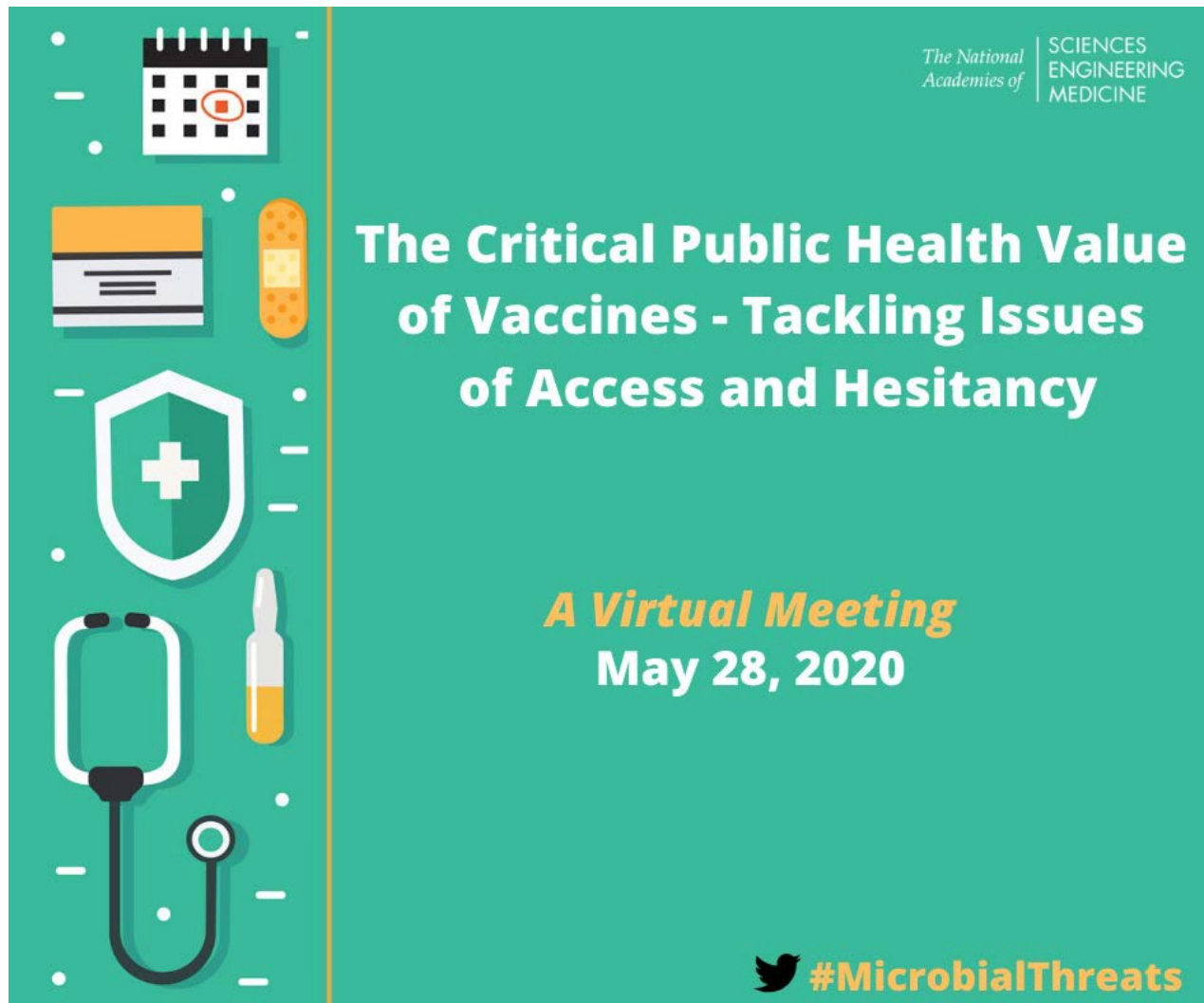



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The National Academies of SCIENCES ENGINEERING MEDICINE

**The Critical Public Health Value of Vaccines - Tackling Issues of Access and Hesitancy**

*A Virtual Meeting*  
May 28, 2020

 [#MicrobialThreats](#)

