



# International **W**heat Genome Sequencing Consortium

**2017  
ANNUAL REPORT**

[www.wheatgenome.org](http://www.wheatgenome.org)

# OUR GOAL

The IWGSC goal is to

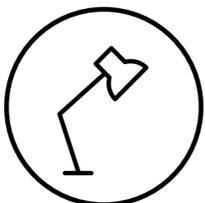


Lay a foundation to accelerate wheat improvement

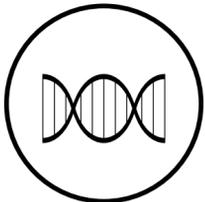


Increase profitability throughout the industry

We provide resources that serve as a foundation for the accelerated development of improved varieties and that empowers all aspects of basic, applied and translational wheat science.

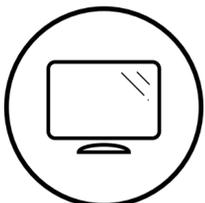


Reference sequence



Assemblies

Annotations



Gene models

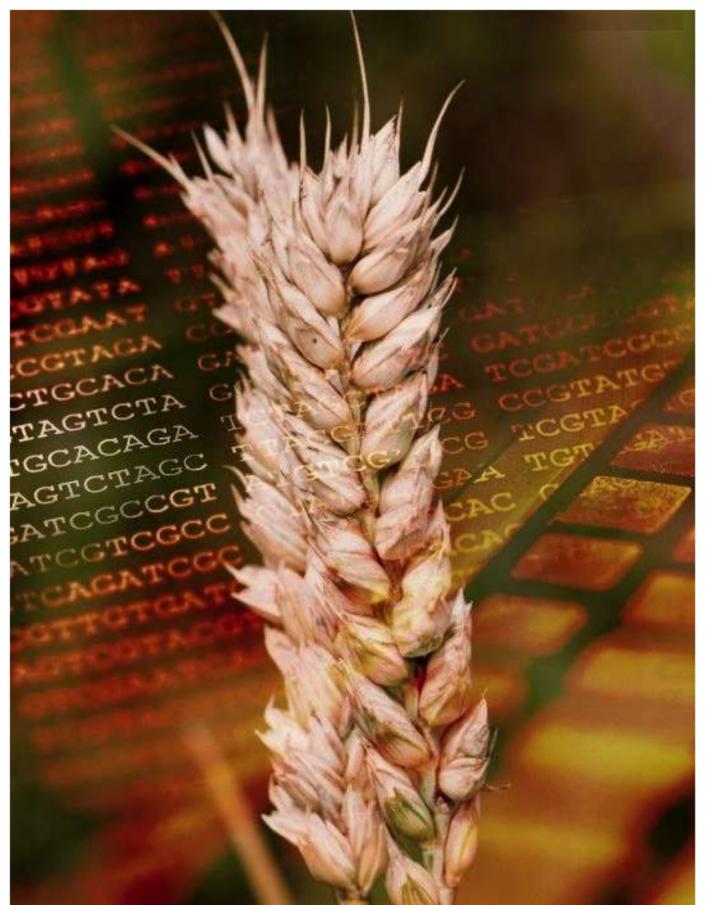
Markers

Physical maps

BAC libraries

Tools to browse and mine the data

# OUR WORK



All data are publicly available at the IWGSC Sequence Repository hosted at URGI

<http://wheat-urgi.versailles.inra.fr/Seq-Repository>

# OPENING LETTER

Kellye Eversole  
IWGSC Executive Director

2017 was a pivotal, exciting year for the IWGSC.

When the Consortium was set up in 2005 with the goal of producing a reference sequence of bread wheat, it was considered, if not impossible, at least totally unrealistic. Now, after 12 years, we reached this goal.

In January 2017, we provided pre-publication access to IWGSC RefSeq v1.0, the reference genome sequence of bread wheat. The quality of the reference sequence is unprecedented and demonstrates the importance of BAC libraries, physical maps, and chromosome-based resources. This was followed in June with the release of an annotation of RefSeq v1.0. We submitted a manuscript outlining the analysis of the reference sequence and accompanying resources to a scientific journal mid-December.

