



Network News

Volume 3, Issue 2

Editors' Introduction

This seventh edition of Network News includes news from three successful EADGENE meetings which have taken place in the last few months. Two of our research working groups, on mastitis and fish pathogens, have held workshops to report results and plan their future activities. The ethics group (WP12.1) have held a workshop in Denmark to discuss ethical issues and concerns in relation to animal disease genomics and host-pathogen relationships. We are also pleased to give you more information about the upcoming EADGENE and SABRE conference, and we hope to see you in Utrecht (NL) on 4-8th June 2007.

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EADGENE / SABRE Days - June 2007

EADGENE's 3rd Annual Conference is being held in co-operation with SABRE (Cutting Edge Genomics for Sustainable Animal Breeding, www.sabre-eu.eu), on the theme of "**Genomics for Animal Health,**" from **4th - 8th June 2007 in Utrecht, The Netherlands.**

The 5-day event will focus on the latest genetics and genomics research in the field of farm animal health, through a joint 2-day conference which will be preceded and followed by a series of satellite workshops and work package meetings.

Registrations opened in January, and we already have over 150 delegates including many members of EADGENE Partner institutes and the Club of Interest. This conference presents our Partners with a perfect opportunity to meet their EADGENE colleagues and get up-to-date on the progress of the project. There will be excellent networking opportunities during the poster session and Conference Dinner, and we strongly encourage any Partner who have not yet registered to do so as soon as possible!



SABRE **Genomics for Animal Health: Joint SABRE and EADGENE conference**

5th June 14:00-18:00 and 6th June 09:00 - 16:00 (Open to all)



This 2-day conference features a series of presentations by keynote speakers and leading specialists in their fields which will update delegates on the latest genetics and genomics research in udder health, gut health and functionality, genome wide selection, microarray analyses, and new genomics tools and technologies.

Satellite Workshops

From Infection to Inference: Interpreting Animal Health and Disease Data

4th June 14:00 - 18:00 and 5th June 08:30 - 11:00 (Full)

***E. coli* and *Salmonella* workshop**

7th June 09:00 – 17:00 (Open to all)

FABRE-TP discussion meeting

7th June 09:30 – 12:30 (Open to all)

Genomics for Robust Cows workshop

8th June 10:00 – 17:00 (Open to all)

EADGENE Workpackage Meetings

EADGENE WP1.4 Analytical tools

4th June 18:00 - 19:00

EADGENE WP6 Population Genomics

5th June 18:00 - 20:00

EADGENE WP1.3 Bioinformatics and WP5 Structural genomics

7th June 08:30-12:30

EADGENE WP8 Operational Genomics

7th June 12:30 - 14:00

Registration and further information

Registration for this event is free, but places are limited, so we urge anyone who wishes to attend to register as soon as possible to avoid possible disappointment. Further information, the **online registration form**, programme updates, travel and hotel information are available in the events sections of the EADGENE website (www.eadgene.info). Please note that the deadline for registration is **30th April 2007**. Please contact conference@sabre-eu.eu if you wish to make changes to your registration.





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People, money & animals : EADGENE ethics

Christian Gamborg and Peter Sandøe, Danish Centre for Bioethics and Risk Assessment

The Danish Centre for Bioethics and Risk Assessment (**CeBRA**), hosted an **internal EADGENE workshop, 28-29 Nov 2006** applying the so-called modified ethical matrix to address and discuss ethical issues and concerns in relation to animal disease genomics and host-pathogen relationships. A select group almost of 20 people from the Network - across Activities and across partner institutions, including junior and senior staff as well as members of the GC and the IPUDC - participated. The workshop was run with the help of Kate Millar of the University of Nottingham.

Aim of the ethical matrix workshop

The aim of the group-work session at the Copenhagen workshop was twofold. First, it was to enable participating Network members to explore ideas and opinions about EADGENE-related ethical and societal issues. A second aim was to build up capacity in order to spread ethical discussion into the full Network.

Participants were given a short introduction to bioethics followed by an account of the goals, the content, the structure and the use of the ethical matrix (see Figure 1). Then participants were divided into two groups and asked to interpret the principles in the matrix in relation to interest groups that are prominent in the context of EADGENE. The two groups were furthermore asked to discuss how they would judge the impact of EADGENE work (e.g. a vaccine) in relation to each principle, to identify what they saw as key ethical issues for the Network, and to set out what they believed to be the main responsibilities of EADGENE researchers.

One group took a general approach: it considered EADGENE animal disease and health across the board. The other group focused on a specific EADGENE-related case involving Mastitis, using this case as a vehicle with which to identify and discuss ethical issues. For further information on the actual content and procedure of the workshop, as well as on evaluation by participants and copies of the matrices produced, please see the workshop report which is available in the EADGENE Intranet (www.eadgene.info).

