

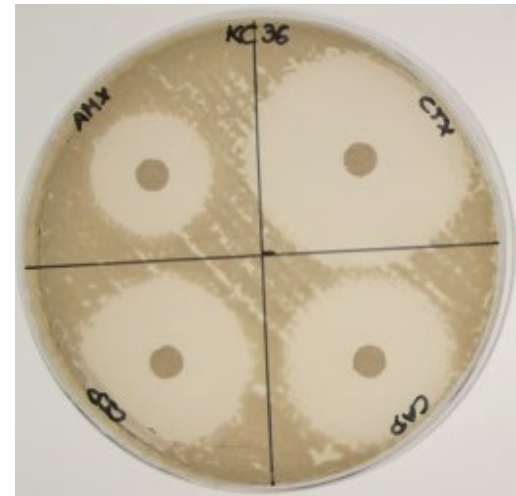
# Understanding mechanisms of antibiotic toxicity and searching for new antimicrobials

**Mark Shepherd**

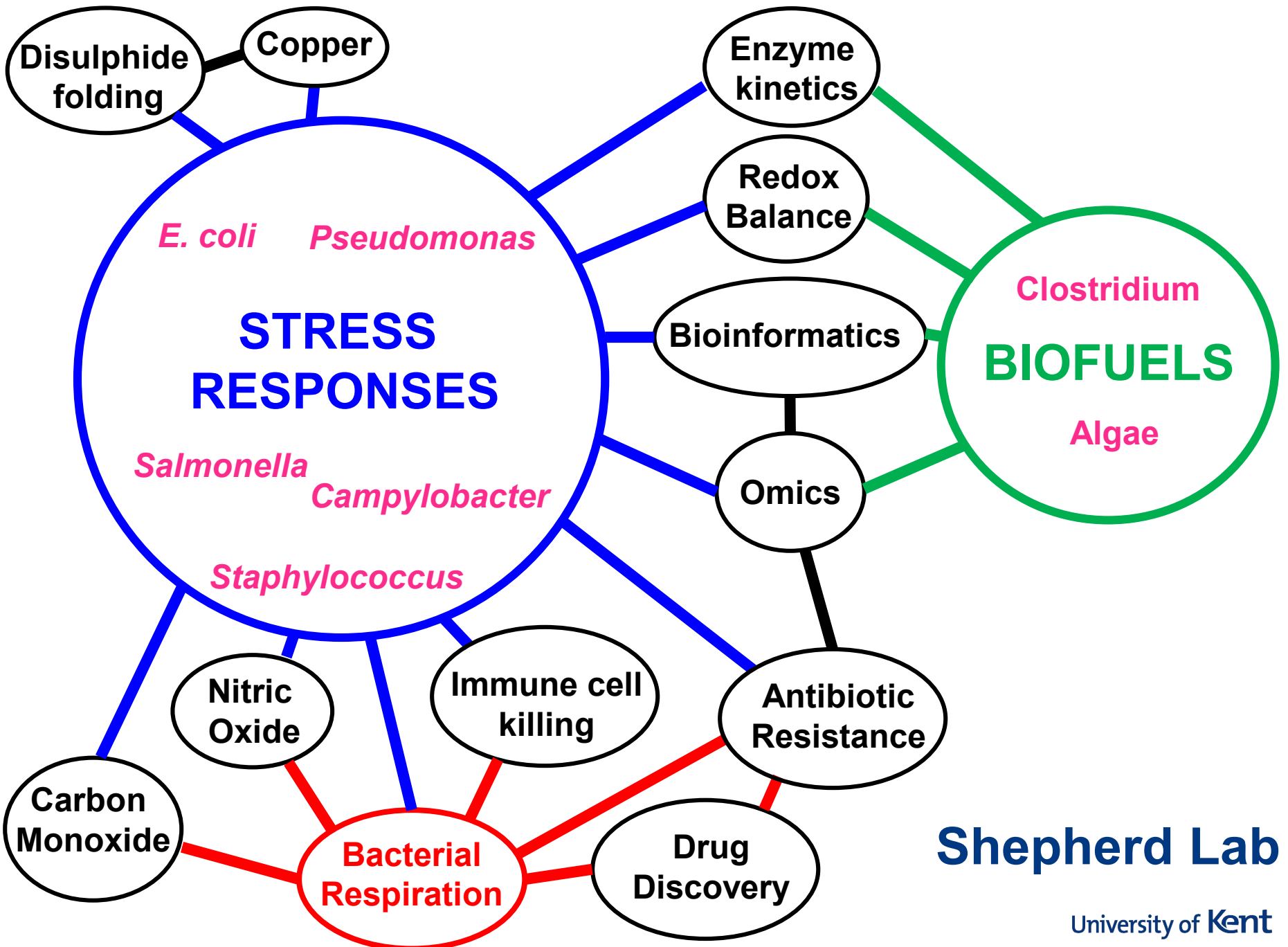
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University of  
**Kent**



