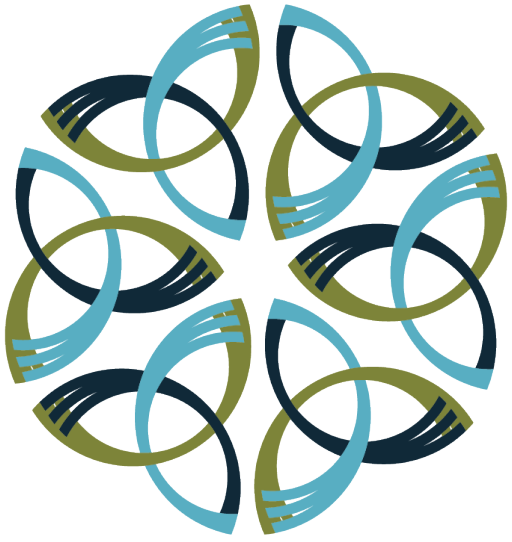
PMAC PRINCE MAHIDOL AWARD CONFERENCE 2018



PLENARY SESSION 0

VISION 2100: RE-IMAGINING THE END GAME FOR THE END OF THE PANDEMIC ERA

| BACKGROUND

Plenary Scope: Examine how even in the face of increasing threats posed EIDs and AMR innovative approaches that harness transformative thinking allow us for the first time to imagine the end of the "pandemic era".

Plenary Background: We live in an era when the emergence of novel infectious disease agents is posing an increasing threat to global health and security. The threat from novel infectious diseases is accelerating at a pace and with an intensity unprecedented in human history, driven by increasing human populations, climate change and surging global travel. The possibility that a single lethal microbe could suddenly emerge and sweep through every household, through every community without regard to national borders or social and economic standing is a shared fear across the globe. Just the fear can cost billions, as illustrated by recent Ebola and Zika virus panics in little-affected countries. But the reality of the threat is all too clear, proven by the decades of response to the HIV-AIDS pandemic.

Zoonotic and AMR related diseases account for more than 95% of all emerging infectious diseases reported during the second half of the 20th century.

In this century the emergence of SARS, pandemic influenza, MERS, and the spread of Ebola and Zika reflect the world's increasing vulnerability to novel zoonotic threats. The simultaneous emergence of pathogens resistant to antibiotic therapies raises the prospect of a "post antibiotic" world. While the drivers underlying the emergence of zoonotic and antibiotic resistant diseases are complex, human behaviours and their impact on animal populations and the environment are understood to be central to the emergence of both disease threats. The role of increasing animal-human contact in the emergence of zoonotic diseases has been well documented and been increasingly the focus of One Health initiatives across the globe. The contribution made by the inappropriate use of antibiotics in animal husbandry to AMR is less well documented but in recent years has been increasingly understood to be a core driver behind the emergence and global spread of antibiotic resistant organisms, along with inappropriate "prescriber-user" practices associated with antibiotic use in clinical care. Changing environmental and climatic conditions have also been closely linked to the emergence of novel infectious diseases. That infectious disease emergence is closely associated with practices and behaviours at the animal-human-environment interface speak to the importance of an expanded multi-sectoral alliance across the animal, human and environmental sectors to address the threats posed by both zoonosis and AMR.

As we look forward towards the end of this century, the predictable escalation in the interactions between humans and animals speaks to a world of increasing global risk. The consequences of these trends, however, are avoidable. Success in "making the world safe from the threats of emerging infectious diseases" requires we think and act differently; to not continue with the half-measures that have made the world ill prepared to address these threats.

Rapid advances in science and a corresponding revolution in technologies allow us, for the first time, to imagine a world where these "threats" can be minimized. What is required is bold action; that embraces an aggressive time horizon; and, that is global in scope. Such action can build systems and capacities able to mitigate the emergence of future threats and to control them when they do. With this knowledge comes the power to end panic and move to prevention.

This Plenary will present and discuss examples of new, innovative and bold global ventures which are now laying the groundwork for the "beginning of the end of the Pandemic Era".

[1] K. E. Jones *et al.*, Global trends in emerging infectious diseases. *Nature* **451**, 990-993 (2008).

| OBJECTIVES

- Explore novel and transformative approaches that address the underlying drivers of zoonotic disease and AMR
- Harness methodologies, technologies, and thinking across a range of disciplines to promote a vision for a proactive approach to emerging zoonoses and AMR
- Enable a conversation that transcends current impediments and envisions possible pathways and enabling factors to realize the end of the "pandemic era"

Moderator

Dennis Carroll

Pandemic Influenza and Other Emerging Threats Unit Director

United States Agency for International Development
United States of America

Dennis Carroll Dr Dennis Carroll currently serves as the Director of the U.S. Agency for International Development’s (USAID) Emerging Threats Unit. In this position Dr. Carroll is responsible for providing strategic and operational leadership for the Agency's programs addressing new and emerging disease threats. Previously, Dr. Carroll was the Agency's Senior Infectious Diseases advisor, responsible for overseeing the Agency's programs in malaria, tuberculosis, antimicrobial resistance, disease surveillance, as well as neglected and emerging infectious diseases. Dr Carroll has a doctorate in biomedical research with a special focus in tropical infectious diseases from the University of Massachusetts at Amherst. He was a Research Scientist at Cold Spring Harbor Laboratory where he studied the molecular mechanics of viral infection.

