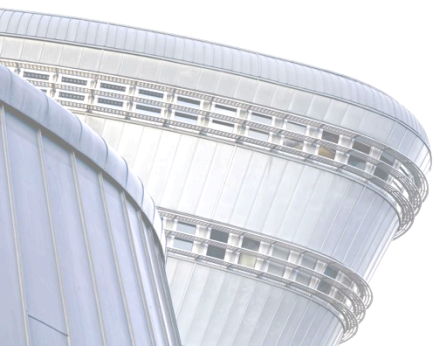


# Novel Strategies to Detect and Mitigate the Emergence of Antimicrobial Resistance in Zoonotic Pathogens

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**University of Surrey**

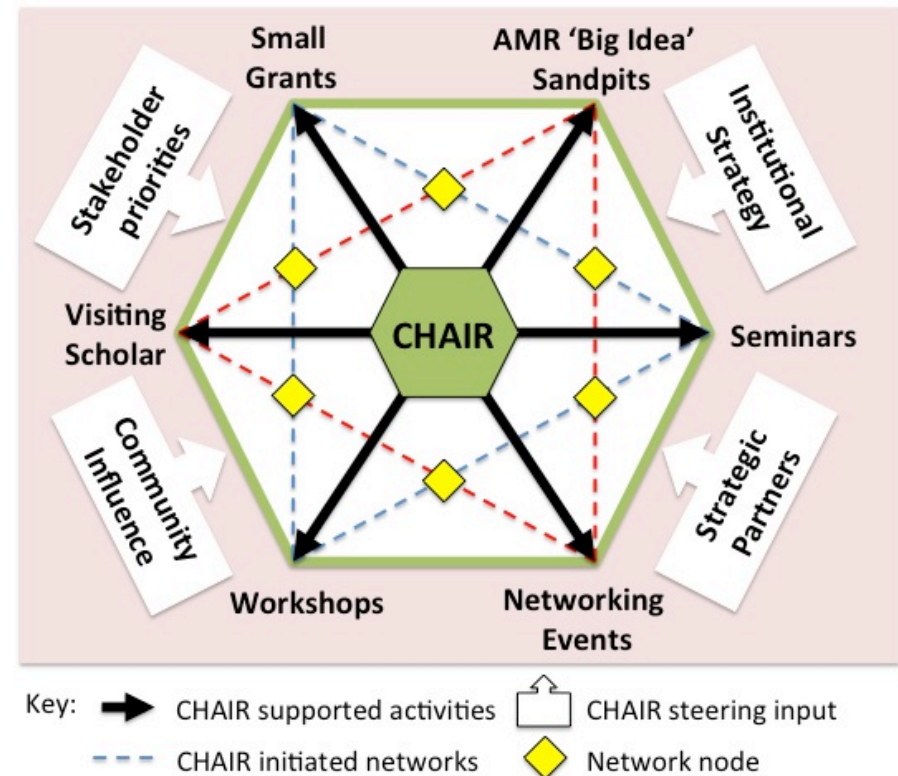


# Core Aim

To create networks of researchers, supported and based around a Collaborative Hub for Advancing Interdisciplinary Research (CHAIR), focused on developing novel strategies to detect and prevent the emergence of antimicrobial resistance (AMR) in zoonotic pathogens.