Organized by the  
**Forum on Microbial Threats**

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

**THE CRITICAL PUBLIC HEALTH VALUE OF VACCINES – TACKLING ISSUES  
OF ACCESS AND HESITANCY**

*A VIRTUAL MEETING*

May 28, 2020

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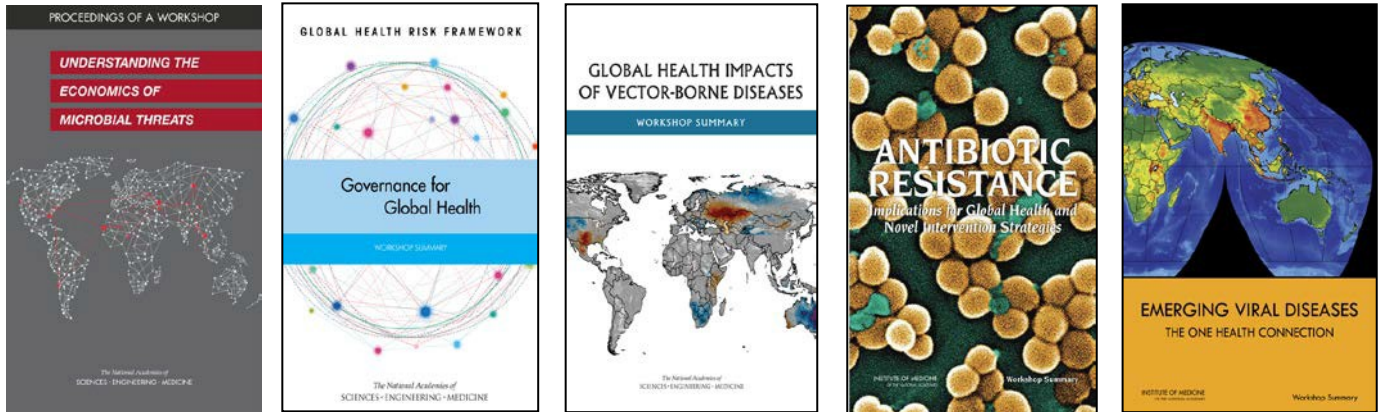
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HEALTH AND MEDICINE DIVISION  
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## **THE FORUM ON MICROBIAL THREATS**

---- An Overview ----



### **ABOUT THE FORUM**

The Forum on Microbial Threats of the National Academies of Sciences, Engineering, and Medicine (National Academies) was created in 1996 at the request of the Centers for Disease Control and Prevention and the National Institutes of Health to provide a structured opportunity for discussion and scrutiny of critical, and possibly contentious, scientific and policy issues related to research on and the prevention, detection, surveillance, and responses to emerging and reemerging infectious diseases in humans, plants and animals as well as the microbiome in health and disease. The Forum brings together leaders from government agencies, industry, academia, and nonprofit and philanthropic organizations to facilitate cross-sector dialogue and collaboration through public debate and private consultation to stimulate original thinking about the most pressing issues across the spectrum of microbial threats.

Despite decades of progress, the need for the Forum on Microbial Threats remains. Problems such as MERS, Ebola, Chikungunya, Zika, yellow fever, and antibiotic resistance demonstrate how the issue of emerging infections is global and unrelenting. The drivers are ever more pervasive, and the consequences—human, social, and economic—loom larger than ever.

The Forum convenes several times each year to identify and discuss key problems and strategies in the area of microbial threats. To supplement the perspectives and expertise of its members, the Forum also holds public workshops to engage a wide range of experts, members of the public, and the policy community. All workshops are summarized in high quality scholarly workshop proceedings that are available for free download from the National Academies Press.

The Forum on Microbial Threats is part of the National Academies' Board on Global Health. For more information about the Forum, please visit our website: [www.nationalacademies.org/microbalthreats](http://www.nationalacademies.org/microbalthreats).

## SPONSORS

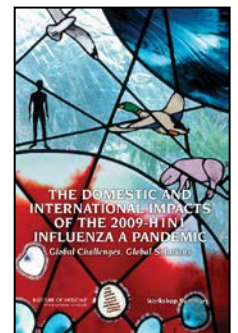
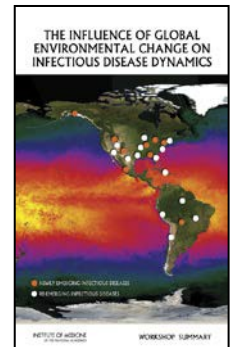
Financial support for the Forum is derived from the following government agencies, industries, and nonprofit and philanthropic associations:

- Biomedical Advanced Research and Development Authority
- U.S. Agency for International Development
- U.S. Centers for Disease Control and Prevention
- U.S. Department of Homeland Security
- U.S. Department of Veterans Affairs
- U.S. Food and Drug Administration
- U.S. National Institutes of Health
- Uniformed Services University of the Health Sciences
- American Society of Tropical Medicine and Hygiene
- EcoHealth Alliance
- Infectious Diseases Society of America
- Johnson & Johnson
- Merck & Co., Inc.
- Sanofi Pasteur

*The Forum greatly appreciates our sponsors that make intellectual and financial contributions to the Forum's work.*

