Wednesday, 20 September

12:30-14:00 Registration with lunch

14:00-14:10 Welcome and Introductions

14:10-14:20 Frontiers Research Topics

14:20-15:10 Keynote Lecture
Genetic variation of hominid immune systems
Peter Parham
Stanford University, USA

15:10-16:10 Session 1: Genetics of the immune response & disease resistance
Chair: Mark Fife, The Pirbright Institute, UK

15:10 A bird’s-eye view of genetics, genomics, immune response and disease
Sue Lamont
Iowa State University, USA

15:40 Genetic basis of disease resistance in aquaculture species
Ross Houston
University of Edinburgh, UK

16:10-16:40 Afternoon Tea

16:40-17:40 Session 1 continued: Genetics of the immune response & disease resistance
Chair: Peter Parham, Stanford University, USA

16:40 Natural killer cell receptor evolution in livestock: alternative strategies to generate immunogenetic variation
John Hammond
The Pirbright Institute, UK

17:10 A major effect of genomic region containing Toll-like receptor genes on IgM (natural) antibodies in chickens
Tom Berghof
Wageningen University & Research, The Netherlands
17:25  Transcriptional profiling of the innate immune response to NDV infection in the chick embryo
   Megan Schilling
   Pennsylvania State University, USA

17:40-18:10  Lightning Talks

18:10-19:40  Poster Session I (odd numbers) with Drinks Reception

19:40  Dinner

Thursday, 21 September

09:00-10:30  Session 2: Genetically engineered livestock
   Chair: Helen Sang, The Roslin Institute, UK

09:00  Gene editing-addressing major sustainability issues in Atlantic salmon farming
   Anna Wargelius
   Institute of Marine Research, Norway

09:30  Genetically engineered chickens: New models to analyze host-pathogen interaction and vaccine responses in chickens
   Benjamin Schusser
   Technical University of Munich, Germany

10.00  Utilising mouse models to understand colorectal cancer risk loci
   Ruby Osborn
   University of Edinburgh, UK

10.15  Engineering disease resistance in the domestic pig
   Maeve Ballantyne
   Roslin Institute, UK

10:30-11.00  Morning Coffee

11:00-12:30  Session 3: Quantitative genetics applied to disease
   Chair: Leif Andersson, Uppsala University, Sweden

11:00  Title tbc
   Michel Georges
   University of Liège, Belgium

11:30  Bovine tuberculosis: a complex disease with complex genetics
   Liz Glass
   University of Edinburgh, UK

12:00  A natural challenge model for disease resilience in pigs
   Jack Dekkers
   Iowa State University, USA
12:15 Genomic and transcriptomic studies of Campylobacter gut colonization resistance in broilers  
Androniki Psifidi  
The Roslin Institute, UK

12:30-14:00 Lunch

14.00-15:30 Session 4: Epidemiology & pathogen evolution
Chair: Andrea Wilson, The Roslin Institute, UK

14:00 Evolution of antibiotic resistance  
Dan Andersson  
Uppsala University, Sweden

14:30 Causal versus predictive modeling using population-based biobank data: some methodological considerations and examples  
Krista Fischer  
University of Tartu, Estonia

15:00 Genetic differences in host infectivity affect mortality rates in epidemic outbreaks - evidence from a transmission experiment  
Osvaldo Anacleto  
Roslin Institute, UK

15:15 The Landscape and evolution of somatic mutations in bovine leukemia virus induced tumors  
Keith Durkin  
University of Liège, Belgium

15:30-16:00 Afternoon Tea

16:00-17:30 Session 5: Host pathogen interactions: mechanisms and modelling
Chair: Anna Wargelius, Institute of Marine Research, Norway

16:00 Host immune responses and selective breeding: some insights from evolutionary game theory  
Louise Matthews  
University of Glasgow, UK

16:30 New insights concerning the interaction between nuclear-replicating viruses and their hosts  
Leif Andersson  
Uppsala University, Sweden

17.00 Uncovering the role of chicken IFITM-mediated viral restriction  
Thomas Whitehead  
The Pirbright Institute, UK
17:15 Evaluating the role of epigenomic modifications in host-pathogen interaction for bovine alveolar macrophages infected with Mycobacterium bovis
David MacHugh
University College Dublin, UK

17:30-18:00 Lightning Talks

18:00-19:30 Poster Session II (even numbers) with drinks reception

19:30 Dinner

Friday, 22 September

09:00-10:30 Session 6: Comparative & functional genomics
Chair: Michel Georges, University of Liège, Belgium

09:00 Dog genes tell surprising tales: the genetics of modern dog breeds
Elaine Ostrander
National Institutes of Health, USA

09:30 African swine fever virus host interactions relevant for understanding pathogenesis in different hosts
Linda Dixon
The Pirbright Institute, UK

10:00 Functional role of IRF7 on the host responses against avian influenza virus infection in chickens by both gain and loss-of-function
Tae Hyun Kim
UC Davis, USA

10:15 Autosomal dwarfism in chicken is caused by a nonsensemutation in TMEM263 on chromosome 1
Zhou Wu
Wageningen university and research, The Netherlands

10:30-11:00 Morning Coffee

11:00-12:30 Session 7: Improving breeds: welfare, management advances and new challenges
Chair: Jack Dekkers, Iowa State University, USA

11:00 Reducing the risk of animal welfare problems
Linda Keeling
Swedish University of Agricultural Sciences, Sweden

11:30 Resistance and tolerance as selection objectives in commercial pig breeding
Pieter Knap,
Genus-PIC, Germany
12:00  Improving livestock products in the 21st Century  
Vish Nene  
ILRI, Kenya

12:30  Implementation of the nagoya protocol on access and benefit sharing in the UK  
Katie Beckett  
Regulatory Delivery, Department for Business, Energy & Industrial Strategy, UK Government, UK

12.45  Panel discussion

13:15  Conference summary and closing remarks

13.15 -13:45  Lunch (grab bag) & depart