Results of the workshop compared to previous approaches within EADGENE

Prior to the ethical matrix workshop, at earlier stages of the EADGENE project, several issues were identified as significant topics for the Network to address (Meyer, 2005; Meyer, 2005b). Different approaches – such as document analysis and a series of interviews with individual researchers – have been used in order to identify ethical challenges to be dealt with by EADGENE researchers and the Network as such. The results are rather similar in so far as all of them identify three major and interrelated areas of concern. Interpreted in broad terms, these approaches all identified three types of ethical issue: *how to relate to the public at large*; *how to cope with vested interests and conflicts of interest*; and *how to combine the use of and the care for animals*.

Exchanges within the Network on the first issue, concerning relations with the public at large, have consistently been characterised by ambiguity concerning the purpose of communicating with other citizens about the research project: is the purpose one of educating and convincing other citizens about the rightful aims of the project or should relations with the public be linked to internal reflection. No arguments were made against a general principle of openness at the workshop.

The second major area of concern — how to cope with vested interests and conflicts of interest was taken up at the internal seminar in relation to the growing prominence of intellectual property rights in the field of biotechnology. This is an area of outspoken disagreement both in wider society and among scientists in general, EADGENE participants included. The disagreement is linked to different understandings of the relationship between public goods and private property.

Finally, the challenge of combining the use of and the care for animals — in research as well as in agricultural production — is prominent in the public sphere and must be confronted by the Network. In the reports on ethical and societal aspects of the research project, production animals have been the main focus. At the internal seminar, however, attention shifted from production to research animals.

Interest group	Respect for		
	WELLBEING	AUTONOMY	JUSTICE
PRODUCERS/ INDUSTRY	1	2	3
CONSUMERS/ CITIZENS	4	5	6
SCIENTISTS	7	8	9
ANIMALS IN RESEARCH	10	11	12
PRODUCTION ANIMALS	13	14	15
THE ENVIROMENT	16	17	18

Figure 1. The modified ethical matrix for EADGENE



The next step: local workshops

The next step for EADGENE and the CeBRA team will be to arrange a number of *local/regional* workshops. These will build on the framework of the modified ethical matrix, allowing participants to identify what they see as the most significant ethical issues, to prioritize among issues, and to discuss what they see as focal areas for the Network.





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Fish Pathogens Working Group (WP7.1)

By B.Hoyheim (NSVS) & P.Boudinot (INRA)

The research proposal "Genomics of Pathogen/salmonids interactions and genetic resistance" was launched by the EADGENE fish pathogen working group in January 2007 and has been approved by the EADGENE management team. The working group consists of 5 partners and will focus on the salmonids Atlantic Salmon and Rainbow Trout, and on the viruses Infectious Salmon Anaemia Virus (ISAV) and Infectious Pancreatic Necrosis Virus (IPNV), which have significant economic importance for the aquaculture industry.

ISAV is an orthomyxovirus, and its interactions with the host constitute a model for influenza. Thus, subversion strategies of ISAV may be interesting for both fish and human orthomyxovirus biology. There are variations in virulence between strains of ISAV, which can partly be explained by differences found in the surface glycoproteins. The natural disease caused by ISAV is only found in Atlantic salmon (*Salmo salar*) and not in closely related species. However, ISAV experimental infection also induces clinical signs and mortality in rainbow trout.



Infectious pancreatic necrosis virus (IPNV) belongs to the genus Aquabirnavirus within the family Birnaviridae and IPNV is at the moment the most economically important disease for Atlantic salmon. It was known to be a disease of fry (in freshwater), but an increasing number of outbreaks are reported on smolts in seawater. Aquabirnaviruses viruses exhibit a high degree of antigenic heterogeneity and variation in infectivity and pathogenicity towards different species of fish. Also for IPNV there is a comparative model in chicken (infectious bursal disease virus, IBDV) where it causes immunosuppression.

These viruses therefore constitute good models for the analysis of the mechanisms responsible for genetic resistance and viral pathogenesis.

The EADGENE fish pathogen working group will use challenge experiments in order to study the response of infected fish compared to their uninfected counterparts. Studies include QTL scan on Atlantic salmon and transcriptome studies on both fish species after challenging as well as investigation of the modulation of the cell response to the pathogen by analysing TLR signalling cascades and complexity by PAMP from different pathogens as well as subversion of immune response by ISAV. Finally, the working group will generate tools for the study of virus/host interactions by performing reverse genetics of ISAV after infection of rainbow trout.

2nd EADGENE Workshop on Mastitis

By Hans-Martin Seyfert (RIBFA, Germany)

The second scientific meeting of EADGENE's Mastitis Working Group was hosted by Drs Elisabeth Glass and Kirsty Jensen at Roslin Institute in Scotland, on 1-2 March 2007. Twenty-six delegates from the various mastitis research groups shared results from their ongoing mastitis related research.

