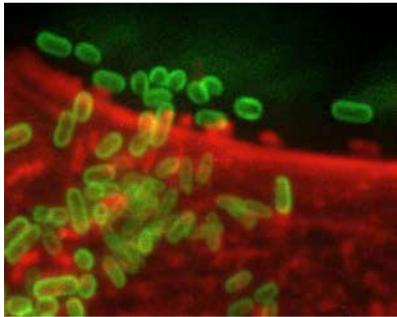




# Environment and Zoonoses

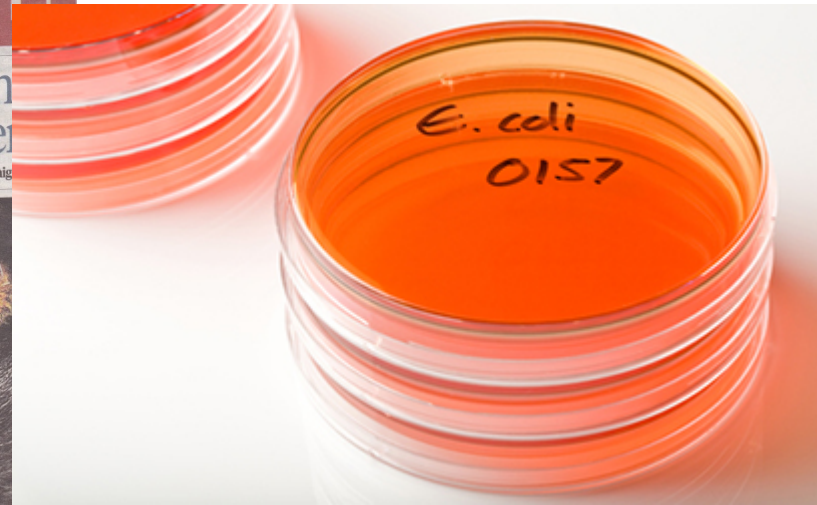
Lee Innes and Beth Wells

# Environment and zoonoses



- Zoonoses: diseases or pathogens transmitted between animals and people
- 62% of human pathogens are zoonotic
- 75% of emerging diseases are zoonotic
- *E. Coli*
- *Campylobacter*
- *Toxoplasma gondii*
- *Cryptosporidium*,
- *Chlamydia*

# Environment and zoonoses



Scottish Government  
Riaghaltas na h-Alba  
gov.scot



# Environment and zoonoses



Development of diagnostic tests and tools to accurately identify pathogens



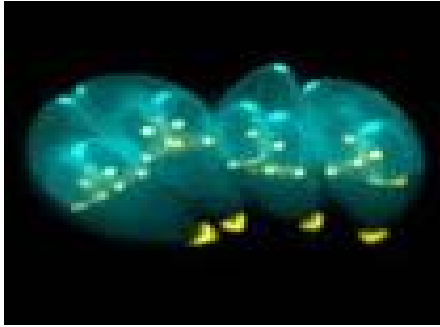
Survival and persistence of pathogens in environment

Pathogen transmission routes from animals/environment/people

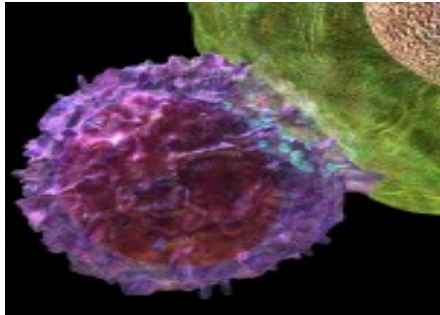
Risk and mitigation strategies



# Environment and zoonoses

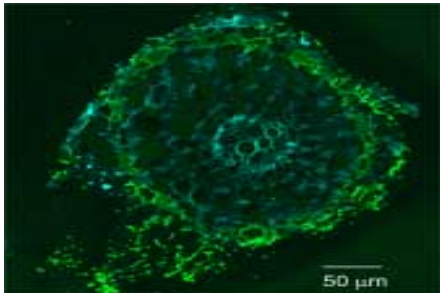


Understand the host-pathogen interaction in both animals and plants



How do pathogens invade and multiply within host species?

