



## Potential Research Priorities to Inform Readiness and Response to Highly Pathogenic Avian Influenza A (H5N1): A Workshop

DAY 1: October 22, 2024 | 10:00 AM – 5:00 PM ET · DAY 2: October 23, 2024 | 10:00 AM – 5:00 PM ET

### WORKSHOP OVERVIEW

Highly Pathogenic Avian Influenza (HPAI) A (H5N1) has been circulating globally for over two decades, with recent outbreaks driven by a variant of the virus (Clade 2.3.4.4b) spreading rapidly among bird populations. The situation in the United States is unique as genotype B3.13, affecting primarily dairy cows, has led to challenges in managing and controlling virus spread.

In response, the National Academies of Sciences, Engineering, and Medicine (National Academies) is sponsoring this **workshop to explore research priorities for readiness and response to the ongoing H5N1 outbreak in the United States**. Recognizing the interconnection between people, animals, and their shared environment, the workshop will take a One Health approach to bring together federal government agencies, the academic community, and the private sector, as well as other relevant stakeholders across the health, agriculture, and food safety sectors. The workshop will specifically examine research priorities to prevent the occurrence of spillover and readiness and response factors to mitigate impacts on humans and animals.

Day 1 will focus on research priorities for **preventing spillover and spillback** to:

- Discuss the latest scientific evidence on H5N1, including virology, transmission patterns, epidemiology, and pathogenesis, to establish a clear understanding of the knowledge base (Session 2).
- Explore research priorities for risk mitigation and managing transmission across public health, healthcare, and farm systems (Session 3).

Day 2 will focus on research priorities for **limiting spread and health impacts** in humans and animals to:

- Identify innovative research opportunities that could improve early detection, enhance surveillance systems, and provide timely data to mitigate the spread of H5N1 (Session 6).
- Highlight ongoing efforts and future research needs in the development of vaccines, antiviral treatments, and other countermeasures to protect human and animal populations from H5N1 (Session 7).

### WORKSHOP SPONSORS

National Academies of Sciences, Engineering, and Medicine Presidents' Circle Fund, National Academy of Sciences Independent Fund, National Academy of Engineering Independent Fund, and National Academy of Medicine Independent Fund

### NATIONAL ACADEMIES COLLABORATORS

[Board on Health Sciences Policy](#) | [Board on Global Health](#) | [Food and Nutrition Board](#) | [Board on Life Sciences](#) | [Board on Agriculture and Natural Resources](#)

## TUESDAY, OCTOBER 22, 2024

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*Day 1 of the workshop will examine research priorities to identify potential threats to animals and humans and reduce risk of spillover or spillback.*

### SESSION 1 OPENING SESSION

#### 10:00 AM Welcome Remarks (10 min)

**Nahid Bhadelia**, *Workshop Planning Committee Chair*  
Director  
Boston University Center on Emerging Infectious Diseases

#### 10:10 AM Keynote Fireside Chat (40 min)

##### MODERATOR

**Nahid Bhadelia**, *Workshop Planning Committee Chair*  
Director  
Boston University Center on Emerging Infectious Diseases

##### KEYNOTE SPEAKERS

**Paul Friedrichs**  
Deputy Assistant to the President and Director  
White House Office of Pandemic Preparedness and Response Policy

**Maria Van Kerkhove**  
Director (a.i.) Epidemic and Pandemic Preparedness and Prevention  
World Health Organization

### SESSION 2 UNDERSTANDING INFECTION DYNAMICS

*Discuss the latest scientific evidence on H5N1, including virology, transmission patterns, epidemiology, and pathogenesis, to establish a clear understanding of the current knowledge base.*

#### 10:50 AM Natural History in Animals and Humans (90 min)

##### MODERATORS

**Nora Wineland**, *Planning Committee Member*  
State Veterinarian  
Animal Industry Division  
Michigan Department of Agriculture and Rural Development

**Rachel Herlihy**, *Planning Committee Member*  
State Epidemiologist and Deputy Chief Medical Officer  
Colorado Department of Public Health and Environment

##### PANELISTS

**Carol Cardona**  
Professor, Department of Veterinary and Biomedical Sciences  
University of Minnesota

**Jeff Root**

Project Leader, NWRC Wildlife Disease Project  
National Wildlife Research Center  
United States Department of Agriculture (USDA)

**Keith Poulsen**

Director of the Wisconsin Veterinary Diagnostic Laboratory  
Department of Medical Sciences  
University of Wisconsin-Madison

**Carrie Reed**

Branch Chief, Epidemiology & Prevention  
Centers for Disease Control and Prevention (CDC)

