



# Strategic Network Enhancement Initiative (SNEI)

In November of 2009, EmbryoGENE applied for additional NSERC funding under the Strategic Network Enhancement Initiative (SNEI). This program was developed by NSERC to assist Strategic Networks in meeting the goal of developing multidisciplinary and multi-sectoral partnerships in strategically important areas of research and to train the next generation of scientists for academia, government, and industry. All NSERC Strategic Networks awarded in 2007 were recently invited by NSERC to apply for up to an additional

\$200,000 per year to:

1. Build on strengths and support enriched training opportunities through highly qualified personnel (HQP) training supplements.
2. Further the goals of NSERC's international strategy through improved international linkages with existing research groups or experts in the field.
3. To enhance knowledge/technology transfer activities through enhanced extension activities and/or commercialization.

The funding decision was received on January 27, 2010 with EmbryoGENE receiving \$277,500 over three years. The activities approved by NSERC include hosting a satellite meeting, funds for sending HQP to international locales for training, funding for keynote speakers at meetings, and the hosting of an international ethics and policy-making conference. NSERC has requested that EmbryoGENE build a definite plan for HQP training in foreign labs and has indicated that we can negotiate how the funds are to ultimately be used. In preparation for the upcoming AGM, EmbryoGENE administration will be developing an official review process for identifying HQP that could benefit from cross training in international labs which will need to be reviewed and approved by the ISAC.



### Inside this issue:

Platform Update/AGM/New PDF	2
Board and ISAC Biographies	3/4
Project Proposals/ABG Conference	5



# EmbryoGENE Annual General Meeting 2010

---



The 2010 EmbryoGENE Annual General Meeting will be held in Edmonton, Alberta from June 14-16. Participants will be staying at the Varscona Hotel on Whyte Avenue ([www.varscona.co](http://www.varscona.co)), where the meeting will also take place. We are working on an agenda similar to the 2009 meeting as this format worked very well. The scientific meetings will take place on June 14 and 15, with the

Board of Directors and International Scientific Advisory Committee meetings on June 16. Information on how to register for the meeting and the hotel is currently being sent out to all involved with EmbryoGENE. If you have not received an invitation email, please contact Tracy at [tracy.gartner@ualberta.ca](mailto:tracy.gartner@ualberta.ca).

## Transcriptomics Platform Update

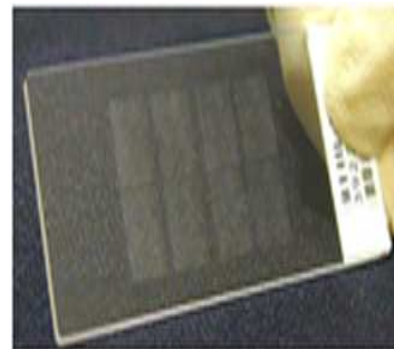
---

At the timing of the last newsletter (November 2009), we had received over 1 million bovine reads, which were being analyzed to produce a microarray that covers the entire bovine transcriptome, including splice variants and isoforms. Agilent had also been chosen for the manufacturing of the slide, a few slides were thus ordered to carry out different tests to determine the specific characteristics of Agilent slides and our variant discrimination capacity. These tests helped us determine optimal hybridization conditions and optimize probe design.

The bovine microarray design has now been completed and the first slides were

ordered. The first hybridizations, comparing *in vivo* controls with *in vitro* bovine embryos, will be performed this March, after which microarrays will be available to all members. A complete analysis of these results will be presented at the EmbryoGENE AGM. The porcine microarray will follow in the upcoming months.

The analysis platform is also coming together nicely, a Beta version of the Laboratory Information Management System (LIMS) and of the FlexArray analysis software are presently being tested and are receiving a positive review. They should be completely implemented this spring.



## Béatrice de Montera—Post Doctoral Fellow, Laval

---

Béatrice de Montera is a Post-doctoral fellow in Epigenomics at the Research Center of Reproduction Biology, Animal Science Department, Laval University, Québec and the newest member of the EmbryoGENE team. For 6 years she has studied the molecular basis of genetic identity and epigenetic variability in adult bovine clones at the Laboratory of Developmental Biology and Reproduction of the French National Institute of Agronomy (INRA) center of Jouy-en-Josas (France). As she has a background in both biology

and philosophy, she is, in parallel, pursuing Post-doctoral studies in Ethics of Biotechnology at the Chair of Canada in Bioethics and Environmental Ethics, Laval University, Québec.

