



Wheat Initiative Satellite Meetings

Thursday, April 20 – Saturday, April 22

@ BOKU Vienna, Peter Jordan Str. 82, room: SR 06

WI Satellite Meeting: Wheat Quality

Friday, April 21 – Saturday, April 22

@ BOKU Vienna, Peter Jordan Str. 82, room: EH 01

WI Satellite Meeting: Plant Phenotyping

Saturday, April 22

@ BOKU Vienna, Peter Jordan Str. 82, room: SR 09

WI Satellite Meeting: Adaptation of Wheat to Abiotic Stress

Sunday, April 23, 09:00 - 17:00

@ BOKU campus Tulln, Konrad Lorenz Str. 24, room SR 15.

WI Satellite Meeting: Wheat Breeding Methods and Strategies

Sunday, April 23, 15:00 - 18:00

@ BOKU campus Tulln, Konrad Lorenz Str. 24, room SR 14.

WI Satellite Meeting: Control of Wheat Pathogens and Pests

Sunday, April 23, 17:00 - 19:00 @ BOKU campus Tulln, Konrad Lorenz Str. 24, room SR 17.

WI Satellite Meeting: Durum Wheat Genomics and Breeding

Monday, April 24, 19:15 - 20:30 @ IWGS Venue Tulln

Satellite Meeting: Updates and discussions on recent stem rust epidemics in Europe and Eastern Africa



IWGS plan

Sunday, April 23, 2017

14:00 - 20:00 Registration Desk opens, poster setup starts, hand in your presentation

16:00 - 20:00 Welcome reception, ATRIUM Tulln

Monday, April 24, 2017

09:15 - 09:55 Welcome Messages

09:55 - 10:35 **Opening Lecture:** Helmut Haberl, AT
The option space for feeding the world in 2050 without deforestation: exploring the role of diets and agricultural technology

Cytogenetics; Diversity and Evolution of the Triticeae

Chairs: Elena Salina (RU) and Evans Lagudah (AU)

10:35 - 11:05 Pierre Sourdille, FR
Identifying sequence features impacting recombination in wheat: lessons from chromosome 3B

11:05 - 11:45 ☕ Coffee break

11:45 - 12:05 Åsmund Bjørnstad, NO
Tritico nihil est fertilius – nothing is more prolific than wheat. The cultural and cultivation history of wheat

12:05 - 12:25 Ekaterina D Badaeva, RU
Genome evolution in Aegilops evaluated using molecular-cytogenetic analyses

12:25 - 12:45 Steven Xu, US
Introgression of a new stem rust resistance gene from Aegilops markgrafii into wheat

12:45 - 14:10 🍽 Lunch break

Harnessing Diversity for Triticeae Improvement

Chairs: Ekaterina D. Badaeva (RU) and Graham Moore (UK)

14:10 - 14:40 Julie King, UK
A step change in the transfer of interspecific variation into wheat from its wild relatives

14:40 - 15:00 George Fedak, CA
Advances in alien gene transfer in wheat

15:00 - 15:20 Robert McIntosh, AU
The Wheat Gene Catalogue: 50 years on

15:20 - 15:40 Sukhwinder-Singh, MX
Mobilizing wheat biodiversity from gene banks to breeding programs

15:40 - 16:00 Etienne Paux, FR
How can genome organization impact wheat breeding (and vice versa)?



16:00 - 16:40 ☕ Coffee break

Structural and Functional Wheat Genomics

Chairs: Jizeng Jia (CN) and Hana Šimková (CZ)

- 16:40 - 17:10 Rudi Appels, AU
The wheat genome in the 21st century
- 17:10 - 17:30 Curtis J. Pozniak, CA
Genome assemblies of elite cultivars provides insights into the wheat pan-genome
- 17:30 - 17:50 Luigi Cattivelli, IT
High quality assembly of the durum wheat genome cv. Svevo
- 17:50 - 18:10 Jorge Dubcovsky, US
Dissection of the wheat flowering pathway using sequenced mutant populations
- 18:10 - 18:30 Maria Buerstmayr, AT
Irradiation induced deletion mapping allows high-resolution mapping of the Fusarium head blight resistance QTL support interval Qfhs.ifa-5A residing in the low-recombining peri-centromeric region of chromosome arm 5AS
- 18:30 - 18:50 Xiuying Kong, CN
A TRIM insertion led to a gene resurrection event that causes male sterility in wheat
- 18:50 - 19:10 ☕ Evening break

