



MONOGRAM 2022

CEREALS & GRASSES RESEARCH NETWORK



UNIVERSITY OF LEEDS

DAY 1: MONDAY 4TH APRIL

Registration opens 10.00

Welcome: Dr Laura Dixon, University of Leeds 11.30

Keynote Speaker: Rank Prize seminar
Dr Alison Bentley, Director of the Wheat Programme, CIMMYT 11.40

Our cereal future: research, breeding and beyond



12:30 LUNCH

SESSION 1: WORLD UNDER PRESSURE

CHAIRS: STEPHEN PEARCE AND CHETAN DEVA



13:30 Plenary Speaker : Diane Saunders (JIC)
A perfect storm approaching: the re-emergence of wheat stem rust in Western Europe

14:00 Talk 1: Nick Fradgley (NIAB)
How will climate change affect UK wheat quality and what can breeders do about it?

14:20 Talk 2: Joanna Raymond (University of East Anglia)
Identifying genetic and environmental drivers of winter wheat variability in the UK

14:40 Talk 3: Benedict Coombes (Earlham Institute)
Exotic alleles contribute to heat tolerance in wheat under field conditions

15:00 BREAK

DAY 1: MONDAY 4TH APRIL (CONTINUED)

SESSION 2: DEVELOPMENT AND CROP IMPROVEMENT



CHAIRS: SARAH MCKIM AND ADAM GAULEY

- 15:30** Plenary Speaker: Tracey Lawson (University of Essex)
Natural variation in stomatal dynamics in bread wheat
- 16:00** Talk 1: Sadiye Hayta (JIC)
Expanding Genome Editing System into Elite Wheat Varieties by Using Morphological Genes
- 16:20** Talk 2: Kathryn O'Connor (University of Leeds)
A new method to speed vernalize winter crops
- 16:40** Talk 3: Petros Sigalas (Rothamsted Research)
Wheat tillering control in response to N supply: The case of strigolactones

17:00 POSTER FLASH TALKS

17:20 POSTER SESSION



DAY 2: TUESDAY 5TH APRIL

8.00 Women in Wheat tea

SESSION 3: QUALITY AND NUTRITION

CHAIRS: BRITTANY HAZARD AND NICK FRADGLEY



- 9:00** Plenary Speaker: Veronica Guwela (University of Nottingham)
High zinc wheat for sub-Saharan Africa
- 9:30** Talk 1: Rose McNelly (JIC)
*Exploiting natural diversity in *Aegilops tauschii* starch to discover novel factors in starch granule biogenesis*
- 9:50** Talk 2: Rohan Richard (Rothamsted Research)
Environmental effects on wheat grain protein
- 10:10** Talk 3: Sarah Raffan (Rothamsted Research)
Reducing the acrylamide-forming potential of wheat

10:30 BREAK

SESSION 4: MEGA GENOMES

CHAIRS: MARTIN MASCHER AND AMANDA BURRIDGE



- 11:00** Plenary Speaker: Simon Griffiths (JIC)
Systematic selection of new and useful diversity from the Watkins wheat landrace collection
- 11:30** Talk 1: Sandeep Amberkar (University of Liverpool)
PanOryza: Globally coordinated genomes, proteomes and pathways for rice
- 11:50** Talk 2: Raz Avni (IPK)
Progress towards a pan-genome for hexaploid oat
- 12:10** Talk 3: Guy Naamati (EBI)
The Wheat Pan Genome in Ensembl Plants

12:30 LUNCH

DAY 2: TUESDAY 5TH APRIL (CONTINUED)

SESSION 5: AMAZING MAIZE AND MIGHTY MILLET

CHAIRS: STÉPHANIE SWARBRECK AND ANGELA BURNETT



- 13:30** Plenary Speaker: Johannes Kromdijk, University of Cambridge
Too much of a good thing – photosynthesis under high light stress in maize and sorghum
- 14:00** Talk 1: Lizo Masters (Kew)
Diversity and evolution in Urochloa (Brachiaria) grasses and their application in sustainable tropical forage systems.
- 14:20** Talk 2: Jon Bančić (Roslin Institute)
Genomic and phenotypic characterization of finger millet indicates a complex diversification history
- 14:40** Talk 3: Aiswarya Girija (Aberystwyth University)
A forgotten grain from Ethiopia, Tef

