



## Network News

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### Welcome

The fourth Network News highlights some of the progress made in the first 18 months of the EADGENE Network. There is an update from Prof Hans-Martin Seyfert on behalf of the mastitis working group, a report on a second successful EADGENE microarray training course, some details of a data analysis workshop, and an article from the Knowledge Management Working Party. We are also pleased to announce that the next major EADGENE event, the EADGENE Days 2006, will take place at the end of June in Oslo. We hope to see you there.

### EADGENE Days 2006

You are kindly invited to attend the next **EADGENE Days**, which are planned for **29-30th June 2006** at the **University of Oslo**, following immediately after the 4th International Veterinary Vaccines and Diagnostics Conference (IVVDC) (<http://www.ivvdc.org>).



The EADGENE Days 2006 meeting will highlight the achievements of the first 18 months of the EADGENE Network of Excellence through a programme of presentations, short talks, discussions and poster sessions. The meeting will focus on the integrating activities within the Network and will include sessions on: bioinformatics facilities within EADGENE; the outcomes of EADGENE funded short-term stays at partner institutes; and EADGENE's resources and research.

We are pleased to announce that the conference will open on the Thursday evening with a plenary lecture by Joan Lunney of the United States Department of Agriculture. This will be followed by the conference dinner and a poster session, providing ample opportunity to meet colleagues from the scientific community and the animal health and breeding industries.

Several working group meetings are planned for the Thursday and Friday afternoons, so we recommend you check the EADGENE website for regular updates. Rooms can be booked for working group meetings via the registration form.



Registration should be at your earliest convenience, but no later than 31 May 2006. A registration form, further information and programme details are available on the EADGENE website ([www.eadgene.org](http://www.eadgene.org)). Completed registration forms should be emailed to [eadgenedays@effab.info](mailto:eadgenedays@effab.info). A convenient hotel booking service is provided by the IVVDC, via the registration process on their website ([www.ivvdc.org](http://www.ivvdc.org)).

Please pass this information on to interested colleagues.

We look forward to meeting you at this event.





## Network News

### EADGENE Data Analysis Workshop

As part of EADGENE's commitment to exploring and evaluating analytical tools (WP1.4), a **data analysis workshop**, focusing on the analysis of **microarray** data, has been planned for **1-3 November 2006** in **Tune, Denmark**.

For this workshop we are planning to distribute a data set from a collaborative EADGENE research project as well as simulated data. Participants will be given access to the datasets when they have registered and signed the IP and publication agreement related to the workshop data. Participants will then have the opportunity to analyse these data according to their preferred techniques, or according to the questions they believe are appropriate for the data. Results will be presented and discussed at the workshop. We aim to publish the main outcomes of the workshop, as well as specific reports by the groups that analysed the data in a 'Special Issue' of a suitable journal.

We will shortly be providing information on registration but for the moment we would kindly request interested groups to note their interest with Caroline Channing (caroline.channing@bbsrc.ac.uk).

## Research Update: Mastitis Working Party

By Professor Hans-Martin Seyfert (RIBFA)

Why can some pathogens survive in the udder and others not? Persisting infections of the udder (chronical mastitis) is one of the most urgent problems in maintenance of our dairy animals. It is a problem not only for cows, but also for goats and sheep. These subclinical infections cause more than 80% of all financial losses associated with mastitis (over €1,000M per year in Europe). Moreover, they affect severely the well-being of our dairy animals: How must one feel, having an organ of the size of an udder chronically infected?

This is the background of why the EADGENE NoE has targeted mastitis as one of the four topics for its Joint Research Programme. EADGENE seeks to apply the state-of-the-art techniques of 'Functional Genomics' to eventually reduce the risk and incidences of mastitis.

Functional Genomics requires us to first record all genes being regulated in the course of any udder infection, to next filter out those being specifically regulated by a given pathogen species, and then use bioinformatics to identify the functional interplay of genes at hand of their co-regulation. The chromosomal localisation of the thus characterized key genes will eventually be exploited to evaluate the benefit of their variants in the active breeding population. To make this complex endeavour a success requires - and profits from - international collaboration.

EADGENE partners from seven different European countries are working together, analysing experimentally induced udder infections in cattle, goat and sheep. A key feature of the added value provided by collaborating in the EADGENE Network is the opportunity to compare the activation of immune mechanisms in the udder across species, elicited by different, well-defined pathogen species. Thus, results emerging from the different national approaches can be combined. Their comparative evaluation will highlight the mechanisms relevant for clearing the udder from an infection much better than considering any single approach alone.

