



# 4<sup>TH</sup> International **Brachypodium** Conference

25 - 28

JUNE

Huesca Convention Centre 2019



PROGRAMME



**4<sup>th</sup> International Brachypodium Conference 2019**

**PROGRAMME**

## PROGRAMME

### TUESDAY 25 JUNE 2019

#### » Session: Opening keynote address

- 17:30 Opening address
- 18:00 **Elizabeth Kellogg**. *Diverse development of grass abscission zones*
- 19:30 Opening reception

### WEDNESDAY 26 JUNE 2019

#### » Session S1: Natural diversity and evolution

- 8:30 **Robert Hasterok**. *Inferring on karyotype structure and evolution in Brachypodium using cross-species chromosome barcoding*
- 9:00 **John Doonan**. *Flower and grain trait variation in Brachypodium*
- 9:15 **Sinead Dread**. *Brachypodium distachyon grains in a comparative and evolutionary context*
- 9:30 **Benoit Lefebvre**. *Brachypodium distachyon genetic variability for beneficial interaction with arbuscular mycorrhizal fungi*
- 9:45 **Errol Vela**. *Typification of names and their taxonomic assignment within the Brachypodium distachyon complex (Poaceae)*
- 10:00 **Pilar Catalan**. *How diverse is Brachypodium? an updated view of annual and perennial compilospecies complexes*
- 10:15 Coffee break

#### » Session S2: Comparative genomics and transcriptomics

- 10:45 **Robin Buell**. *Life with 1000 genomes: Defining the pan-genome in maize*
- 11:15 **Keiichi Mochida**. *Transcriptome analysis of gene regulatory network reveals differential organization of rhythmic transcriptome between sub-genomes in the allopolyploid grass Brachypodium hybridum*
- 11:30 **Alexander Betekhtin**. *CRISPR/Cas9-based targeted mutagenesis in Brachypodium distachyon and B. hybridum and its application to study the model grass genome organisation*
- 11:45 **János Györgyey**. *LOB-domain transcription factor gene family of Brachypodium distachyon*
- 12:00 **Isabel Marques**. *Genome-wide analysis of floral genes in perennial temperate grasses: is there a common genomic toolbox to cope with extreme environmental conditions?*
- 12:15 **Charles Solomon**. *Programmed cell death in developing Brachypodium distachyon caryopsis*
- 12:30 Lunch

**WEDNESDAY 26 JUNE 2019**

» **Session S3: Development and growth**

- 13:30 **David des Marais**. *Natural diversity in patterns of biomass allocation in annual and perennial Brachypodium*
- 14:00 **Daniel Woods**. *Mutations in a predicted DNA polymerase subunit Cdc-27 (ZAO1) result in more rapid flowering of Brachypodium distachyon*
- 14:15 **Liang Wu**. *Divergent roles of FTs in flowering control in Brachypodium distachyon*
- 14:30 **Michael Raissig**. *Developmental innovations of stomatal form and function in Brachypodium*
- 14:45 **Richard Sibout**. *A Leucine Rich Repeat Receptor Kinase regulates vasculature patterning, phloem-xylem polarity and cell wall composition in Brachypodium*
- 15:00 **Thiel Lehman**. *Molecular and cell biological characterization of the BUZZ cell division kinase involved in root hair development*
- 15:15 Coffee break

» **Session S4: Tolerance and adaptation to abiotic stresses**

- 15:45 **Pubudu Handakumbura**. *Genotypic and phenotypic diversity for drought tolerance in Brachypodium distachyon*
- 16:00 **Mhemmed Gandour**. *Screening of Brachypodium hybridum genotypes for drought tolerance*
- 16:15 **Shira Penner**. *Adaptation to stress in Brachypodium along the aridity gradient in Israel*
- 16:30 **Johannes Metz**. *Ecology of annual Brachypodium in Israel: Unexpected ways of adaptation to drier climates at two spatial scales*
- 16:45 **Bruno Contreras**. *A pan-genome perspective on the co-expression response of genes to drought in the model grass Brachypodium distachyon*
- 17:00 Poster session: even posters present