We are entering an exciting time for wheat researchers and breeders. The early, pre-publication release of the whole genome assembly, reference sequence, and annotation have led already to a flurry of significant advancements in trait discovery, gene cloning, and understanding of targeted regions of the wheat genome as well as the entire genome. While it is easy to pause now and think that the job of the IWGSC is over, much remains to be done by a well-coordinated, collaborative, and international consortium.

Accordingly, the IWGSC is moving into Phase II (IWGSC 2.0) activities to pursue its original mission – accelerate wheat improvement.

In December, the Coordinating Committee approved the following Phase II activities:

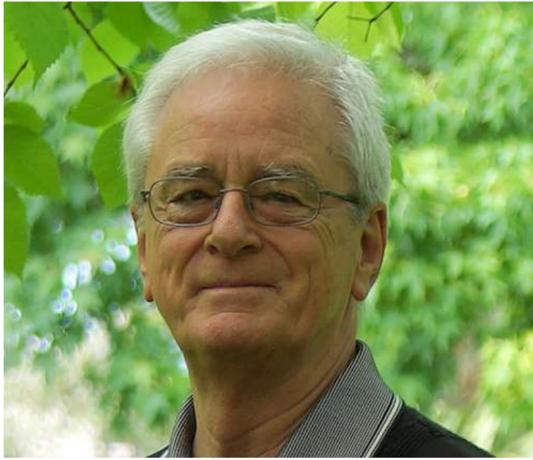
- IWGSC Exome Array based on the reference sequence
- Wheat pan-genome based on de novo sequencing and assembly of multiple wheat genomes (landraces and elite varieties) that cover the breadth of wheat diversity
- IWGSC Gold Standard: maintenance, updates, and integration of manual and functional annotation to the reference sequence
- User-friendly, integrated databases and tools to benefit public breeders and the full range of industry partners, from SME to large companies

These activities will enable the IWGSC to complete its vision of having a gold standard reference genome sequence as well as accompanying tools and resources for breeders and the broader scientific community.

As was critical over the past 12 years, success in Phase II will be dependent upon having strong academic and industry leaders, as well as sufficient sponsorship support for the IWGSC to remain operational. We hope that you will join us as we move into IWGSC 2.0.

**We are looking forward to working with dedicated leaders and welcome the opportunity to form new partnerships.**

# OUR LEADERSHIP



Rudi Appels  
University of Melbourne &  
AgriBio, Melbourne, Victoria



Kellye Eversole  
Eversole Associates  
& IWGSC



Catherine Feuillet  
Bayer CropScience



Sebastien Praud  
Biogemma



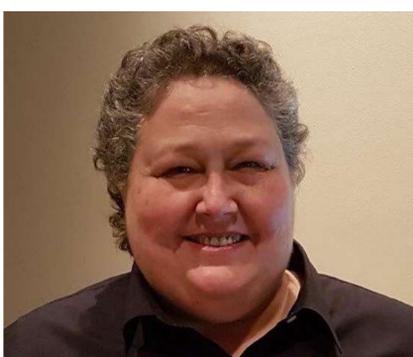
Beat Keller  
University of Zurich



Jane Rogers  
IWGSC

The Leadership team implements the strategic decisions made by the scientific Coordinating Committee, a group comprised of representatives of universities, public research entities and grower organizations, as well as small and large wheat breeding and seed companies.

# OUR STAFF TEAM



Kellye Eversole  
Executive Director



Jane Rogers  
Deputy Director  
Head of Sequencing



Lori Leach  
Chief Operations  
Officer



Isabelle Caugant  
Communications Director

# 2017 HIGHLIGHTS

In 2017, the IWGSC released two key resources to the wheat community, resulting in increased activity at the sequence repository and a rise in membership. Of note, there is no requirement to be a member to gain access to IWGSC data. The rise in membership, thus, reflects growing support for the activities of the Consortium.



## IWGSC Reference Sequencing Project

The IWGSC RefSeq v1.0 project was completed in late fall and the results were submitted to a scientific journal in mid-December.

**2** key resources were made available to the scientific community

In January: IWGSC reference sequence – RefSeq v1.0

In June: annotation of the IWGSC reference sequence v1.0

## Impact of the IWGSC Reference Sequence

Over **100**

journal articles published in 2017 referenced IWGSC RefSeq related resources (IWGSC WGA v0.4, IWGSC RefSeq v1.0 and annotation v1.0).

