



Pig Genome Update

No. 56 September 1, 2002

The 28th International Conference on Animal Genetics met in Gottingen, Germany August 11-15 at the Georg-August University campus. The meetings were attended by over 700 scientists, the largest attendance in the history of ISAG, and featured many excellent workshops, presentations and posters. Plenary presentations covered diverse topics including new technologies (SNPs and proteomics), biodiversity in the Amazon, genomics for healthier pigs, biotechnology in fish, and prion diseases. Of particular note was the large number of excellent posters demonstrating the continued progress that researchers in the Society have made since the last meeting. For the pig, radiation hybrid maps have been expanded and integrated with the genetic maps, high resolution BAC maps are available, and major genomic regions including the SLA complex have been, or will shortly be, fully sequenced. Increasing numbers of pig SNPs are being reported, and new strategies being developed for more rapid SNP identification and haplotyping. Major EST projects with every available porcine tissue have been productive along with preliminary microarray data. More detailed maps for important meat, carcass and reproductive traits were presented. For the first time, an animal genome sequencing workshop was held at ISAG, updating researchers on the progress made toward sequencing chicken, cattle and pig genomes. A permanent ISAG committee is being formed as a result of this workshop. A working group is writing a white paper to submit to the NIH this October for a pig genome sequencing project, following the high priority ratings given by NIH NHGRI to chickens and, most recently, cattle. Progress was discussed at many other workshops on pig mapping, the comparative gene mapping, and applied pig genetics. The latter workshop will be combined with pig mapping for future ISAG meetings. After several years of silence, an SLA workshop was held to reformulate nomenclature based on DNA sequences rather than serologic reagents. The Immune Response workshop discussed immune microarray developments and data quality and control issues. Participants were very fortunate to have an opportunity to visit historical places in and around Gottingen during the program on a beautiful and informative tour and the final banquet in the Town Hall. The hosts from the Georg-August-University of Gottingen and the City of Gottingen are to be congratulated for their efforts to make conference an exciting and successful conference. (kindly provided by K.S. Kim, J. Reecy and J. Lunney).

The 7th World Congress on Genetics Applied to Livestock Production was held in Montpellier, France. Hosted by INRA and CIRAD, this was the largest meeting of its kind with nearly 1,400 and over 300 accompanying persons. The meeting featured an enormous program of over 1,000 presentations including plenary talks on animal breeding and society, intellectual property rights and use of resources for developing countries. There were over 25 separate topic areas that covered all aspects of quantitative, statistical, molecular and applied animal genetics in a large number of species. Of particular note was the large number of pig papers related to new gene discovery and application. Other sections demonstrated advances in methods to do gene discovery and to apply those discoveries in the respective industries. The quality of the presentations both as talks and posters was superb. Proceedings for the conference can be obtained by visiting the web site: <http://www.wcgalp.org/>. Participants were given the opportunity to take one of many excellent tours that included historical places, the sea, wine and olive tasting and ended the evening with a dinner in a country chateau. As with the candidate gene meeting which preceded this meeting, the excellent hospitality of our hosts combined with the southern French flavor of Montpellier, the excellent organization and facilities for the meeting and the nearness of the beach made for an

unforgettable week of science and fun. To all our hosts we say a big *Merci*.

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Candidate gene research in health and immune response took center stage at the Second International Symposium on Candidate Genes for Animal Health held in Montpellier, France August 16-18. Hosted by INRA and CIRAD and held at the northern CIRAD campus this meeting had over 100 participants and featured a wide range of papers covering candidate genes, disease models, array technology and new methodologies. The organizers did an excellent job hosting this event. The next meeting will be hosted by Iowa State University and other US colleagues in 2-3 years time.

Allerton III: Beyond Livestock Genomics: A Roadmap for Harvesting the Promise was held July 9th and 10th at University of Illinois in Urbana/Champaign. This workshop was hosted by Larry Schook and Harris Lewin, and attended by a small group of scientists and industry representatives from several fields. Several interesting talks were presented dealing with how genetics and genomics can and should interact with these disciplines. In addition, the meeting was attended by several individuals from the USDA-NRI administrative staff. Currently, the organizers are working on drafting a white paper outlining the outcomes from this meeting (kindly provided by James Reecy).

