

Plant Genomes in a Changing Environment

24-26 October 2018

Wellcome Genome Campus,
Hinxton, Cambridge, UK

Conference Programme

Wednesday, 24 October 2018

12:30-13:50 **Registration with Lunch**

13:50-14:00 **Welcome and Introductions**
Cristobal Uauy, John Innes Centre, UK

14:00-15:00 **Keynote Lecture**
Chair: Cristobal Uauy

Adapting to different winters: non-coding transcripts and epigenetic switches at FLC
Caroline Dean
John Innes Centre, UK

15:00-15:50 **Session I: Structural Variation and Pan Genomes**
Chair: Cristobal Uauy

15:00 Characterizing genetic and transcript variation using long single molecule sequencing
Doreen Ware
USDA and Cold Spring Harbor, USA

15:30 Pan-genome and network analyses of drought response in the model grass *Brachypodium distachyon*
Bruno Contreras-Moreira
EEAD-CSIC, Spain

15:50-16:20 **Afternoon Tea**

16:20-17:50 **Session I: Structural Variation and Pan Genomes**
Chair: Michele Morgante

16:20 Patterns of conservation and divergence in relative gene order of plant and animal genomes using network-based synteny analysis
Eric Schranz
Wageningen University, The Netherlands

- 16:50 The pan-genome of *Brachypodium distachyon* and its implications for polyploid genome evolution
John Vogel
University of California, Berkely, USA
- 17:20 Natural variation in telomere repeats, a major plant satellite DNA, correlates with flowering time variation
Zoe Lye
New York University, USA
- 17:40 Characterisation of the pan-genome of *Vitis vinifera* using Next Generation Sequencing
Gabriele Magris
University of Udine, Italy

18:00-18:20 **Lightning Talks**

18:20-19:15 **Poster Session**

19:15 **Dinner**

Thursday, 25 October 2018

09:00-10:40 **Session 2: Artificial Variation and Gene Editing**

Chair: Cristobal Uauy

09:00 Controlled mobilization of transposable elements in plants: A tool for rapid crop breeding?
Etienne Bucher
INRA, France

09:30 Engineering plant genomes: achieving and understanding genomic change
Holger Puchta
Karlsruhe Institute of Technology, Germany

10:00 Leveraging genomic resources to study wheat senescence
Sophie Harrington
John Innes Centre, UK

10:20-10:50 **Morning Coffee**

10:50-12:30 **Session 3: Regulatory Variation and Systems Biology**

Chair: Sally Aitken

10:50 Molecular logic and emergent properties in receptor-receptor interaction networks
Youssef Belkhadir
GMI Vienna, Austria

- 11:20 Finding drugs in the garden
Anne Osbourn
John Innes Centre, UK
- 11:50 Integrating GWAS, eQTL, and precision phenotyping to support the identification of candidate genes for maize leaf development
Matteo Dell Acqua
Scuola Superiore Sant'Anna, Italy
- 12:10 Regulatory divergence in wound-responsive gene expression between domesticated and wild tomato
MingJung Liu
Academia Sinica, Taiwan

12:30-14:00 **Lunch**

14:00-15:00 **Keynote Lecture**

Chair: Joy Bergelson

Long, slow lives facing rapid change: Climate adaptation in conifers

Sally Aitken

University of British Columbia, Canada

15:00-16:00 **Session 4: Natural Variation and Ancient Genomes**

Chair: Joy Bergelson

15:00 Reinforcing plant evolutionary genomics using ancient DNA

Hernan Burbano

MPI Tübingen, Germany

15:30 A major QTL for grain weight in wheat is associated with increased grain length and cell size

Jemima Brinton

John Innes Centre, UK

15:50-16:30 **Afternoon Tea**

16:30-18:15 **Session 4: Natural Variation and Ancient Genomes**

Chair: Joy Bergelson

16:30 A novel mechanism underlies morphological diversity in plants

Esther van der Knaap

University of Georgia, USA

17:00 Natural variation of leaf secondary metabolites and underlying genetics in European white oaks

Benjamin Brachi

INRA, France

17:30 Plant genotype × herbivore genotype interactions shape the genetic architecture of resistance to herbivory in *Arabidopsis*

Andrew Gloss

University of Chicago, USA

17:50 Short message service: the role of miRNA signaling under drought stress in *Brassica napus*
Sarah Schiessl Weidenweber
Justus Liebig University Giessen, Germany

18:10 Convergent evolution of flower morphology after the transition to selfing in the genus *Capsella*
Adrien Sicard
SLU Uppsala, Sweden

18:30-19:15 **Drinks Reception**

19:15 **Conference Dinner**

Friday, 26 October 2018

09:00-10:40 **Session 5: Epigenetic Variation**

Chair: Michele Morgante

09:00 Epigenetic regulation of transposable elements drives plant speciation
Claudia Köhler
Swedish University of Agricultural Sciences, Sweden

09:30 Chromatin regulation of heat stress memory in plants
Isabel Bäurle
University of Potsdam, Germany

10:00 Both climate of origin and breeding efforts influence DNA methylation in Barley
Manu Dubin
CNRS / Université de Lille, France

10:20 Regulation of DNA methylation in *Arabidopsis* by folate metabolism
Martin Groth
Helmholtz Zentrum München, Germany

10:40-11:10 **Morning Coffee**

11:10-12:50 **Session 6: Novel Technologies for Genome Analysis**

Chair: Doreen Ware

11:10 Ultra-long sequencing methods aid assembly of complex genomes
Nick Loman
University of Birmingham, UK

11:40 Visualization and manipulation of genomes in sexual reproduction
Tetsuya Higashiyama
Nagoya University, Japan

12:10 Developing fitness consequence maps for plant genomes
Zoé Joly Lopez
New York University, USA

12:30 Evolutionary genomics: the emergence of drought tolerance in plants
Alexander Bowles
University of Essex, UK

12:50 **Closing remarks:**
Joy Bergelson, *University of Chicago, USA*

13:00 - 14:20 **Lunch**

14:30 **Coaches depart to Cambridge City Centre and Train Station, Stansted Airport via Heathrow Airport**