

Pig Genome Update #122

October 1, 2015

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1. Description of important summer meetings attended by Coordinators

The two Coordinators split responsibilities to cover summer meetings this year; Dr. Tuggle attended the International Symposium on Animal Functional Genomics (ISAFG) in Piacenza, Italy, and Dr. Ernst attended the American Society of Animal Science/American Dairy Science Association Joint Annual Meeting (JAM) in Orlando, Florida. Here is a brief summary of what was discussed at these two meetings.

a. ISAFG

The 6th International Symposium on Animal Functional Genomics (ISAFG 2015) was held in Piacenza, Italy from the 27th to the 29th of July, 2015. The purpose of ISAFG 2015 is to bring together academic researchers, industry representatives and policy makers to exchange knowledge on the leading-edge developments in functional genomics and its applications in the livestock sector. The symposium themes included important topics, ranging from structural and comparative genomics to systems biology. (ISAFG website; see <http://www.isafg2015.it/>) Although Piacenza was very hot in July, the accommodations and science were excellent. **The Conference Themes** included Comparative genomics, Epigenetics, Transcriptomics, Proteomics, Microbiome, Systems Biology. Speakers describing porcine genomics included M. Groenen who described his recent work on selective sweeps (Frantz nature Genetics 2015) and the effect of such selection-associated genotypes on phenotypes. A. Archibald discussed how animal genomics data can enable prediction, and outlined how the new FAANG project can accelerate the development of such data. T. Sonstegard described his new position at Acceligen, where the focus is genome editing to improved practical phenotypes in swine as well as work at a related company Surrogen to create swine models for biomedicine. T. Smith described his new results using PacBio technology to generate a genome assembly from a Duroc/Landrace/Yorkshire cross pig. The 187 Gb of data looks very good, and he expects to be able to report in early 2016 on this project. Beyond swine, there were excellent talk on how European groups are funding animal genetics/genomics research from J.C. Cavitte (European Commission, Belgium); the use of genetics and genomics data from blood to predict disease in humans (N. Soranzo, U. Cambridge, UK); miRNA biology and function (A. Pasquinelli, UCSD, USA); and network biology tools (D. Lynn, EMBL, Adelaide, Australia).

b. JAM

The ASAS/ADSA JAM Conference was held in Orlando, FL, USA from the 12th to the 16th July, 2015. The animal breeding and genetics program was very strong with 10 oral sessions and over 100 posters. International partnerships were a highlight of the program including a pre-meeting joint symposium with Interbull and a symposium sponsored by the European Federation for Animal Science (EAAP) on the topic of Breeding for Environmental Sustainability. General sessions focused on genomic analysis methods, as well as species-specific applications. More details on the program and abstracts can be found at the meeting website (<http://www.jtmtg.org/JAM/2015/index.asp>).

Please be aware that ***JAM will meet in Salt Lake City UT next year (July 19-23) in conjunction with the International Society of Animal Genetics (July 23-26)***. There is a joint symposium on Functional Genomics planned for the overlap day of July 23, so don't miss it! Available deadlines for JAM: early registration deadline is February 18, 2016 with Abstract submissions due by March 23, 2016). ISAG deadlines will be forthcoming.

2. Update on new functional genomics project FAANG – Washington Meeting Oct 7-8, 2015

As described in the February PG Update, a major event at PAG was the announcement and further organization of the Functional Annotation of ANimal Genomes (FAANG) Consortium. The following text is a summary of the activities of FAANG since the PAG meeting; for further information please see the FAANG website (www.faang.org).

a. Summary of FAANG group's and their activities

We have developed a number of committees dedicate to specific aspects of the Consortium's goals. These committees have met approximately monthly during 2015 to organize FAANG efforts. The following summaries are provided here so that you can decide if one or more committees would be of interest to join; all committees welcome new members.

First, the overall objective of the Animals, Samples and Assays Committee (ASA) is to achieve and share standardized protocols for adequate sample collection, storage, processing, and respective assays as required for FAANG core assays. Standardization of the different steps involved is the essential prerequisite for integration of multiple datasets.

Second, the purpose of the Bioinformatic and Data Analysis Committee (BDA) is to agree and define standard pipelines for the analysis of FAANG data, with the aim that data sets are comparable because they have been analyzed using the same pipeline, as well as work together to investigate methods to integrate the primary analysis results to high level summaries of functional state.

Third, the objective of the Metadata and Data Sharing (MDS) committee is to recommend standard methods to record information for all samples, experiments and analyses carried out by FAANG consortium members; recommend best practice for data archiving; and define data sharing methodologies that encourage sharing within the FAANG consortium and rapid public release of raw data and analysis results.