» **Session: Keynote conference**

- 17:30 **Eviatar Nevo**. *Evolution Canyon: sympatric evolution through niche adaptation*
- 18:30 Social events

**THURSDAY 27 JUNE 2019**

» **Session S5: Regulatory elements, networks and epigenomics**

- 8:30 **Anne Roulin.** *Transposable element evolution in *Brachypodium distachyon*: what can we learn from population genomics?*
- 9:00 **Mexia Li.** *RNA interactome capture in *Brachypodium* reveals a flowering plant core RBPome*
- 9:15 **Joshua Coomey.** *SECONDARY WALL INTERACTING bZIP (SWIZ) regulates secondary cell wall biosynthesis in *Brachypodium distachyon* in response to mechanical stress*
- 9:30 **Michael Thieme.** *Stress-induced mobilization of transposable elements in natural accessions of the model plant *Brachypodium distachyon**
- 9:45 **Christoph Stritt.** *High sequence turnover and GC bias in the grass *Brachypodium distachyon* indicate frequent ectopic recombination between retrotransposon copies*
- 10:00 **Kirankumar Mysore.** *Insertional mutagenesis in *Brachypodium distachyon* using the Tnt1 retrotransposon and its potential use to identify novel sources of disease resistance*
- 10:15 Coffee break

» **Session S6: Polyploidy and perenniality**

- 10:45 **Pamela Soltis.** *Polyploidy as integrator across levels of biological organization: from cells to ecosystems*
- 11:15 **Ruben Sancho.** *Reference-genome syntenic mapping and multigene-based phylogenomics reveal the ancestry of homeologous subgenomes in grass *Brachypodium allopolyploids**
- 11:30 **Virginia Markham.** *Transposon traps and kissing chromosomes: 3D chromatin interactions in a hybrid nucleus*
- 11:45 **Antonio Manzaneda.** *Homoeologous gene expression and subgenome contributions in response to water stress in the allotetraploid *Brachypodium hybridum* (Poaceae)*
- 12:00 **Natalia Borowska-Zuchowska.** *The fate of 35S rRNA genes in allotetraploid *Brachypodium hybridum* – an evolutionary point of view*
- 12:15 **Nir Sade.** *The perennial model grass *Brachypodium sylvaticum* -stress tolerance of two accessions growing in contrasting climate*
- 12:30 Lunch
- 13:30 Poster session: even posters present
- 14:00 Half day field trip to Somontano area
- 21:00 Banquet dinner

**FRIDAY 28 JUNE 2019**

» **Session S7: Ecology and Environment**

- 8:30 **David Lowry.** *The genetic and physiological basis of local adaptation along environmental gradients*
- 9:00 **Megan Korte.** *Facilitation as a driver of within population variation in Brachypodium*
- 9:15 **Pedro Rey.** *Influence of leaf functional trait variation on the response to insect herbivory in the Brachypodium distachyon species complex*
- 9:30 **Xavier Picó.** *The value of regional collections of natural populations to unravel the ecological and genetic basis of adaptive variation in Arabidopsis thaliana*
- 9:45 **Agnieszka Gladala-Kostarz.** *The impact of wind stress and mechanical stimulation on the growth and composition of Brachypodium distachyon stems*
- 10:00 **Luis Mur.** *Genetic, epigenetic and metabolomic differentiation of Turkish Brachypodium distachyon accessions into two geographically distinct populations*
- 10:15 Coffee break

» **Session S8: Adaptation to abiotic and biotic constrains**

- 10:45 **Borjana Arsova.** *Use of non-invasive phenotyping, molecular approaches and beneficial microbes in the understanding and improvement of Brachypodium nutrient uptake with focus on Nitrogen, Phosphorus and Zinc*
- 11:15 **Yusuke Kouzai.** *Rapid activation of WRKY-dependent immunity facilitates native resistance against the sheath blight pathogen, Rhizoctonia solani, in Brachypodium distachyon*
- 11:30 **Macarena Mellado-Sanchez.** *The SNF2 family of chromatin remodelers is conserved in Brachypodium distachyon and involved in the response to combinatorial abiotic stresses*
- 11:45 **Emma Aronson.** *Brachypodium distachyon and B. hybridum root, rhizosphere and bulk soil bacterial communities differ between native and invaded ranges*
- 12:00 **Rajiv Kumar Tripathi.** *Molecular characterization of SPL/miR156 regulatory component in Brachypodium spp.*
- 12:15 **Marlon De la Peña Cuao.** *Brachypodium distachyon: a good model to study ammonium assimilation, nutrition and stress in cereals*
- 12:30 Lunch

