



International Wheat Genetics Symposium

24–29 August 2008

Brisbane Convention Centre

Brisbane, Qld, Australia

Current Program (correct as at 14 August 2008)

The Symposium Organisers reserve the right to alter the program as required

Sunday 24 August

9.00 am – 11.30 am	International Wheat Genome Sequencing Consortium Open Business Meeting Convenor: Rudi Appels
9.00 am	<i>Physical mapping projects</i> Kellye Eversole: Overview 3B (Etienne Paux), 3AS (Bikram Gill) and <i>T. tauschii</i> (Jan Dvorak): Discussion of key issues, problems encountered and solutions proposed so that new projects can be improved.
9.30 am	Sequencing and database integration Annotation pipelines based on discussions held internationally during 2007 and 2008 (James Breen) URGI and TriAnnot automated annotation pipeline (France and EU project, Catherine Feuillet) Graingenes (Olin Anderson) Gramene and NCBI (Rudi Appels)
10.30 am	<i>Assigning the physical map to genetic maps for use in breeding</i> Strategies for accelerating genome specific marker development in wheat (Alain Murigneux, Biogemma) The Sr2 region on chromosome 3B (Wolfgang Spielmeier) Options for large populations that can be analyzed for phenotype and high resolution molecular marker mapping (Colin Cavannagh)
11.30 am	Close
11.30 am – 12.30 pm	ITMI Business Meeting Convenor: Catherine Feuillet
12 noon	Registration Desk Opens
1.00 pm – 6.00 pm	Ug99 Rust Workshop Welcome: Christian Roth, ACIAR Regional Co-ordinator for South Asia and Research Program Manager for Land and Water Resources
1.10 pm – 3.10 pm	Session 1
1.10 pm	<u>Chair:</u> Evans Lagudah, IWGS, CSIRO O01 <i>Historical overview of stem rust research</i> <u>Robert McIntosh</u> , University of Sydney
1.40 pm	O02 <i>Virulence variation within the Ug99 lineage</i> <u>Yue Jin</u> , USDA-ARS Minnesota, USA
2.10 pm	O03 <i>Current resistance sources and breeding strategies to mitigate Ug99 threat</i> <u>Ravi Singh</u> , CIMMYT Mexico
2.40 pm	O04 <i>Molecular markers for wheat stem rust resistance: current research and future plans</i> <u>Mark Sorrells</u> , Cornell University
3.10 pm	O05 <i>Detection of wheat stem rust race "Ug99" (TTKSK) in Iran</i> <u>Kumarse Nazari</u> , iCARDA, Syria



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3.20 pm – 3.40 pm

Afternoon Tea

3.40 pm – 5.50 pm

Session 2

Chair: Paul Fox, ACIAR

3.40 pm

O06 *Chromosome engineering to enhance utility of alien-derived stem rust resistance*

Steven Xu, USDA-ARS North Dakota, USA & Ian Dundas

4.10 pm

O07 *Status of Ug99 resistance in current Australian wheat cultivars and breeding materials*

Harbans Bariana and Robert Park, University of Sydney

4.40 pm

O08 *Operation and development of screening facilities in East Africa*

Rick Ward, Cornell-BGRI

5.10 pm

O09 *The Borlaug Global Rust Initiative and international collaboration*

Rick Ward, Cornell-BGRI, and Katherine Kahn, Gates Foundation

5.50 pm

Close

6.00 pm – 8.00 pm

IWGS 2008 Welcome Reception



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Monday 25 August

- 8.30 am – 9.00 am **Conference Opening**
- 9.00 am – 10.25 am **Session 1: Exploring and exploiting wheat genetic resources**
9.00am
O10 *Conserving crop diversity: navigating politics and climate change to create a global system*
Cary Fowler, Global Crop Diversity Trust, Italy
- 9.45 am **O11** *Metabolic phenotyping of genetically diverged species in Gramineae*
Mochida K, Furuta T, Ogihara Y, Shinozaki K, Kikuchi J
- 10.05 am **O12** Molecular diversity and association mapping in a collection of synthetic hexaploid wheat
Ogbonnaya FC, Ye G, Emebiri LC, Trethowan R, van Ginkel M
- 10.25 am – 11.10 am **Morning Tea**
- 11.10 am – 12.35 pm **Session 2: Exploring and exploiting wheat genetic resources (contd)**
11.10 am
O13 *Diving into the genepool: a rational system to access specific traits from large germplasm*
Ken Street, ICARDA, Syria
- 11.55 am **O14** *Allele mining and sequence diversity at the wheat powdery mildew resistance locus Pm3*
Kaur K, Street K, Mackay M, Yahiaoui N, Keller B
- 12.15 pm **O15** *Imprint of selection in pedigrees of modern bread wheat varieties*
Horvath A, Charmet G, Balfourier F
- 12.35 pm – 2.00 pm **Lunch and Posters**
- 2.00 pm – 3.25 pm **Session 3: Chromosome biotechnology**
2.00 pm
O16 *Unexpected chromosome behavior in wheat: general rule or an exception?*
Adam Lukaszewski, University of California, USA
- 2.45 pm **O17** *Chromosome re-assembly for wheat improvement*
Ayala-Navarrete L, Bariana HS, Singh RP, Mechanicos AA, Gibson JM, Larkin PJ
- 3.05 pm **O18** *Recombination analysis on bread wheat chromosome 3B*
Saintenac C, Paux E, Choulet F, Faure S, Philippon J, Boyer D, Bernard M, Feuillet C, Sourdille P
- 3.25 pm – 4.00 pm **Afternoon Tea**