Pig BAC library and filters are on the move. Thanks to some real partnering with Dr. Pieter de Jong, Children's Hospital Oakland Research Institute and interested labs the new porcine BAC library and filters will be shared among 12 swine genomics labs in the US. The library and filters were prepared with funding from a USDA grant (USDA# 99-35205-8537). The library has been designated as "CHORI-242". The library has received some provisional characterization. Once completed, the data will be posted on a web page (www.chori.org/bacpac/porcine242.htm) and also linked by the US Pig Genome Web page (www.genome.iastate). High-density colony filter sets are available for library screening. Each filter contains 18,432 clones from 48 microtiter dishes from the library (36,864 colonies due to duplicate stamping). A total of 11 filters is required for screening the entire library. In July a request went out for interested parties to request filters and libraries. The USDA grant will be paying for 5 libraries to be shared and the US Pig Genome Coordinator will be paying for an additional 3 library copies and 10 filter sets to be shared at this time. The receiving labs will pay the shipping charges. Unfortunately this offer could not be extended to foreign colleagues and industry groups at this time. If you are interested and missed the first call, contact the US Pig Genome Coordinator to see if the offer will be extended in 2003.

A pig gene array is on the horizon. One project the US Pig Genome Coordinator is now working on is to make pig gene microarray materials available to each lab at a reduced cost. To date several parties have suggested considerable interest. At present the Pig Genome Coordinator with assistance from others is working to design a general pig gene chip with 8,000 genes on it for expression work. If you have interest, please contact the US Pig Genome Coordinator at mfrothsc@iastate.edu.

Plant, Animal & Microbe Genomes XI will again be at the Town & Country Convention Center in San Diego, CA, from Saturday, January 11 through Wednesday, January 15, 2003. The pig workshop meeting will likely begin on the afternoon of Saturday, January 11. Max Rothschild is the organizer and is looking for the names of 1-2 good speakers for the session. Speakers will receive free registration for the meeting. Please provide names if you have good suggestions.

Renewal proposal for NRSP-8 making progress! The new objectives will focus on: 1. Mapping and comparative genomics as they lead to the development and use of full genome sequences; 2. Functional genomics; and 3. Informatics. Cathy Ernst is coordinating the overall writing team. Draft proposals are

already being circulated and will be revised soon with E-1 (effort) forms collected from Ag Experiment Stations by October. The final and complete proposal is due to Area Administrators by Dec. 1, 2002.

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The Roslin Bioinformatics Group (<http://bioinformatics.roslin.ac.uk>) is pleased to announce the availability of a new mirror node for their ARKdb series of databases. The site is hosted at the Australian National Genomic Information Service and is intended to provide a more accessible service for users in the Southern hemisphere. It can be found at the URL <http://angis.thearkdb.org> and carries the full complement of ARK-based species, namely pig, chicken, cattle, sheep, salmon, turkey, tilapia, deer, horse and cat. The new Australian site joins the three existing nodes at Roslin (<http://www.thearkdb.org>), Iowa (<http://iowa.thearkdb.org>) and Texas (<http://texas.thearkdb.org>) Users of the ARKdb databases are encouraged to cite the databases as follows - ARKdb-<insert species name> <insert date database accessed for information cited> <http://www.thearkdb.org> Hu, J., Mungall, C., Law, A., Papworth, R., Nelson, J.P., Brown, A., Simpson, I., Leckie, S., Burt, D.W., Hillyard, A.L. and Archibald, A.L. 2001. The ARKdb - genome databases for farmed and other animals. *Nucleic Acids Research* 29, 106-110.

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

2nd UK Farm Animal Functional Genomics Workshop (ARK-Genomics Workshop), September 12, 2002, Pentlands Science Park, Bush Loan, Penicuik, Midlothian EH26 0PZ. For more information please email info@arkgenomics.org for details and a registration form.

TIGR's 14th International Genome Sequencing and Analysis Conference, October 2-5, 2002, Boston, MA. Please see www.tigr.org/conf/gnac/.

Plant, Animal and Microbial Genome XI, joint with NC-168 and NAGRP annual meetings, Jan. 11-15, 2003, Town & Country Convention Center, San Diego, CA. For more information see information on the web at www.intl-pag.org/.

The John M. Airy Beef Cattle Symposium 2003: Visions for Genetics and Breeding May 15-17, 2003 in Des Moines, Iowa will be hosted by Iowa State University. For more information contact James Reecy at jreecy@iastate.edu.

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

Items for *Pig Genome Update 57* can be sent to me by no later than October 20 please.

*Max F. Rothschild
U.S. Pig Genome Coordinator
2255 Kildee Hall
Department of Animal Science
Iowa State University
Ames, Iowa 50011
Phone: 515-294-6202
Fax: 515-294-2401
mfrothsc@iastate.edu
<http://www.genome.iastate.edu>*

cc: Dick Frahm, CSREES and Caird Rexroad II, ARS

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