# Antimicrobial resistance/ discovery projects

## AMR in *E. coli* isolates

- Bacteraemia isolates (inc. MDR)
- Genomic & phenotypic analyses

## Respiration and antibiotic susceptibility

- Respiratory inhibition
- Combinatorial treatments

## Antibiotics Unearthed

- Soil/lake isolates
- Screening/genomics

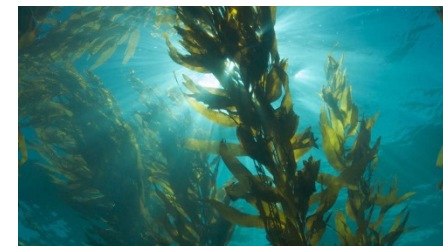
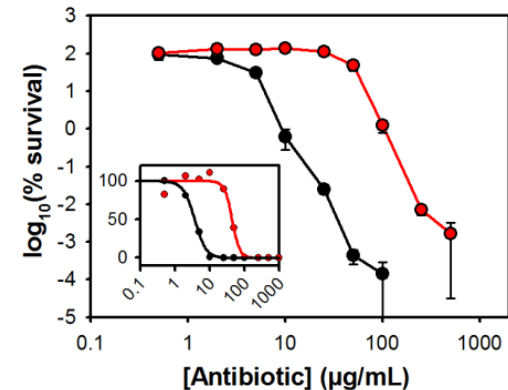
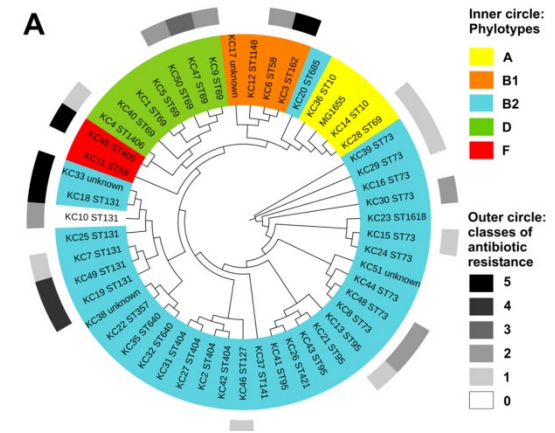


## New antimicrobials from endophytic fungi

- HPLC fractionation
- Susceptibility testing
- LC-MS

## Other pathogens within the school

- Candida, Cryptococcus, Blastocystis, Cryptosporidium.....

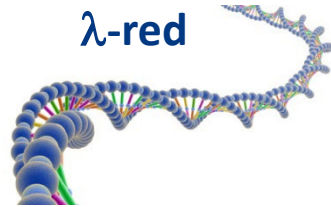


# Techniques/resources

Bacterial culture/  
physiology



Genetics/  
genomics



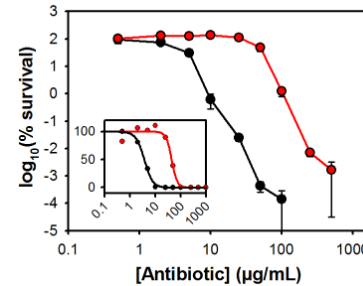
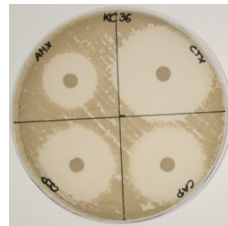
Analytical



GCMS

LC-MS

Drug screening



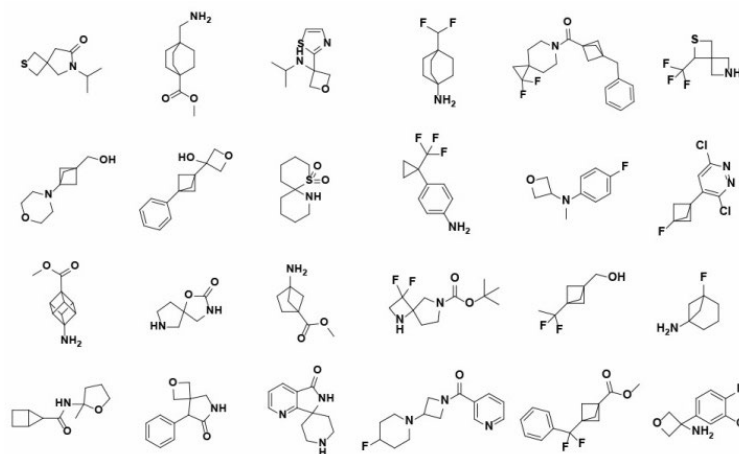
MSc Infectious Diseases students



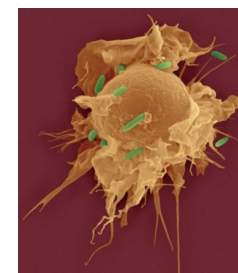
# Bottlenecks

Drug libraries and natural extracts to target Gram-negatives

Bioinformatics tools to identify new antimicrobial biosynthesis pathways



Animal models & Macrophage/neutrophil killing



Structural characterisation