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4.00 pm – 5.25 pm

4.00 pm

Session 4: Chromosome biotechnology (contd)

O19 *The Ph1 locus – a story 50 years in the making*

Graham Moore, John Innes Centre, UK

4.45 pm

O20 *A genetic and physical map of the short arm of rye chromosome 1 (1RS)*

Kofler R, Gong L, Resch K, and Lelley I

5.05 pm

O21 *Dissecting the hexaploid wheat genome by chromosome sorting*

Suchankova P, Kubalaková M, Cihalikova J, Zagorova H, Gill BS, Dolezel J

5.30 pm – 7.00 pm

P001-P054

P055-P074

P075-P078

Posters

Exploring and exploiting wheat genetic resources

Chromosome biotechnology

Genetic diversity

5.30 pm – 8.30 pm

Generation Challenge Program Workshop: Application of Genomics in Wheat Breeding

5.30 pm

Overview of GCP

Philippe Monneveux

5.50 pm

Wheat germplasm projects and delivery

Susanne Dreisigacker

6.10 pm

Gene discovery and analysis projects

Peter Langridge

6.30 pm

Modelling and database work

Scott Chapman

6.50 pm

Panel discussion

Chair: Peter Langridge

Panel members: Pushpendra Gupta (India), Ruilian Jing (China),

Alexey Morgounov (Turkey)

Panel discussion will address the following questions:

1. Awareness of GCP Did you know about the GCP prior to this meeting?

1. Overall structure of the GCP projects is this appropriate for the wheat breeding community? How might it be improved given the funding constraints?

2. Wheat projects: do these represent real priorities for wheat breeders?

3. Delivery of outcomes and engagement of breeders How can this be most effectively achieved?

4. Wheat breeders forum. Would this be helpful and how might it operate?

8.20 pm - 8.30 pm

Concluding remarks and plan of action



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Tuesday 26 August

9.00 am – 10.25 am

9.00 am

Session 5: Genome dynamics

O22 *The Big B of Bread wheat – 3B – exploring the structure, function, and evolution of the hexaploid wheat genome*

Catherine Feuillet, INRA, France

9.45 am

O23 *Genomic shock induced genetic and epigenetic changes in homoeologs of class ABCDE MADS-box genes in hexaploid wheat*
Murai K, Shitsukawa N

10.05 am

O24 *High-resolution radiation hybrid mapping in wheat: an essential tool for the construction of the wheat physical maps*

Michalak M, Kumar A, Riera-Lizarazu O, Gu Y, Paux E, Choulet F, Feuillet C, Kumar S, Goyal A, Tiwari V, Dogramaci M, Hegstad J, Peckrul A, Kalavacharla V, Hossain K, Balyan HS, Dhaliwal HS, Gupta PK, Randhawa GS, Maan SS, and Kianian SF

10.25 am – 11.10 am

Morning Tea

11.10 am – 12.35 pm

11.10 am

Session 6: Genome dynamics (contd)

O25 *Structure and organization of the wheat genome*

Katrien Devos, The University of Georgia, USA

11.55 am

O26 *Single feature polymorphism discovery using the wheat Affymetrix Gene Chip*

Banks T, Somers DJ, Jordan MC

12.15 pm

O27 *Marker/trait associations identified in spring wheat using 25 years of CIMMYT international trials*

Arief V, DeLacy IH, Dieters MJ, Crossa J, Godwin I, Batley J, Davenport G, Dreisigacker S, Edwards D, Huttner E, Lambrides C, Manes Y, Payne T, Singh RP, Duveiller E, Warburton M, Wenzl P, Kilian A, McLaren G, Braun H-J, Crouch J, Ortiz R, Basford KE

12.35 pm – 2.00 pm

P106-P168

Lunch and Posters

Coping with wheat in a changing environment – biotic stresses

2.00 pm – 3.25 pm

2.00 pm

Session 7: Coping with wheat in a changing environment – biotic stresses

O28 *Genetics of host-pathogen interactions in the wheat-*Stagonospora nodorum* pathosystem*