## PROGRAMME

### FRIDAY 28 JUNE 2019

#### » Session S9: Crop and biomass crop translation

- 13:30 **Klaus Mayer.** *From genome to genomes. Charting the genome landscape(s) of western civilisation*
- 14:00 **Manuel Becana.** *Hemoglobins of vascular plants: from model plants to crops (and way back)*
- 14:15 **Miguel Alfonso-Lozano.** *Functional analysis of fatty acid elongase TaFAE1 gene from biofuel feedstock *Thlaspi arvense* reveals differences in seed-oil biosynthesis among Brassicaceae*
- 14:30 **Ernesto Igartua.** *Diversification of cultivated barley and selection footprints in the landraces of the Iberian Peninsula*
- 14:45 **Aurora Diaz.** *Molecular passport of a new Zea weed emerged in European maize fields*
- 15:00 **Thomas Girin.** *From models to crops: using Brachypodium toward an improvement of Nitrogen Use Efficiency in cereals*
- 15:15 Coffee break
- 15:45 Poster session: odd posters present

#### Session: Closing keynote address

- 17:00 **John Vogel.** *More, more, more, the genus Brachypodium as a sequence-enabled functional genomics model*
- 17:30 Closing address
- 18:00 Social events

### SATURDAY 29 JUNE 2019

#### Postconference field trips

- 7:00-20:00 Ordesa National Park
- 7:00-20:00 Rio Vero Canyon

**WEDNESDAY 26 JUNE 2019 17:00-17:30**

» **Session S1: Natural diversity and evolution**

- P01 Multiple founder events explain the genetic diversity and structure of the model allopolyploid grass *Brachypodium hybridum* in the Iberian Peninsula hotspot.  
[V. Shiposha](#), I. Marques, D. Lopez-Alvarez, A. J. Manzaneda, P. Hernandez, M. Olonova, P. Catalán.
- P02 Exhaustive cytogenetic search within perennial Mediterranean and Eurasian *Brachypodium* taxa untapped new cytotypes and potential new species.  
B. Montes, R. Gorgojo, I. Cavazos, P. Catalán, [L. A. Inda](#).
- P03 Genomics and phylogeography of *Brachypodium sylvaticum* in western Eurasia.  
M.A. Decena, A. Díaz-Pérez, P. Catalan, [E. Perez-Collazos](#).
- P04 A RADseq phylogeography of the model circum-Mediterranean grass *Brachypodium stacei*.  
[A. Díaz-Pérez](#), D. López-Álvarez, A. Oumouloud, P. Catalán.
- P05 Underscoring fungal endophytes of temperate *Brachypodium* and Loliinae grasses through NGS techniques: genomic diversity and host distribution.  
[M. F. Moreno](#), J. Hackel, M.A. Decena, P. Catalan.
- P06 Phylogenetic reconstruction of *Brachypodium* using genome skimming data.  
[M. A. Decena](#), A. Díaz, J. Lusinska, L. A. Inda, E. Pérez, P. Catalán.

» **Session S2: Comparative genomics and transcriptomics**

- P07 The SNF2 family of chromatin remodelers is conserved in *Brachypodium distachyon* and involved in the response to combinatorial abiotic stresses.  
[C. Barrero-Sicilia](#), M. Mellado, J. Engelhorn, C. Kroner, S. Farrona.
- P08 Optimisation of an *Agrobacterium*-delivered CRISPR/Cas9 system for targeted mutagenesis in *Brachypodium* species.  
[K. Hus](#), A. Betekhtin, A. Pinski, M. Rojek, L. Kubica, C. Nibau, E. Grzebelus, J. H. Doonan, R. Hasterok.

