The Antimicrobial Resistance (AMR) Problem

- AMR is the resistance of a microorganism (including bacteria, fungi, viruses and parasites) to an antimicrobial drug that was originally effective for treatment of infections caused by it.
- Incidence of resistance to antimicrobials and antiretrovirals (for the treatment of HIV) is rapidly increasing.
- Resistance to all current antibiotic treatments has now been detected, with resistance to last resort antibiotic Colistin reported in Nov 2015.
- The inability to effectively treat bacterial, fungal and viral infections would render many advances in modern medicine obsolete, including elective surgery, transplants and cancer treatments.
- It is predicted that if action is not taken now, by 2050 AMR infections will be the leading cause of death worldwide, resulting in 10 million deaths annually.

AIMS

- EMBRACE is a two-year EPSRC project that aims to bridge the gaps between Engineering, Medicine and the Natural and Physical Sciences in AMR research.
- The purpose of EMBRACE is to nurture multidisciplinary research within Imperial College London to challenge the catastrophic threat of antimicrobial resistance.
- The programme is principally designed to develop a cohort of interdisciplinary research fellows who will develop a unique set of hybrid research skills, a positive attitude to multidisciplinary research and the ability to communicate across traditional academic boundaries.

MULTIDISCIPLINARY RESEARCH

- Research in AMR must go beyond the confines of traditional disciplines and create sustainable multidisciplinary networks and collaborations, capable of tapping into the full range of available technology and theoretical knowledge.
- Imperial College London offers an ideal environment for multidisciplinary research on AMR.

EMBRACE ACTIVITIES

Seminars
- Cross-faculty bi-monthly seminars
- Highlights the work across departments and sites
- Provides learning opportunities for researchers and healthcare providers in areas outside of their usual field of expertise

Pump-priming calls
- Three awards of £20K
- Multi-disciplinary projects (12 months)
- Supported by EMBRACE fellows

Conferences
- Two annual conferences
- 130 attendees at the 1st EMBRACE conference
- Twitter: #EMBRACE16

Sandpits
- 20 to 30 invited participants
- 2-3 days
- Inter-disciplinary research that is risky, cutting edge and unlikely to get funded through any other source

REFERENCES
1. World Health Organisation factsheet No 194 (2014)

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