Justin Faris, USDA-ARS Cereal Crops Research Unit, USA

2.45 pm

O29 *Deciphering defense strategies that are elucidated in wheat containing different *Dn* resistance genes*

Botha AM, Swanevelder ZH, Schultz T, Van Eck L, Lapitan NLV

3.05 pm

O30 *The role for basal resistance in non-host interactions*

Tufan HA, Boyd LA

3.25 pm – 4.00 pm

Afternoon Tea



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- 4.00 pm – 5.25 pm **Session 8: Coping with wheat in a changing environment – biotic stresses (contd)**
- 4.00 pm **O31-*Molecular analysis of fungal disease resistance in wheat***
Beat Keller, University of Zurich, Switzerland
- 4.45 pm **O32 *Fine-mapping of the durable leaf rust resistance gene Lr34 using sequence information from Brachypodium and Aegilops tauschii***
Krattinger SG, Lagudah ES, Spielmeier W, Keller B
- 5.05 pm **O33 *General disease resistance loci against biotrophic pathogens in wheat***
Lillemo M, Asalf B, Singh RP, Huerta-Espino J, Chen XM, He ZH, Brown JKM, Bjørnstad Å
- 5.30 pm – 7.00 pm**
P079-P105
P169-P218 **Posters**
Genome dynamic
Coping with wheat in a changing environment – abiotic stresses
- 5.30 pm – 7.00 pm** **Wheat Genetic Resources Workshop**
Convenor: Michael Mackay
- 8.00 pm – 10.30 pm** **International Wheat Genome Sequencing Consortium – Coordinators Meeting (By invitation only)**
Convenor: Rudi Appels

Wednesday 27 August

- 9.00 am - 10.25 am **Session 9: Coping with wheat in a changing environment – abiotic stresses**
- 9.00 am **O34 *Genetic improvement of wheat for dry environments – a trait based approach***
Richard Richards, CSIRO Plant Industry, Australia
- 9.45 am **O35 *Physiological-genetic dissection of drought resistance in wild emmer wheat***
Saranga Y, Peleg Z, Fahima T
- 10.05 am **O36 *Effects of post-anthesis heat stress and nitrogen levels on grain yield and grain growth of wheat (T. durum and T. aestivum) genotypes***
Modhej A, Naderi A, Emam Y, Ayneband A, Normohamadi G
- 10.25 am – 11.10 am** **Morning Tea**
- 11.10 am – 12.25 pm** **Session 10: Coping with wheat in a changing environment – abiotic stresses (contd)**
- 11.10 am **O37 *Wheat production in a changing environment - low temperature adaptation***
Brian Fowler, University of Saskatchewan, Canada
- 11.55 am **O38 *Can ABA signaling be used to develop drought tolerant wheat?***



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Schramm E, Abellera J, Strader L, Campbell KG, Steber CM

12.15 pm

O39 *Stay-green wheat for Australia's changing, dry environment*
Christopher JT, Manschadi AM, Hammer GL, Borrell AK

1.00 pm – 5.30 pm

CIMMYT Users Group Workshop
Convenor: Richard Trethowan

7.45 pm – 10.30 pm

Wheat Genome Databases Workshops
Convenors: Pablo Rabinowicz & Rudi Appels

This workshop includes time for participants to use the web tools, provided their laptops can access the wireless facility provided. Advance notice is required for attendance at the workshop.

7.45 pm

Introduction
Pablo Rabinowicz

8.00 pm

JCVI/UMB annotation (ex-TIGR annotation): Annotation pipeline, project's website showcase, community annotation
Rama Maiti (JCVI)

8.40 pm

The DAWS-PAWS wheat annotation pipeline
Katrien Devos

9.20 pm

Wheat genome physical mapping and annotation web tools: the WHEAPHY-Gbrowse and the TriAnnot annotation pipeline: INRA annotation and physical mapping of Chromosome 3B
Catherine Feuillet

10.00 pm

Gene catalogue: Update on the Wheat gene catalogue
Yukiko Yamazaki, Rudi Appels, Bob McIntosh

10.15 pm

Update on molecular genetic maps available in CMap format
Rudi Appels

4) Gene catalogue

Thursday 28 August

9.00 am – 10.25 am

Session 11: Coping with wheat in a changing environment – quality

9.00 am

O40 *Proteomics evidence of quality stresses caused by changing environment*
Gerard Branlard, INRA, France

9.45 am

O41 *Characterization of low-molecular-weight glutenin subunit genes at Glu-B3 and Glu-D3 loci and development of functional markers in common wheat*
Wang L, Zhao X, He XY, He ZH, Xia XC