**Erica Pan**

State Epidemiologist  
California Department of Public Health

**12:20 PM**

**Viral Evolution and Pathogenesis in Animals and Humans (90 min)**

**MODERATOR**

**Richard Webby**, *Planning Committee Member*

Director  
World Health Organization Collaborating Centre for Studies on  
the Ecology of Influenza in Animals and Birds  
St. Jude Children's Research Hospital

**PANELISTS**

**Drew Magstadt**

Clinical Associate Professor  
Veterinary Diagnostic Laboratory  
Vet Diagnostic & Production Animal Medicine  
Iowa State University

**Amy Baker**

Virus and Prion Research, Research Veterinary Medical Officer  
Agricultural Research Service  
United States Department of Agriculture (USDA)

**Jesse Bloom**

Professor, Basic Sciences Division  
Professor, Herbold Computational Biology Program  
Public Health Sciences Division  
Fred Hutch

**Martha Nelson**

Staff Scientist  
National Institutes of Health (NIH)

## SESSION 3 REDUCING THE RISK OF SPILLOVER AND SPILLBACK

*Explore research priorities for risk mitigation and managing transmission across public health, healthcare, and farm systems.*

### 1:50 PM Worker Health, Safety, and Education (90 min)

#### MODERATOR

**Anabel Rodriguez**, *Planning Committee Member*  
Assistant Professor  
Texas A&M

#### PANELISTS

**Robert Hagevoort**  
Topliff Dairy Chair, Professor and Extension Dairy Specialist  
NMSU Ag Science Center at Clovis  
New Mexico State University

**Bethany Boggess Alcauter**  
Director of Research & Public Health Programs  
National Center for Farmworker Health

**Matthew Nonnenmann**  
Professor, Environmental, Agricultural and Occupational Health  
College of Public Health  
University of Nebraska Medical Center

**Cherissa Abdul-Hamid**  
Regional Zoonosis Veterinarian  
Texas Department of State Health Services

### 3:20 PM Foresight and Preparedness Across Public Health, Health Care, and Farming Systems (90 min)

#### MODERATOR

**Georges Benjamin**, *Planning Committee Member*  
Executive Director  
American Public Health Association

#### PANELISTS

**Maggie Baldwin**  
State Veterinarian  
Colorado Department of Agriculture

**Bryan Lewis**  
Research Associate Professor  
Biocomplexity Institute  
University of Virginia

**Stefanie Friedhoff**

Co-Founder and Co-Director  
Information Futures Lab  
Brown University

**Raina Plowright**

Faculty member  
Department of Public & Ecosystem Health  
Cornell

**Stephen Ostroff**

Public Health and Regulatory Consultant, S Ostroff Consulting  
Adjunct Professor, School of Public Health  
University of Pittsburgh

**SESSION 4 CLOSING DAY 1**

**4:50 PM      Wrap Up and Closing (10 min)**

**Nahid Bhadelia, *Workshop Planning Committee Chair***

Director  
Boston University Center on Emerging Infectious Diseases

**\*\*ADJOURN DAY 1\*\***

## WEDNESDAY, OCTOBER 23, 2024

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*Day 2 will explore research priorities to limit spread and health impacts in animals and humans.*

### SESSION 5 DAY 2 OPENING SESSION

#### 10:00 AM Welcome Remarks and Day 1 Recap

**Nahid Bhadelia**, *Workshop Planning Committee Chair*  
Director  
Boston University Center on Emerging Infectious Diseases

### SESSION 6 INTEGRATED SURVEILLANCE

*Identify innovative research opportunities that could improve early detection, enhance surveillance systems, and provide timely data to mitigate the spread of H5N1.*

#### 10:05 AM Human, Animal, and Environmental Surveillance (90 min)

##### MODERATORS

**Rachel Herlihy**, *Planning Committee Member*  
State Epidemiologist and Deputy Chief Medical Officer  
Colorado Department of Public Health and Environment

**Meghan Davis**, *Planning Committee Member*  
Associate Professor  
Johns Hopkins Bloomberg School of Public Health

##### PANELISTS

**Anthony Maresso**  
Professor  
Virology and Microbiology  
Baylor College of Medicine

**Gregory C. Gray**  
Professor in Infectious Disease Epidemiology  
Departments of Internal Medicine (Infectious Diseases), Microbiology and Immunology, and Global Health  
University of Texas Medical Branch (UTMB)

**Colin Basler**  
Deputy Director  
National Center for Emerging and Zoonotic Infectious Diseases  
Centers for Disease Control and Prevention (CDC)

**Nora Wineland**  
State Veterinarian  
Animal Industry Division  
Michigan Department of Agriculture and Rural Development

