



## Program of the 60<sup>th</sup> Annual Maize Genetics Conference

**Maize Genetics Conference Steering Committee:** Alain Charcosset (Chair), Michael Muszynski (Co-chair), Erich Grotewold, Karen McGinnis, Jianbing Yan, Natalia de Leon, Sylvia Sousa, Maïke Stam, Andrea Eveland, Thomas Slewinski, Andrea Gallavotti, Stephen Novak  
**Ex-officio:** Maud Tenaillon (Local Host), Marty Sachs, Carson Andorf, and David Braun.

The 2018 Maize Genetics Conference will be held at the Palais du Grand Large, Saint-Malo (France) on *March 22-25, 2018*. Details about the program, meeting and housing, registration, travel directions, and transportation services are available at the meeting website: [http://www.maizegdb.org/maize\\_meeting/2018/](http://www.maizegdb.org/maize_meeting/2018/).

### Invited speakers and topics covered

This year's meeting will feature four plenary speakers, Ortrun Mittelsten Scheid (Gregor Mendel Institute), Magnus Nordborg (Gregor Mendel Institute), Jeffrey Ross-Ibarra (University of California – Davis) and François Tardieu (INRA, Montpellier).

We will have the privilege to hear Rob Martienssen, the 2018 awardee of the Barbara McClintock Prize for Plant Genetics and Genome Studies in recognition of his exceptional contribution to the field of plant genome structure, function and evolution, especially the field of gene regulation and epigenetics. Rob Martienssen will give a plenary talk at this Maize Genetics Conference.

The program also includes 33 short talks (15 minutes each) selected based on abstracts, and extended poster sessions. Research topic areas are: The genes that make maize, Genetic architecture and evolution, Emerging tools and challenges, Interactions with the environment, Expressing the genome, The maize (epi)genomes, and Communicating within and between cells and plants.



## **Friday, March 23**

8:00 AM – 1:00 PM	<b>REGISTRATION</b> (Ground floor)	
8:30 AM – 10:40 AM	<b>SESSION 2 – GENETIC ARCHITECTURE AND EVOLUTION</b> Chair: Jianbing Yan	Talks 6-11.
8:30 AM	<b>ANNOUNCEMENTS</b>	(Chateaubriand)
8:40 AM	<b>Markus Stetter, University of California - Davis</b> <i>How polygenic adaptation during domestication shaped the genetic architecture of maize</i>	[T6]
9:00 AM	<b>Christine Dillmann, Université Paris-Saclay</b> <i>Twenty years of divergent selection for flowering time from maize inbred lines</i>	[T7]
9:20 AM	<b>Kelly Swarts, Max Planck Institute</b> <i>Prehistoric selection for temperate climates has far-reaching implications for global germplasm</i>	[T8]
9:40 AM	<b>Aaron Kusmec, Iowa State University</b> <i>Distinct genetic architectures for phenotype means and plasticities in <i>Zea mays</i></i>	[T9]
10:00 AM	<b>Jie Liu, Huazhong Agricultural University</b> <i>The conserved and unique genetic architecture of kernel size and weight in maize and rice</i>	[T10]
10:20 AM	<b>Jinyu Wang, Iowa State University</b> <i>Genome-wide nucleotide divergence and UV induced mutations following maize domestication</i>	[T11]
10:40 AM	<b>BREAK</b>	
11:10 AM – 12:55 PM	<b>SESSION 3 – PLENARY TALKS</b> Chair: Michael Muszynski	
11:10 AM	Introduction	(Chateaubriand)
11:15 AM	<b>Magnus Nordborg, Gregor Mendel Institute</b> <i>Epigenetic variation in <i>Arabidopsis</i></i>	[PL1]
12:05 PM	<b>Francois Tardieu, INRA Montpellier</b> <i>Drought tolerance: which mechanisms, traits and alleles for which drought scenarios?</i>	[PL2]

## **Friday, March 23 (continued)**

1:00 PM – 2:00 PM      **LUNCH** (Grand Large room)

2:00 PM – 4:15 PM      **POSTER SESSION 1** (Lamennais & Surcouf rotunda)

2:00 PM – 3:10 PM      *Presenters should be at odd numbered posters.*

3:10 PM – 4:15 PM      *Presenters should be at even numbered posters.*

*Beverages will be available from 3:30 PM in Poster rooms & Jacques Cartier rotunda.*

4:15 PM – 5:35 PM      **SESSION 4 – EMERGING TOOLS AND CHALLENGES**  
Chair: Erich Grotewold      Talks 12-15.

4:15 PM      **Kokulapalan Wimalanathan, Iowa State University**      [T12]  
*Maize - GO Annotation Methods Evaluation and Review*  
*(Maize-GAMER)*

4:35 PM      **Mary Galli, Rutgers University**      [T13]  
*Using DAP-seq to map genome-wide ARF transcription factor binding*  
*events in maize*

4:55 PM      **En Li, China Agricultural University**      [T14]  
*Long-range interactions provide a topological basis for genetic*  
*regulation of complex traits in maize*

5:15 PM      **Samuel Leiboff, University of California - Berkeley**      [T15]  
*The RNAseq Time Machine: Species-specific shifts in developmental*  
*timing and trajectory underlie morphological differences in maize*  
*tassel and sorghum panicle architecture*