Fourth, the Communications committee (COM) aims to provide the community with information about FAANG activities and provide links between the various FAANG groups; a major effort lies with developing and maintaining <http://www.faang.org>. The website aims to provide the scientific community and the public with information about the project and its working groups, and facilitate

information exchange between working groups. The Com committee also organizes meetings to promote the goals and objectives of FAANG.

Finally, the purpose of the Steering Committee (SC) is to develop and implement policy to advance the FAANG project. The SC gathers information from FAANG committees and members, as well as directing Committees to evaluate proposals for new directions and project structures.

b. Update on GO-FAANG, a Washington DC Meeting Oct 7-8, 2015

A major effort of the COM has been to develop a Workshop named Gathering On – FAANG, or GO-FAANG, to be held October 7-8, 2015. The main objective of the GO-FAANG Workshop is to advance the goals of the FAANG initiative. This will be accomplished through discussions and decision-making in three areas; 1) establishing priorities for functional genomics research efforts within and across species; 2) planning the management structures required for efficient use and sharing of samples, data and computational tools; and 3) identifying resources needed to accomplish these goals.

Until the meeting starts, you can sign up to participate via a web simulcast. Details can be found here: <http://www.faang.org/bbs?s=go-faang.zoom.txt>. Both Dr. Tuggle and Dr. Ernst will attend, as well as many other members of the NRSP-8 community. GO-FAANG has been supported by funding from National Science Foundation USDA-NIFA-AFRI Animal Genomes Program, USDA NRSP-8 Bioinformatics, Poultry, Sheep, and Swine National Genome Coordinators, and Illumina as well as Iowa State University. The Program is listed here: <http://www.animalgenome.org/community/FAANG/bbs?s=go-faang.txt> and includes welcomes by Dr. Catherine Woteki (USDA Deputy Undersecretary, October 7) and Dr. Sonny Ramaswamy (USDA-NIFA Director, October 8), as well as three plenary lectures and presentations by five funding agencies and FAANG representatives. A substantial portion of the Workshop is devoted to small group and unstructured discussions on the main goals of GO-FAANG.

A recording (audio/video) will be made of this two-day Workshop and is planned to be available on the FAANG website. If you are not able to attend or participate in the web simulcast, you can view the main sessions of the meeting there.

Please join our initiative by signing up at the website!

3. Reminder on PAG registration and poster abstract deadlines.

A big reminder that PAG registration has opened!

See (<https://pag.confex.com/pag/xxiv/registration/call.cgi>). Also, a call for abstracts came out September 29! To submit a poster abstract, remember you must first be registered. Please see <https://pag.confex.com/pag/xxiv/cfp.cgi>. Poster abstracts must be submitted by October 30, 2015. Early registration rates through October 30, 2015 are as follows: Student:\$390; Non-profit (\$590; weekend only rate is \$460). There are also rates that apply to for-profit (\$900/\$600 weekend).

Nominations are encouraged for the Neal A. Jorgenson Graduate Student Travel Award. The award is for up to \$1000 for travel expenses and registration for a graduate student in the USA to travel to and attend PAG XXIV, and the Swine Genome Coordinators will select a recipient from applicants in the pig category. To be eligible, an applicant must be a current graduate student residing in the USA. **Applications are due by October 30**, and application information is available at <http://www.intlpag.org/2016/images/pdf/PAGXXIV-grants-jorgenson.pdf>.

4. Upcoming additional meetings information

Besides the GO-FAANG, PAG meetings including the NRSP-8 Swine Subcommittee and Animal Genome meetings as well as JAM and ISAG meetings discussed above, there are many other meetings coming up. For meetings of relevance to the genomics community over the next 6-12 months, see: <http://www.animalgenome.org/pig/community/meetings>)

5. Recent conference call of Swine genome interest group initiated

Prompted by a suggestion from Dr. Lakshmi Matukumalli, C. Ernst organized a conference call with many members of the NRSP-8 Swine Subcommittee, as well as other interested swine researchers. On September 29, 2015, C. Ernst, C. Tuggle, L Matukumalli, A. Archibald, D. Ciobanu, Z. Jiang, G. Rohrer, D. Nonneman, T. Smith, R. Prather, K. Lee, J. Lunney, C. Anthon participated in the call. The PAG Swine workshop was discussed and a request for speakers for both the overall NRSP-8 meeting (Jan 10) and the Swine Subcommittee Workshop (Jan 9) was made (D. Ciobanu and C. Ernst). The GO-FAANG Workshop was summarized (C. Tuggle), and an update of NIFA events was made (L. Matukumalli). A request was again made for research project applications for Coordinator fund support.

6. We want to hear from you!

The swine genome coordinators are always glad to hear from NRSP-8 members and other readers about ways that the coordination effort can be improved or provide resources that are needed. If you have items of general interest to the swine genetics and genomics communities that can be included in this newsletter please share. Our issues are now planned for February 1 and October 1 each year. Any contribution should be sent to the Coordinators one week prior to these dates.

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