Exploring the Frontiers of Innovation to Tackle Microbial Threats

_A Workshop_

**Agenda**

DECEMBER 4-5, 2019

National Academies Keck Center
500 Fifth Street NW, Room 100
Washington, DC

Objectives:

This is a 1.5-day public workshop designed to examine the major advancements in scientific, technological, and social innovations that have been taking place to tackle microbial threats, including diagnostics, vaccine development and production, new antimicrobials as well as non-pharmaceutical interventions and surveillance. The workshop will offer particular considerations given to innovations that occur at the human-animal-plant-environment interface and those that are practical and can be implemented in different resource-level settings.

Specifically, this workshop will feature invited presentations and discussions including the following:

- Detection and diagnostic tools that empower end-users and patients to take appropriate action including obtaining early treatment;
- Cutting-edge methods and tools such as advances in predictive modeling, digital platforms, and precision public health, and how to best make use of them in practice;
- Novel innovations that take into account social and behavioral factors related to microbial threats;
- Communication and structural strategies that would help demystify the uptake and increase access of effective innovations to facilitate positive behavior change and strengthen preparedness and response capacities;
- Approaches to leverage data and modeling insights that would be useful for practitioners working on the ground in diverse settings, particularly at the community level;
- Models and indicators that help reveal the extent to which the innovations are “successful”; and
- Effective mechanisms for stimulating meaningful collaboration and communication among various stakeholders, including multilateral organizations, national governments, private sector, and civil society.

Workshop speakers and discussants will contribute perspectives from government, academia, private, and nonprofit sectors.
WORKSHOP ON EXPLORING THE FRONTIERS OF INNOVATION TO TACKLE MICROBIAL THREATS

DAY 1 – WEDNESDAY, December 4, 2019

1:00pm ET

Welcome Remarks
PETER DASZAK, Chair of the Forum on Microbial Threats
President
EcoHealth Alliance

Workshop Overview and Goals
KENT KESTER, Vice-Chair of the Forum on Microbial Threats and Workshop Co-Chair
Vice President and Head, Translational Science and Biomarkers
Sanofi Pasteur

RAFAEL OBREGON, Workshop Co-Chair
Chief, Communication for Development
UNICEF

Keynote Addresses
Applying Lessons Learned from Innovation in Polio Eradication
ANANDA BANDYOPADHYAY
Senior Program Officer
Bill & Melinda Gates Foundation

Advancing Innovation on the Ground in the Fight Against Ebola
JONATHAN TOWNER
Team Lead, Disease Ecology Group
Viral Special Pathogens Branch
Centers for Disease Control and Prevention

Q&A

Session I: Harnessing Lessons from Emerging Scientific, Technological, and Social Innovations

2:00pm

Session I objectives:

- Present case studies on the lessons learned from approaches that have enabled successful innovations for predictive modeling, big data, mHealth, and diagnostic and detection tools

Moderator: Greg Armstrong, Centers for Disease Control and Prevention

The Role of Innovation in the Evolution of Global Vector Control Response
AUDREY LENHART
Lead, Insecticide Resistance and Vector Control Team
Centers for Disease Control and Prevention
Applying Modeling to Inform Infectious Disease Surveillance and Outbreak Response
CAROLINE BUCKEE
Associate Director and Associate Professor
Center for Communicable Disease Dynamics, Harvard T. H. Chan School of Public Health

Unbiased Metagenomics Sequencing to Counter Microbial Threats: Lessons from Bangladesh
SENJUTI SAHA
Scientist
Child Health Research Foundation

Will Process Innovations for HIV Self-testing Impact Health Outcomes at the Community Level?
NITIKA PANT PAI
Associate Professor in the Department of Medicine
McGill University

Q&A

3:30pm
Break

3:00pm

Session II: Overcoming Barriers in the Field to Bolster Access and Practical Use of Innovations

3:45pm

Session II Objectives:
• Elucidate the key barriers and facilitators to implementing innovative approaches that empower end-users and patients, facilitate positive behavior change, and ultimately reduce the health impact of infectious diseases at the community level

Moderator: Eva Harris, University of California, Berkeley

Empowering Health Workers to Improve Immunization Service Delivery through Digital Innovation
COLLINE OSEWE
Founder and CEO
ChanjoPlus

Translating Data and Modeling Insights into Improved Capacity for Detection and Response
BRIAN BIRD
Research Virologist, One Health Institute
University of California, Davis

Fostering Collaboration and Practical Tools to Enhance Timely Sharing of Data
CAROLINA DOS S. RIBEIRO
Senior Policy Advisor
Centre for Infectious Disease Control, Netherlands
Applying Insights from Behavioral Sciences to Enhance Acceptability and Adoption of Innovations across Diverse Social and Cultural Contexts
FADI MAKKI
Founder
Nudge Lebanon and the Consumer Citizen Lab