Special session - Wheat Genome Databases

Chair: Ute Baumann (AU)

- 19:10 - 19:30 Taner Z. Sen, US
GrainGenes: Supporting the Small Grains Community
- 19:30 - 19:50 Thomas Letellier, FR
Explore IWGSC reference genome data thanks to URGI resources
- 19:15 - 20:30 *Satellite Meeting: Updates and discussions on recent stem rust epidemics in Europe and Eastern Africa*

Tuesday, April 25, 2017

Genetics and Genomics of Biotic and Abiotic Stress Resistance

Chairs: Maricelis Acevedo (US), Lesley Boyd (UK), Wolfgang Spielmeyer (AU) and Anna-Maria Botha-Oberholster (ZA)

- 09:15 - 09:45 Beat Keller, CH
Pathogen-informed strategies for wheat disease resistance improvement
- 09:45 - 10:05 Nick Collins, AU
QTLs for heat tolerance in wheat
- 10:05 - 10:25 Laura Dixon, UK
A genetic mechanism for adaptation of wheat to variable growth temperatures
- 10:25 - 10:45 Dina Raats, UK
Functional genomics to improve wheat disease resistance
- 10:45 - 11:15 ☕ Coffee break



11:15 - 13:15 **Poster Session I – postes with odd numbers**

13:15 - 14:10 ☺ Lunch break

14:10 - 14:30 Friedrich Longin, DE
Potential of molecular markers for hybrid wheat breeding

14:30 - 14:50 Radvile Nagrockaite-Lelesiene, LT, 🎓 student presenter
Identification of new allelic variants for freezing tolerance in winter wheat WRKY71 and ZCCT2 genes

14:50 - 15:10 Qixin Sun, CN
*Genetic and epigenetic controls of heat tolerance in wheat (*Triticum aestivum* L.)*

15:10 - 15:30 Eduard Akhunov, US
*Unraveling the mechanisms of stem rust resistance conferred by the Sr35 gene against the *Puccinia graminis* pathogen*

15:30 - 15:50 Cyrille Saintenac, FR
*Stb16q-mediated resistance against *Zymoseptoria tritici* is conferred by a new class of R gene*

15:50 - 16:10 Manisha Shankar, AU
Detection and stacking of new genes for tan spot (yellow spot) resistance results in genetic gain

16:10 - 16:50 ☕ Coffee break

16:50 - 17:10 James A. Anderson, US
*Combining QTL-based markers and genomewide prediction with phenotypic screening for efficient selection of *Fusarium* head blight resistance in wheat*

17:10 - 17:30 Rongqi Liang, CN
*Silencing of a lipase maturation factor 2-like gene by wheat-mediated RNAi reduces the survivability and reproductive capacity of grain aphid (*Sitobion avenae*)*

17:30 - 17:50 María José Diéguez, AR
Mapping a complementary gene to LrSV2 for adult plant specific leaf rust resistance identified in the durable resistant variety Sinvalocho MA

17:50 - 18:10 Anupriya Kaur Thind, CH, 🎓 student presenter
*Long-range scaffolding enables rapid isolation of the leaf rust disease resistance gene *Lr22a**

18:10 - 18:30 ☕ Evening break

Special session - Functional characterization of *Fhb1*, a large effect QTL for *Fusarium* resistance

18:30 - 18:30 Chair: Cristobal Uyay (UK)

18:30 - 18:40 Nidhi Rawat, US
*Pore-forming toxin-like gene provides resistance against *Fusarium* head blight in wheat*

18:40 - 18:50 Zhengqiang Ma, CN
*Map-based cloning of *Fhb1* revealed unique mutation of a well-conserved gene resulting in resistance to wheat *Fusarium* head blight*