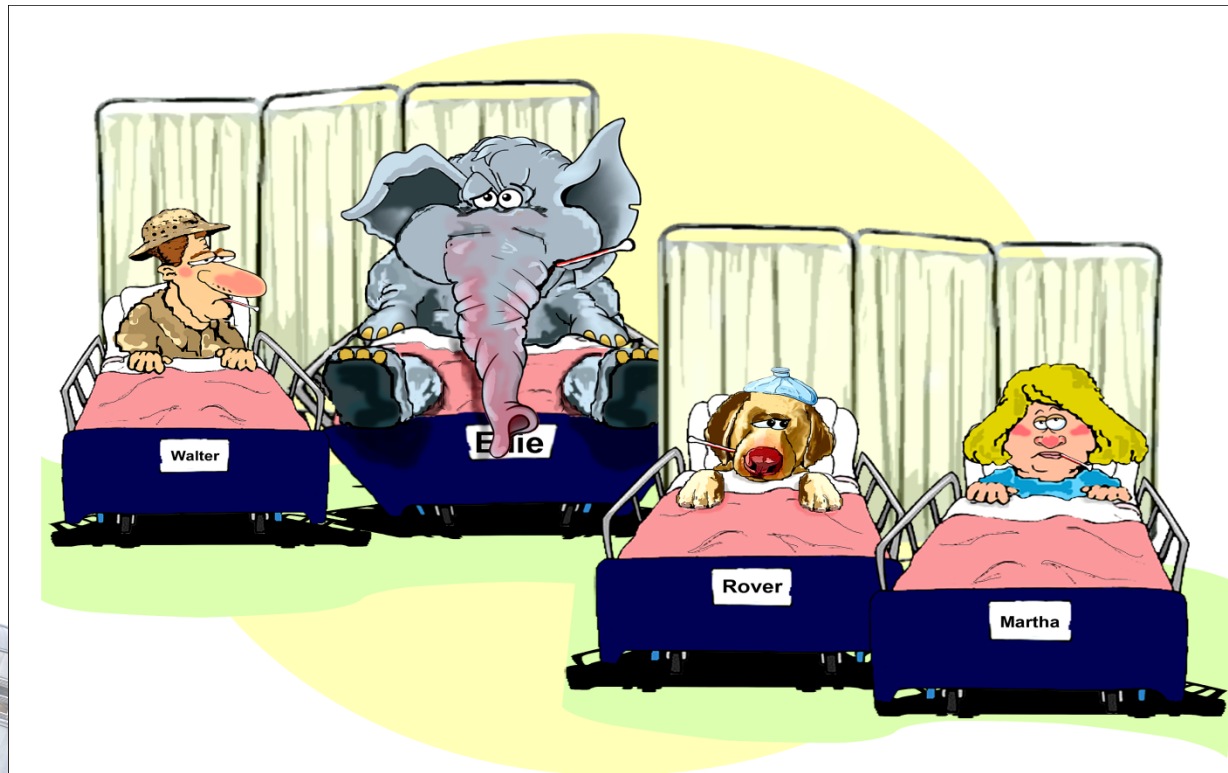
## CHAIR

- based on core team of active interdisciplinary researchers
- designed to build and support new collaboration focusing initially on AMR
- responsive to external factors
- adaptive to optimise emerging opportunities

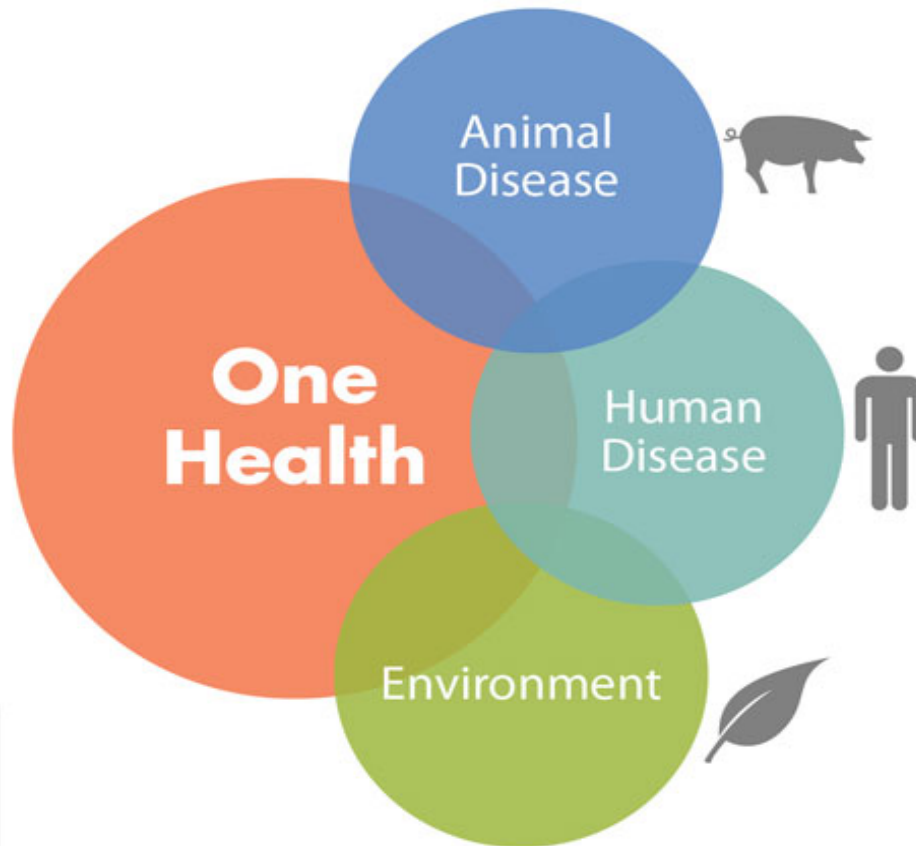


Why focus on zoonotic pathogens?

