## Badgers, bowels and the microbiome: Could secrets held in the faeces help diagnose the world's biggest infectious killer?



## Tuberculosis in badgers and cattle

Tuberculosis (TB) a bacterial disease affecting cattle is a huge issue for UK farming – leading to the slaughter of over 30,000 cattle a year, with combined costs to the taxpayer and industry of around £150 million a year!

Badgers are also infected with TB, and are known to be widespread, but identifying which setts are infected is tricky – badgers need to be trapped and tested I Or rely on faecal PCR tests which are not very sensitive, as the bacteria itself is only intermittently shed



Herd level incidence of bovine TB in England, 2017. Godfrav report (2018)

## The 'microbiome'

By using both 16S and shotgun metagenomics (whole genome) sequencing we will assess what shifts occur in the badger faecal microbiome, down to the species level.



Increasing incidence of bovine TB in England, 1986-2010. Godfray report (2018)



The 'metabolome'

All the small compounds (<1.5kDa) in a biological sample are together called the **metabolome** and can be identified using mass spectrometry. We will compare changes in TB infected badgers to identify any significant changes associated with immunology or the infertion istif.

## The biggest infectious killer of humans



Jim Scott-Baumann Jfs10@aber.ac.uk

Aberystwyth University







