

EDITORIAL

This is the eleventh EADGENE Newsletter.

Communication in science is highlighted and the next EADGENE days are advertised.

This time Gloria Estes is our "in the picture" guest.

Furthermore, the development of the Animal Trait Ontology by EADGENE is described.

Angela van der Sanden

Science Communication

By Dr Siân B. Astley*

Last week someone asked me why science communication about food was important. My answer was because we all want to know what is good and safe to eat. This means that talking to consumers and others about diet and health is relatively easy. People recognise that food can bring benefits, and young and old alike want to know more about what they are eating including where and how it was produced.

We understand the connection between fruit that is difficult to peel and juice that is gentle pasteurised, but may not understand the terminology. Similarly, heavy rain and increased prices for cereals and root crops, and the need for calves from milk herds are unfamiliar, and agricultural research is beyond our experience. It is important therefore to communicate not only the science but also its ethical, legal and societal aspects.

It is not that such activities will make the public like science. Knowledge can reduce fear or lead to questions that otherwise go unasked, but this is a risk inherent in all communication not just science. It is that most of us are interested and want to feel that information is available for us, regard-

less of whether we choose to access it or not. We want access the information in a format of our choice – WAP, RRS or email as well as more conventional methods such as books and leaflets – and importantly it might be argued we have already paid for these services; European research is financed by tax payers in the presumption of benefit for society.

One reason people give for not eating healthily, apart from not liking certain foods, is apparently conflicting messages about diet and health. Public health messages are channelled through government and healthcare, but information is also relayed through the media, which seeks to tell a story not educate the public. The majority of journalists writing about science are not scientists, and science journalists must cover all of science not just their speciality. Their timescales and style are utterly opposed to that of research; deadlines are immediate, details are less important than the story and conflict is entertainment.

Working with journalists can mean reaching large numbers of people, and if you can sum up your story as who, when, where, what, why and how then it is much more likely to be published without the interference of subeditors with an eye for catchy headlines. If tabloid journalism is too intimidating, trade magazines and websites offer a useful alternative. When targeted for a specific audience (e.g. farmers or retailers) articles can be more detailed, and editors welcome submissions since relevant topics are always current.

So, why might someone who will always think of herself primarily as a research scientist give up practical work to write and talk about what her colleagues are doing? The simple answer is that the technical aspects of research were not sufficiently stimulating for me. Making science accessible for different stakeholders is. It also happens to be fun, but more importantly it is an essential part of the research process.

*Dr Siân B. Astley, European Communications Manager, Norwich BioScience Institutes, Norwich Research Park, Colney,

Animal Disease Genomics Conference

9th-12th June 2008, Edinburgh, UK



The EU-funded project **EADGENE** invites you to their annual meeting on Animal Genomics Research. 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 conference features 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 the Med-Vet-Net Network of Excellence.

Animal Disease Genomics: Opportunities and Applications Conference

Tuesday 10th June and Wednesday 11th June

Satellite Workshop: EADGENE Animal Trait Ontology Initiative

Thursday 12th June

Several other closed workpackage meetings will also take place during the conference

For more information please visit: www.eadgene.info



Hyperlinks

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Source: <http://www.preventivemedicine.nrp.org.uk>

The development of an Animal Trait Ontology (ATO)

Collaboration has started between Europe (Hein van der Steen, ATO coordinator, EADGENE/SABRE) and the US (James Reecy, NRSP-8 Animal Trait Ontology Project) with the objective to develop unified animal trait ontology (ATO). This will help facilitate the transfer of trait and genomics information across agricultural species and the links with information from human and from 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.

An important aspect is the dissemination of information and global coordination of ATO activities. The objectives are: 1) to provide information for individuals and groups that have an interest in the development and the use of an ATO and 2) to make sure that ATO related activities fit with and support the development of an integrated ATO, avoiding 'competition', overlap and wasting of resources.

Livestock/aquaculture production traits are sets of animal phenotypes described for their nature, quality, quantity and biological stage. Due to differences in methods of detection or measurement, scope of description and/or customs, a trait may be described in several different ways. In order to compare and use information, we have to make a "standard" way of trait description. To solve this problem, "Trait Ontology" is introduced to classify and organise the traits. Ontology is a classification methodology that defines a common vocabulary in a structured way for useful information sharing. Animal production traits may be classified in many different ways based on their functions (who uses them), features, property, etc.