How do the hosts respond to and resist the pathogens?



How can we use this information to develop disease and prevention strategies?

# Environment and zoonoses



Food and water borne pathogens

Food safety



Rapid detection of pathogens in the food chain

Disease risk



Contamination and disease prevention strategies

# Cooperative of Zoonoses Experience and Expertise (CoZEE)



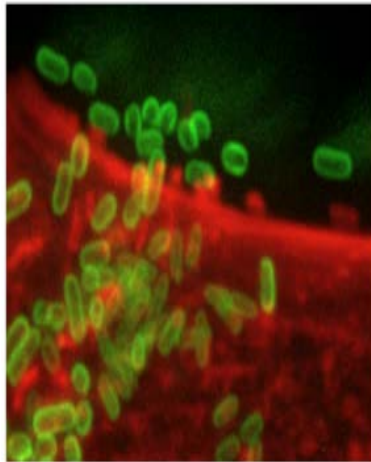
- Facilitate an inclusive network from a wide range of different stakeholders with an interest in zoonoses
- Improve collaboration, networking, inter-disciplinarity, communication
- Encourage innovative approaches and interdisciplinary initiatives to reduce the impact of zoonoses
- Engage and encourage participation of early career researchers and postgraduate students



# Cooperative of Zoonoses Experience and Expertise (CoZEE)



- Significant impact to economy, veterinary, environmental and public health
- Prevention and control of zoonoses requires a coordinated approach involving many different sectors
- Stakeholders may hold very different views on disease risks and also may not communicate very well across sectors





# Cooperative of Zoonoses Experience and Expertise (CoZEE)



## Launch meeting Edinburgh



Dr Roger Sokol, Director of the New York State Dept of health's bureau of water supply protection.

Experiences of protecting the watershed that provides 9 million people with 1 billion gallons of unfiltered drinking water.



**Output:** AQUA VALENS project Euro 9 million  
40 partners across Europe Academia and SME's. Safe water supplies for human consumption

# Cooperative of Zoonoses Experience and Expertise (CoZEE)



## Conference Dundee Intervention Strategies to Prevent and Control Zoonoses

Short overviews from different industries involved in the food chain from primary producers through to suppliers and government agencies.

- What are the main zoonotic risks in your sector?
- Is intervention against zoonotic risks being applied and if so how effective are they?
- Where are the knowledge gaps?

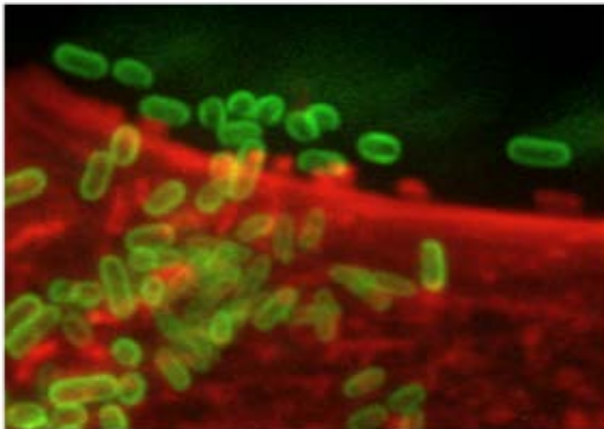


# Cooperative of Zoonoses Experience and Expertise (CoZEE)



**The role of high-throughput sequencing in surveillance, diagnostics and tracking zoonotic bacteria**

- Sequencing as a key approach – outbreaks
- Applications need to be pathogen appropriate
- Collaboration and data sharing
- Centralised sequencing resource(s) Scotland





# Cooperative of Zoonoses Experience and Expertise (CoZEE)





# Environment and Zoonoses

Lee Innes and Beth Wells

Frank Katzer, Nicola Holden, Lisa  
Avery, Davy McCracken