## HIGHLIGHTS OF RECENT WORKSHOP PROCEEDINGS

- The Convergence of Infectious Diseases and Noncommunicable Diseases: Proceedings of a Workshop (2019)
- Exploring Lessons Learned from a Century of Outbreaks: Readiness for 2030: Proceedings of a Workshop (2019)
- Understanding the Economics of Microbial Threats: Proceedings of a Workshop (2018)
- Urbanization and Slums: Infectious Diseases in the Built Environment: Proceedings of a Workshop (2018)
- Combating Antimicrobial Resistance: A One Health Approach to a Global Threat: Proceedings of a Workshop (2017)
- Building Communication Capacity to Counter Infectious Disease Threats: Proceedings of a Workshop (2017)
- Big Data and Analytics for Infectious Disease Research, Operations, and Policy: Proceedings of a Workshop (2016)
- The Ebola Epidemic in West Africa: Proceedings of a Workshop (2016)
- Global Health Impacts of Vector-Borne Diseases: Workshop Summary (2016)
- Global Health Risk Framework: Governance for Global Health: Workshop Summary (2016)
- Emerging Viral Diseases: The One Health Connection: Workshop Summary (2015)
- The Influence of Global Environmental Change on Infectious Disease Dynamics: Workshop Summary (2014)



## FORUM'S ACTION COLLABORATIVE – ONE HEALTH

The Forum's One Health Action Collaborative (OHAC), led by Forum member Jonna Mazet, is an ad hoc activity that engages a community of participants who are interested in contributing to ongoing exploration and information sharing related to One Health topics. OHAC is committed to accelerating the implementation of a One Health approach in the field to counter microbial threats. Members include a subset of Forum members and a diverse range of external stakeholders from multiple sectors and disciplines such as public health, animal health, plant pathology, agriculture, environment, biotechnology, and others. Drawing from the dynamic discussions over

regular conference calls, OHAC advises on One Health efforts that are internal and external to the National Academies, through the publication of papers and the hosting of seminars. For more info, [click here](#).

## FORUM MEMBERSHIP

Membership in the Forum includes a diverse range of stakeholders from multiple sectors.

**Peter Daszak, Ph.D. (Chair)**

EcoHealth Alliance

**Kent E. Kester, M.D. (Vice Chair)**

Sanofi Pasteur

**Rima F. Khabbaz, M.D. (Vice Chair)**

U.S. Centers for Disease Control and Prevention

**Kevin Anderson, Ph.D.**

U.S. Department of Homeland Security

**Timothy Burgess, M.D., M.P.H.**

Uniformed Services University of Health Sciences

**Rick Bright, Ph.D.**

Biomedical Advanced Research and Development Authority

**Cristina Cassetti, Ph.D.**

National Institute of Allergy and Infectious Diseases

**Andrew Clements, Ph.D.**

U.S. Agency for International Development

**Marcos A. Espinal, M.D., Dr.P.H., M.P.H.**

Pan American Health Organization

**Eva Harris, Ph.D.**

University of California, Berkeley

**Elizabeth D. Hermsen, Pharm.D., M.B.A.**

Merck & Co., Inc.

**Chandy C. John, M.D., M.S.**

American Society of Tropical Medicine and Hygiene

**Michael Mair, M.P.H.**

U.S. Food and Drug Administration

**Jonna A. K. Mazet, D.V.M., M.P.V.M., Ph.D.**

University of California, Davis

**Sally A. Miller, Ph.D.**

The Ohio State University

**Suerie Moon, Ph.D., M.P.A.**

The Graduate Institute, Geneva

**David Nabarro, B.M.B.Ch., MFPHM, FRCP**

4SD – Skills, Systems & Synergies for Sustainable Development

**Rafael Obregon, Ph.D., M.A.**

United Nations Children's Fund

**Kumanan Rasanathan, M.B.Ch.B., M.P.H**

Health Systems Global

**Gary A. Roselle, M.D.**

U.S. Department of Veterans Affairs

**Peter A. Sands, M.P.A.**

The Global Fund to Fight AIDS, Tuberculosis & Malaria

**Thomas W. Scott, Ph.D.**

University of California, Davis

**Alan Tennenberg, M.D., M.P.H.**

Johnson & Johnson

**Matthew Zahn, M.D.**

Orange County Health Care Agency

## FORUM STAFF

**Julie Pavlin, M.D., Ph.D., M.P.H.**

Director, Board on Global Health

Director, Forum on Microbial Threats

202-334-2171

[JPavlin@nas.edu](mailto:JPavlin@nas.edu)

**Gillian Buckley, Ph.D., M.P.H.**

Senior Program Officer

202-334-2540

[GBuckley@nas.edu](mailto:GBuckley@nas.edu)

**Edith Amponsah, M.P.H.**

Associate Program Officer

202-334-3222

[EAmponsah@nas.edu](mailto:EAmponsah@nas.edu)

**Hannah Goodtree**

Senior Program Assistant

202-334-1471

[HGoodtree@nas.edu](mailto:HGoodtree@nas.edu)

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**The Critical Public Health Value of Vaccines – Tackling Issues of Access and Hesitancy**

**Agenda**  
**MAY 28, 2020**  
**VIRTUAL MEETING**

Objectives:

This virtual meeting is the first of a series of two workshops on the critical public health value of vaccines. The workshop series will feature invited presentations and discussions on the following topics. Specifically, this workshop will feature invited presentation on questions of improving access to vaccines, creating demand for vaccines, and understanding vaccine hesitancy. Speakers will give particular attention to the role of social determinants of vaccine use and equitable distribution of vaccines.