She was the Project manager for an in-house Animal Ethics seminar at INRA center of Jouy-en-Josas for 4 years. She has been a Natural Science lecturer for 5 years at National Museum of Natural Science in Paris and a Bioethics lecturer for 6 years in several Institutes of Agronomy in France.



# Biographies of Board and ISAC Members

---

In this and a number of future issues of EmbryoGENE we will be featuring members of our Board of Directors and ISAC. This issue will feature members that spoke at the 2009 AGM (Christopher Tuggle and Kurt Zuelke) along with members that will present at the 2010 AGM (Graham Plastow and Kevin Sinclair).

## Graham Plastow—Board of Directors

---

Graham Plastow, former Chief Technology Officer of Sygen International (one of the world's largest animal breeding companies when acquired by Genus in 2005) is Director of the Alberta Livestock Program at the University of Alberta. A pioneer of the application of genomics in livestock, he trained in Biology and Genetics at the University of Leicester. He has more than 25 years experience in the management and implementation of multidisciplinary research projects and technology transfer on an international basis. He joined Dalgety's R&D Centre in the early 1980's to explore the application of DNA tech-

nology in the food industry and was responsible for biotechnology research across the group as well as breakthrough R&D for the agriculture division (agchem, seed, produce, feed, and pig genetics). He was also responsible for developing a group wide food safety policy. He has led or participated in numerous international research collaborations and has held positions on boards and committees of industry and research organizations including the Roslin Institute, the Genesis Faraday Partnership (UK), and the Biotechnology Research and Development Organization in the US.



## Christopher Tuggle—ISAC

---



Christopher Tuggle obtained a Ph.D. in Biochemistry in 1986 from the University of Minnesota. From 1987-1990, he held NIH postdoctoral traineeships at Columbia University, NY and the University of Southern California. Dr. Tuggle

joined the Department of Animal Science, Iowa State University (ISU) in 1991 and was promoted to Associate Professor in 1995 and to full Professor in 2001. At ISU, he has been working in two main research areas. First, he is interested in identifying, mapping and analyzing genes involved in economic traits in pigs, focusing most recently on genes controlling variation in *Salmonella* shedding. Second, Dr. Tuggle has a major effort in functional genomics and the bioinformatic analysis of transcriptional regulatory pathways.

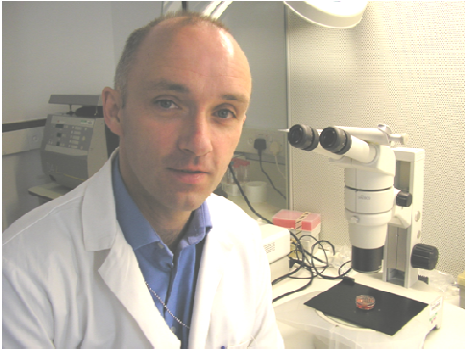
He has published pioneering work validating and using genome-wide porcine microarrays in reproductive biology,

residual feed intake, and immune response. A major strength of these projects is the strong collaborative groups Dr. Tuggle has built to address the complexity in these studies, and collaborates with quantitative geneticists, statisticians, immunologists, reproductive biologists, nutritionists, and computer scientists.

Dr. Tuggle has obtained over \$10 million in external grants as PI and co-PI at ISU and has over 98 refereed publications. He received the 1996 ISU Award for Early Achievement in Research, and the 2001 Midwest American Society of Animal Science Outstanding Researcher Award.

## Kevin Sinclair—Board of Directors

---



Kevin Sinclair is an Associate Professor and Reader in Developmental Biology at the University of Nottingham, UK. His program of work focuses on metabolic programming during early mammalian development, where epigenetic outcomes are determined in embryonic cells and tissues, and long-term developmental consequences assessed in offspring. Whereas his early studies investigated the effects of culture media composition on fetal development leading to the ‘Large Offspring Syndrome’

in ruminants, more recent studies have focussed on the effects of specific dietary nutrients around the time of conception on epigenetic programming of adult health and disease in offspring. His long-term objective is to identify the features of those eggs and/or embryos that give rise to viable and healthy offspring.

## Kurt Zuelke—Board of Directors and ISAC

---

Dr. Kurt Zuelke has been the Director of the USDA Agricultural Research Service’s National Animal Disease Center (NADC) since May 30, 2006. The NADC, located in Ames, IA is the largest US federal facility dedicated to animal health research. The Center has just moved into newly constructed \$470M state-of-the-art facilities capable of supporting high-level bio-containment research in large animal livestock and wildlife species.