Crucial for meaningful comparisons of experiments conducted in different laboratories and across different host species, is the application of common tools for transcriptome profiling. Here again the collaboration within the EADGENE network is helpful: The mastitis working group has chosen to apply the 'immune biased' bovine cDNA array, which has been developed by the Roslin Institute and ARK Genomics (Scotland) as the central tool to profile the regulation of the transcriptome during infection.

First results of these analyses were presented at the first meeting of the Mastitis Working Group in Lelystad (NL) on the 2<sup>nd</sup>-3<sup>rd</sup> February 2006. Comparison of the data between udder infections that were experimentally elicited with pathogenic strains from either *E. coli* or *S. aureus* show that the highly virulent *E. coli* pathogens regulate many more genes in the udder than the *S. aureus* pathogens. These, however, cause a subclinical, chronic infection rather than the heavy, acute mastitis elicited by the *E. coli* pathogens. The first data from the infections conducted in cows with *E. coli*, *S. aureus* and *S. uberis* pathogens have now been handed over to the bioinformaticians to filter out regulated, coregulated and pathogen-specific regulated genes.

For more information on the groups involved and the different approaches used, please view the presentations of this meeting at <http://lotus5.vitamib.com/hnb/eadgene/eadgene.nsf/web/frame?openform>, and go to Joint Research Programme / Mastitis Working Group.



Photo: The EADGENE Mastitis Working Group





## Network News

### Knowledge Management Working Party Update

After an open call at the website, five senior managers of the breeding and animal health industry have committed themselves to EADGENE in order to form the Knowledge Management working party (KMwp\*) together with the technology transfer facilitator of EFFAB. All these industrial members have had extensive experience of cooperative research projects with institutes and universities. Therefore, they are familiar with practical ways of sharing the knowledge generated in these projects between the parties involved, as well as with the problems which might arise when negotiating a fair distribution of technology.

The first meeting of the Knowledge Management Working Party took place on 12 January 2005 in Amsterdam. During 2005 the group was able to gather a lot of important documents for setting up contracts between Industry and Research within and over the European borders. Over several meetings with some good discussions, the group was able to select the most important documents. All this eventually resulted in a very helpful report: Do's and Don'ts Technology Transfer Protocol, which will soon be available at the EADGENE website!

The group considers that the goal of patenting the produced innovations sustained by EU-funded research and sharing the advantages with the inventor is to motivate research institutions to disseminate the fruits of their research. Based on these activities, the group has worked in conjunction with a new world of activities linked with patenting. The group of managers participating in the KMwp soon demonstrated that the main objectives of the EU regarding patenting were certainly achieved; but a lot of unplanned consequences came up too, necessitating the use of severe measures to confront them.

Another important goal of this group is to aid the mission of universities in relation to the problem of free dissemination of basic knowledge with practical and industrial application. The position of the group is that scientific research has in some way been reduced due to the academic world's opposition to the sharing of acquired knowledge with others unless such sharing is accompanied by legal agreements about "reach-through" royalties on potential findings and the right to restrict the publication of results. The group of senior managers also expressed the risk of industries demonstrating against the business-oriented attitude of research institutes' managers.

The group intends to create the right atmosphere to support knowledge dissemination and at the same time defend the interests of all stakeholders, from both research institutes and industry. Considering these different items, the group felt that it was important to establish a guide for industries, research institutes and scientists, with the objective to create the right scenario for efficient research activities in the framework of current legislation.

\*KMwp: Steen Peterson (*The Danish Pig Breeders & Slaughterhouses, Jan-May 2005*); Andrea Rosati (*EAAP*); Toine Roozen (*Genesis Faraday*); Wim van Haeringen (*Dr. Van Haeringen group*); Alain Malafosse (*UNCEIA*) & Angela van der Sanden (*EFFAB*).

### EADGENE Microarray Design and Analysis Course, December 2005

An **EADGENE** and National e-Science Centre sponsored **microarray design and analysis course** was held at the e-Science Institute in Edinburgh from 5<sup>th</sup> to 7<sup>th</sup> December 2005. The three-day course was organised by members of EADGENE and Ark-Genomics based at the Roslin Institute.

