

## Animal Disease Genomics: Opportunities and Applications 9th - 12th June 2008, University of Edinburgh, UK

The EU-funded project **EADGENE** will hold their annual meeting on animal genomics research from 9th - 12th June 2008 in Edinburgh, UK. This 4-day event will focus on the latest genetics and genomics research in the field of farm animal health, through a 2-day conference which will be preceded and followed by a series of satellite workshops and meetings.

The main conference will take place on Tuesday 10th and Wednesday 11th June 2008. It will feature a series of presentations by keynote speakers and leading specialists in their fields which will update delegates on the latest animal genomics research. It also includes a joint session with **Met-Vet-Net** (the European Network of Excellence for Zoonoses research) and EADGENE scientists, highlighting the links between the two Networks.

An EADGENE Animal Trait Ontology Initiative Workshop will be held as a satellite meeting on Thursday 12th June 2008, and various EADGENE working group meetings will take place on Monday 9th and Thursday 12th June 2008.



### About EADGENE

EADGENE is an EC-funded Network of Excellence, comprising 13 partner institutes, which coordinates a genomics approach to the development of new or improved therapeutics and vaccines, improved diagnostics, and the breeding of farm animals for disease resistance.

EADGENE research concentrates on pathogens of importance in the food chain. Research topics range from host-pathogen interactions, through bioinformatics, the analysis of genetic data to population-level studies with industry. The major focus is on host-pathogen interactions relevant to animal and human health, including Salmonella in pigs and poultry, enterohaemorrhagic *E. coli* (EHEC) in cattle, mastitis in cattle, goats and sheep, and IPNV and ISAV infections in salmon. EADGENE also funds mobility, training, technology transfer and the support of experimental resources.

For further information about EADGENE please visit the project website at <http://www.eadgene.info>.

### Further conference information and registration

Registration for all the events during the EADGENE Animal Disease Genomics: Opportunities and Applications conference is free, but delegates who have registered and do not notify us of cancellation before 31st May 2008 will be charged 100 Euro for each registered day.

Online registration has now closed. Enquiries can be sent to: [conference@eadgene.info](mailto:conference@eadgene.info).

Further information and programme updates are available at [www.eadgene.info](http://www.eadgene.info).

# Animal Disease Genomics: Opportunities and Applications

Tuesday 10th June 2008, David Hume Tower, University of Edinburgh, UK

## Session 1: Developments in Animal Genomics

**Chairperson: Marie-Hélène Pinard van der Laan, EADGENE Co-ordinator, INRA, France**

- 09:00 Welcome - Marie-Hélène Pinard van der Laan, EADGENE Co-ordinator, INRA, France
- 09:10 Whole genome sequencing in livestock species: the end of the beginning - André Eggen, INRA, France
- 09:50 Global perspectives on animal trait ontology - James Reecy, Iowa State University, USA
- 10:30 *Coffee break and posters*
- 11:15 Animal trait ontology within EADGENE - Hein van der Steen, StoneBridge Breeding Ltd, UK
- 11:40 Pathogen genomics: approaches and applications - Mark Pallen, University of Birmingham, UK
- 12:20 Systems Biology: Glycomics of *Campylobacter jejuni* - Emily Kay, Centre for Integrative Systems Biology, Imperial College London, UK
- 12:45 *Lunch break and posters*

## Session 2: EADGENE Progress in Animal Genomics

**Chairperson: Stephen Bishop, The Roslin Institute and R(D)SVS, University of Edinburgh, UK**

- 14:00 Resistance to salmonella in chicks: which genetic control for which animal model ? - Fanny Calenge, INRA, France
- 14:30 Identification and use of SNPs in chickens, pigs and turkeys - Martien Groenen, Wageningen UR, The Netherlands
- 15:00 Microarray annotation within EADGENE - Christophe Klopp, INRA, France
- 15:30 *Coffee break and posters*
- 16:15 miRNAs studies in livestock, a summary of the EADGENE workshop - Anne-Sophie Lequarré, University of Liège, Belgium
- 16:35 Results of EADGENE funded short-term stays at other partners:  
OspG a versatile type III effector protein - Rika Nobe, INRA, France  
Comparison of bovine and human O26 EHEC strains by the Whole Genome PCR Scanning - Majorie Bardiau, University of Liège, Belgium.  
"A technological triangle" - Jakob Hedegaard, University of Aarhus, Denmark
- 17:25 Ethical Reflection within the EADGENE Project - Karsten Klint Jensen and Christian Gamborg, Danish Centre for Bioethics and Risk Assessment (CeBRA), Denmark

## Poster Session

18:00 Poster session in the David Hume Tower at the University of Edinburgh

## Conference dinner

20:00 Conference dinner in the Apex Suite, Apex International Hotel, 31-35 Grassmarket, Edinburgh.