**WORKSHOP SERIES ON THE CRITICAL PUBLIC HEALTH VALUE OF VACCINES – TACKLING ISSUES  
OF ACCESS AND HESITANCY**

10:00am **Welcome Remarks**  
PETER DASZAK, *Chair of the Forum on Microbial Threats*  
President  
EcoHealth Alliance

**Workshop Overview and Goals**  
MATTHEW ZAHN, *Workshop Co-Chair*  
Medical Director, Division of Epidemiology and Assessment  
Orange County Health Care Agency

**Vaccine Access and Creating Demand**  
ROBIN NANDY  
10:05 Principal Advisor & Chief of Immunizations  
UNICEF

**Understanding Vaccine Hesitancy**  
EVE DUBÉ  
10:35 Senior Researcher, National Institute of Public Health of Quebec  
Invited Professor, Laval University, Department of Anthropology

**Improving Access to Vaccines: Lessons from the US Immunization Program**  
NANCY MESSONNIER  
11:05 Director, National Center for Immunization and Respiratory Diseases  
Centers for Disease Control and Prevention

**Panel Discussion with Speakers**  
HEIDI LARSON, *Workshop Co-chair, Moderator*  
11:35 Professor of Anthropology, Risk and Decision Science  
London School of Hygiene & Tropical Medicine  
Director, The Vaccine Confidence Project

12:00pm Adjourn

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THE CRITICAL PUBLIC HEALTH VALUE OF VACCINES – TACKLING ISSUES OF ACCESS AND HESITANCY  
*A Workshop Series*

**PLANNING COMMITTEE ROSTER**

Heidi Larson, M.A., Ph.D. (*Co-Chair*)  
Professor of Anthropology, Risk and Decision Science  
London School of Hygiene & Tropical Medicine  
Director, The Vaccine Confidence Project

Matthew Zahn, M.D. (*Co-Chair*)  
*Member, Forum on Microbial Threats*  
Medical Director, Division of Epidemiology and  
Assessment, Orange County Health Care Agency

Kevin Anderson, Ph.D.  
*Member, Forum on Microbial Threats*  
Senior Program Manager  
Science & Technology Directorate  
Department of Homeland Security

Alison Buttenheim, Ph.D., M.B.A.  
Associate Professor, Family and Community Health,  
School of Nursing  
Associate Professor, Health Policy  
Perelman School of Medicine  
University of Pennsylvania

**Andrew Clements, Ph.D.**  
*Member, Forum on Microbial Threats*  
Deputy Director, Pandemic Influenza and Other  
Emerging Threats Unit  
U.S. Agency for International Development

Amanda Cohn, M.D.  
Executive Secretariat, Advisory Committee on  
Immunization Practices  
Acting Chief Medical Officer, National Center for  
Immunization and Respiratory Diseases  
U.S. Centers for Disease Control and Prevention

Peter Daszak, Ph.D. (NAM)  
*Chair, Forum on Microbial Threats*  
President  
EcoHealth Alliance

Eva Harris, Ph.D.  
*Member, Forum on Microbial Threats*  
Professor, Division of Infectious Diseases and  
Vaccinology  
Director, Center for Global Public Health  
University of California, Berkeley

Elizabeth D. Hermsen, Pharm.D., M.B.A.  
*Member, Forum on Microbial Threats*  
Head, Global Antimicrobial Stewardship  
Merck & Co., Inc.

Noni MacDonald, M.D., M.Sc.  
Professor, Department of Pediatrics  
Dalhousie University  
Nova Scotia, Canada

Walter Orenstein, M.D.  
Professor, Emory University  
Associate Director, Emory Vaccine Center  
Director, Emory Vaccine Policy and Development



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THE CRITICAL PUBLIC HEALTH VALUE OF VACCINES – TACKLING ISSUES OF ACCESS AND HESITANCY  
*A Workshop*