- 18:50 - 19:00 Guihua Bai, US
TaHRC is the key gene underlying Fhb1 resistance to Fusarium head blight in wheat
- 19:00 - 19:10 Barbara Steiner, AT
Functional identification of the wheat gene enhancing mycotoxin detoxification of the major Fusarium resistance QTL Fhb1

Public Evening Session (in German language) Weizen - ein Grundnahrungsmittel der Menschheit

- 19:30 - 21:00 *Panel debate*
Hans Braun: head of the wheat breeding program at CIMMYT
Peter Langridge: Wheat Initiative
Eva Stoeger: professor for molecular physiology at BOKU Vienna
Franziska Loeschenberger: practical wheat breeder in Austrian
Moderator: Andreas Obrecht

Wednesday, April 26, 2017

Genetics and Genomics of Resource Efficiency; Quality and Composition I

Chairs: Carlos Guzman (MX) and Fernanda Dreccer (AU)

- 09:15 - 09:45 Tatsuya M Ikeda, JP
International collaboration to improve wheat quality for processing and health
- 09:45 - 10:05 Stephane Lafarge, FR
Improving nitrogen use efficiency in wheat by genome wide and candidate genes targeted association studies
- 10:05 - 10:25 Velu Govindan, MX
Getting good genes and high-throughput phenotyping for nutritious wheat breeding
- 10:25 - 10:45 Ann Blechl, US
Dough mixing properties of wheat flours with high levels of HMW-glutenin subunits Dx5 and Dy10
- 10:45 - 11:25 ☕ Coffee break

🎓 Student Session I

Chairs: Miriam Gatti (FR) and Sebastian Michel (AT)

- 11:25 - 11:45 Alevtina Ruban, DE, 🎓 student presenter
Root-specific elimination of the Aegilops speltoides B chromosomes and the possible mechanism behind
- 11:45 - 12:05 Lauren Baker, UK, 🎓 student presenter
Introgressing genetic diversity into wheat from the wild relative Thinopyrum elongatum
- 12:05 - 12:25 Diana Duarte-Delgado, DE, 🎓 student presenter
Identification of novel candidate genes of bread wheat involved in early salt stress tolerance through the integration of genomics and transcriptomic resources
- 12:25 - 12:45 Mathilde Daniau, NL, 🎓 student presenter
New strategy to get durable disease resistance in wheat



- 12:45 - 13:05 Serhii Mykhailyk, UA, 🎓 student presenter
Identification and analysis of wheat TaMSH7 gene promoter region
- 13:05 - 14:30 🍽️ Lunch break
- 14:00 - 21:30 🚌 Vienna Sightseeing Tour, **bus departure 14:00** // Free Afternoon //

Thursday, April 27, 2017

Genetics and Genomics of Resource Efficiency; Quality and Composition II

Chairs: Carlos Guzman (MX) and Fernanda Dreccer (AU)

- 09:15 - 09:45 Scott Boden, UK
Regulation of inflorescence architecture in wheat by TEOSINTE BRANCHED1
- 09:45 - 10:05 Oluwaseyi Shorinola, UK
Waking up too early: TaMKK3-A underlies the major 4AL pre-harvest sprouting resistance locus, Phs-A1, in global germplasm
- 10:05 - 10:35 ☕ Coffee break

10:35 - 12:35 **Poster Session II - postes with even numbers**

- 12:35 - 14:00 🍽️ Lunch break

Applying Novel Tools to Practical Wheat Improvement I

Chairs: Outi Manninen (FI), Philippe Lonnet (FR), Viktor Korzun (DE) and Hans Braun (MX)

