



The Global Virome Project

by

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Date : 7 September 2017 (Thursday)
Time : 10:00 a.m. – 11:30 a.m.
Venue : SR3, The Jockey Club Building for Interdisciplinary Research, 5 Sassoon Road

Abstract:

We live in an era when the threats posed by pandemics and epidemics that have the potential to spread globally are greater than at any other point in human history. Previously-unknown viruses emerge with increasing frequency, driven by our expanding population, surging global travel, and our domination of the environment. Despite the potential impact of viral threats, the world remains unable to predict when, where, or from what species the next emerging virus will break out. Global trends indicate that over the course of this century, new microbial threats will continue to emerge at an accelerating rate, driven by the world's expanding population, growing interconnectedness, and increasing interactions with animal populations. Recent estimates put the total number of these animal viruses that could threaten us at more than 1.5 million, spanning 24 viral families. Compared to the 260+ viruses known from humans, this viral “dark matter” represents 99.9% of the potential pandemic threat. It means that, for every known strain of the SARS virus there are likely thousands of unknown “SARS-like” viruses circulating in wildlife that could emerge in the future. The same likely holds for other viral families – HIV and retroviruses, Ebola and filoviruses, and Zika and flaviviruses.

Rapid and revolutionary advances in health science and technology allow us to imagine a world without the threat of pandemics. The Global Virome Project is a 10-year partnership designed to exploit these advances to develop a global atlas of the majority of the planet's naturally-occurring viral threats circulating in wildlife, transforming the world of emerging diseases into a data-rich field, will drive the advanced development of prevention efforts and countermeasures against future threats. Like the Human Genome Project, the Global Virome Project is a bold global-scale ‘big science’ project that will enable the global community to move away from a reactionary approach to these threats, to a strategy that focuses on prediction and prevention – and mark the beginning of the end of the Pandemic Era.



Bio-sketch:

Dr 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.

Dr Peter Daszak

Dr Peter Daszak is President of EcoHealth Alliance, a US-based organization that conducts research and outreach programs on global health, conservation and international development. Dr Daszak's research has been instrumental in identifying and predicting the impact of emerging diseases across the globe. His achievements include identifying the bat origin of SARS, identifying the underlying drivers of Nipah and Hendra virus emergence, producing the first ever global emerging disease 'hotspots' map, identifying the first case of a species extinction due to disease, and discovering the disease chytridiomycosis as the cause global amphibian declines.

Dr Daszak is a member of the IOM's Forum on Microbial Threats, the NRC Advisory Committee to the US Global Change Research Program, the Supervisory Board of the One Health Platform, the One Health Commission Council of Advisors, the CEEZAD External Advisory Board; has served on the IOM Committee on global surveillance for emerging zoonoses, the NRC committee on the future of veterinary research, the International Standing Advisory Board of the Australian Biosecurity CRC; and has advised the Director for Medical Preparedness Policy on the White House National Security Staff on global health issues. Dr Daszak won the 2000 CSIRO medal for collaborative research on the discovery of amphibian chytridiomycosis, is the EHA institutional lead for USAID-EPT-PREDICT, is on the Editorial Board of Conservation Biology, One Health, and Transactions of the Royal Society of Tropical Medicine & Hygiene, and is Editor-in-Chief of the journal Ecohealth. He has authored over 300 scientific papers, and his work has been the focus of extensive media coverage, ranging from popular press articles to television appearances.