**PLANNING COMMITTEE BIOGRAPHIES**

**Heidi J. Larson, Ph.D. (Co-Chair)**, is an anthropologist and Director of The Vaccine Confidence Project™ (VCP); Professor of Anthropology, Risk and Decision Science, Dept. Infectious Disease Epidemiology, London School of Hygiene & Tropical Medicine; Clinical Professor, Institute of Health Metrics & Evaluation, University of Washington; and Chatham House Centre on Global Health Security Fellow. Dr. Larson previously headed Global Immunisation Communication at UNICEF, chaired GAVI's Advocacy Task Force, and served on the WHO SAGE Working Group on vaccine hesitancy. The VCP is a WHO Centre of Excellence on addressing Vaccine Hesitancy. Prof. Larson's research focuses on the analysis of social and political factors that can affect uptake of health interventions and influence policies. Her particular interest is on risk and rumour management from clinical trials to delivery – and building public trust. She served on the FDA Medical Countermeasure (MCM) Emergency Communication Expert Working Group, and is Principle Investigator of the EU-funded (EBODAC) project on the deployment, acceptance and compliance of an Ebola vaccine trial in Sierra Leone. Prof. Larson has recently joined the Centre for the Evaluation of Vaccination (CEV) (University of Antwerp) as associate professor, as the CEV at the Antwerp University will host the European regional Office of the Vaccine Confidence Project as of May 15, 2019, and will closely collaborate with Vaccine Confidence Project partners at European level on implementing the Vaccine Confidence Index™ and developing and evaluating interventions to address vaccine hesitancy.

**Matthew Zahn, M.D. (Co-chair)**, is Medical Director of the Division of Epidemiology and Assessment for the Orange County Health Care Agency. Dr. Zahn received his Bachelor of Science from Santa Clara University, his doctorate in medicine from St. Louis University School of Medicine and completed his fellowship in Pediatric Infectious Disease at the Children's Hospital of Colorado in 2004. From 2004 through 2011, he served as Medical Director for the Louisville Metro Department of Public Health and Wellness. During that time, he also served as an Assistant Professor of Pediatric Infectious Disease at the University of Louisville School of Medicine. He has been adjunct professor of Pediatrics at the University of California – Irvine since 2011. Dr. Zahn has served as chair for the Immunization Advisory Workgroup for the National Association of County and City Health Officials (NACCHO) from 2009 until 2012, currently serves on NACCHO's Infectious Disease Workgroup, and is the liaison from NACCHO to the CDC's Advisory Committee on Immunization Practices. He has served on multiple national public health committees, including CDC's school-located vaccination advisory committee, and as president of the California Association of Communicable Disease Controllers. His primary work responsibility is in public health, but he continues to practice as a pediatric infectious disease physician.

**Kevin Anderson, Ph.D.**, serves as a senior program manager in the Department of Homeland Security's (DHS's) Science and Technology Directorate, providing oversight and requirements for biodetection and biodiagnostics systems development for government-wide customers and stakeholders. Since joining DHS in 2003, Dr. Anderson has provided leadership for science program development, laboratory design, and strategic planning; served as a subject matter expert and advisor to the Bioterrorism Risk Assessment and Biological Threat Characterization programs; and has participated in interagency working groups and assessments which provide guidance to medical countermeasure development, a key component of the nation's biodefense strategy. Prior to joining DHS, Dr. Anderson was a principal

investigator at the U.S. Army Medical Research Institute of Infectious Diseases, leading research focused on understanding basic mechanisms of viral diseases causing hemorrhagic fever and development of medical countermeasures. He received postdoctoral training in molecular virology at the University of Alabama at Birmingham and the University of North Carolina at Chapel Hill, performing basic research on human respiratory syncytial viruses, and earned Ph.D. and B.S. degrees in microbiology from Montana State University and the University of Maryland, College Park, respectively.

**Alison Buttenheim, Ph.D., M.B.A.**, is a public health researcher and behavioral epidemiologist who combines her interest in behavioral economics with a focus on improving child health on a global level. She has designed and evaluated interventions to improve parental and family decisionmaking across a broad range of topics, including food access in low-income neighborhoods, childhood obesity, vaccine hesitancy, and participation in large-scale vector control programs. Through her involvement with Penn's Center for Health Incentives and Behavioral Economics, Dr. Buttenheim is working with colleagues in epidemiology, politics, statistics, and mathematics on an NIH-funded study to reduce the transmission of Chagas disease (a neglected tropical parasitic disease) in Arequipa, Peru's second largest city. The study aims both to eliminate transmission of the parasite and to use behavioral economics to understand factors that influence residents' decisions about having their homes sprayed with insecticide. In a large pragmatic randomized trial, households were assigned to one of three interventions: improving the schedule for spraying; creating social norms for spraying; and participating in a lottery that offered financial rewards for spraying. Data analysis is underway. Dr. Buttenheim and colleagues hope that study findings will help address other common and emerging problems such as bed bugs or the Zika virus. With funding from NIH, Dr. Buttenheim studied California laws on nonmedical exemptions from school-mandated immunizations. After examining school records, she found that 47 percent of children whose parents requested exemptions had received the first dose of the measles-mumps-rubella vaccine. This suggests that using exemption rates as a proxy for vaccination rates is misleading; and, importantly, that the risk of disease in unvaccinated populations is therefore higher than previously thought. Colleagues in biostatistics and epidemiology participated in this study. With support from the Robert Wood Johnson Foundation, Dr. Buttenheim is part of an interdisciplinary team analyzing vaccination exemption laws in several states. The team's goal is to identify ideal state-level exemption legislation.