Transcriptome profiling data were presented from udders of cows infected with live *E. coli* or *S. aureus* pathogens (Kirsty Jensen, RI, UK), or *S. uberis* (Astrid de Greeff, ASG, Lelystad, NL). Guro Boman and Ingrid Olsaker (NSVS, Norway) complemented these udder data with transcriptome profiles of bovine macrophages after challenges with *S. aureus* pathogens. Juliane Guenther and Hans-Martin Seyfert (RIBFA, Germany) reported on a comparative analysis of the cytokine profiles elicited by *E. coli* or *S. aureus* infections in vivo, in the udders of cows or in vitro, in primary bovine mammary epithelial cells. Dirk-Jan de Koning (RI, UK) reported on the results from the EADGENE Data Analysis workshop in Tunc (1-3 November 2006), in which the transcriptome profiling data (as established by Kirsty Jensen and Liz Glass using the *E. coli* or *S. aureus* infected udders from the RIBFA/RI project) had been used as model data to evaluate different strategies, tools and means to identify regulated genes.

Rachel Rupp and Gilles Foucras (INRA, France) updated the group on the mastitis related characteristics of their high and low SSC selection lines of dairy sheep, while Paolo Moroni (University of Milan, Italy) and Alessandra Stella (PTP, Italy) informed the audience about the status of the mastitis research in goats.

Elisabetta Guiffra and Sem Genini (PTP, Italy) put forward the idea of exploiting the EADGENE mastitis research as a project for Operational Genomics (WP8). This could help bring the basic research of the mastitis working group closer to application. Collaboration with the SABRE project could also be very helpful in this regard, and Mogens Lund (University of Aarhus Faculty of Agricultural Sciences (DIAS), Denmark) informed the group about mastitis research in the frame of the SABRE project. There was also discussion of how to bring the expertise of the working groups of Structural Genomics (WP5) and Quantitative Genetics (WP6) into the mastitis research.



Delegates of the 2nd EADGENE Workshop on Mastitis

Some shortened presentations from the meeting can now be viewed on the EADGENE website at:

<http://www.eadgene.info/NewsandEvents/EADGENEEvents>





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Contact Us

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Contributions & suggestions are always welcome!

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Upcoming EADGENE Events

News insights into mixed model methodology with applications to genomics and biostatistics

21– 25 May 2007- La Londe, France

EADGENE is funding 20 registration fees for EADGENE PhD Students.
<http://www.eadgene.info/TrainingCourses/Training/EADGENEcourses>

Bovine Annotation workshop

23-25 May 2007, Hinxton, UK

A 3 day annotation “jamboree” organised by EADGENE and SABRE.
<http://www.eadgene.info>

Animal Biotechnology and its Application to Animal and Human Health

14 - 16 June 2007, Wellcome Trust Genome Campus, Hinxton, UK.

This meeting aims to bring together those using genetics, genomics, transgenesis, developmental analysis and other techniques of molecular biology to discuss applications to veterinary and medical sciences.
<http://www.esf.org/conferences/07206>

International Symposium on Animal Genomics for Animal Health (AGAH)

23-25 October 2007, OIE Headquarters, Paris, France.

This conference aims to identify critical needs and opportunities to advance the use of animal genomics to solve problems in animal health.
<http://www.ars.usda.gov/meetings/AGAH2007/index.htm>

Management Communications

A Partner meeting for all the WP Leaders will take place **24 - 25 May 2007** in **Cordoba**. The aim of the meeting is to update the Partners on the progress of each WP and to discuss the evolution (work and budget) of each of the activities for the next 2 years.

In order to improve the management of the Network, the updated **Management Procedures report** provides answers to some of your questions. For example, it provides guidance on the procedures for **organising a meeting**, the procedures for **declaring expenses** and the procedure to **complete the “Plan for using and disseminating the knowledge”**. Please do not hesitate to consult this document for guidance. It is available from the EADGENE Intranet (see article below).

Everybody involved within the EADGENE project should fill in the **Dissemination Plan**, and in particular section 2, which includes past and future activities of dissemination such as a **list of publications (as a result of Indirect/Direct EADGENE funds)** and a **list of oral scientific presentations and abstracts** related to your EADGENE research. Please send your contribution to ayuso@jouy.inra.fr.

Please add an “acknowledgement” to any of your **publications** which result from direct and indirect funding by **EADGENE**. It is also essential to send an electronic version of these publications to ayuso@jouy.inra.fr.

New EADGENE Website

Those of you who have visited the EADGENE website recently will have noticed that there has been a major overhaul. The two original EADGENE websites - www.eadgene.org for scientists and www.eadgene.info for the public - have merged into one new website at the www.eadgene.info address.

Partners are invited to register for the EADGENE Partner Intranet, using the “register” button in the top right of the screen. Once your registration has been authorised by the Administrator you will have access to additional pages, in a secure password protected area. The Intranet is designed to give EADGENE Partners access to internal project news, downloads, discussion forums and other important information about the project. Each Workpackage and Working Group has its own page with contact information for the WP Leader, the objectives of the WP, milestone and deliverable information, and downloads such as deliverable reports, minutes of meetings, and other internal documents. We would welcome your initial feed back and

