

# 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, Maike 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: <a href="http://www.maizegdb.org/maize\_meeting/2018/">http://www.maizegdb.org/maize\_meeting/2018/</a>.

#### 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.

# **Schedule of Events**

Talks will be held in the Chateaubriand auditorium. Posters will be displayed in the Lamennais room and Surcouf rotunda.

## Thursday, March 22

1:30 PM – 5:00 PM	OPTIONAL PRE-CONFERENCE WORKSHOPS	
1:30 PM – 3:30 PM 1:30 PM – 3:30 PM 3:00 PM – 4:30 PM 3:30 PM – 5:00 PM	"Epigenetics" "Maize tools & resources" "Genetic transformation & editing" "Maize genomes"	Maupertuis Charcot Chateaubriand Maupertuis
	Pre-registration recommended for the above sessions.	
12:00 PM – 10:00 PM	REGISTRATION (Ground floor)	
3:00 PM – 6:00 PM	POSTER HANGING (Lamennais & Surcouf)	
6:00 PM – 7:15 PM	<b>DINNER</b> (Grand Large room)	
7:30 PM – 9:25 PM	SESSION 1 – WELCOME / THE GENES THAT M Chair: A la in Charcosset / Andrea Gallavotti	Talks 1-5.
7:30 PM	WELCOME AND ANNOUNCEMENTS	(Chateaubriand)
7:45 PM	Thomas Widiez, INRA  How to make maize seeds that look "not like dad": instertilization and prospects for novel breeding tools	[T1] sights in double
8:05 PM	Nina Chumak, University of Zürich Generating clonal progeny in maize	[T2]
8:25 PM	Thu Tran, University of Missouri - Columbia  Maize Carbohydrate partitioning defective 33 function export from leaves	[T3] s in sucrose
8:45 PM	Phillip Conklin, Cornell University  NARROWSHEATH1 controls cell cycle dynamics to pu mediolateral outgrowth of leaf primordia	[T4]
9:05 PM	Keting Chen, Iowa State University Interrogating metabolic and transcriptomic networks t genetic, developmental and environmental variation in lipid landscape on maize silks	
9:30 PM – 1:00 AM	INFORMAL POSTER VIEWING & HOSPITALITY (Lamennais & Surcouf rotunda, Hospitality in Bouvet	

# Friday, March 23

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

## 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 CHALLEN Chair: Erich Grotewold	GES Talks 12-15.
4:15 PM	Kokulapalan Wimalanathan, Iowa State University Maize - GO Annotation Methods Evaluation and Review (Maize-GAMER)	[T12]
4:35 PM	Mary Galli, Rutgers University Using DAP-seq to map genome-wide ARF transcription y events in maize	[T13] factor binding
4:55 PM	En Li, China Agricultural University  Long-range interactions provide a topological basis for gregulation of complex traits in maize	[T14] genetic
5:15 PM	Samuel Leiboff, University of California - Berkeley The RNAseq Time Machine: Species-specific shifts in dev timing and trajectory underlie morphological differences tassel and sorghum panicle architecture	•
5:35 PM – 7:25 PM	SESSION 5 – PLENARY TALKS Chair: Alain Charcosset	
5:35 PM	Introduction (C	Chateaubriand)
5:45 PM	Ortrun Mittelsten Scheid, Gregor Mendel Institute Light control of seed germination: the unusual role of usu	[PL3] ual suspects
6:35 PM	Jeff Ross-Ibarra, University of UC Davis A bad genetic history of maize	[PL4]
7:30 PM – 8:45 PM	<b>DINNER</b> (Grand Large room)	
8:50 PM = 1:00 AM	INFORMAL POSTER VIEWING & HOSPITALITY	

### 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  $5~\mathrm{am}$ )

# Saturday, March 24

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

## Saturday, March 24 (continued)

Hospitality in Bouvet room until 5 am)

12:35 PM	Lu Chen, Huazhong Agricultural University Circular RNAs mediated by transposons are associated with transcriptomic and phenotypic variation in maize	[T26]
1:00 PM – 2:00 PM	LUNCH (Grand Large room)	
2:00 PM – 4:30 PM	POSTER SESSION 1 (Lamennais & Surcouf rotunda)	
2:00 PM – 3:15 PM	Presenters should be at even numbered posters.	
3:15 PM – 4:30 PM	Presenters should be at odd numbered posters.	

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

4:30 PM – 5:30 PM	COMMUNITY SESSION - Maize Gene	tics Executive Committee
	MGEC Chair: Karen Koch	(Chateaubriand)

5:30 PM – 7:30 PM	SESSION 8 – AWARDS AND MCCLINTOCK PRIZE PRESENTATION Chair: Karen Koch
5:30 PM	Karen Koch, MGEC Chair Early- and Mid-Career Award, announcement of Emerson Award
5:45 PM	Paul Chomet, NRGene McClintock Prize Presentation
6:00 PM	<b>Rob Martienssen, Cold Spring Harbor Laboratory</b> <i>Germline reprogramming, epigenetic inheritance and small RNA: how to avoid Bad Karma</i>
6:50 PM- 7:50 PM	Musical entertainment by Pao Bran and cocktails (Jacques Cartier rotunda)
8:00 PM – 9:50 PM	GALA DINNER (Grand Large room)
10:00 PM – 1:00 AM (Lamennais & Surcouf ro	INFORMAL POSTER VIEWING/DANCE & HOSPITALITY otunda, Music by Vincent Gaillard in Jacques Cartier rotunda,

2:00 AM Daylight Savings Time begins in EU. Change time to 3:00 AM.

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