**Andrew Clements, Ph.D.**, is the Deputy Director of the Pandemic Influenza and Other Emerging Threats Unit in the U.S. Agency for International Development's Bureau for Global Health. He received his doctorate in Anaerobic Microbiology from Virginia Tech and completed his post-doctoral training in biochemistry at the National Institutes of Health's National Cancer Institute. Including his Diplomacy Fellowship through the American Association for the Advancement of Sciences, he has served as an infectious disease advisor at USAID for the past 17 years focusing on the development, management, and monitoring of programs to address tuberculosis, malaria, avian influenza, antimicrobial resistance, and disease surveillance. He is currently the manager of a grant with the UN Food and Agriculture Organization (FAO) to monitor influenzas in animals and the PREDICT project, part of USAID's Emerging Pandemic Threats program, which monitors wildlife for new zoonotic threats, characterizes the spill-over risk associated with specific interfaces between wild animals and humans, and improves models for predicting geographic "hot spots" for emergence of new public health threats. He also analyzes trends for avian influenza and other emerging public health threats and serves as a liaison to USAID missions in the Asia and Near East regions for programs related to avian influenza and emerging pandemic threats.

**Amanda Cohn, M.D. (CAPT, USPHS)**, is the Acting Director for the National Center on Birth Defects and Developmental Disabilities (NCBDDD). Previous to joining NCBDDD in this new role, Dr. Cohn served as

the Acting Chief Medical Officer in the National Center for Immunization and Respiratory Diseases (NCIRD), where she led Center activities in Vaccine Policy, Preparedness, and Global Health. She is also the Executive Secretary of the Advisory Committee on Immunization Practices (ACIP). Dr. Cohn previously served as the Deputy Director of NCIRD's Immunization Services Division. She came to CDC in 2004 as an Epidemic Intelligence Service Officer and joined the Meningitis and Vaccine Preventable Diseases Branch in 2006, where she focused on prevention and control of meningococcal disease, both domestically and internationally. She is board certified in Pediatrics and is a fellow of the American Academy of Pediatrics. Dr. Cohn graduated from Brown University with a bachelor's degree in English and obtained her from Emory University School of Medicine. She completed a residency in pediatrics at Boston Children's Hospital and Boston Medical Center in Massachusetts.

**Peter Daszak, Ph.D.**, is president of EcoHealth Alliance, a U.S.-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, developing a strategy to find out how many unknown viruses exist that could threaten to become pandemic, 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 and chair-elect of the National Academy of Sciences, Engineering and Medicine's Forum on Microbial Threats. He is a member of the National Research Council (NRC) Advisory Committee to the U.S. Global Change Research Program, the Supervisory Board of the One Health Platform, the One Health Commission Council of Advisors, the Center of Excellence for Emerging and Zoonotic Animal Diseases External Advisory Board, the Cosmos Club, and the Advisory Council of the Bridge Collaborative; he has served on the Institute of Medicine 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 Cooperative Research Centres, and has advised the Director for Medical Preparedness Policy on the White House National Security Staff on global health issues. Dr. Daszak is a regular advisor to the World Health Organization (WHO), World Organisation for Animal Health, and the Food and Agriculture Organization of the United Nations, and is actively involved in the WHO Expert group on Public Health Emergency Disease Prioritization. Dr. Daszak won the 2000 Commonwealth Scientific and Industrial Research Organisation medal for collaborative research on the discovery of amphibian chytridiomycosis, is the EHA institutional lead for USAID-EPT-PREDICT, is on the editorial boards 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.

**Eva Harris, Ph.D.**, is a professor in the Division of Infectious Diseases in the School of Public Health and Director of the Center for Global Public Health at the University of California, Berkeley. She has developed a multidisciplinary approach to study the molecular virology, pathogenesis, immunology, epidemiology, clinical aspects, and control of dengue, Zika, and chikungunya, the most prevalent mosquito-borne viral diseases in humans. Specifically, her work addresses immune correlates of protection and pathogenesis, viral and host factors that modulate disease severity, and virus replication and evolution, using in vitro approaches, animal models, and research involving human populations. This has been possible through a close collaboration with the Ministry of Health in Nicaragua for over 28 years. Her international work focuses on laboratory-based and epidemiological studies of dengue, chikungunya, Zika, and influenza in endemic Latin American countries, particularly in Nicaragua, where ongoing projects include clinical and biological studies of severe dengue, a pediatric cohort study of

