

The 7th Transgenic Technology meeting: debut for “down under” (<http://www.tasq.uq.edu.au/TT2007>)

Marina Gertsenstein · Kristina Vintersten

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Abstract The 7th Transgenic Technology meeting was held in Brisbane, Australia on February 12–14, 2007. Not only did this gathering mark a milestone as it was hosted outside the European continent for the first time, but also because it was the initial meeting to be held on behalf of the new International Society for Transgenic Technologies (ISTT, <http://www.transtechsociety.org/>). As in previous years, the topics were aimed towards both a scientific as well as a technical audience. The subjects covered a wide range of cutting edge applications in the field of genetic modifications in animal models, with the focus on (but by no means limited to) mice. True to the meetings tradition, a large emphasis was also laid on discussions about the management of transgenic production units. With the beautiful Australian sun shining over the venue, and a large number of exceptional speakers, this was a most pleasant and informative conference.

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The Transgenic Technology (TT) meeting is by now a well-known and widely appreciated conference covering topics in the intersection between science and technology. Since their initiation in 1998 by Johannes Wilbertz (Karolinska Institute, Stockholm), the TT meetings have steadily grown in reputation and popularity. This year, the 7th meeting was no exception. 145 attendees from 20 countries all over the world made their way to the continent of Australia in order to participate in what was to become a very successful event. Elisabeth Williams, head of the Transgenic Animal Service of Queensland at the University in Brisbane, did an excellent job with her organizing committee team, consisting of Ric Broadhurst (AgResearch, New Zealand), Graham Kay (Queensland Institute of Medical Research, Brisbane), Frances Lemckert (Westmead Children’s Hospital, Sydney), Dmitry Ovchinnikov (Institute for Molecular Bioscience, Brisbane), Julie Scott (Walter and Eliza Hall Institute, Melbourne), Lluís Montoliu (CNB-CSIC, Madrid) and Johannes Wilbertz (Karolinska Institute, Stockholm), to create a most welcoming, enjoyable and informative agenda. They spared no efforts to ensure that the delegates were well served with accommodation, plenty of social activities, good food and a very well chosen venue site.

After the customary registration and welcoming opening of the meeting, the first session started off with three talks around the subject of assisted reproduction and its applications in transgenic and

M. Gertsenstein (✉) · K. Vintersten
Samuel Lunenfeld Research Institute, Mount Sinai
Hospital, Toronto, ON, Canada
e-mail: gertsenstein@mshri.on.ca

K. Vintersten
e-mail: vintersten@mshri.on.ca

knock-out production. First out, Bjorn Oback (AgResearch in New Zealand), gave a first-rate presentation on the latest developments in nuclear transfer cloning in both farm animals as well as in mice. He described how his new technique, which does not require Piezo drilling but uses zona-free embryos and lectin-mediated attachment, greatly improves reproducibility and increases throughput. Next out, Stefan Moisyadi (University of Hawaii, USA) presented his most recent work on the use of ICSI-based PiggyBac transposase transgenesis. Finally, George Thouas (Monash University, Melbourne) gave a very informative overview on the topic of mouse *in vitro* fertilization.

The second session started with the presentation of travel award diplomas sponsored by ISST to three student/technician ISTT members (Maria Liljander, Lund University, Sweden; Ana N6voa, Gulbenkian Institute, Oeiras, Portugal; Pengyu Gu, Nanjing University, China) by Lluís Montoliu (President of ISTT) and continued with the much-anticipated presentation of this year's winner of the fifth genOway prize for Transgene Technology, Professor Charles Babinet (Institut Pasteur, Paris). The audience was mesmerized by a wonderful presentation that the speaker himself called "A journey through the fascinating world of mouse functional genetics." Professor Babinet showed us a number of historical photographs from the very early days of pre-implantation embryo manipulation, and the message he delivered about the issues surrounding "no obvious phenotype" will surely stay in our memory.

The next day started off with three presentations on strategies and applications for knock-ins and knock-outs. First, Klaus Matthaei (Australian National University, Canberra) delivered a very informative talk on tissue and temporal control of gene expression *in vivo*, focusing on the lac operon system. Richard Behringer (U of Texas, M.D. Anderson Centre, Houston) came next, and gave us an exceptional talk on the use of transposon-mediated insertional mutagenesis system in rats. The focus on rats was a welcoming change since, as Richard pointed out, "Rats are not just big mice!" and they serve as most adequate models for physiology, behaviour and toxicology studies. Last but not least, Andrew Perkins (Institute of Molecular Bioscience, Brisbane) covered the topic of expression profiles in ES cell differentiation.