The course aimed to provide participants with a robust microarray analysis strategy that they could take back to their laboratories. The course covered the set stages of microarray design and analysis: experimental design; image analysis; removal of outlier slides; normalisation; statistical analysis of gene expression; and interpretation and reporting of results.



*Delegates at work during a practical session*

The course proved very popular and was fully booked, with eighteen delegates from EADGENE partner institutes in Belgium, Denmark, France, Netherlands, Norway, Slovenia, and UK, two non-EADGENE UK delegates. The delegates appreciated the format of the course, with lectures and practical sessions run by experts in each field, using real data and case studies. Overall the delegates rated the course as very good and likely to change the way they worked in the future.

Following on the success of this first course, ARK Genomics has run another microarray design and analysis course from 2-4 May 2006 in Edinburgh, and plans to continue running this course at regular intervals. For further information on this course please visit [www.ark-genomics.org](http://www.ark-genomics.org).





## Network News

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Contributions & suggestions are always welcome!

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## Upcoming Meetings

### 30th International Conference on Animal Genetics (ISAG 2006)

20-25th August 2006, Porto Seguro, Brazil

This bi-annual conference focuses on animal molecular genetics.

<http://www.cbra.org.br/eventos/XXXisag.do>

### 8th World Congress on Genetics Applied to Livestock Production

13-18 August 2006, Belo Horizonte, MG, Brazil

This is the meeting point for scientists involved in genetic improvement of domestic animals.

<http://www.wcgalp8.org.br/paginalnicial.do>

### EurSafe 2006

#### 6th Congress of the European Society for Agricultural and Food Ethics

22-24 June 2006, Oslo, Norway

<http://eursafe2006.etikkom.no>

### 4th International Veterinary Vaccines and Diagnostics Conference (IVVDC)

29-30 June 2006, Oslo, Norway (immediately prior to the EADGENE Days)

The conference focuses on recent progress and future perspectives in the fields of vaccinology and diagnostics.

<http://www.ivvdc.org/>

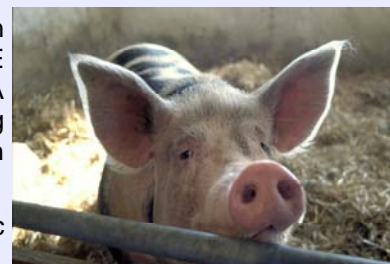
## Links with other European Projects: FABRETP



The Farm Animal Breeding and Reproduction Technology Platform (FABRE-TP) aims to support **stakeholder involvement** in the set up of a **partnership led by industry** to tackle major issues concerning **sustainable animal breeding and reproduction** in Europe. It will mobilize the research, technological development and innovation efforts in Europe, and bring together key stakeholders around a common vision for the development of the technologies and issues surrounding farm animal breeding and reproduction.

FABRE TP has developed a **Vision Paper** on farm animal breeding and reproduction in the medium to long term (15-20 years), which was featured at the EADGENE Industry Days in October 2006, and officially launched on 2nd March 2006. A **Strategic Research Agenda** is currently being developed, with the aim of ensuring the commitment of the stakeholders involved, including business, research organisations and funding organisations at the national level.

Two EADGENE partners have responsibility for the industrial (EFFAB) and scientific (Roslin Institute) coordination of FABRE-TP, with a third EADGENE partner (INRA) involved in the Strategic Research Agenda working group.



*Photograph property of INRA*

## Management Communications

**A Partner meeting** for all the WP Leaders will take place on the 11th and 12th May in Paris. The aim of the meeting is to update the Partners on the progress of each WP and to discuss the evolution of the integrating activities and the joint programme of research.

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 producing a deliverable, the procedures for organising a meeting, and the procedures for declaring expenses. Please do not hesitate to consult this document for guidance!!!

**1st Financial Annual Report and advance of the money for the 2nd year:** The money for the 2nd year has not yet been paid due to the late delivery of some of the partners' form C and audit certificates to us, and therefore to the Commission. In order to prevent this happening next year, please take care not to forget the **official stamps** and ensure that **Form C** is filled in correctly (including third party's expenses in the partner Form C) for the next annual reporting .

Our request for **Clause 39** was agreed by the Commission. This means that audits certificates will not be necessary each year for Partners who receive less than or equal to **150 000€**. Instead it may be possible to carry out audits of these Partners every 2 years, but they will still be required to report their expenses to the Management team during the annual reporting.