# Animal Disease Genomics: Opportunities and Applications

Wednesday 11th June 2008, David Hume Tower, University of Edinburgh, UK



## Session 3: Interaction with Med-Vet-Net

**Chairperson: Mari Smits, Animal Sciences Group Wageningen UR, The Netherlands**

- 09:00 Introduction - Roberto La Ragione, Veterinary Laboratories Agency, UK (Med-Vet-Net)
- 09:05 Characterisation of the early host response to *Salmonella* and *Campylobacter* infection - Roberto La Ragione, Veterinary Laboratories Agency, UK (Med-Vet-Net)
- 09:25 Functional genomics of *E. coli* in cattle and poultry - Francis Dziva, Institute for Animal Health, UK (EADGENE)
- 09:45 Is seroepidemiology a tool to unravel the pyramid of surveillance for food borne pathogens - Kåre Mølbak, Statens Serum Institut, Denmark (Med-Vet-Net)
- 10:05 Comparative virulotyping analysis of VTEC isolates gathered from different regions within Europe - Muna Anjum, Veterinary Laboratories Agency, UK (Med-Vet-Net)
- 10:25 *Coffee break and posters*
- 11:00 Host pathogen interaction in murine salmonellosis: characterization and significance of early immune response - Paolo Pasquali, Istituto Superiore di Sanita, Italy (Med-Vet-Net)
- 11:20 Salmonella induced innate immune responses in pigs - Juan Jose Garrido, Universidad de Córdoba (EADGENE)
- 11:40 Inhibition of *S. Typhimurium* invasion in a novel porcine 3D cell culture model - James Collins, Veterinary Laboratories Agency, UK (Med-Vet-Net)
- 12:00 Toward harmonisation of Trichinella infection control methods, quantitative risk assessment in pigs and an early indirect diagnosis in humans and pigs - Pascal Boireau, Agence Française de Sécurité Sanitaire des Aliments (AFSSA), France (Med-Vet-Net)
- 12:20 In vitro culture of fastidious viruses with 3D cultures - Malcolm Banks, Veterinary Laboratories Agency, UK (Med-Vet-Net)
- 12:40 *Lunch break*

## Session 4: EADGENE Applications

**Chairperson: Anne-Marie Neeteson-van Nieuwenhoven, EFFAB, The Netherlands**

- 14:00 EADGENE's fish pathogen work - Bjørn Høyheim, Norwegian school of Veterinary Science (NSVS), Norway
- 14:10 Tackling the disease viral hemorrhagic septicaemia (VHS) in rainbow trout (*Oncorhynchus mykiss*) by identifying genes for resistance using gene-expression analysis - Mette Hansen, University of Aarhus, Denmark
- 14:25 First Steps of ISAV Recovery from cDNA by Reverse Genetics - Stéphane Biacchesi, INRA, France
- 14:40 Meta-analysis of the EADGENE mastitis data - Sem Genini, Parco Tecnologico Padano, Italy
- 15:00 Technology Transfer: the global perspective - Chris Warkup, Genesis Faraday, UK
- 15:30 Technology Transfer: the EADGENE perspective - Angela van der Sanden, EFFAB, The Netherlands
- 16:00 *Close*



# Animal Disease Genomics: Opportunities and Applications

## EADGENE Project Meetings: Monday 9th June 2007

The EADGENE project meetings are aimed specifically at EADGENE work package and working group members.

### WP1.1 Biological resources and facilities

13:30-17:00, Monday 9th June 2008, Duddingston Room, John McIntyre Centre, Pollock Halls, Edinburgh

The objective of this WP is to coordinate and facilitate access and sharing of biological resources and advanced technological facilities to perform the relevant EADGENE and related research activities.

**EADGENE WP1.1 participants only.**

WP Leader: Ingrid Olsaker (NSVS), enquiries to: [ingrid.olsaker@veths.no](mailto:ingrid.olsaker@veths.no)

### WP6.1 Population genetics

12:00-14:30, Monday 9th June 2008, Holyrood Room, John McIntyre Centre, Pollock Halls, Edinburgh

EADGENE WP6 aims to define (and measure) phenotypes in specific populations, provide primary cells or cell lines and investigate genetic epidemiological modelling tools.

**EADGENE WP6.1 participants only.**

WP Leader: Catherine Beaumont (INRA), enquiries to: [Catherine.Beaumont@tours.inra.fr](mailto:Catherine.Beaumont@tours.inra.fr)

### EADGENE Salmonella Working Group (WP7.1)

15:00-18:00, Monday 9th June 2008, Holyrood Room, John McIntyre Centre, Pollock Halls, Edinburgh

The EADGENE Salmonella Working Group concentrates on early responses in Salmonella infected poultry and pigs.