Of which **76** were related to breeding and field applications



## URGI sequence repository

The IWGSC sequence repository experienced increased activity during the year as key data were released to the community.

**28,151** visits

downloads **22,935**

**476,595** BLAST

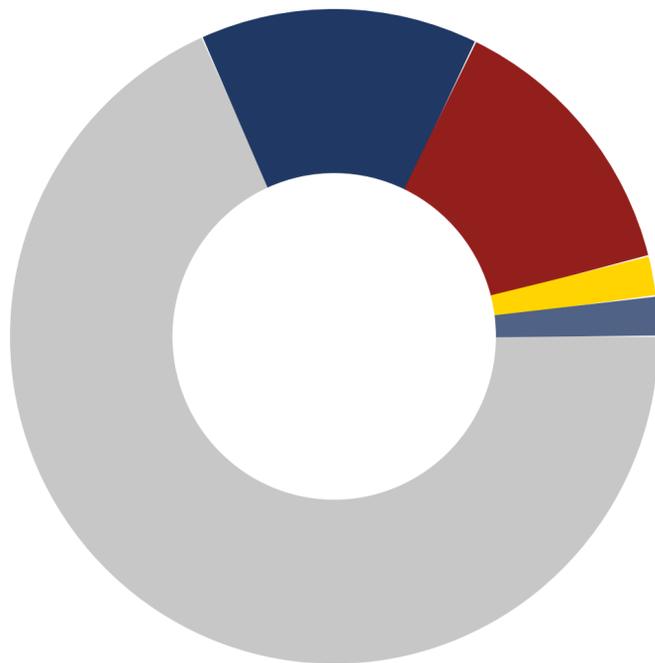
**↑ 143%**



# 2017 FINANCES

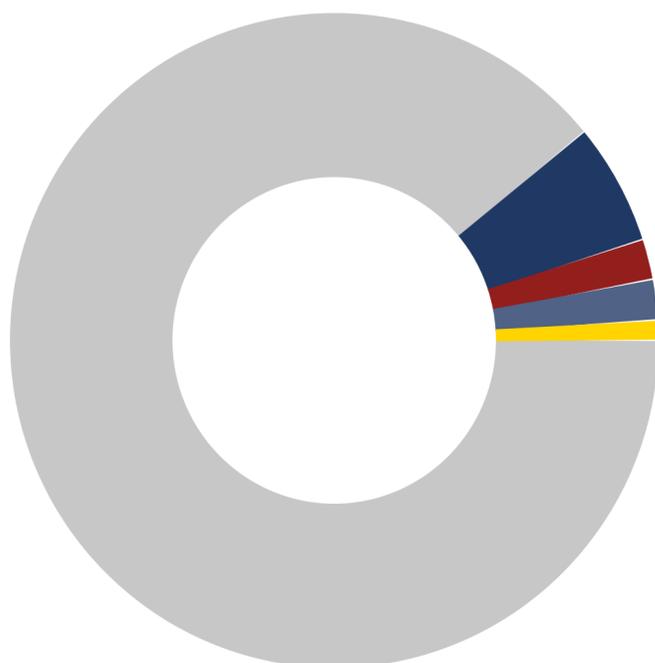
The IWGSC is financially supported by sponsors - private companies, research institutions, and grower organizations.

## Resources



- Industry (69%)
- Research Institutes (14%)
- Reserve Funds (14%)
- Grower Organizations (2%)
- Restricted Funds for Video Project (2%)

## Expenses



- Contract Services and Professional Fees (89%)
- Travel (6%)
- Operating Expenses (2%)
- Restricted Funds for Video Project (2%)
- Meetings, Workshops, Communication (1%)

The FY2017 budget was adjusted to accommodate a loss in sponsor revenue compared to 2016: travel expenses, meeting and workshop expenditures, and staff compensation were all reduced. Despite these budget cuts, the FY2017 expenses exceeded the revenue, which required a transfer from the Emergency Reserve funds into the general budget.

Moving in to FY2018, we have adopted a bare minimum budget, but it will be critical to increase our sponsor support if we are to continue into the Phase II activities.

# OUR SPONSORS in 2017



# STAY IN TOUCH WITH US



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