dengue, Zika, chikungunya, and influenza transmission in Managua, a household transmission study of Zika, and a recently concluded cluster-randomized controlled trial of evidence-based, community-derived interventions for prevention of dengue via control of its mosquito vector. She is also directing a study of Zika in infants and pregnancy in Nicaragua and evaluating a number of Zika diagnostic tests with her team in Nicaragua. In 1997, she received a MacArthur Award for work over the previous 10 years developing programs to build scientific capacity in developing countries to address public health and infectious disease issues. This enabled her to found a nonprofit organization in 1998, Sustainable Sciences Institute (SSI; [www.sustainableciences.org](http://www.sustainableciences.org)), with offices in San Francisco, Nicaragua, and Egypt, to continue and expand this work. Dr. Harris was named a Pew Scholar for her work on dengue pathogenesis. She received a national recognition award from the Minister of Health of Nicaragua for her contribution to scientific development and was selected as a “Global Leader for Tomorrow” by the World Economic Forum. In 2012, she was elected Councilor of the American Society of Tropical Medicine and Hygiene and received a Global Citizen Award from the United Nations Association. She has published over 200 peer-reviewed articles, as well as a book on her international scientific work.

**Elizabeth D. Hermsen, Pharm.D., M.B.A.**, is the head of Global Antimicrobial Stewardship at Merck & Co., Inc. and an adjunct associate professor at the University of Nebraska Medical Center, Colleges of Pharmacy and Medicine, in Omaha, Nebraska. Dr. Hermsen received her Doctor of Pharmacy degree from the University of Nebraska Medical Center followed by a pharmacy practice residency at The Nebraska Medical Center, a fellowship in infectious diseases research at the University of Minnesota, College of Pharmacy, and a master’s degree in business administration at the University of Minnesota, Carlson School of Management with an emphasis in health care industry. Following her fellowship, Dr. Hermsen developed and co-directed the antimicrobial stewardship program at The Nebraska Medical Center and subsequently joined Cubist, where she created and led the Antimicrobial Stewardship Outreach Group. Now, in her role at Merck, she is responsible for creating and executing a strategy to advance antimicrobial stewardship through education, implementation, research, and advocacy focused on patient outcomes, population health, and the value of care. When leading the program at The Nebraska Medical Center, Dr. Hermsen developed a publicly available antimicrobial stewardship website that subsequently was featured in an article regarding top web resources for antimicrobial stewardship (Pagani L, et al. Navigating the Web in Search of Resources on Antimicrobial Stewardship in Health Care Institutions. *Clin Infect Dis.* 2009; 48:626-32.). Dr. Hermsen actively contributed to the advancement of the Society of Infectious Diseases Pharmacists (SIDP) Antimicrobial Stewardship Certificate Program during her term as SIDP president and continues to participate as a lecturer in the program. Dr. Hermsen served as a contributing member of the Antimicrobial Stewardship Knowledge & Skills Collaborative, coordinated by the Society for Healthcare Epidemiology of America; an expert panel on Antimicrobial Practice Improvement in Hospitals, coordinated by the American Society of Health-System Pharmacists; an expert panel on Hospital-based Antimicrobial Utilization Surveillance via the National Healthcare Safety Network, coordinated by the U.S. Centers for Disease Control and Prevention (CDC); the Cardinal Health Infectious Diseases Advisory Group; and an expert panel coordinated by the National Quality Forum and CDC to develop the practical tool entitled, *Antibiotic Stewardship in Acute Care: A Practical Playbook*. Dr. Hermsen is currently co-chair of the Antimicrobial Stewardship Work Package (1A) for the Innovative Medicines Institute's Driving Reinvestment in Research & Development and Responsible Antibiotic Use (DRIVE-AB) initiative. Dr. Hermsen is a board certified pharmacotherapy specialist with added qualifications in infectious diseases. She has contributed to the profession with numerous publications in peer-reviewed journals, book contributions, and by serving as a reviewer for several professional journals. Dr. Hermsen has also given over 100 invited presentations at state, regional, national, and international meetings.

**Noni MacDonald, M.D., M.Sc.**, is a Professor of Paediatrics (Infectious Diseases) at Dalhousie University and the IWK Health Centre in Halifax Canada. She is a former Dean of Medicine. Her current three major areas of interest are: 1) Vaccines, especially vaccine hesitancy, vaccine safety, vaccine pain mitigation at immunization and AEFI surveillance in pregnant women through her work with the World Health Organization as well as vaccine pain and hesitancy research and policy work in Canada; 2) MicroResearch, building capacity in community focused research in developing countries ([www.microresearch.ca](http://www.microresearch.ca)) and 3) application of Health Information Systems in developing countries to improve health outcomes. She has published over 350 papers; is the founding Editor-in-Chief of Paediatrics and Child Health, and a former Editor-in-Chief of CMAJ (Canadian Medical Association Journal). Dr. MacDonald has long been recognized in Canada and internationally as an advocate for children and youth health and as a leader in paediatric infectious disease.

