



# POULTRY GENOME NEWSLETTER 2006

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## PSA Meeting Report

The **95<sup>th</sup> Annual Meeting of the Poultry Science Association** just concluded in Edmonton, Alberta. PSA participants enjoyed cool weather and lots of sun (~5:00 a.m. to 11 p.m.). The **Ancillary Scientists Symposium** was entitled “**Functional Genomics: Building the Bridge between the Genome and Phenome**”. The Symposium chair was **Craig Coon**, and **Dave Burt** began the day with a keynote presentation that highlighted study of the chicken as a model for agricultural and biomedical research. Dave noted that the second build of the chicken genome has put nearly 95% of (~20,000) chicken genes onto chromosome-linked super-contigs. As noted last issue, **Gallus\_gallus-2.0** can be downloaded (in the form of chromosome AGP files) from [ftp://genome.wustl.edu/pub/user/lhillier/private/chicken\\_060412.tar.gz](ftp://genome.wustl.edu/pub/user/lhillier/private/chicken_060412.tar.gz). For more info, see <http://genome.wustl.edu>. It will probably take a couple more months for the new build to become available in graphic formats on the major genome browsers, although a “Pre-“ version may be loaded sooner at **Ensembl**, [http://www.ensembl.org/Gallus\\_gallus/](http://www.ensembl.org/Gallus_gallus/). (See also: **UCSC**, <http://genome.ucsc.edu/cgi-bin/hgGateway?org=Chicken&db=0&hgsid=30948908> and **NCBI**, <http://www.ncbi.nlm.nih.gov/genome/guide/chicken>.) (Note, when you BLAST against the database, e.g., at NCBI, you’re already blasting against the new build sequence.) Dave also described new sequence-based resources that are now available for chicken and gave examples of their use from his own research. **Parker Antin** then described his extensive *in situ* hybridization efforts on the chick embryo (see <http://geisha.biosci.arizona.edu/>). He also noted the availability of a whole genome long oligo array at [www.grl.steelecenter.arizona.edu](http://www.grl.steelecenter.arizona.edu) and introduced chicken micro-RNA research, a recurring topic throughout the day. **Tom Porter**, **Larry Cogburn** and, later, **Sam Aggrey** described their use of microarrays and QTL scans to analyze crosses of divergently selected high and low growth and fat and lean lines. **Mark Richards** also spoke on genes and proteins regulating energy metabolism and food utilization, but the focus shifted to the genetics of disease resistance in subsequent talks by **Hyun Lillihøj** and **Sue Lamont**. **Dirk de Koning** merged microarray and QTL analysis in discussing “genetical genomics”, and **Hsiao-Ching Liu** moved into the proteomics arena, along with description of her own micro-RNA survey. **Dave Harry** provided the industry perspective, with his talk on what the genome sequence means to breeders now and in the future. (An upcoming issue of *Poultry Science* will provide papers based on the Ancillary Scientists Symposium.) This Symposium was followed by three days of PSA Scientific Sessions, posters and additional symposia. Thanks to both the local hosts and the PSA administrators for organizing an enlightening and enjoyable meeting.

### Full length chicken cDNA website

As he described at the PSA meeting, **Fred Leung** of the **U. of Hong Kong** has developed a **Database for Full Length Chicken cDNAs** derived from existing genome and EST sequences, along with their own sequencing efforts. It’s at <http://bioinfo.hku.hk/chicken/>. Add it to your other chicken sequence site bookmarks!

## WASHINGTON FUNDING UPDATE:

CSREES FY 2006 National Research Initiative (competitive grant program) information can be found at <http://www.csrees.usda.gov/funding/nri/nri.html>. Total FY 2006 NRI funding was \$181.7M (slightly above FY 2005). The House FY 2007 budget allocates about \$190M for next year's NRI, but this awaits review by the Senate and a likely Conference Committee. **Note: it is anticipated that next year's FY 2007 NRI applications will require electronic submission through <http://grants.gov/>.**

## PAG XV & NAGRP/NC-1008 Meeting

PAG-XV will be held January 13-17, 2007 at the usual spot, the Town and Country Hotel, San Diego, CA. The program is available at [www.intl-pag.org/](http://www.intl-pag.org/), and the abstract deadline will be Oct. 6, 2006. The NC-1008 Multistate Research project committee and the National Animal Genome Research Program, NRSP-8, will meet concurrently (9:00 am Saturday morning, Jan. 13, to 3:25 pm Sunday). The full NRSP-8 meeting will be 3:35-5:45 pm, Sunday, Jan. 14. **Kent Reed**, chair for NRSP8-Poultry, and **Tom Porter**, chair of NC-1008, will co-organize the Poultry Workshop. See the PAG website for more information or to register on-line. **Coordinators will again have some funds to help with travel support for NAGRP members or their lab members - contact us prior to the abstract deadline.** In particular, students are encouraged to apply for the **Neal Jorgensen Travel Award** for poultry (see the PAG website or contact [dodgson@msu.edu](mailto:dodgson@msu.edu) or [hcheng@msu.edu](mailto:hcheng@msu.edu)). In order to meet the demand for workshop space, plenary lectures have been reduced to two each on Tues. and Wed., with an 8 a.m. start, and workshops added between 10 a.m. and lunchtime. A keynote/plenary speaker also has been added to the program prior to the opening reception and Poster session on Sunday night.

## Welcome Eric Young!

**Eric Young** (Exec. Director, Southern Assn. of Ag. Experiment Station Directors, N.C. State U.) has joined the **NRSP-8 Administrators** with responsibility for the Southern Region and serving as lead administrator for poultry. The Poultry Subcommittee welcomes Eric to our flock, and we also express our appreciation to **Jerry Cherry**, our out-going lead administrator.