4:45pm  Q&A

5:15pm  Observations from Day 1
KENT KESTER, Vice-Chair of the Forum on Microbial Threats and Workshop Co-Chair
Vice President and Head, Translational Science and Biomarkers
Sanofi Pasteur

5:30pm  Adjourn

DAY 2 – THURSDAY, December 5, 2019

8:15am  Welcome and Recap Day 1
RAFAEL OBREGON, Workshop Co-Chair
Chief, Communication for Development
UNICEF

Session III: Taking a Systems Approach to Spur Innovation in Tackling Antimicrobial Resistance

8:25am  Session III Objectives:
• Explore the key elements of the policy, regulatory, market, and funding environments that can foster innovation in the field to address antimicrobial resistance
• Identify novel strategies to facilitate the mitigation of the burden of antimicrobial resistance through market, regulatory, monitoring, data sharing, and funding mechanisms
• Discuss promising avenues for coordination across systems to advance innovation in antimicrobial resistance

Moderator: Cristina Cassetti, U.S. National Institute of Allergy and Infectious Diseases

Lessons from One Health: Enhancing Animal and Human Surveillance Systems to Bolster Innovation in Antimicrobial Resistance
CHRISTINE KREUDER JOHNSON
Professor of Epidemiology and Ecosystem Health
University of California at Davis
Sparking Antibiotic Discovery through Data Sharing and Scientific Collaboration  
WES KIM  
Senior Officer, Antibiotic Resistance Project  
The Pew Charitable Trusts

Incentivizing Novel Diagnostic Tests to Counter Antibiotic Resistance  
DANIEL BERMAN  
Lead  
Longitude Prize

Strengthening Health Systems to Overcome Market and Regulatory Barriers to Innovation on Antimicrobial Resistance  
JYOTI JOSHI  
Head of South Asia  
Center for Disease Dynamics, Economics and Policy

9:20am  
Q&A

9:50am  
Break

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**Session IV: Translating Innovation into Convergent Action**

10:05am  
Session IV - Part A: Overcoming Barriers and Forging Partnerships - Objectives:  
- Discuss novel strategies to enhance existing or stimulate new cross-sectoral collaborations and public-private partnerships  
- Identify promising approaches to ensure the sustainability of innovative interventions

*Moderator:* Alan Tennenberg, Johnson & Johnson Global Public Health

**Panel: Breaking Down the Barriers and Fostering New Forms of Partnership to Enable Innovation**

MATTHEW HEPBURN  
Joint Product Lead  
U.S. Army

RAHIMA DOSANI  
Global Health Market Access Advisor, Center for Innovation and Impact  
USAID

RAJEEV VENKAYYA  
President  
Global Vaccine Unit, Takeda Pharmaceuticals

11:15am  
Q&A

12:00pm  
Lunch
Session IV - Part B: Incubating Action through Novel Ecosystems - Objectives:

- Examine novel ecosystems and hubs that nurture companies to accelerate research and development against microbial threats
- Discuss the key environmental features of novel ecosystems that enable innovations to tackle microbial threats

**Moderator:** Rick Bright, Biomedical Advanced Research and Development Authority

**Panel: Nurturing Innovations to Accelerate Research and Development through Novel Ecosystems**

**SABRINA WELSH**
Director of Programs and Operations
Human Vaccines Project

**MAURIZIO VECCHIONE**
Executive Vice President of Global Good and Research
Intellectual Ventures

**SALLY ALLAIN**
Head
JLABS

**RANGA SAMPATH**
Chief Scientific Officer
Foundation for Innovative New Diagnostics (FIND)

2:00pm  
**Q&A**

2:45pm  
**Break**

3:00pm  
**Visionary Statements on Priorities for Innovation**

**Moderator:** Marcos Espinal, Pan American Health Organization

**JULIO CRODA**
Chief, Department of Communicable Diseases
Secretary of Health Surveillance, Brazil

**CARRIE TEICHER**
Director of Programs
Doctors without Borders/Médecins Sans Frontières

**LORI BURROWS**
Associate Director
Michael De Groote Institute of Infectious Disease Research
WORKSHOP ON EXPLORING THE FRONTIERS OF INNOVATION TO TACKLE MICROBIAL THREATS

PETER SANDS
Executive Director
The Global Fund to Fight AIDS, Tuberculosis and Malaria

3:30pm  Final Synthesis and Discussion with Audience

4:10pm  Closing Remarks
KENT KESTER, Vice-Chair of the Forum on Microbial Threats and Workshop Co-Chair
Vice President and Head, Translational Science and Biomarkers
Sanofi Pasteur

PETER DASZAK, Chair of the Forum on Microbial Threats
President
EcoHealth Alliance

4:30pm  Adjourn