The amount of genomic information associated with livestock species traits is growing exponentially. Traits, underlying traits, the physiological basis of traits and the pathways involved are studied across many species, involving thousands of genes and markers. It is imperative that a standard nomenclature be created so that animal science researchers may communicate consistently and unambiguously. The goal of the ATO is to create a medium for the standardization, annotation, retrieval, integration, and analysis of livestock trait information, from the industry level to the genes involved.

Trait information is currently spread amongst journal articles, books, local researcher archives, and other miscellaneous sources. These disparate sources of phenotypic information contribute to the inconsistency of trait terms, and trait information can be inconsistent between different regions of the world. The ATO will help bridge the gap between nomenclatures used in different species, industries, and research groups in different parts of the world.

The project aims to develop the Animal Trait Ontology (ATO) by including trait information for farm animals and aquaculture species and to create a database that will allow the linkage of the trait and other information (QTLs, SNPs, associations, ...) within and across species including mouse, rat, human, etc.

As an example we can look at the situation where a new defect is emerging in a certain species. The first question for a breeding organization is whether it could be heritable. The next question is what to do about it. A description of the defect can be used to find out whether similar defects have been reported in other species, including rat, mouse and human. If so, this may lead to information about heritability, underlying biological processes and pathways and genes involved. Identification of underlying biological processes can in itself lead to pathways and genes. All this information can then be used to develop a strategy, including the design of an R&D program. The ATO will facilitate this process and maximize the chance that all relevant information is included.

A lot of public money is invested to create and standardize data bases that hold information and to develop tools that improve the accessibility of this information. We (the agricultural research community and industry) don't have to duplicate that but we need to be in a position to exploit it. The definition of traits across species and research fields in agriculture and aquaculture can only be done with the support from this community as nobody else will do it. This activity will facilitate the exploitation of the exponential growth of available information. Industry groups have been created for Cattle, Pigs and Poultry. This will be followed by similar groups for Sheep, Horses, Shrimp and Salmonids. The first step is to define the traits as used by the industry. The research community will be involved in the second stage in order to define the links between industry traits and traits used in research.

If you are knowledgeable about a particular set of traits that should be included in the ATO and/or are interested in participating in the development of the animal trait ontology and/or are working on an aspect of an ATO for a certain species, please contact Hein van der Steen (hein.vandersteen@stonebridgeg.com).

In the picture:

Gloria Estes

My name is Gloria Estes and I was born in October 1979 in Minaya, a little town in Albacete (Spain). I studied Molecular Biology in Segovia. In 2003 I started my PhD at the University of Córdoba in the Genetics Department and next March I will defend my PhD Thesis.



During this time, from 1998 until last year I also worked at my family's pub in my free time.

My research group, "Molecular markers in domestic animals", in the Genetic Department is working on swine immune system genetics variability. Moreover we study differential gene expression in gut cells from healthy and Salmonella infected pigs to discover novel candidate resistance genes to obtain animals genetically resistant to Salmonella.

The work group is composed of young people (mainly female) and we have a very good relation between us. We are friends, and enjoy a lot of things together. Sometimes we ask our boss to recruit a male PhD student, but no one of them seems to want to work with us..... Could it be that they are frightened?

During my time in Córdoba I have had the opportunity to learn and to appreciate the fantastic scientific world and I have done a lot of different things in my time here. I have been on several short-term stays: to Barcelona and Pamplona. In April I will travel to Copenhagen to complete my training. I think it is very important to have a good interaction among the working groups because you can learn a lot of things from other people.

I am living in Córdoba now and I share flat with two friends. Córdoba is a beautiful city. I really like to go out for "tapas" and to go for a walk through the city. Some weekends my friends and I go to skate by the riverside (Gualdalquivir river) and we also like going out dancing at night. Moreover, I like to travel: last year I spent my holidays in Portugal and Berlin.

My next adventure will be to travel to the USA, since I have a post-doc contract with the group *Receptor Cell Biology* in the *National Institute of Health (NIH)* in Washington. I am really happy about this, as this is a golden opportunity for me.

