ONE HEALTH

Getting together on One Health

Students from a range of different disciplines got together in January for the first student-led Cambridge University One Health conference. Joanne Harries, one of the organisers and a fifth-year veterinary medicine student at Cambridge, describes the diverse nature of the subjects discussed.

THE 120 student delegates who attended the conference, which was organised by the Cambridge University One Health Society, reflected the multidisciplinary nature of the One Health concept, coming from veterinary, medical, natural science, global health and public health backgrounds.

Duncan Maskell, head of the Cambridge School of Biological Sciences, gave the opening talk on the One Health principle, highlighting the need to remove the ‘anthropocentric view’ embedded in the field of medicine today. He illustrated this with a quote from Rudolf Virchow: ‘between animal and human medicine there is no dividing line – nor should there be’.

Dame Barbara Stocking, a former chief executive of Oxfam GB, provided a humanitarian perspective on responses to natural disasters, drawing on her experience with Oxfam in regions such as Darfur, to raise awareness of the most appropriate ways to respond to disaster situations.

Tim Brooks, of Public Health England, rounded up the morning talks with an enlightening discussion of zoonotic diseases, aptly named ‘Caring and sharing’. He concluded that people might be sharing more with their pets than they thought!

The afternoon began with Peter Hawkey, of the University of Birmingham, describing his research on the pressing issue of antibiotic resistance in Gram-negative bacteria, with particular emphasis on the importance of mobilomes in antibiotic resistance.

Javier Dominguez, representing the Food Standards Agency, described the agency’s strategy to tackle foodborne Campylobacter — currently the most pressing food safety issue in the UK with 72,000 cases confirmed in 2012 and estimates of up to half a million cases occurring each year.

Jane Dobson, of Cambridge veterinary school, addressed the thought-provoking One Medicine topic of comparative aspects of oncology, with a focus on how breed-specific cancers in dogs could be of use in determining cancer-related genes in people. This was followed by analysis of zoonotic disease in songbird populations in the UK by Katie Beckmann from the Zoological Society London.

Derek Smith, director of the World Health Organization Collaborating Centre for Modelling, Evolution and Control of Emerging Infectious Diseases, rounded up the conference with a description of the fascinating work his team are involved in regarding the mapping and prediction of influenza virus evolution. His research aims to uncover all the ways in which the influenza virus can change to escape antibodies, and what the virus actually does in nature.

Research by his colleagues had demonstrated that the viral evolution documented in people was the same in birds (with avian flu H5) and in horses (with equine influenza). He explained that piecing together the puzzle involved weighing up the costs from the virus’s point of view. When the virus mutated, its valuable receptor binding point was distorted, so the influenza virus would not mutate unless it had to. Therefore, the question remained: when is there a selective advantage for the virus to evolve? Professor Smith concluded that it was not always possible to predict exactly what the virus was like across different species and how human interventions (no matter how good the intentions) might affect different species.

The conference drew to a close with a traditional Cambridge-style formal dinner at Murray Edwards College. The Cambridge University One Health Society is grateful to the Wellcome Trust for supporting the event. It hopes that bringing together students involved in both human and veterinary medical fields for the meeting will have stimulated discussion and encouraged further interest in the One Health initiative across the student body. It looks forward to holding further successful events.

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