10.05 am

O42 *International collaboration for unifying Glu-3 nomenclature system in common wheats*



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Ikeda TM, Branlard, G, Peña RJ, Takata K, Liu L, He Z, Lerner SE, Kolman MA, Yoshida H, Rogers WJ

10.25 am – 11.10 am	Morning Tea
11.10 am – 12.25 am	Session 12: Coping with wheat in a changing environment – quality (contd)
11.10 am	O43 <i>Understanding the molecular basis of Chinese noodle quality</i> Zhonghu He, PR China
11.55 am	O44 <i>Dormancy in white-grained wheat: Mechanisms and genetic control</i> <u>Rathjen JR</u> , Mares DJ, Mrva K, Schultz C, Cheong J
12.15 pm	O45 <i>An integrated approach to predicting end-product quality of wheat</i> <u>Bekes F</u> , Morell M
12.35 pm – 2.00 pm	Lunch and Posters
P219-P261	Coping with wheat in a changing environment – quality
P262-P276	Coping with wheat in a changing environment – varying development
P277-P298	Breeding for a changing world
P299-P302	Integration from molecules to function
2.00 pm – 3.25 pm	Session 13: Coping with wheat in a changing environment – varying development
2.00 pm	O46 <i>The application of new tools to study gene expression and genetic diversity in allopolyploid wheat</i> Keith Edwards, University of Bristol, UK
2.45 pm	O47 <i>AMMI analysis for stability and location effect on grain yield and its components of durum wheat genotypes</i> <u>Sarial AK</u> , Haile JK, Assefa S, Sareen S
3.05 pm	O48 <i>Wheat (<i>Triticum aestivum</i> L.) root proteome and identification of differentially expressed proteins between hybrid and parents</i> <u>Sun Q</u> , Song X, Ni Z, Yao Y, Zhang Y
3.25 pm – 4.00 pm	Afternoon Tea
4.00 pm – 5.25 pm	Session 14: Coping with wheat in a changing environment – varying development (contd)
4.00 pm	O49 <i>Genes and gene networks regulating wheat development</i> Jorge Dubcovsky, University of California, USA
4.45 pm	O50 <i>Integration of low-temperature and long-day flowering responses in cereals</i> Sasani S, Hemming MH, Dennis ES, Peacock WJ, <u>Trevaskis B</u>
5.05 pm	End of session
	Conference Dinner at the Gabba



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Friday 29 August

- 9.00 am – 10.25 am** **Session 15: Breeding for a changing world**
9.00 am **O51** *Outstanding in their field: the phenotype of the 21st century plant breeder*
Stephen Baenziger, University of Nebraska, USA
- 9.45 am **O52** *Effectiveness of marker assisted selection for resistance to Fusarium head blight in a wheat backcross breeding program*
Cao W, Fedak G, Somers DJ, McCartney C, Xue A, Savard ME, Voldeng H
- 10.05 am **O53** *Breeding strategies to improve grain yield and quality of short-season spring wheat for the steppe of Kazakhstan and Siberia*
Morgounov AI, Abdullayev K, Abugalieva AI, Baytassov A, Bekenova LV, Bekes F, Belan I, Cakmak I, Chudinov V, Ganeev V, Gergely Sz, Gomez HF, Koyshibayev MK, Rsaliev S, Sereda GA, Shpigun S, Tomoskozi S, Trethowan R, Tsygankov V, Zelenskiy YI, Zykin VA
- 10.25 am – 11.10 am** **Morning Tea**
- 11.10 am – 12.25 pm** **Session 16: Breeding for a changing world (contd)**
11.10 am **O54** *The challenges of integrating new technologies into a wheat breeding programme*
Hadyn Kuchel, Australian Grain Technologies, Australia
- 11.55 am **O55** *Population plant breeding: making a big picture from all the little pieces*
Falk DE
- 12.15 pm **O56** *Breeding for biofuel production*
Botes WC, Tsupko Y, Dix R, De Groot S, Saul H
- 12.35 pm – 2.00 pm** **Lunch and Posters**
- 2.00 pm – 3.45 pm** **Closing Session: Integration from molecules to function**
2.00 pm **O57** *Comparative genomics as a guide to the wheat genome*
Michael Bevan, John Innes Centre, UK
- 2.45 pm **O58** *Discovery of novel genes for bread making quality by meta-QTL analysis of digital images of crumb structure*
Snape JW, Simmonds J, Leverington M, Fish LJ, Wang YK, Higgins J, Christoudolou V, Griffiths S, Millar S
- 3.15 PM **O59** *Priorities for the future of wheat*
Bob McIntosh, University of Sydney, Australia
- 3.45 pm Conference Ends