Keynote Speaker

Harvey Fineberg

President

The Gordon and Betty Moore Foundation
United States of America

Harvey V. Fineberg is president of the Gordon and Betty Moore Foundation. He previously served as president of the U.S. Institute of Medicine (now National Academy of Medicine), as provost of Harvard University, and as dean of the Harvard Chan School of Public Health. He has devoted most of his academic career to the fields of health policy and medical decision-making. His past research has focused on global health, assessment of medical technology, evaluation and use of vaccines, and dissemination of medical innovations. Dr. Fineberg chaired the WHO Committee on the Functioning of the International Health Regulations (2005) and on Pandemic Influenza A (H1N1) 2009. He chairs the board of the Carnegie Endowment for International Peace and serves on the China Medical Board. He previously served on the boards of the William and Flora Hewlett Foundation, the Josiah Macy, Jr. Foundation, and the Association FXB (USA). He helped found and served as president of the Society for Medical Decision Making. Dr. Fineberg serves in a number of other advisory capacities, including the foresight committee of the Veolia Environment Institute and the advisory board of the Peterson Center on Healthcare. Dr. Fineberg is co-author of the books Clinical Decision Analysis, Innovators in Physician Education, and The Epidemic That Never Was, an analysis of the controversial U.S. immunization program against swine flu in 1976. He has co-edited books on such diverse topics as AIDS prevention, vaccine safety, understanding risk in society, and global health and has authored numerous articles published in professional journals. Dr. Fineberg is the recipient of several honorary degrees, the Frank A. Calderone Prize in Public Health, the Henry G. Friesen International Prize in Health Research, and the Harvard Medal, awarded by the alumni association of the university from which he earned his bachelor’s and doctoral degrees.

Panelist

Eddy Rubin

Chief Scientific Officer

Metabiota
United States of America

Eddy Rubin MD, PhD, FACMG Edward “Eddy” Rubin is an internationally recognized physician, geneticist and information scientist. His research has included pioneering studies on the use of massive scale DNA sequencing to decipher the interactions between humans and other biological and environmental systems. He has held several leadership positions at the Lawrence Berkeley National Laboroatory including serving as the Director of the U.S. Department of Energy’s Joint Genome Institute for more then a decade. There he led a team that sequenced 13% of the human genome as part of the International Human Genome Project as well as the sequencing and analysis of thousands of fungi, microbes, viruses and environmental metagenomes. In 2016 he became the Chief Scientific Officer at Metabiota. Metabiota is a San Francisco based company focused on applying comprehensive risk analytics to help countries and organizations mitigate complex infectious disease threats.

Panelist

Larry Brilliant

Chairman

Larry's Personal
United States of America

LARRY BRILLIANT, M.D., M.P.H., is the author of Sometimes Brilliant: The Impossible Adventures of a Spiritual Seeker and Visionary Physician Who Helped Conquer the Worst Disease in History. He currently serves as the Chairman of the Board of Ending Pandemics, whose mission is to work with partners across the globe to unlock the potential to find, verify, and respond to outbreaks faster regardless of where they might emerge on the planet. Larry is also a Senior Adviser at the Jeff Skoll Group, and has also served as Skoll Global Threats Fund’s President and CEO, and as Vice President of Google and as founding Executive Director of Google.org. He is board certified in preventive medicine and public health and co-founder of The Seva Foundation, an international NGO whose programs and grantees have given back sight to more than 3.5 million blind people in over 20 countries. Dr. Larry lived in India for more than a decade working as a United Nations medical officer where he played a key role in the successful World Health Organization (WHO) smallpox eradication program in South Asia. He was professor at the University of Michigan and founding chairman of the National Biosurveillance Advisory Subcommittee. Prizes: Time 100, TED Prize, two honorary doctorates. He is serves on the boards of the Skoll Foundation and Salesforce Foundation and Dharma Platform.

Panelist

Margaret Hamburg

President

American Association for the Advancement of Science
United States of America

Dr. Hamburg is an internationally recognized leader in public health and medicine. As Foreign Secretary of the National Academy of Medicine, She is senior advisor on international matters and is the liaison with other Academies of Medicine around the world. She is also President-elect of the American Association for the Advancement of Science (AAAS). Dr. Hamburg is a former Commissioner of the U.S. Food and Drug Administration (FDA), where she was known for advancing regulatory science, modernizing regulatory pathways, and globalization of the agency. Before this, she was founding vice president and senior scientist at the Nuclear Threat Initiative, a foundation dedicated to reducing nuclear, chemical and biological threats. Other positions have included Assistant Secretary for Planning and Evaluation (HHS), Health Commissioner for New York City, and Assistant Director of the National Institute of Allergy and Infectious Disease. Dr. Hamburg currently sits on a wide range of not-for-profit boards including the Commonwealth Fund, the Simons Foundation and GAVI. She also serves on the Harvard University Global Advisory Council and the Scientific Advisory Committee for the Gates Foundation, among other activities. She is a graduate of Harvard College and Harvard Medical School.

Panelist

Peter Salama

Deputy Director General for Emergency Preparedness and Response

World Health Organization
Switzerland

Panelist

Sally Davies

Chief Medical Officer

Department of Health
United Kingdom

Dame Sally is the Chief Medical Officer for England and Chief Medical Advisor to the UK Government. She is an independent advisor to the UK Government on medical and public health matters. Dame Sally founded the National Institute for Health Research and is a Non-Executive Director of Genomics England Ltd. She was a member of the WHO Executive Board and the Strategic and Technical Advisory Group on AMR. Most recently, she has been appointed a co-convener of the UN Inter-Agency Co-ordination Group on AMR, set up in response to the UNGA 2016 declaration. Dame Sally received her DBE in 2009, was elected Fellow of the Royal Society in 2014, and a member of the National Academy of Medicine, USA in 2015.