



Pig Genome Update

No. 53 March 1, 2002

On the road again!! An excellent pig genome workshop and PAGX were held in sunny San Diego. Over 1,700 participants from 30 countries came this year for a full and interesting meeting featuring a wide range of science and policy talks. Some highlights included Dr. Francis Collins, "Czar" of the Human Genome Program at NIH, who gave an excellent public overview of the progress in the human genome project and Ralph Greenspan, who gave a superb talk on the genetic architecture of behavioral genetics. Also, Steve Brown presented an interesting talk on ENU mutagenesis in mice and Eric Green gave an excellent overview on new approaches to comparative genome sequencing. As usual, there was a plethora of posters and plenty of interesting displays and discussion.

The NC210-NRSP joint pig genome workshop at PAGX was also quite successful. It was chaired by Jon Beaver from University of Illinois. Station reports and invited speakers presented information on the pig genome. The featured speakers were Denis Milan, INRA who presented "*Integration of Genetic and RH Porcine Maps with Carthagene*", Craig Beattie, University of Nevada-Reno, presented "*Progress Towards a Comprehensive Map for the Porcine Genome*", Daniel Ciobanu, Iowa State University, presented "*Discovery of New Genetic Markers Affecting Meat Quality in Pigs*" and Jack Dekkers, Iowa State University ended the program with a presentation on "*Mapping and Use of QTL for Marker-Assisted Improvement of Meat Quality in Pigs*". In addition to the many participants from NC210 and NRSP-8 about 30 guests were also present. Considerable progress was made during the past year at the research stations. For Objective 1: *Develop and apply technology for positional cloning of ETL with the pig* the IA station presented evidence for finding QTL for many traits of interest in the pig including those associated with growth, backfat and meat quality. Other stations (IL, MI) reported their work on developing new QTL projects and on expanding collaborations with an existing project (IA). Candidate gene research was also presented (IA, MI, USDA-BARC). This research has significant opportunities to impact pig producers. For Objective 2: *Analyze the function and expression of genes that regulate traits of economic importance in the pig* results were presented concerning the development of EST and microarray projects in the pig by several stations (IL, IA, MI, NE, Purdue, USDA-BARC). Considerable progress has been made in these areas. Many tools (BACs, ESTs, databases) are now being developed to help future activities. No NC210 meeting is planned for next year as NC210 is ending and a new project involving NC210 and NC220 members has been submitted (see below).

A symposium "**Exploring Horizons for Domestic Animal Genomics**" was held at the National Academy of Science in Washington DC on February 19. Featured speakers included Dr. Stephen O'Brien (National Cancer Institute) "*The Landscape of Comparative Genomics in Mammals*", Dr. Steve Kappes (USDA): "*Animal Genomics Research in the U.S.—Where We Are and Where We're Going*", Dr. Harris Lewin (University of Illinois): "*Livestock Genome Sequencing Initiative: Status and Importance*", Dr. Eric Green; (NIH): "*Multi-Species Comparative Sequencing of Targeted Genomic Regions*", Dr. Richard Gibbs (Baylor College of Medicine): "*The Rat Genome Sequencing Project*" and Dr. Roger Wyse (Burrill & Company): "*A Private Sector Perspective: Financing Innovation.*" Following lunch there were three group discussions involving: "*Priorities for Genome Sequencing: Which Species?*", "*What are the Roles of the Public, Private, and NGO Sectors for Advancing Genomics Research?*" and "*How Can We Facilitate Data Sharing and Access?*" The meeting was well attended and discussion was quite engaging especially as it related to which species to sequence. Clearly the largest interest and discussion was related to which species to sequence first. Most comments suggested doing the pig, cattle, and chicken genomes first amongst livestock species, though order was not determined and doing sheep and the horse later. Sequencing of cat and dog species was also a high priority but again order was debated. Targeted sequencing of other species for evolutionary information was also suggested. Support for the conference from the Alliance for Animal Genome Research, USDA and the National Research Council is appreciated. A summary from this meeting is expected in the near future.

Mouse Genome Monthly Newsletter Issue #3 January 2002 is now available. This is the third in a series of newsletters that are being produced on approximately a monthly schedule. The goals of the newsletter are of informing the scientific community about the progress in sequencing and annotating the mouse genome and about updates on the availability of information and resources generated by this project. The newsletter can be downloaded from http://www.ensembl.org/Mus_musculus/newsletter/ or from <http://www.informatics.jax.org/mgihome/news/index.shtml> as well as from several NIH web sites.

Chips, arrays, sequencing – what is your interest?? One of the projects the US Pig Genome Coordinator is now working on is to make either gene chips or microarray materials available to each lab at a reduced cost. To date several parties have suggested some interest. Another important consideration is a white paper for sequencing the pig genome. The Coordinator is in discussions with others concerning this opportunity. If you have an opinion or an interest in helping, please contact the US Pig Genome Coordinator at mfrothsc@iastate.edu.

New tools still are available. New pig microsatellite diversity primers (set XI) of primers were made in response to requests and suggestions concerning pig diversity research and selected from markers across all 19 pig chromosomes. More information on all sets of primers can be found at the web site: <http://www.genome.iastate.edu/resources/fprimerintr.html>. A new public porcine expressed sequence tagged (EST) database, a set of tools for EST analysis and a web query tool for public access to this database has been developed (<http://pigest.genome.iastate.edu>).

Upcoming meetings (for more details see: <http://www.genome.iastate.edu/community/meetings.html>)

NC220 Swine genetics regional project meeting, May 31-June 1, 2002, Ames, Iowa. For details contact Jack Dekkers at jdekkers@iastate.edu.

17th International Pig Veterinary Society Congress, June 2-5, 2002, Ames, Iowa. For details see <http://www.ipvs2002.vetmed.iastate.edu>.

International Society of Animal Genetics, Göttingen, Germany, August 11-15, 2002. See <http://www.gwdg.de/~bbrenig/ISAG2002.html> for further information.

7th World Congress of Genetics Applied to Livestock Production, August 19-23, 2002, Montpellier, France. See <http://www.wcgalp.org> for more information.

Additional items can be found at: <http://www.agbiotechnet.com/calendar/index.asp>.

Items for *Pig Genome Update 54* can be sent to me by no later than April 10 please.

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