- Approximately 75% of recently emerging infectious diseases affecting humans are diseases of animal origin; approximately 60% of all human pathogens are zoonotic.



ONE HEALTH



The One Health concept recognizes the interrelationship between animal, human and environmental health.



# Drivers of zoonoses - Global shipping routes



# Drivers of zoonoses - Passenger flights



- In 2013, over 3 million flights were recorded
- A person incubating an infection can travel from (almost) any place to another in 24-48hrs



# Surveillance of animal and human health



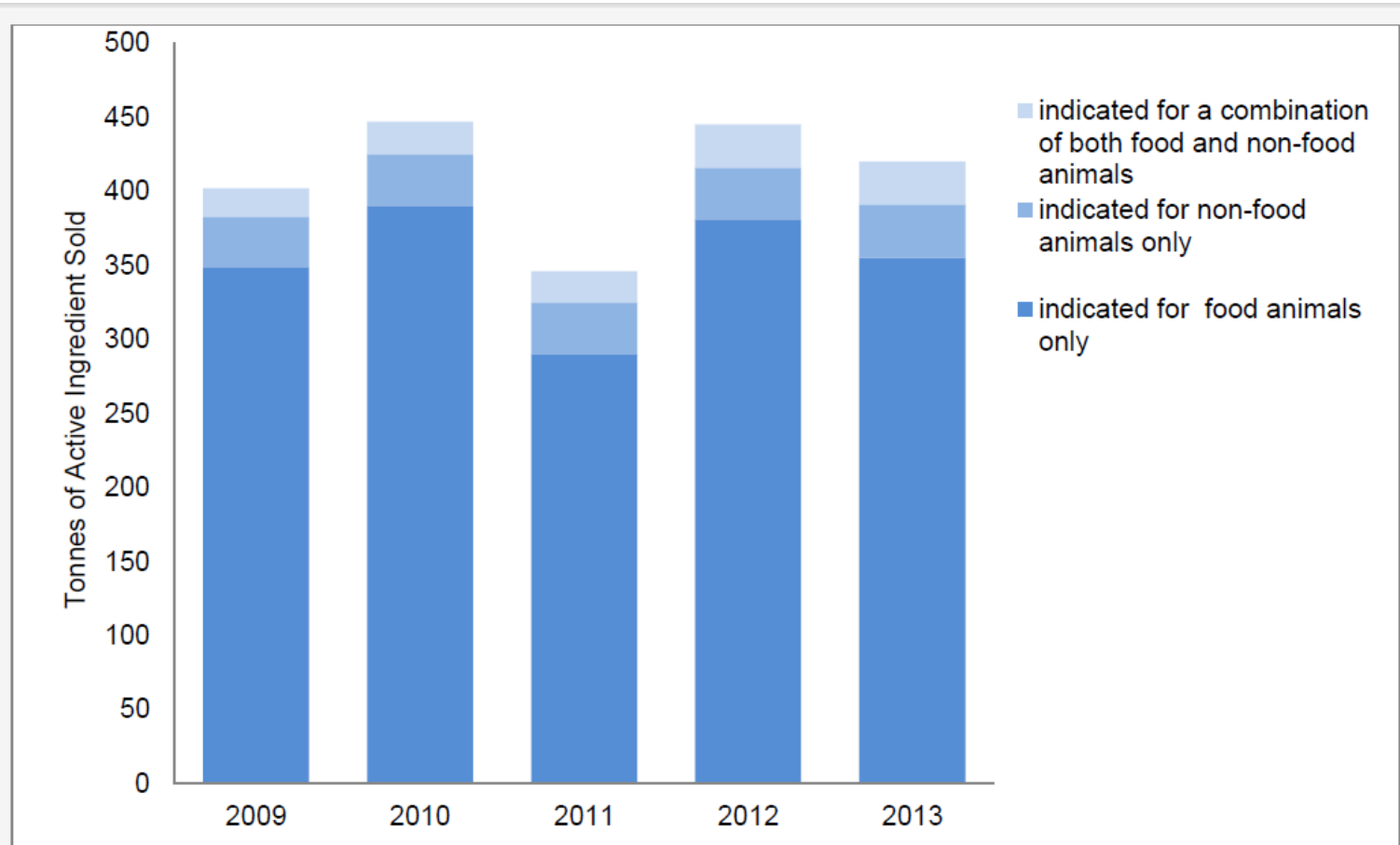


# Bush meat entering the UK..... unknown risk

**7,500 tonnes of illegal meat products enter Britain every year**

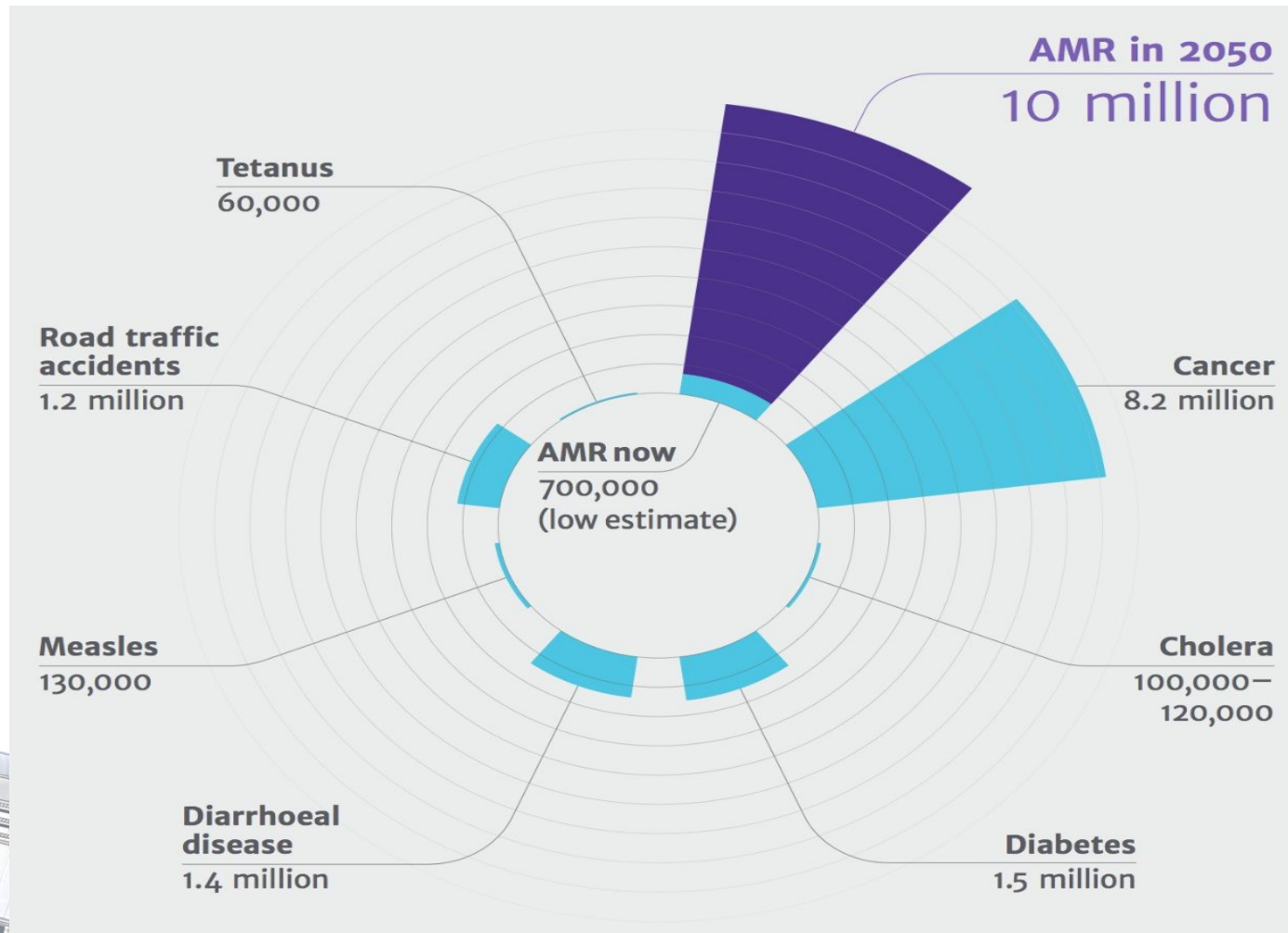


