



Cristina Lanzas



Assistant Professor of
Infectious Disease

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Title:

Research emphasis:

My research focuses on the epidemiology and ecology of enteric and antimicrobial resistant pathogens in animal and human populations. Our lab combines data, epidemiological analysis and mathematical and computational approaches to study mechanisms and drivers of transmission and to identify and design control measures to reduce the public health burden of infectious diseases. For example, we are characterizing the sources of heterogeneity for enteric disease transmission. The project integrates data generated in a natural infection model system (*Escherichia coli* – cattle) through experimental challenge studies, field transmission studies, and animal movement monitoring systems with mathematical and computation models of pathogen transmission.

Selected publications:

Lanzas, C., and Chen, S. 2015. Complex system modeling for veterinary epidemiology. *Preventive Veterinary Medicine*, 118: 207-214

Chen, S., White, B., Sanderson, M., Amrine, D., Ilany, A., Lanzas, C. 2014. A highly dynamic animal contact network and implications on disease transmission. *Nature Scientific Reports*, 4: 4472.

Lanzas, C., Ayscue, P., Ivanek, R., Gröhn, Y.T. 2010. Model or meal? Farm animal populations as models for infectious diseases of humans. *Nature Reviews Microbiology*, 8:139-148

Application:

- Infectious disease epidemiology
- Mathematical modeling
- Network analysis
- Transmission models

Collaboration potential:

- Transmission studies
- Data integration in infectious diseases
- Mathematical models of the ecology and evolution of pathogens