

V. MAIZE GENETICS AND GENOMICS DATABASE (www.maizegdb.org)

New Personnel in 2007

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Feb 2007, Part-time Curator and Outreach Coordinator

In her first year on staff, Lisa plans to visit 3 cooperator sites: University of Florida, University of Georgia, and University of Arizona. One of her first curation tasks is to better integrate data from the RescueMu and Maize Inflorescence Architecture Projects with the rest of MaizeGDB so that these datasets can be searched via the site's integrated mechanisms.

Taner Sen USDA-ARS at Iowa State University, Ames, IA

To begin June 2007, Computational Biologist

Early on, Taner will be working to incorporate a genome browser into MaizeGDB to display the B73 sequence and to serve as a basis for representing gene models. Be on the lookout for inquiries from Taner on your preferences for genome browsing capabilities!

Data Improvements

MaizeGDB has added and facilitated the addition of a wide variety of new data, along with incrementally improving the existing data through regular manual and automated updating. Some of our most noteworthy newer initiatives in this area are described below.

Sequence Pipeline

Public sequence data for all of the *Zea* species are updated from Volker Brendel's PlantGDB on a monthly basis and linked with relevant manually-curated data within MaizeGDB. Individual sequences are also linked to contigs generated by external projects that include PlantGDB and the Dana Farber Cancer Institute. The Maize Genome Sequencing Consortium's B73 sequences are associated to BACs on a monthly basis from the data releases posted at maizesequence.org.

Editorial Board

We have initiated and currently maintain an Editorial Board whose members contribute a paper each month to be highlighted at MaizeGDB. Perhaps most exciting are reports that the Editorial Board has directly led to the founding of journal clubs on various campuses! Students and faculty alike download the recommended papers and meet to discuss them. The 2006 Editorial Board was made up of: Tom Brutnell (chair), Surinder Chopra, Karen McGinnis, Wojtek Pawlowski, and Jianming Yu. The 2007 Board consists of: Marja Timmermans (chair), Guri Johal, Damon Lisch, Gael Pressoir, and Moira Sheehan.

Data Additions – Larger Sets

TILLING: We have worked extensively with Cliff Weil's team at Purdue to include the output of the Maize TILLING project in MaizeGDB. This includes integrated primer, probe, locus, variation, and gene product data, along with an integrated interface for ordering stocks from the TILLING project. The current schedule (see http://www.maizegdb.org/data_schedule.php) is to update TILLING data twice yearly.

New maps: The Maize Mapping Project and a number of community members have volunteered a number of new maps for inclusion in MaizeGDB. These include new QTL maps, continued refinements of the IBM and IBM Neighbors maps, and maps that describe the structure of the AGI physical maps. The current schedule is to update maps once each spring.

Contributing your data to MaizeGDB

You may contribute data in a number of ways to MaizeGDB. The easiest is very like a 'wiki', where you simply add a comment using the annotation tool. You will first need to register, using the menu item 'annotation' on the top menu bar of the homepage. Once registered, every time you access MaizeGDB, you will be able to annotate any page. Annotations will appear in the monthly updates of the database. A second way is to use the community curation tools. Inquire at mgdb@iastate.edu for access.

If you are developing a project that will generate large datasets and that you would like to submit to MaizeGDB, you need to contact Carolyn Lawrence before you submit the proposal.

New Tools

We have continued our commitment to providing a consistent and clean interface, continued maintenance and improvement of that interface, and integration of new interface options where appropriate. Some noteworthy changes include new map displays and a stand-alone tool to compare cytological and genetic maps.

Map Display Update: One major interface addition is the inclusion of new map displays designed with the aid of commentary from a number of maize community members. We have added three new options that enable interesting new ways of viewing maps without

Full copies of the database as well as individual tables and custom-formatted dumps are provided to individuals who make requests to the MaizeGDB team at mgdb@iastate.edu. Copies support Oracle, MySQL, and Microsoft Access. The current MaizeGDB schema can be accessed at <http://www.maizegdb.org/MaizeGDBSchema.pdf>.

Five-Year Plan

We are in the process of drafting our five-year plan for the USDA-ARS. Objectives were developed with input from the MaizeGDB Working Group and are available online at <http://www.maizegdb.org/objectives.php>.

Acknowledgements

MaizeGDB is guided by members of the community of maize geneticists through feedback sent to us through the website, and by guidance from the MaizeGDB Working Group. Current membership includes Volker Brendel, Ed Buckler, Karen Cone, Mike Freeling, Owen Hoekenga, Lukas Mueller, Marty Sachs, Pat Schnable, Tom Slezak (chair), Anne Sylvester, and Doreen Ware.

Citing MaizeGDB

MaizeGDB may be cited using any or all of these references:

Lawrence CJ, Schaeffer ML, Seigfried TE, Campbell DA, Harper LC, 2007. MaizeGDB's new data types, resources and activities. *Nucleic Acids Res.* 35:D895-900.

Lawrence CJ, Seigfried TE, Brendel V, 2005. The maize genetics and genomics database. The community resource for access to diverse maize data. *Plant Physiol.* 138:55-58.

Lawrence CJ, Dong Q, Polacco ML, Seigfried TE, Brendel V, 2004. MaizeGDB, the community database for maize genetics and genomics. *Nucleic Acids Res.* 32: D393-397.

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