**Michelle Catlin**

Chief Scientist  
Food Safety and Inspection Service  
United States Department of Agriculture (USDA)

**11:35 AM      Agroecconomics and Food Value Chain Incentives (90 min)**

**MODERATORS**

**David Stiefel**, *Planning Committee Member*

Director  
Nuclear Threat Initiative

**Michelle Kromm**, *Planning Committee Member*

Principal  
Food Forward, LLC

**PANELISTS**

**Tom Marsh**

Professor  
School of Economic Sciences & Paul G. Allen School for Global Animal Health  
Washington State University

**John Clifford**

Veterinary Trade Policy Advisor  
USA Poultry and Egg Export Council (USAPEEC)

**Eric Deeble**

Deputy Under Secretary for Marketing and Regulatory Programs  
U.S. Department of Agriculture (USDA)

**Dustin Oedekoven**

Chief Veterinarian  
South Dakota State Veterinarian  
National Pork Board

**Steve Grube**

Chief Medical Officer  
Food and Drug Administration (FDA)

**SESSION 7    LIMITING SPREAD IN ANIMALS AND HUMANS**

*Highlight ongoing efforts and future research needs in the development of vaccines, antiviral treatments, and other countermeasures to protect human and animal populations from H5N1.*

**1:05 PM      Vaccines, Diagnostics, and Treatment Readiness (90 Min)**

**MODERATOR**

**Rick Bright**, *Planning Committee Member*

Consultant  
Bright Global Health

## PANELISTS

### **Jesse Goodman**

Professor and Director, Center on Medical Product Access,  
Safety and Stewardship (COMPASS)  
Attending Physician, Infectious Diseases  
Georgetown

### **Ruben Donis**

Deputy Director, Influenza Division  
Biomedical Advanced Research and Development Authority (BARDA)

### **Paula Barbosa**

Associate Director, Vaccine Policy  
International Federation of Pharmaceutical Manufacturers and Associations (IFPMA)

### **Frederick Hayden**

Professor Emeritus  
University of Virginia School of Medicine

### **Michael Mina**

Chief Science Officer  
eMed Digital Healthcare

### **Darrell Kapczynski**

Exotic & Emerging Avian Viral Diseases Research Laboratory  
U.S. Department of Agriculture (USDA)

**2:35 PM**

## **Clinical Care, Preparedness, and Response (90 min)**

## MODERATOR

### **Nahid Bhadelia**, *Workshop Planning Committee Chair*

Director  
Boston University Center on Emerging Infectious Diseases

## PANELISTS

### **Tim Uyeki**

Chief Medical Officer, Influenza Division  
Centers for Disease Control and Prevention (CDC)

### **Carlos Del Rio**

Distinguished Professor of Medicine in the Division of Infectious Diseases  
Emory University School of Medicine

### **Kelly Wroblewski**

Director of Infectious Disease Programs  
Association of Public Health Laboratories (APHL)

### **Erica Shenoy**

Chief of Infection Control  
Mass General Brigham



**Lauren Sauer**

Director, Special Pathogens Research Network  
University of Nebraska Medical Center

**SESSION 8 WORKSHOP WRAP-UP AND CLOSING**

**4:05 PM Roundtable Discussion with National Academies Initiative Leaders (45 min)**

**MODERATOR**

**Nahid Bhadelia**, *Workshop Planning Committee Chair*  
Director  
Boston University Center on Emerging Infectious Diseases

**PANELISTS**

**Asha M. George**, [\*Forum on Medical and Public Health Preparedness for Disasters and Emergencies\*](#)  
Executive Director  
Bipartisan Commission on Biodefense

**Jon Samet**, [\*Indoor Air Management of Airborne Pathogens Workshop, Environmental Health Matters Initiative\*](#)  
Professor  
Colorado School of Public Health

**Christine Petersen**, [\*Board on Animal Health Sciences, Conservation, and Research\*](#)  
Professor and Associate Dean for Research and Graduate Studies  
College of Veterinary Medicine  
The Ohio State University

**Rodolphe Barrangou**, [\*Food and Nutrition Board\*](#)  
Professor of Food Science  
North Carolina State University

**Jonathan Sleeman**, [\*One Health Action Collaborative\*](#)  
Science Advisor, Wildlife Health and Ecology  
United States Geological Survey (USGS)

**4:50 PM Wrap Up and Closing (10 min)**

**Nahid Bhadelia**, *Workshop Planning Committee Chair*  
Director  
Boston University Center on Emerging Infectious Diseases

**\*\*MEETING ADJOURNS\*\***