IWGSC Open Business Meeting

Kellye Eversole
IWGSC Executive Director

Plant and Animal Genome Conference
San Diego, California
9 January 2016
• Presentation of IWGSC leadership and early career awards
• Update of IWGSC
• Communications Report
• Project Status Report
• New Resources and new projects
• Exome Capture
• RNASeq Working Group
• Updated roadmap
• Early career award – Tingting Zhu, UC, Davis

• IWGSC leadership awards
  – Jan Dvorak, UC, Davis
  – Ming-Cheng Luo, UC, Davis
  – John Jacobs and Bayer CropScience
The International Wheat Genome Sequencing Consortium

2015

COUNTRIES: 55
MEMBERS: 1,100
INSTITUTES/COMPANIES: 372
SPONSORS: 21

Board of Directors
Role: Overall strategy and organization
Up to 10 directors including at least 1 Outside Director

Leadership Team
Role: Daily management
Members: Appelta, Everz, Feuillet, Keller, & Rogers

Coordinating Committee
Role: Scientific strategy
Members: Sponsors & Leaders of IWGSC Projects & Initiatives

Members
Role: Participation & Input
Members: Open to Anyone

www.wheatgenome.org
Vision and roadmap

**Goal**
- Lay a foundation to accelerate wheat improvement
- Increase profitability throughout the industry

**Vision**
- High quality annotated genome sequence, comparable to rice
- Physical map-based, integrated and ordered sequence

Chromosomal-based Physical Maps

MTP Sequencing

Chromosomal Survey Sequence

Whole Genome Shotgun Assembly

A REFERENCE SEQUENCE LINKED TO GENETIC AND PHENOTYPIC MAPS
Progress towards completion of Bread Wheat Reference Genome Sequence

Physical maps available at IWGSC repository for all except 3AL

1 chromosome completed, 15.5 underway.

*Flags represent countries where work is underway with funding, as of January 2016

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New Resources

• Physical maps and MTPs funded by Bayer CropScience for 2B, 2D, 4B, 5BL, and 5DL

• Copies of all BAC libraries at CNRGV

• IWGSC CSS v3 – integrated mate pair data
New Projects/Activities

• Bayer CropScience-IWGSC project to generate WGP sequence tags for MTP BACs from fluorescently fingerprinted physical maps

• CS PacBio/Illumina Assembly

• RNASeq Working Group

• Exome Capture

• IWGSC Whole Genome Assembly
Roadmap to the Wheat Genome Sequence

**Illumina sequencing of individual chromosomes**

- Chromosome Survey Sequence v2 (2014)
  - Whole genome mate pairs
    - IWGSC CSS v3 (2016)

**Physical maps of individual chromosomes**

- MTP sequencing
  - Pseudomolecule assembly
    - Chromosome 3B (2014)
    - 9 chromosomes (2016)

**NRGene-Illumina WGS**

**IWGSC Whole Genome Assembly (2016)**

**BioNanoGenomics, optical, RH, HiC maps**

+ Genetic, LD maps
  + MTP sequence tags.....

**Reference genome sequence (2017)**
Goal -- Achieving Reference release
IWGSC v1.... 2016?

Discussions underway at IWGSC Coordinating Committee
• Monday – IWGSC CC
  – what needs to be done to have first reference sequence this year
  – next steps for the consortium – post 1st reference

• Tuesday – Standards & Protocols Workshop
IWGSC Leadership Team:
• Rudi Appels, Murdoch University
• Catherine Feuillet, Bayer CropScience
• Beat Keller, University of Zurich
• Jane Rogers, IWGSC
• Kellye Eversole, IWGSC

Members of the Coordinating Committee

Leaders of the various physical mapping and sequencing projects, their team members, and collaborators

IWGSC Staff – Lori Leach and Isabelle Caugant

And…..
Thank you!