**EADGENE Salmonella working group participants only.**

WP Leader: Annemarie Rebel (Animal sciences Group WUR), enquiries to: [Annemarie.Rebel@wur.nl](mailto:Annemarie.Rebel@wur.nl)

### Industrial Property Use and Dissemination Committee (IPUDC)

13:00-15:30, Monday 9th June 2008, Salisbury Room, John McIntyre Centre, Pollock Halls, Edinburgh

The IPUDC is an advisory body which is responsible for identifying knowledge that could be the subject matter of protection, use or dissemination based on contemplated publications and activity reports issued by Activity Leaders.

**IPUDC members only.**

Chairperson: Daniel Allain (INRA), enquiries to: [Daniel.Allain@toulouse.inra.fr](mailto:Daniel.Allain@toulouse.inra.fr)

### Governing Council

16:00-18:00, Monday 9th June 2008, Salisbury Room, John McIntyre Centre, Pollock Halls, Edinburgh

The EADGENE Governing Council is composed of high-level representatives of each of the partners of the Network and acts as a decision-making and arbitration body for all of the decisions of the EADGENE Management Team.

**Governing Council representatives only.**

Chairperson: Johan van Arendonk (ID-Lelystad /WU), enquiries to: [Sandrine.Ayuso@jouy.inra.fr](mailto:Sandrine.Ayuso@jouy.inra.fr)

# Animal Disease Genomics: Opportunities and Applications

## Satellite Workshops and EADGENE Project Meetings: Thursday 12th June 2008

### WP8.1 Operational Genomics

09:00-11:00, Thursday 12th June 2008, Faculty Room South, David Hume Tower, University of Edinburgh

The goal of Operational Genomics (WP8.1) is to integrate the main inputs/outcomes from EADGENE's structural, functional and population genomics work packages (WP5.1, 6.1 and 7.1), in order to develop plans and tools for the application of these results.

#### EADGENE WP participants only.

WP Leader: Elisabetta Giuffra (PTP), enquiries to: [Elisabetta.Giuffra@tecnoparco.org](mailto:Elisabetta.Giuffra@tecnoparco.org)

### EADGENE Animal Trait Ontology Initiative Workshop (Open to all)

11:00 - 13:00, Thursday 12th June 2008, Faculty Room South, David Hume Tower, University of Edinburgh

Ontology is a classification methodology that defines a common vocabulary in a structured way for useful information sharing. An ATO will help facilitate the transfer of trait and genomics information across agricultural species and the links with information from human and model species such as mouse and rat. Our target is to make (as much as possible) good use of all activities worldwide that are related to the development of an ATO, avoiding 'competition', overlap and wasting of resources.

In reality, that is not as easy as it sounds. Different groups working on different aspects of an ATO very quickly develop their own interpretation of what an ATO is all about. What is a logical approach for one species might not work out that well for another species. Also, getting input from the stakeholders is always a challenge.

The workshop will focus on the collection of trait information in general and on a specific project around Salmonella in pigs. The trait information involves traits used by the animal breeding and production industry. The 'Salmonella in pigs' project is a pilot that in the future will be extended to other diseases and species.

The objectives of the workshop are 1) to illustrate what the main activities around the development of the ATO are, 2) to give feedback to those involved in the process, 3) to discuss how to improve the process and the value of the resulting product and 4) to illustrate how an ATO can be used and create value for the industry and research community.

Workshop organisers: Martien Groenen (Wageningen UR), Hein van der Steen (StoneBridge Breeding Ltd.)

Enquiries to: [Hein.vandersteen@stonebridgeg.com](mailto:Hein.vandersteen@stonebridgeg.com)

### WP 5.1 Structural Genomics (Open to all - Continuation of the ATO workshop)

14:00 - 16:30, Thursday 12th June 2008, Faculty Room South, David Hume Tower, University of Edinburgh

Work package 5.1 is concerned with the improvement and development of genomics resources in farm animals, with particular attention focussed on the genetic variation in these species and on the improvement of the genome assemblies and annotation. Genome annotation focuses on genes as well as on the identification of regulatory elements (e.g. transcription factor binding sites, miRNAs and miRNA targets). Genetic variation is addressed by the large scale identification and use of SNPs and the analysis of copy number variation (CNV) in farm animals. The objective of the workshop is to provide an overview of the recently developed resources and to stimulate collaborative use of these resources in the ongoing research projects within the laboratories of the partners involved in EADGENE.

Workshop organiser: Martien Groenen (Wageningen UR), enquires to: [Martien.Groenen@wur.nl](mailto:Martien.Groenen@wur.nl)