Antimicrobial Resistance, Diagnostics and Drug Discovery
Edinburgh, 23 April 2015

With the current high profile of Antimicrobial Resistance (AMR), and increasing funding becoming available for AMR research, Till Bachmann (Division of Infection and Pathway Medicine) and Hilary Snaith (Edinburgh Infectious Diseases) organised a one-day workshop hosted by Edinburgh Infectious Diseases to showcase research activities carried out in Edinburgh within this field. The workshop attracted over 90 delegates and speakers from a wide range of disciplines to hear and discuss how interdisciplinary collaborations can maximise impact. In this complex field, Edinburgh researchers from disciplines as diverse as clinical medicine, epidemiology, microelectronics and physics, presented their work on AMR, alongside talks from representatives from major funding bodies and policy makers.

The first session was kicked off with a welcome by Till Bachmann and the announcement of plans for a continued bundling of AMR activities in Edinburgh by the foundation of an Edinburgh AMR Forum and the initiation of the Antimicrobial Resistance Diagnostic Challenge (AMR DxC), where international institutions will come together forming student teams competing in a challenge to advance the next generation of AMR diagnostics. This introduction was followed by a broad overview of the global burden of AMR (Mark Woolhouse). Representatives from the MRC (Ghada Zoubiane), Innovate UK (Penny Wilson) and NESTA (Joshua Ryan-Saha) then presented new funding opportunities and new strategies for cross-disciplinary and inter-sectorial collaboration around the field of AMR and diagnostics. Session two provided an overview of the biological aspects of AMR mechanisms in gram negative bacteria (Thamarai Schneider-Schneiders) and transmission of Staphylococcus aureus among human and animal populations (Ross Fitzgerald), which was contrasted with antibiotic use and prescription both in human (Clair Mackintosh) and veterinary medicine (Sally Argyle). Session three focussed on the development of novel AMR diagnostics and drug discovery. Research on AMR tests in a point-of-care setting, potential for prognostic tests (Till Bachmann), novel imaging tools (Kev Dhaliwal) and microelectromechanical systems-based technologies (Stewart Smith) were discussed, along with vaccines (Kim Thompson), microbial peptides (Wilson Poon) and novel classes of antibiotics (Malcolm Walkinshaw). The session was concluded with an overview of the socioeconomic aspects of AMR (Joyce Tait) and a strong emphasis on the change in antimicrobial
stewardship and policy (Dilip Nathwani) in order to reverse the trends in antibiotic use and resistance.

The day was wrapped up with roundtable discussions on the topic of AMR research in Edinburgh. With several aspects being discussed, there was clear consensus about the need for an Edinburgh AMR Forum allowing researchers to connect, explore potential future collaborations and disperse AMR related activities in Edinburgh. This extremely well-received workshop was a successful day of knowledge exchange between Edinburgh researchers interested in AMR and participants stated a strong demand for follow up events.

Comments on the workshop from both speakers and attendees:

- Excellent meeting and very well-organised.
- It was a great meeting and if a follow up is designed, industry and companies could get involved as well in order to explore opportunities to collaborate.
- A stimulating and interesting day.
- Great meeting with excellent speakers. Got a lot out of it and looking forward to reading the report.
- It was a fantastic day and hoping it is the first of many. It would be great to keep the momentum going.