15:00 BREAK

SESSION 6: BIOINFORMATICS UPDATE

CHAIRS: PHILIPPA BORRILL AND MIRIAM SCHREIBER



- 15:30** Plenary Speaker: Ricardo Ramírez González (JIC)
Ten Years of Wheat Genomics: from draft assemblies to pangenomes and beyond
- 16:00** Talk 1: Jose De Vega (Earlham Institute)
Characterising the genetic diversity and effects of breeding selection in Vietnamese rice landraces
- 16:20** Talk 2: Amanda Burrridge (University of Bristol)
Finding Novel Alleles Without Novel Methods
- 16:40** Talk 3: Jesus Quiroz Chavez (JIC)
- 17.00 – 17.45** Panel Discussion
Do we need new technologies in cereal research and breeding to meet future environmental challenges?
- Adam Gauley (University of Leeds) Sigrid Heuer (NIAB) Carus John-Bejai (KWS) Emma Markham (BBSRC)



CONFERENCE DINNER: QUEENS HOTEL 19.00

DAY 3: WEDNESDAY 6TH APRIL

SESSION 7: RISE OF THE MACHINES (PHENOTYPING)



CHAIRS: PHIL TAILBY AND SURBHI GREWAL

- 9:00** Plenary Speaker: Eric Murchie, University of Nottingham
Field phenotyping of canopy photosynthesis in cereals: new challenges
- 9:30** Talk 1: Sigrid Heuer (NIAB)
Novel sources, genes and molecules for heat tolerance in wheat
- 9:50** Talk 2: Marina Millán Blázquez (JIC)
Development and application of a phenotyping toolbox to investigate the temporal dynamics of the unpollinated wheat stigma.
- 10:10** Talk 3: Lorna McAusland (University of Nottingham)
Things that go bump in the night; understanding the role of nocturnal conductance

10:30 BREAK

SESSION 8: WINNERS TALKS



CHAIRS: MALCOLM MACAULAY AND KELLY HOUSTON

- 11:00** New Lecture Rank Prize
Dr Alexandra Burgess (University of Nottingham)
The Architecture of Crop Yield
- 11:20** Post doc MECEA
- 11:40** PhD MECEA

12:00 LUNCH

DAY 3: WEDNESDAY 6TH APRIL (CONTINUED)

SESSION 9: DEVELOPMENTAL PROCESSES

CHAIRS: STEFAN KEPINSKI AND JENNIFER SHOESMITH



- 13:00** Plenary Speaker: Sarah McKim, University of Dundee
Genes encoding deeply conserved signalling components control epidermal features in barley
- 13:30** Talk 1: Andy (Yi) Chen (JIC)
*The *T. ispahanicum* elongated glume locus P2 maps to chromosome 6A and is associated with the ectopic expression of SVP-A1*
- 13:50** Talk 2: Constanze Schmidt (IPK)
Beyond anther extrusion: trait discovery for efficient hybrid wheat production
- 14:10** Talk 3: Lara Esch (JIC)
*Starch synthesis in *Brachypodium distachyon* endosperm occurs in highly dynamic and interconnected amyloplast compartments*

14:30 BREAK

SESSION 10: BIOTIC THREATS

CHAIRS: TOM BENNETT AND RUTH BRYANT



- 15:00** Plenary Speaker: TBC
- 15:30** Talk 1: Megan McDonald (University of Birmingham)
Giant transposons facilitate horizontal gene transfer of the necrotrophic effector ToxA
- 15:50** Talk 2: Isaac Nguthiru Kamweru
*Genomic analysis of native resistance to FAW (*Spodoptera frugiperda*) in CIMMYT maize lines.*
- 16:10** Talk 3: David Gilbert (JIC)
Summoning the ancestors: unearthing wild resistance to stripe rust

END OF CONFERENCE