**Walter Orenstein, M.D.**, is a Professor of Medicine, Epidemiology, Global Health, and Pediatrics at Emory University; as well as the Associate Director of the Emory Vaccine Center and Director, Emory Vaccine Policy and Development. From 2008 through 2011, Dr. Orenstein was Deputy Director for Immunization Programs at the Bill & Melinda Gates Foundation. His primary focus at the foundation had been on polio eradication, measles control, and improving routine immunization programs. Prior to 2004, Dr. Orenstein worked for 26 years in the Immunization Program at the Centers for Disease Control and Prevention. From 1988-2004, he was the Director of the United States Immunization Program. He is a former Assistant Surgeon General of the USPHS. Dr. Orenstein successfully developed, promoted, facilitated and expanded new vaccination strategies to enhance disease prevention. Dr. Orenstein has authored and co-authored numerous books, journals and reviews. Dr. Orenstein co-edited Plotkin's Vaccines, 7th edition in 2018 – the leading textbook in the field. He is a past Chair of the WHO's Poliomyelitis Technical Consultative Group. He served as the Chair of the National Vaccine Advisory Committee (NVAC) from 2012 to 2016. He is also currently a member of the WHO's Strategic Advisory Group of Experts (SAGE) on Immunization Polio as well as Measles and Rubella Working Groups. He is currently the Chair of WHO's Immunization and Vaccines Related Implementation Research Advisory Committee (IVIR-AC). Between July 1, 2016 and June 30, 2018, Dr. Orenstein was the President of the National Foundation for Infectious Diseases (NFID).

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THE CRITICAL PUBLIC HEALTH VALUE OF VACCINES – TACKLING ISSUES OF ACCESS AND HESITANCY

*A Workshop Series*

**Speaker Biographies**



**Eve Dubé, Ph.D.**, is a medical anthropologist. She is affiliated with Quebec National Institute of Public Health and the Research Center of the CHU-Québec. She is also an invited professor in anthropology at Laval University. Her research focuses on social, cultural and ethical issues surrounding vaccination. She is the lead investigator of the Social Sciences and Humanities Network of the Canadian Immunization Research Network. She is interested in how to enhance vaccine acceptance and uptake and she is leading different projects around this issue.



**Nancy Messonnier, M.D.**, is the Director of the National Center for Immunization and Respiratory Diseases (NCIRD). Since beginning her public health career in 1995 as an Epidemic Intelligence Service Officer in the Deputy Director for Infectious Diseases (DDID), Dr. Messonnier has held a number of leadership posts across CDC and within NCIRD. She served as Deputy Director of NCIRD from October 2014-March 2016, and led the Meningitis and Vaccine Preventable Diseases Branch in NCIRD's Division of Bacterial Diseases from 2007-2012. Dr. Messonnier led the agency's response to the measles outbreak in 2019 as well as the early response to COVID-19. She is currently leading the agency's work on how to roll out a new

COVID-19 vaccine.



**Robin Nandy, M.D., M.P.H.**, was appointed Principal Adviser and Chief of Immunization at UNICEF Headquarters in December 2015. From 2011 to 2015, he was Chief of Child Survival and Development at UNICEF Indonesia. Previously, Dr. Nandy led the Global Polio Eradication Initiative at UNICEF Headquarters from 2010 to 2011 and was the Team Leader for Health in Emergencies from 2006 to 2011. Dr. Nandy is a Medical Epidemiologist and Public Health Physician with an extensive background in international public health, particularly in the areas of immunization and in humanitarian health response. Before joining UNICEF, he worked as a Medical Epidemiologist at the Global Immunization Division of the US Centers for Disease Control & Prevention (CDC) in Atlanta from 2002 to 2006. Previously, he worked with the International Rescue Committee (IRC) both at country and headquarters level, as well as for the Indian Government in the Republic of Maldives. He also spent four years as a Medical Officer in various hospitals in Delhi, India, from 1990-1994. Dr. Nandy obtained his medical degree from Mysore University, India, in 1990 followed by a Master of Public Health at the Nuffield Institute for Health, Leeds, UK, in 1996. He also completed the Epidemic Intelligence Service (EIS) Fellowship at the CDC (2002–2004).

UPCOMING FROM THE FORUM ON MICROBIAL THREATS  
THE CRITICAL PUBLIC HEALTH VALUE OF VACCINES - TACKLING  
ISSUES OF ACCESS AND HESITANCY  
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The Forum on Microbial Threats will host a 1.5-day public workshop as part of a workshop series that will explore health systems, research opportunities, communication strategies, and policies that could be considered to address access, perceptions, attitudes, and behaviors toward vaccination.

Workshop participants will discuss the complex determinants of vaccination that hinder or promote vaccine uptake; how misinformation reinforces anxieties about vaccine safety and drivers of vaccine hesitancy; and communication approaches that would help assuage anxieties about vaccine safety.

**Stay tuned for more details!**

To learn more about the event and how to register, visit:  
<https://www.nationalacademies.org/our-work/forum-on-microbial-threats>