of tick species in Laos, describing new sandfly species in Laos as well as other coronaviruses from bats in Laos. His research efforts have earned him grants for active surveillance of ticks and tick-borne pathogens, sandflies and sandfly-borne pathogens, and other zoonosis diseases in Laos. He is currently working for the Institut Pasteur du Laos as the head of the laboratory of medical entomology and vector-borne diseases and is enrolled in his third year of the PhD program at the University of Reims Campagne-Ardenne, France, studying the inventory of sandflies and their related pathogens in Laos. He lives in Vientiane, Laos.

#### **FELLOWS**



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# Faculty Feedback

"After having led the teaching efforts in both Salzburg and Mexico City, the idea was to replicate the OMI course format in Southeast Asia. By bringing in the expertise of local faculty, the seminar turned out to be extremely beneficial to the attendees drawn from Cambodia, China, France, Indonesia, Japan, Laos, South Korea, and Vietnam."

Anna-Bella Failloux, PhD

Vector-Borne Diseases





## Faculty Feedback

"It is a great opportunity to gather experts and fellows to discuss vector-borne diseases. Now, we understand issues better and can find the appropriate solutions. I also expect the Vietnamese fellows to create a vector-borne program to train medical entomologists."

Huynh Thi Thuy Trang, PhD





## Faculty Feedback

"The OMI seminar allows young professionals with different backgrounds to exchange their knowledge for a better understanding of vector-borne diseases that affect the global health, and to discuss ways to mitigate them in the future. I am very happy to be part of this unique educational program!"

Khamsing Vongphayloth, MD

Vector-Borne Diseases







I admire the OMI for bringing high-quality courses to Vietnam. As a junior professional, I am eager to expand my scientific and medical network, and this seminar was a valuable opportunity to meet and engage in discussions with top experts from the region and abroad. I genuinely hope that the OMI seminars will expand to more hospitals and research institutes in Southeast Asia.

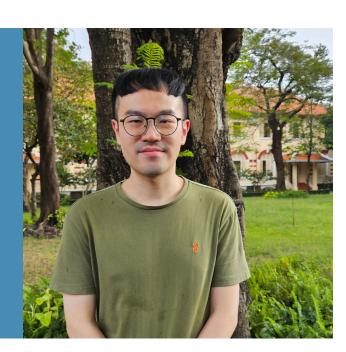
Minh Hang Duong OMI fellow from Vietnam



Xavier de Lamballerie gave us an update on vaccine development against VBD, using dengue as an example. He has profound knowledge about various aspects of arbovirology and his presentation was filled with interesting interpretations and humorous examples, greatly facilitating my undersanding about the development and validation of the dengue vaccine.

Yunshi Liao OMI fellow from Hong Kong | China





It's my first time to attend an international seminar, so I was bit nervous. However, the various topics turned out to be incredibly interesting, which allowed me to gain great knowledge. The experiences and the passion of the faculty and fellows were unforgettable, and it feels like another turning point in my career.

Jinhee Yu
OMI fellow from South Kore







I was inspired by Nguyen Hoan Phu's talk about malaria. He is a true expert in this field. He showed a great passion for the control of malaria in Vietnam and surrounding areas and put a lot of effort into the discovery and validation of effective and safe treatment of malaria. With the continous work of Dr. Phu and his team, the number of malaria cases in Vietnam has been controlled well, which is very encouraging and admirable.

Atikah Fitria Muharromah OMI fellow from Indonesia





As I am doing research on tick-borne viral infections in Japan, I was particularly interested in the lectures of Khamsing Vongphayloth. They were truly remarkable. The finding that the spermatophores transferred to female genital operculum by males' chelicerae was eye-opening. I had seen this phenomenon before but did not know what it was for.

lyo Matsumura DMI fellow from Japar



Anna-Bella Failloux talked about vector-borne diseases and the threat of arboviral diseases in Asia. The lectures were truly impressive and insightful. She provided valuable information that allowed us to clearly understand the topics, and we could ask her questions anytime.

Somsanith Chonephetetsarath





One of my favorite parts of the seminar were the round table sessions. This interactive format was completely new to me. We could freely ask questions and share our thoughts. I have never experienced this before.

Kimly Heng





# CONTACT



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