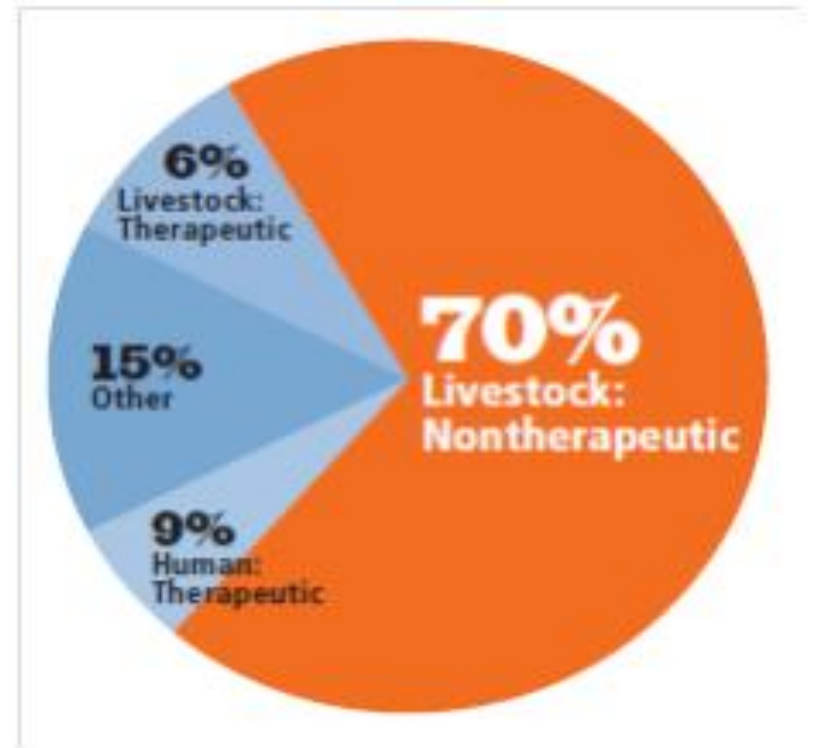
# Antibiotic sales in UK agriculture





# A global issue...







# Surrey's Unique Positioning



**CHAIR draws on key strategic strengths of the University:**

**ATI** | Advanced  
Technology  
Institute

**MATERIALS  
@SURREY**

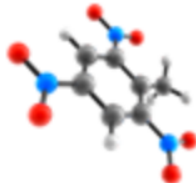
**5G INNOVATION CENTRE**

**CENTRE FOR  
VISION, SPEECH  
AND SIGNAL  
PROCESSING**

**Faculty of  
Engineering  
and Physical  
Sciences**

**Department of Microbial  
and Cellular Sciences**

**Department of  
Biochemistry and  
Physiology**



**SCHOOL OF  
VETERINARY  
MEDICINE**

**Faculty of  
Health and  
Medical  
Sciences**

# University of Surrey School of Veterinary Medicine

presented by

Professor Roberto La Ragione

[www.surrey.ac.uk](http://www.surrey.ac.uk)





# Wonderful things happen here...



- £7m staff investment - 100 new academic staff
- Manor Park campus development
- Surrey Sports Park - world-class £36m sports centre
- New £13m library – state-of-the-art facilities for students and staff
- New School of Veterinary Medicine and 5G Centre
- New STEM centre



# Project Partners



Animal &  
Plant Health  
Agency



**NC STATE**  
UNIVERSITY



**Universidade  
de São Paulo**

[www.surrey.ac.uk](http://www.surrey.ac.uk)

Already active prior to formal start:

MRC grant application led by Prof McFadden in partnership with NPL.

*‘Understanding antimicrobial resistance via single cell electrophysiology measurements of bacteria’*

## Questions?

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Prof Johnjoe McFadden and Prof Rob Dorey

