



K O N I N K L I J K E N E D E R L A N D S E  
A K A D E M I E V A N W E T E N S C H A P P E N



netherlands  
centre for  
one health

## Academy Colloquium

### *'One Health Approach to Infectious Diseases'*

Date: 14-15 February 2017

Venue: Trippenhuis Building, Kloveniersburgwal 29, 1011 JV Amsterdam ([knaw.nl/routedescription](http://knaw.nl/routedescription))

In collaboration with the Netherlands Centre for One Health

### **Background**

Due to the global trends of population growth, urbanisation, intensive farming, and the strong increase in international trade and travel, infectious diseases and contaminated products are quickly and easily transported. They pose grand risks to human, animal, and ecosystem health. In the past decade we have witnessed several global outbreaks, i.e. avian influenza pandemic, severe acute respiratory syndrome (SARS), Ebola, and currently Middle East respiratory syndrome (MERS)-coronavirus and Zika virus outbreaks.

It is widely accepted that such threats to human health should not be addressed exclusively from human medical perspective, as the infectious diseases often spread through humans, animals, and the environment. A more general approach is needed that integrates the relevant disciplines of human, animal, and environmental health into a 'One Health approach'. By performing interconnected research, an integrated and balanced perspective can be created to develop and implement durable intervention strategies.

This colloquium, organised by the Netherlands Centre for One Health (NCOH), will highlight four global and timely health challenges within the One Health domain. The NCOH bundles top-leading academic research institutes in the Netherlands in an open innovation network focused on One Health: public, veterinary, wildlife, and ecosystems health. It aims for an integrated approach to face the global risk of infectious diseases and to develop durable solutions regarding grand societal health challenges. This virtual science-driven institution focuses its research and increase of knowledge on antibiotic resistance, emerging infectious diseases, smart farming, and healthy ecosystems. The NCOH stimulates collaboration between academic and research institutes, governments, non-governmental organisations, public-health institutes, and industrial partners.



## Programme

**Tuesday 14 February 2017**

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8.30 a.m. Registration

9.00 a.m. Welcome

### **Emerging Infectious Diseases Preparedness**

Title: *The fascinating world of EID research: a focus on bat-borne diseases*

Chair: Marion Koopmans, Scientific Director NCOH-EID

9.10 a.m. *Understanding the macroecology of human emerging infectious diseases*  
Kate Jones (Centre for Biodiversity and Environment Research, University College London)

9.50 a.m. *Focussing on the animal reservoir of lyssaviruses, particularly in bats*  
Charles Rupprecht (Wistar Institute, Philadelphia)

10.30 a.m. Coffee break

11.00 a.m. *Focussing on pathology of diseases in bats*  
Gudrun Wibbelt (Leibniz Institute for Zoo and Wildlife Research, Berlin)

11.45 a.m. *Pathogenesis of rabies in humans*  
Corine Geurts van Kessel (Department of Virology, Erasmus MC Rotterdam)

12.30 p.m. Lunch

### **Healthy Wildlife and Ecosystems**

Title: *Wildlife-related diseases and the environment*

Chair: Andrea Gröne, Scientific Director NCOH-HWE

1.30 p.m. *Buffering effects of species richness on disease prevalence, the dilution effect*  
Fred de Boer (Resource Ecology, Wageningen UR)

2.15 p.m. *Dynamics, impacts and implications of infections in natural ecosystems*  
Sarah Cleaveland (Glasgow), tbc

3.00 p.m. Coffee/ tea break

3.30 p.m. *Wilderness in the 'city' revisited: different urbes shape transmission of *Echinococcus multilocularis**  
Peter Deplazes (Institute of Parasitology, University of Zurich)



- 4.15 p.m. *Rinderpest and other transboundary animal diseases at the wildlife, livestock and human interface*  
Richard Kock (Royal Veterinary College London)
- 5.00 p.m. Closing remarks
- 5.05 p.m. Drinks

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### Wednesday 15 February 2017

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#### **Tackling Antimicrobial Resistance**

Title: *Understanding of the complex system of AMR*  
Chair: Marc Bonten, Scientific Director NCOH-AMR

- 8.45 a.m. Welcome
- 9.00 a.m. *Antibiotic resistance and the human microbiome*  
Willem van Schaik (Department of Medical Microbiology, UMC Utrecht)
- 9.45 a.m. *Population dynamics of AMR clones at geographical scales: How massive whole genome sequencing can inform infection control and public health*  
Hajo Grundmann (Infection Prevention and Hospital Epidemiology, University Hospital Freiburg)
- 10.30 a.m. Coffee/ tea break
- 11.00 a.m. *Carbapenamase-producing Enterobacteriaceae and Acinetobacter baumannii in animals*  
Christa Ewers (Institute of Hygiene and Infectious Diseases of Animals, University Giessen)
- 11.45 a.m. *Antibiotic resistance: A complex system*  
Hans Heesterbeek (Department of Farm Animal Health, Utrecht University)
- 12.30 p.m. Lunch

#### **Smart and Healthy Farming**

Title: *Improve the intrinsic properties of animals to prevention of intestinal and respiratory animal diseases*  
Chair: Annemarie Rebel, Scientific Director NCOH-SHF

- 1.30 p.m. *Different interventions affect piglet intestinal development (immune and microbiom) in different ways*  
Mari Smits (Wageningen Bioveterinary Research, Wageningen UR)



- 2.15 p.m.      *Understanding and managing resilience in bio-based production systems*  
Marten Scheffer (Aquatic Ecology and Water Quality Management, Wageningen UR)
- 3.00 p.m.      Coffee/ tea break
- 3.30 p.m.      *Analysis of the host genetic background in relation to disease susceptibility and recovery*  
Dirk-Jan de Koning (Department of Animal Breeding and Genetics, University of Agricultural Sciences Uppsala)
- 4.15 p.m.      *Enriched housing and early programming reduces disease susceptibility*  
Bas Kemp (Adaptation Physiology, Wageningen UR)
- 5.00 p.m.      Closing remarks