Medical Research Foundation National PhD Training Programme in Antimicrobial Resistance Research

Annual Conference 'AMR in the Anthropocene: Human solutions to human-made problems?'

9 – 11 August 2021

FINAL PROGRAMME

Day 1 – Session 1: Monday 9 August 2021 (10:00-13:00 BST)

Time	Welcome and opening address
10:00	**Conference welcome address** **Professor Matthew Avison**, Academic Programme Lead, University of Bristol **Address & introduction to the Medical Research Foundation National PhD Training Programme in AMR Research** Professor Danny Altmann, Trustee of the Medical Research Foundation
Session 1 – One Health AMR in a Changing World	
10:10	**Session welcome** **Dr Andrew Singer,** UK Centre for Ecology and Hydrology **Chairs' opening address and introduction** **Claire Scott** (Bristol Veterinary School) and **Ryan Cook** (University of Nottingham)
Keynote lecture	
10:15	**AMR from an International, Interdisciplinary and Interspecies Perspective** **Professor Ruth Zadoks** School of Veterinary Science, University of Sydney, Australia
10:50	**Break – 5 min**

Student presentations	
10:55	**Identifying Drivers of Antibiotic Resistance in Rivers** **James Delaney** (University of Warwick)
11:10	**Sharing of Resistance Genes between Humans & Animals to Critically Important Antibiotics** **Jordan Sealey** (University of Bristol)
11:25	**Coffee break - 15 min**
11:40	**The Name Game: Classifying Novel Diversity in Genomic Data** **William Matlock** (University of Oxford)
11:55	**High-Resolution Sampling of Wastewater Influent for Short-Term Changes in AMR and Microbial Composition** **Kevin Chau** (University of Oxford)
12:10	**Closing remarks** **Dr Andrew Singer,** UK Centre for Ecology and Hydrology
Student showreels (narrated presentations and videos)	
12:15	**Introduction to 3-minute showreels** **Professor Matthew Avison,** University of Bristol
	Preventing the Rising Tide of AMR: Utilising Water Stable MOFs to Remove Antibiotics from Wastewater **Aoife Quinlivan** (University of Nottingham) **Reducing Antibacterial Resistance (ABR) through the Identification of the Risk Factors in the Perinatal Period and Early Life of the Calves that Drive ABR in Dairy Farms** **Beatriz Llamazares** (University of Bristol) **Rapid Identification of Bacteria Directly from Milk** **Daniel Buhl** (University of Cambridge) **Exploring Human-Animal Interactions, Disease Management and Antimicrobial Resistance on Smallholder Farms** **Claire Scott** (University of Bristol) ***Pseudomonas aeruginosa* Evolution Experiment** **William Hutton** (Liverpool School of Tropical Medicine) **Evolution of *Staphylococcus aureus* in Hypoxia** **Rebecca Hull** (University of Sheffield) **Antimicrobial Resistance in Kenya** **Anne Amulele** (Kenya Medical Research Institute)

	Characterisation of Conjugation and Plasmid Diversity of Carbapenemase-producing *Klebsiella pneumoniae* (CPE) Clinical Isolates from the United Kingdom **Sarah Element** (University of Birmingham) ***E. coli* Bacteraemia Antimicrobial Resistance: Bacterial Whole Genome Sequencing Linked to Patient Data** **Ahmed Raza** (University of Dundee) **Patient Pathways and the Nosocomial Spread of Antimicrobial Resistance** **Ashleigh Myall** (Imperial College London) **Optimising Empiric Antimicrobial Prescribing from Local Surveillance of Active and Potential Antimicrobial Resistance Mechanisms** **Winnie Lee** (University of Bristol) **Project with the WHO: Developing a Value Attribution Framework (VAF) for Vaccines to Prevent AMR** **Nidhee Jadeja** (Imperial College London)
12:55	**Session close** **Professor Matthew Avison,** University of Bristol
13:00 to 13:45	**Lunch break** **Break out rooms available for meet ups/networking after the session closes**

Day 1 – Session 2: Monday 9 August 2021 (14:00-16:00 BST)

Session 2 - AMR Through the Lens of Big Data and Modelling	
14:00	**Session welcome** **Dr Charis Marwick,** University of Dundee
14:05	**Chairs' opening address and introduction** **Winnie Lee** (University of Bristol) and **Ashleigh Myall** (Imperial College)
Keynote lecture	
14:10	**The Role of (Big) Data in Defining and Solving the Antimicrobial Resistance Crisis** **Dr Eili Y. Klein** Dept. Emergency Medicine, Johns Hopkins University, Baltimore, USA
14:50	**Break – 5min**

Student presentations	
14.55	**Machine Learning Predicts the Effect of DNA Gyrase Mutations on Fluoroquinolone Susceptibility in *Mycobacterium tuberculosis*** **Alice Brankin** (University of Oxford
15:10	**Using Electronic Record Data to Improve Opportunities for Antimicrobial Treatments in Sepsis** **Sian Bladon** (University of Manchester)
15:25	**Modelling to Reveal the Invisible: New Insights into Phage Predation Dynamics and the Importance of Horizontal Gene Transfer of Antimicrobial Resistance by Transduction** **Quentin Leclerc** (London School of Hygiene and Tropical Medicine)
15:40	**IN**frastructure for a **PHA**ge **RE**ference **D**atabase: **Identification of Large-Scale Biases in the Current Collection of Phage Genomes** **Ryan Cook** (University of Nottingham)
15:55	**Closing remarks** **Dr Charis Marwick,** University of Dundee
16:00	**Professor Matthew Avison,** University of Bristol **Introduction to discussion panel on Day 3** **Break out rooms available (until 17:00) for meet ups/networking after the session closes**