» **Session S3: Development and growth**

- P09 Biosynthesis of Brassinosteroids in *Brachypodium distachyon*.  
[J. Roh](#), Y.J. Park, C. Seo, S.K. Kim.
- P38 Thermocycles are the prevailing cue in determining *Brachypodium distachyon* diurnal gene regulation.  
K.J.M. MacKinnon, B.J. Cole, C. Yu, M.S. Remigereau, T. Duffy, L. Tyler, S. A. Kay, [S.P. Hazen](#).



**THURSDAY 27 JUNE 2019 13:30-14:00**

» **Session S3: Development and growth**

- P10 Optimizing Brachypodium growth with light-emitting diodes.  
[K. Mayer](#), [J. Barth](#), [W. Smith](#), [D. Woods](#), [R. Amasino](#).
- P11 Comparative analysis of Brachypodium distachyon anatomical features with Kazakhstani wheat varieties upon infection with brown leaf rust.  
[N. Omirbekova](#), [A. Akhmetova](#), [Z. Zhunusbayeva](#), [A. Zhussupova](#), [D. Mynbaeva](#).
- P12 Using Brachypodium as a Model to Study Key Genes Regulating Reproductive Development in Temperate Grasses.  
[S. Saada](#), [S. Drea](#),
- P13 SVP-like genes are responsive to vernalisation and ambient temperature in Brachypodium distachyon.  
[A. Kennedy](#), [M. Li](#), [K. Geuten](#).
- P14 The conservation of the cell-type-specific communication during lateral root formation from Arabidopsis in Brachypodium distachyon.  
[C. De Jesus Vieira Teixeira](#), [D. Stöckle](#), [J. E.M. Vermeer](#).
- P15 Contrasting developmental plasticity in response to nitrate availability in two Brachypodium distachyon accessions.  
[S. Smith](#), [D. Garvin](#), [O. Leyser](#).
- P16 Role of the NBCL genes in Brachypodium distachyon development.  
[K. Magne](#), [S. Liu](#), [S. Massot](#), [M. Dalmais](#), [R. Sibout](#), [A. Bendahmane](#), [P. Ratet](#).
- P17 The Sowing of Brachypodium retusum in quarries restoration.  
[M. Jorba](#)

» **Session S4: Tolerance and adaptation to abiotic stresses**

- P18 Comparative structural analysis of the drought responsive dehydrin and aquaporin gene families in Brachypodium and close grasses.  
[S. Gálvez Rojas](#), [F. Agostini](#), [M. Á. Decena](#), [R. Mérida García](#), [P. Catalán](#), [P. Hernández Molina](#).

POSTER SESSIONS

**FRIDAY 28 JUNE 2019 15:45-17:00**

» **Session S4: Tolerance and adaptation to abiotic stresses**

- P20 Trials to Develop the Brachypodium Resources in RIKEN BRC.  
[K. Ishiyama](#), [H. Abe](#), [M. Sugawara](#), [Y. Himuro](#), [T. Sato](#), [K. Kumaishi](#), [Y. Ichihashi](#), [M. Kobayashi](#).
- P21 Whole plant phenotyping and molecular identification of Zn transporters during Zn deficiency and excess in the monocotyledon plant model Brachypodium distachyon at two developmental stages.  
[S. Amini](#), [B. Arsova](#), [M. Watt](#), [M. Hanikenne](#).

» **Session S5: Regulatory elements, networks and epigenomics**

- P22 GRASS NAC REPRESSOR OF FLOWERING is a transcriptional repressor that forms a negative feedback loop with SWAM1 to control secondary wall thickening in Brachypodium distachyon.  
[S. Romero-Gamboa](#), [P. Handakumbura](#), [K. MacKinnon](#), [K. Brow](#), [S. Lee](#), [L. Liu](#), [J. Lee](#), [R. O'Malley](#), [J. Vogel](#), [R. Sibout](#), [D. Laudencia-Chingcuanco](#), [J. Coomey](#), [K. Zhao](#), [L. Bartley](#), [S. Hazen](#).
- P23 Progress in the Recognition Process Between Chitosan and Brachypodium Root Tissue  
[R. Cazalis](#).
- P24 Impact of intra-specific TE variations on local epigenetic states and gene expression.  
[M. Wyler](#).
- P25 Regulation of flowering time in Brachypodium distachyon.  
[L. Gonzalo](#), [R. Machado](#), [D. Eusebi](#), [M. M. Günthardt](#), [S. E. Muchut](#), [A. G. Reutemann](#), [A. C. Vegetti](#), [J. P. Vogel](#), [N. G. Uberti Manassero](#).