After a coffee break (or morning tea as our Australian friends call it) and poster exhibition, the audience gathered again for an exciting session about new trends in transgenic production. Thom Saunders (University of Michigan, USA), a well known name within the transgenic community, gave a brilliant talk on transgenic rat production. His presentation was full of wonderful pictures, very informative video clips, and he wrapped up his discussion with presenting an excellent example of application in kidney disease. David Valenzuela (Regeneron, USA) presented their VelociGene high throughput approach for gene targeting, and Satomi Tanaka (University of Kumamoto, Japan) gave us very interesting insights into the whole embryo culture system and transfection of post-implantation embryos and fetal ovaries.

The second day's afternoon started with a now classic round table discussion on the topic of running a transgenic unit. Ric Broadhurst (AgResearch, New Zealand), Karen Brennan (Children's Hospital Westmead, Sydney), Boris Jerchow (Max-Delbrueck centre for Molecular Medicine, Germany) and Kazuki Nakao (Riken, Japan) each gave a short presentation of their respective facilities, which provided the baseline for a very fruitful discussion with the audience. The importance of developing screening strategies before experiments, quality purification of the transgenes and BACs and mouse pathogen outbreaks were among the topics that were discussed. At the end of the session, Tom Fielder (UCI-Irvine, USA) presented the summary of the web-based price survey he conducted in December of 2006. Its very informative results are available at his web site: <http://www.research.uci.edu/tmf>.

After a refreshing afternoon tea, the program continued with a session dedicated to the abstracts of new work selected for short presentations. Ragnar Mattson (Lund University, Sweden) talked about chromosomal loci controlling breeding capacity in female mice, Marina Gertsenstein (Mount Sinai Hospital, Canada) presented trophoblast-specific gene manipulations using lentivirus, Lluís Montoliu (CNB-CSIC, Madrid) described ICSI mediate YAC transgenesis, and Garry Bloomfield (Quantum Scientific) gave a very informative talk on high resolution *in vivo* imaging systems developed by VisualSonics. The day was ended by the 2nd ISTT General Assembly followed by a seafood dinner.

The final day of the meeting was every bit as exciting as the first two. This was clearly evidenced by the number of delegates that stayed virtually the same all the way until the end of the last session. In the morning, we heard four presentations on the use of transgenics in biomedical research. First out was Dmitry Ovchinnikov (Institute of Molecular Biosciences, Brisbane) describing the use of transgenes to study macrophage function in his MacGreen and MacBlue mice. Next, Kerry Fowler (Murdoch Children's Research Institute, Melbourne) gave a wonderful presentation on how transgenic animals fit into the path from gene/protein function to clinical use, using examples such as juvenile arthritis, asthma and Thalassemia. Phil Crosier (University of Auckland, New Zealand) then gave a very informative and nicely presented overview of the use of Zebrafish as a model system and more specific applications of Transposase based transgenics to study Inflammatory Bowel Disease and angiogenesis. His talk was full of beautiful images and very informative real-time movies. Finally, Satish Kumar (CCMB, India) presented his work on the study of Casein expression and milk production in mice.

After a short break, we then returned to the next session: resources for transgenic research. Frank Koentgen (Ozgene, Australia) showed us a state-of-the-art research animal management software. Stuart Read (NHMRC Australian Phenome Bank, Canberra) gave an admirable overview of the wide range of resources they have available to the research community, aiming to establish and operate a data base of all genetically modified strains held in Australia. Darryl Irwin (Sequenom, Brisbane) described their cost-effective speed congenic method. Last but

definitively not least, Jan Parker-Thornburg (M.D. Anderson Cancer Center, Houston, USA) gave one of the highlight presentations of the meeting on a topic with enormous importance, and all too often too little attention: public outreach and education. Her success in engaging the audience was proved by the speed with which all hand-out information she had brought with her disappeared from the podium immediately after her talk.

The organizers dedicated the last session to cover a topic that was connected to a hands-on workshop right after the meeting: gamete and embryo cryopreservation. Carlisle Landel (Thomas Jefferson University, Philadelphia), Michelle Lane (Adelaide University) and Jillian Shaw (Monash University, Melbourne) all contributed with unforgettable presentations, each of which complemented the other. Carlisle gave us some very useful insight in the recent technological improvements in mouse sperm cryopreservation, while Michelle presented the use of the cryoloop vitrification of mouse oocytes and embryos. Lastly, Jillian Shaw, described her most recent work on cryopreservation of ovarian tissue and ovary transplantation.

Elisabeth Williams and her team succeeded in creating an excellent meeting. We can not say anything else than a big thank you to the organizers and the ISTT for a wonderful time, full of informative and exciting presentations, good food, friendly and fun social get-togethers, and a very smooth running agenda.

The next TT meeting will be held in Toronto, Canada October 27–29, 2008—for the first time in North America. We would like to take this opportunity to invite you to this event.