- 14:00 - 14:30 Bettina Lado, UR, 🎓 student presenter
Comparing strategies to select crosses using genomic prediction in two wheat breeding programs
- 14:30 - 14:50 Yong Jiang, DE
The relevance of epistasis to genome-wide prediction in wheat
- 14:50 - 15:10 Sebastian Michel, AT, 🎓 student presenter
Genomic assisted selection for enhancing line breeding
- 15:10 - 15:30 Fabio Cericola, DK
Modelling genotype by environment interaction for genomic selection in wheat
- 15:30 - 15:50 Jianli Chen, US
Perspective using molecular marker-assisted breeding for dwarf and common bunt resistance in winter wheat
- 15:50 - 16:30 ☕ Coffee break
- 16:30 - 16:50 Matteo Dell'Acqua, IT
Which wheat for smallholder Ethiopian farmers? The quantitative genetics of traditional knowledge
- 16:50 - 17:10 Suchismita Mondal, MX
Utilizing genomics and phenomics in CIMMYT wheat breeding
- 17:10 - 17:30 Renaud Rincet, FR
Optimization of trial networks for genomic selection based on crop models



- 17:30 - 17:50 Ahmad M. Manschadi, AT
Crop modelling as a phenotyping tool for enhancing wheat adaptation to abiotic stresses
- 17:50 - 18:10 William D. Bovill, AU
Use of a non-destructive estimate to improve understanding of the genetics of biomass production in wheat
- 18:10 - 18:40 Melissa Garcia, AU
Exploring genetic diversity in bread wheat using nested association mapping (NAM)
- 18:40 - 19:10 **IWGS Business Meeting**
- 19:10 - 19:30 *Recreation Break*
- 19:30 - 23:30 **🍷 Symposium Dinner**

Friday, April 28, 2017

Applying Novel Tools to Practical Wheat Improvement II

Chairs: Outi Manninen (FI), Philippe Lonnet (FR), Viktor Korzun (DE) and Hans Braun (MX)

- 10:10 - 10:30 Javier Sánchez-Martín, CH
Rapid gene isolation in barley and wheat by mutant chromosome sequencing
- 10:30 - 10:50 Craig F. Morris, US
Genetic mapping of flavor loci in wheat
- 10:50 - 11:10 Takashi Okada, AU
Unfertilized ovary pushes wheat flower open for cross-pollination
- 11:10 - 11:30 Lanqin Xia, CN
CRISPR/Cas9-mediated genome editing in wheat genetic improvement
- 11:30 - 12:10 ☕ Coffee break

🎓 Student Session II

Chairs: Susanne Trittinger (US) and Peter Skov (DK)

- 12:10 - 12:30 André Schönhofen, US, 🎓 student presenter
Combined mutations in Sbell genes affect grain yield and bread-making quality in hexaploid wheat
- 12:30 - 12:50 Reem Joukhadar, AU, 🎓 student presenter
The ancestral origin of Australian wheat
- 12:50 - 13:10 Jordan Valente, FR, 🎓 student presenter
Wheat-bacteria positive interactions: would old wheat genotypes be our hope for the future of agriculture?
- 13:10 - 14:40 🍽️ Lunch break
- 14:40 - 15:00 Kali M. Brandt, US, 🎓 student presenter
Testing non-transgenic CRISPR technology for wheat improvement
- 15:00 - 15:20 Taj Arndell, AU, 🎓 student presenter
Wheat genome editing with the CRISPR-Cas system



Future of Wheat Improvement in Different Parts of the World

Chairs: Tina Henriksson (SE) and Silvia German (UR)

- 15:20 - 15:50 Maricelis Acevedo, US
Building on the Borlaug Global Rust Initiative: delivering genetic gain in wheat
- 15:50 - 16:30 ☕ Coffee break
- 16:30 - 16:50 Ravi P. Singh, MX
Genetic gains for grain yield, disease resistance and other traits in CIMMYT spring wheat germplasm targeted for adaptation in diverse environments of Asia, Middle East, Africa and Latin America
- 16:50 - 17:10 Wuletaw Tadesse, MA
Wheat breeding at ICARDA: strategies, achievements and prospects
- 17:10 - 17:30 Lyudmila Bespalova, RU
Russia - wheat grain exporter #1: contribution of breeding, genomics and genetic resources
- 17:30 - 17:50 Wolfgang Friedt, DE
Genetics-based breeding in winter wheat has lead to modern elite varieties with broad resistance to major diseases
- 17:50 - 18:10 *Closing ceremony*