5:35 PM – 7:25 PM      **SESSION 5 – PLENARY TALKS**  
Chair: Alain Charcosset

5:35 PM      Introduction      (Chateaubriand)

5:45 PM      **Ortrun Mittelsten Scheid, Gregor Mendel Institute**      [PL3]  
*Light control of seed germination: the unusual role of usual suspects*

6:35 PM      **Jeff Ross-Ibarra, University of UC Davis**      [PL4]  
*A bad genetic history of maize*

7:30 PM – 8:45 PM      **DINNER** (Grand Large room)

8:50 PM – 1:00 AM      **INFORMAL POSTER VIEWING & HOSPITALITY**  
(Wine & Cheese tasting in Lamennais & Surcouf rotunda, Jacques Cartier rotunda, Hospitality in Bouvet room until 5 am)

## Saturday, March 24

8:30 AM – 10:30 AM	<b>SESSION 6 – INTERACTIONS WITH THE ENVIRONMENT</b> Chair: Natalia de Leon	Talks 16-21.
8:30 AM	<b>ANNOUNCEMENTS</b>	(Chateaubriand)
8:40 AM	<b>Sylvia Morais de Sousa, Embrapa Milho e Sorgo</b> <i>Enhancing phosphorus efficiency in maize and sorghum</i>	[T16]
9:00 AM	<b>Laurie Maistriaux, Université catholique de Louvain</b> <i>Regulation of aquaporin expression in maize: proximal and distal eQTLs</i>	[T17]
9:20 AM	<b>Justin Blancon, BIOGEMMA</b> <i>Innovative and high-throughput field phenotyping method provides leaf traits for breeding of drought tolerance - From Leaf Area Index dynamics to its physiological components</i>	[T18]
9:40 AM	<b>Joerg Degenhardt, Martin Luther University Halle</b> <i>Characterization of biosynthetic pathways and regulatory elements for the production of the volatile homoterpenes DMNT and TMTT in Zea mays</i>	[T19]
10:00 AM	<b>Marcel Bucher, University of Cologne</b> <i>Mycorrhizal phosphate uptake affects maize root-associated microbiota</i>	[T20]
10:20 AM	<b>Katherine Murphy, University of California - Davis</b> <i>Discovery of dolabraloxins, previously unrecognized terpenoid defense compounds in maize (Zea mays).</i>	[T21]
10:40 AM	<b>BREAK</b>	
11:15 AM – 12:55 PM	<b>SESSION 7 – EXPRESSING THE GENOME</b> Chair: Andrea Eveland	Talks 22-26.
11:15 AM	<b>Jacob Washburn, Cornell University</b> <i>Predicting across the central dogma of molecular biology: DNA to mRNA abundance</i>	[T22]
11:35 AM	<b>Bradlee Nelms, Stanford University</b> <i>Mapping the archesporial cell to meiocyte progression using single-cell RNA-Seq</i>	[T23]
11:55 AM	<b>Jutta Baldauf, University of Bonn</b> <i>Single parent expression is a general mechanism driving extensive complementation of non-syntenic genes in maize hybrids</i>	[T24]
12:15 PM	<b>Edoardo Bertolini, Donald Danforth Plant Science Center</b> <i>The regulatory landscape of developing maize inflorescences: linking phenotypic variation to the functional non-coding genome</i>	[T25]



## Sunday, March 25

Posters should be taken down by 9 am!

**TIME CHANGE!! Please remember in the EU daylight-savings time starts today: at 2:00 AM the time changes to 3:00 AM:**

9:00 AM – 10:20 AM	<b>SESSION 9 – THE MAIZE (EPI)GENOMES</b> Chair: Maïke Stam	Talks 27-30.
9:00 AM	<b>Daniel Grimanelli, Université de Montpellier</b> <i>Dynamics of DNA methylation during maize reproductive development</i>	[T27]
9:20 AM	<b>Sarah Anderson, University of Minnesota</b> <i>Transposable element contributions to the dynamic maize genome and transcriptome</i>	[T28]
9:40 AM	<b>Stephen Moose, University of Illinois</b> <i>The evolutionary dynamics of maize small RNAs reveals novel regulatory features in noncoding DNA</i>	[T29]
10:00 AM	<b>Adele Zhou, Cornell University</b> <i>Chromatin as a major determinant in the fate of meiotic double-strand breaks and positioning of COs along maize chromosomes</i>	[T30]
10:20 AM	<b>BREAK</b>	
10:50 AM – 12:00 PM	<b>SESSION 10 – COMMUNICATING WITHIN AND BETWEEN CELLS AND PLANTS</b> Chair: Thomas Slewinski	Talks 31-33.
10:50 AM	<b>Michael Muszynski, University of Hawaii</b> <i>Dissecting a new connection between cytokinin and jasmonic acid in control of leaf growth</i>	[T31]
11:10 AM	<b>Gerrit Beemster, University of Antwerp</b> <i>How grass keeps growing: a predictive model of leaf growth regulation based on studies in <i>Zea mays</i></i>	[T32]
11:30 AM	<b>Hannes Claeys, Cold Spring Harbor Laboratory</b> <i>TREHALOSE-6-PHOSPHATE PHOSPHATASE4, a paralog of RAMOSA3, controls inflorescence architecture and shoot apical meristem activity in maize</i>	[T33]
11:50 AM	<b>CLOSING REMARKS</b>	
12:00 PM	<b>ADJOURNMENT</b>	