Dr. Zuelke’s areas of expertise include: Applying Biotechnology, Genomics, and Systems Biology in animal health and production research; Reproductive Physiology and Developmental Biology; Research Administration and Bio-containment Facilities Operations; Science Policy Development and Implementation.

Kurt completed his undergraduate work in animal science and pre-veterinary medicine at the University of Wisconsin in River Falls, WI. He graduated with a

D.V.M. from the University of Minnesota, St. Paul, Minnesota, in 1988, went on to get a Ph.D. in Physiology from the University of Georgia in 1992, and completed a post doc in toxicology and developmental biology at the University of North Carolina in Chapel Hill in 1995. His first “real” job was as a Research Scientist and Department Head with the Victorian Institute of Animal Science in Melbourne, Australia. The team he led worked on developing genetically-engineered cattle that produced increased levels of protein in their milk and partnering with two other research teams, produced the first transgenic cloned calf in Australia.

Dr. Zuelke returned to the United States in 2001 to join USDA ARS as the Research Leader of the Biotechnology and Germplasm Laboratory in Beltsville. During 2005-2006, Dr. Zuelke served as the USDA representative on President Bush’s National Science and Technology Council where he coordinated fed-



eral agricultural, biotechnology, and life science related issues.

Dr. Zuelke is a Wisconsin native. In addition to wanting to return to the Midwest to be closer to family, Dr. Zuelke was drawn to the NADC because of the unique opportunity to create a new NADC and redefine and progress animal health and veterinary research at a national and international level.

## Project Proposals—2010/2011



Invitations for Year 3 project proposals were sent out via email by Julie Nieminen on January 19, 2010. The project deadline is April 5, 2010 and proposals will be reviewed and approved by the ISAC at the 2010 AGM in June, 2010. Specific projects identified and described in the original NSERC application will serve as the guideline for the

ISAC in their funding decisions. You are invited to refer to the original application to NSERC when preparing your proposal. If you have any questions about the process, please contact Julie ([julie.nieminen@fsaa.ulaval.ca](mailto:julie.nieminen@fsaa.ulaval.ca)) for bovine research, or Tracy for porcine research ([tracy.gartner@ualberta.ca](mailto:tracy.gartner@ualberta.ca)).

## Alberta Ingenuity Centre for Livestock Genomics Technology AGM

The Alberta Ingenuity Centre for Livestock Genomics Technology, formerly Bovine Genomics Program, will be holding their third Annual General Meeting in Calgary, AB from May 11-13, 2010. This year's meeting will be a joint event with the Faculty of Veterinary Medicine at the University of Calgary. The title of the meeting is "Genomics and Livestock Quality Improvement: Bringing it all Together". The theme of the meeting is how genomics contributes to quality issues in

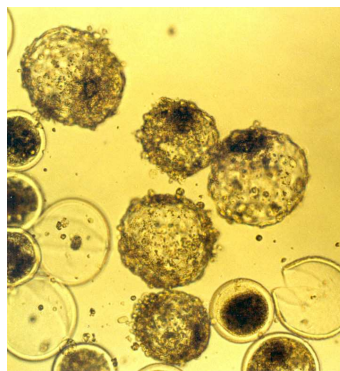
the beef sector in regards to animal health and welfare, eating quality, production systems, healthiness of livestock products, and consumer confidence. The program will feature presentations from nationally and internationally recognized researchers. The deadline for abstracts is March 31, 2010. For further program details and to register, please visit <http://www.albertabovinegenomicsagm.com> or contact [info.aicglt@ales.ualberta.ca](mailto:info.aicglt@ales.ualberta.ca).



## In Closing



**NSERC EMBRYGENE STRATEGIC  
RESEARCH NETWORK**



*Visit us at:*  
[www.embryogene.ca](http://www.embryogene.ca)

This issue was prepared by Tracy Gartner. Should you have any questions or concerns, please feel free to contact Tracy at:

Department of Agricultural, Food and  
Nutritional Science  
3-10V Ag/For Building, Univ of Alberta,  
Edmonton, AB, T6G 2P5  
Phone 780.248.1159  
[tracy.gartner@ualberta.ca](mailto:tracy.gartner@ualberta.ca)