## CHICKEN CHIPS

A 13K chicken spotted cDNA glass slide array is available from the Array Facility at the **Fred Hutchinson Cancer Research Center, FHCRC**. See **Burnside *et al.*, BMC Genomics 6:13 (2005)** (<http://www.biomedcentral.com/bmcgenomics>) for more details. Email requests to [genomics@fhcrc.org](mailto:genomics@fhcrc.org). **Affymetrix, Inc.** is marketing the GeneChip® Chicken Genome Array that measures levels of 32,773 chicken transcripts and 684 chicken viral transcripts. See <http://www.affymetrix.com/products/arrays/specific/chicken.affx>. Microarrays, along with clones and vectors (including RNAi vectors), genotyping services and other resources can also be obtained from **ARK-Genomics** at <http://www.ark-genomics.org>. A chicken whole genome long oligo array is available (~\$150 each) at the U. of Arizona, [www.grl.steelecenter.arizona.edu](http://www.grl.steelecenter.arizona.edu) and can also be purchased on a custom basis from Nimblegen, [www.nimblegen.com](http://www.nimblegen.com).



**ROAD WARRIORS** (thanks to Alice Kuo)

## **ON THE ROAD AGAIN. UPCOMING MEETINGS:**

IMPORTANT NOTE: Regularly updated poultry meeting information is now available at [http://www.animalgenome.org/share/mtg\\_chic.html](http://www.animalgenome.org/share/mtg_chic.html). Meeting organizers can enter their own meeting information on-line at [www.animalgenome.org/cgi-bin/angenmap/mtg\\_new](http://www.animalgenome.org/cgi-bin/angenmap/mtg_new).

4<sup>th</sup> Int'l Workshop on the Molecular Pathogenesis of Marek's Disease Virus, August 5-8, 2006, Clayton Conf. Ctr., U. of Delaware. See <http://ag.udel.edu/conference/mareksconference.htm>

8<sup>th</sup> World Congress on Genetics Applied to Livestock Production, August 13-18, 2006, Belo Horizonte, MG, Brazil. See [www.wcgalp8.org.br](http://www.wcgalp8.org.br)

ISAG 2006, 30th International Conference on Animal Genetics, August 20-25, 2006, Porto Seguro - Brazil. See <http://www.cbra.org.br/eventos/30isag.do>

XII European Poultry Conference, September 10-14, 2006, Verona, Italy. See <http://www.epc2006.veronafiere.it>

24<sup>th</sup> Stadler Genetics Symposium, "Genomics of Disease", October 2-4, 2006, University of Missouri-Columbia, Columbia, MO. See <http://muconf.missouri.edu/stadler/>

Plant and Animal Genome XV, joint with NC-1008 and NAGRP annual meetings, Jan. 13-17, 2007, Town & Country Convention Center, San Diego, CA. See [www.intl-pag.org/](http://www.intl-pag.org/).

Chicken Development and Genomics, April 12-15, 2007, Barcelona, Spain. See <https://www.lists.bbsrc.ac.uk/mailman/listinfo/chicken-genome> to join the chicken genome email list and get updates for this meeting.

Poultry Science Association Annual Meeting, July 8-12, 2007, San Antonio, Texas. Joint with ADSA and ASAS. See <http://www.poultryscience.org/>.

## BAC AT YOU!

**Chicken BAC libraries** have been constructed at Texas A&M (~39,400 each in three sublibraries called TAM31, TAM32, and TAM33, respectively; Lee et al., *Animal Genetics* 34: 151) and by **Pieter de Jong** (CHORI-261: ~73,700 BACs with ~195 kb inserts for ~12x coverage). Pieter has also generated a **turkey BAC library (CHORI-260)**. If interested in either library, see <http://bacpac.chori.org>. Some free filter sets with spotted arrays of CHORI-260, CHORI-261, TAM31 and TAM33 BACs are still available, email [dodgson@msu.edu](mailto:dodgson@msu.edu).

**BAC Contig Physical Map; ChickFPC and ChickAce.** A BAC contig physical map comprised of about 260 contigs, nearly 80% of which have been anchored to the genetic linkage/chromosome map has been described (Wallis et al., *Nature* 432:761-764, 2004). The **ChickFPC** browser at <http://www.bioinformatics.nl/gbrowse/cgi-bin/gbrowse/ChickFPC> allows one to search the map. BAC locations can also be found on the sequence browsers mentioned above. At ChickFPC, BACs from the TAMU libraries have the prefix JB, JE, or JH for the TAM31, TAM32, and TAM33 libraries, respectively. CHORI-261 BACs have the prefix JA. White Leghorn BACs from the Crooijmans et al. library (*Mammalian Genome* 11: 360-363, 2000) have the prefix bW.

### Poultry Genome Newsletter Archive

Poultry Genome Newsletters are distributed electronically through Angenmap, the Animal Genome Discussion Group (<http://www.animalgenome.org/community/discuss.html>) and by hard copy to those on our mailing list. If you wish to be added to or removed from the hard copy mail list, please email [dodgson@msu.edu](mailto:dodgson@msu.edu). All previous newsletters are archived at <http://poultry.mph.msu.edu/newsletters/newsletters.htm>.

### PLEASE PROVIDE YOUR INPUT

The Poultry Coordinators are always glad to hear from NRSP-8 members and other readers about ways that we can improve the coordination effort or provide resources that are needed and with which we may be able to help. Also, let us know if you have items of general interest to the poultry genetics community that we can include in this Newsletter.

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