» **Session S6: Polyploidy and perenniality**

- P26 The Brachypodium distachyon species-complex as a model for dissecting the role of allopolyploidy in plant adaptation.  
[F. Corke](#), [C. Nibau](#), [L. Mur](#), [A. Gladala-Kostarz](#), [R. Hasterok](#), [J. Doonan](#), [P. Catalan](#), [A. Manzaneda](#).

» **Session S7: Ecology and environment**

- P27 Mycobiome diversity of Brachypodium rupestre from high and low diverse grasslands.  
[M. Durán Lázaro](#), [L. San Emeterio Garciandía](#), [L. Múgica Azpilicueta](#), [R. M. Canals Tresserras](#).
- P28 Metabolomic characterisation of Turkish soils as potential drivers of Brachypodium distachyon genotype diversity.  
[A. Pinski](#), [A. Skalska](#), [D. Kattupalli](#), [M. Beckmann](#), [M. Tuna](#), [G.S. Tuna](#), [L. A. J. Mur](#), [R. Hasterok](#).
- P29 Characterization of Brachypodium varieties as tree cover crops in Mediterranean conditions.  
[J. A. Gomez](#), [M. P. Hernández](#), [M.A. Soriano](#).
- P30 Genetic, epigenetic and metabolomic differentiation of Turkish Brachypodium distachyon accessions into two geographically distinct populations.  
[A. Skalska](#), [K. Susek](#), [M. Tuna](#), [A. Roulin](#), [C. Stritt](#), [M. Wyler](#), [H. Williams](#), [M. Swain](#), [L.A.J. Mur](#), [R. Hasterok](#).

**FRIDAY 28 JUNE 2019 15:45-17:00**

» **Session S8: Adaptation to abiotic and biotic constrains**

- P31 Circadian clock genes under drought stress in *Brachypodium distachyon*.  
[M. Gombos](#), Z. Zombori, N. Hapek, E. Kiss, J. Györgyey.
- P32 *P. koreensis*: A plant growth-promoting bacterium for *Brachypodium distachyon* growing with limited nitrogen.  
[S. Sanow](#), B. Arsova, F. Demir, W. Kuang, P. Huesgen, M. Watt.
- P33 Infrared spectromicroscopy of live *Brachypodium* root hair and cap cells to discover specialized environmental monitoring.  
[J. Kant](#), L. Chen, H.Y. Holman, M. Watt.
- P34 Greater N capture by *Brachypodium* roots promoted by beneficial bacteria: A whole plant phenotyping approach advancing EcoFabs with non-invasive imaging and dynamic analyses.  
[W. Kuang](#), B. Arsova, M. Müller-Linow, D. Kohlheyer, J. Kant, U. Mathesius, M. Rothballer, M. Watt.
- P35 Characterization of a nitrate high-affinity transport system in *Brachypodium distachyon*.  
L. David, M. Grégoire, P. Berquin, E. Phommabouth, A. Krapp, F. Daniel-Vedele, T. Girin, [S. Ferrario-Méry](#).
- P36 Using *Brachypodium* as a tool for screening resistance against wheat root diseases.  
[M. Santos](#), L. González-Penadés, P. Nicholson.
- P37 Modifying *Brachypodium distachyon* resistance to Fusarium Head Blight and Fusarium Root Rot with Plant Hormones.  
[J. Haidoulis](#), P. Nicholson, S. Rohrer, E. Haden.

**4<sup>TH</sup>** International  
**Brachypodium**  
Conference 25 - 28  
JUNE  
Huesca Convention Centre 2019