Day 2 – Session 3: Tuesday 10 August 2021 (14:00 – 16:30 BST)

Session 3 - Innovation, Regulation and Acceptability: The Roadmap for AMR	
14:00	**Session welcome** **Professor Alison Holmes,** Imperial College London
14:05	**Chairs' opening address and introduction** **Lucy Miller** (Imperial College) and **Laura Ciaccio** (University of Dundee)
Student presentations	
14:10	**Reproducibility and Reliability in Transposon Mutagenesis Library Construction** **Claire Hill** (Quadram Institute, University of East Anglia)
14:25	**Nature's Silent Pharmacy: Mining Fungal Genomes in the Search for Novel Antibiotics** **Sarah Dodd** (University of Bristol)
14:40	**Engineering Protein Switches for the Rapid, Point of Care Detection of Infection Biomarkers** **Declan Kohl** (University of Leeds)
14:55	**MagnaExtract, a Novel Magnetic Bead-Based Extraction Method for the Molecular Detection of Antimicrobial Resistance** **Rachel Byrne** (Liverpool School of Tropical Medicine)
15:10	**Getting to Know Your Enemy - Structural and Functional Studies on Serine β-Lactamases** **Pauline Lang** (University of Oxford)
15:25	**Tea break – 15 min**
Keynote lecture	
15:40	**Considerations in Anti-Infective Product Development** **Dr Sumati Nambiar** Senior Director, Child Health Innovation and Leadership Department, Johnson and Johnson (formerly Director, Division of Anti-Infective Products, Office of Infectious Diseases at the US Food and Drug Administration)
16:25	**Closing remarks** **Professor Alison Holmes**, Imperial College London
16:30	**Professor Matthew Avison,** University of Bristol **Introduction to discussion panel on Day 3** **Break out rooms available (until 17:30) for meet ups/networking after the session closes**

Day 3 – Session 4: Wednesday 11 August 2021 (09:45-13:00 BST)

Session 4 – Encountering AMR in the worlds we live in	
09:45	**Welcome address** **Professor Matthew Avison,** University of Bristol
09:50	**Chairs' opening address and introduction** **Chloe Morrison** (London School of Hygiene & Tropical Medicine) and **Nidhee Jadeja** (Imperial College London)
Keynote lecture	
09:55	**The Biosocial Worlds: Building Bridges Across Disciplines** **Professor Jens Seeberg** School of Culture and Society, Department of Anthropology, Aarhus University, Denmark
AMR in the real world	
10:35	**Antibiotic Resistant Infections: The Patient Perspective** **Arlene Brailey** Patient Support Service, Antibiotic Research UK (ANTRUK)
10:55	**Antimicrobial Resistance: Interventions as Imagined Versus Interventions as Done** **Dr Enrique Castro-Sanchez** School of Health Sciences, City, University of London
11:15	**Coffee break – 15 min**
Student showreels	
11:35	**Introduction to 3-minute showreels** **Professor Matthew Avison,** University of Bristol
	Storytelling to Communicate the Concept of AMR to the Public **Becky McCall** (University College London) **Research on AMR in a Pandemic** **Esther Rottenburg** (London School of Hygiene and Tropical Medicine) **A Historical and Ethnographic Study of Efforts to Preserve the Efficacy of Antitubercular and other Antibiotics in South Africa** **Rene Raad** (London School of Hygiene and Tropical Medicine

	A Silent Pandemic: How Can We Protect Antibiotics? **Ayodeji Matuluko** (Glasgow Caledonian University) **My Lab Days - Subcellular Fluctuation Imaging (Towards Rapid Antimicrobial Susceptibility Testing - AST)** **Kanasanun Phonrat** (University of Bristol) **The Health and Economic Impact of Respiratory Syncytial Virus Vaccinations on Antibiotic Use and Resistance Within England** **Lucy Miller** (Imperial College London) **Effects of COVID-19 on Antibiotic Prescribing, Healthcare Utilisation and *E. coli* Resistance** **Laura Ciaccio** (University of Dundee) **Discontinuous Percoll Gradient: A Technique to Isolate Immune Cells** **Simone Arienti** (University of Edinburgh) **Drug Discovery for Inflammation Resolution in Chronic Lung disease** **Wezi Sendama** (University of Newcastle) **Antimicrobial Efficacy of XF-73 and Antibiotic Comparators Against *Enterococcus faecalis* in Biofilm Mode of Growth** **Isabella Romeo-Melody** (University of Aston) **Next Generation Inhibitors to Tackle βeta-Lactamase Resistance** **Jonny Burnett** (University of Warwick)
Student discussion panel: Facing the realities of AMR – understanding your part in the bigger picture	
12:15	**Discussion lead – Chloe Morrison** (London School of Hygiene and Tropical Medicine) **Moderator - Nidhee Jadeja** (Imperial College London) **Panellists:** **Becky McCall** (University College London)**, Declan Kohl** (Leeds), **Dr Wezi Sendama** (Newcastle), **Claire Scott** (Bristol Vet School) and **Kevin Chau** (Oxford) *Audience - please use the chat function to ask your questions during the discussion* *There will be interactive tasks - more information will be provided*
13:00	**Conference closing remarks** **Professor Matthew Avison,** Academic Programme Lead, University of Bristol
	Break out rooms available for meet ups/networking after the conference closes until 14:30
14:30 - 16:00	***Leadership Team meeting (for those involved)*** ***Separate Zoom link on the agenda***