

## Sunday, June 17

16:00 - 19:00

Registration

18:00 - 19:00

Welcome reception and registration at Bella Center

## Monday, June 18

08:00 - 18:00

Registration

09:00 - 09:30

Welcome Address

09:30 - 10:15

### Plenary: Genome Based Breeding - New Breeding Technologies

*Genome Editing with programmable nucleases in crop plants*

Caixia Gao, Chinese Academy of Sciences, China

Chair: Fabio Fornara, University of Milan, Italy



10:15 - 11:00

### Plenary: Niche Crops

*Amazonia biodiversity, a source of fine cocoa flavour niches*

Claire Lanaud, CIRAD-AGAP, France

Chair: Robbie Waugh, The James Hutton Institute, UK

11:00 - 11:45

Exhibition and Refreshments



## Subsession 1: Genome Based Breeding – New Breeding Technologies

Chair: Fabio Fornara, University of Milan, Italy

Keynote: *Genome editing in cereal and brassica crops - Progress and Prospects*

Wendy Harwood, John Innes Centre, UK

Selected talks:

*Trans-species synthetic gene design allows resistance pyramiding and broad spectrum engineering of virus resistance in plants*

Anna Bastet

*Genetic engineering of  $\gamma$ -aminobutyric acid (GABA) content in tomato fruits by targeted mutagenesis, and its use in hybrid breeding*

Hiroshi Ezura

*Optimized CRISPR/Cas9 for Engineering Starch Quality in Potato Tubers*

Bent Larsen Petersen

## Subsession 2: Niche Crops

Chair: Robbie Waugh, The James Hutton Institute, UK

Keynote: *Faba bean: from gene to plate and back again*

Fred Stoddard, University of Helsinki, Finland

Selected talks:

*Unlocking the genetic potential of an underutilized legume species, bambara groundnut (*Vigna subterranea* L.) for a changing climate*

Presidor Kendabie

*Grain amaranths: Developing an ancient crop for modern agricultural systems*

Karl Schmid

*Rhodiola rosea - growth and production - effects of abiotic and biotic factors*

Mette Goul Thomsen

13:15 - 14:15

Lunch Break & Exhibition

Science Communication workshop  
(EPSO)

14:15- 15:00

## Plenary: Phenotyping on Different Scales

*Revealing photosynthetic regulatory paradigms using natural variations and massive field measurements*

David Kramer, Michigan State University, USA

Chair: Christian Bachem, Wageningen University, Netherlands



15:00 - 15:30

EPSO award talk: *A new tool for sensitive detection of phosphorus deficiency in plants under field conditions*

Andreas Carstensen, University of Copenhagen, Denmark

15:30 - 16:30

Poster session: *Phenotyping on different scales and Photosynthetic diversity*

16:30 - 18:00

Concurrent Sessions

## Subsession 1: Phenotyping on Different Scales - Methodologies

Chair: Urte Schlüter, University of Düsseldorf, Germany

Keynote: *Integrating multi-scale phenotypic information into prediction models for genotype by environment interaction by a synthesis of statistical-genetic and physiological models*

Fred Van Eeuwijk, Wageningen University, Holland

Selected talks:

*Phenotyping methodologies for anatomical changes of roots traits under impedance*

Dorien Vanhees

*Analysis of metal metabolism in plants by X-ray spectroscopic methods*

Hendrik Küpper

*Leaf surface chemical and optical properties reflect variation based on the genotype and provenance of origin in silver birch*

16:30 - 18:00

## Subsession 2: Photosynthetic Diversity

Chair: Jeremy Harbinson, University of Wageningen, Netherlands

Keynote: *Photosynthetic diversity: are we concentrating too much on carbon?*

Howard Griffiths, University of Cambridge, UK

Selected talks:

*Bryopsis hypnoides and Codium tomentosum accumulate all-trans-neoxanthin and violaxanthin as a photoacclimation mechanism under high light*

Luca Morelli

*Genome wide association analysis of photosynthesis efficiency in Arabidopsis*

Mark Aarts

*Sulfur metabolism in C4 dicots and monocots*

Timothy Jobe

19:00

City Welcome at Copenhagen City Hall

Tuesday, June 19

08:30 - 18:00

Registration

08:30 - 09:15

### Plenary: Photosynthetic Diversity

*Strategies for improving C4 photosynthesis*

Susanne von Caemmerer, Australian National University, Australia

Chair: Jeremy Harbinson, University of Wageningen, Netherlands

09:15 - 09:45

FESPB award talk : *A molecular switch for regulation of photosynthetic light use efficiency in mosses and green algae, named LHCSR*

Alberta Pinnola, Italian Society of Plant Biology, Italy

09:45 - 10:45

Poster Session: *Genome based breeding - New Breeding Technologies and Seeds for the Future*

10:45 - 12:15

Concurrent Sessions

### Subsession 1: Photosynthetic Diversity - Resource Use Efficiency

Chair: Jeremy Harbinson, University of Wageningen, Netherlands

Keynote: *Redirecting photosynthetic reducing power*

Poul Erik Jensen, University of Copenhagen, Denmark

Selected talks:

*The alga that never read the literature - Fastest growing photodamage tolerant alga isolated from desert crust*

Haim Treves

*Thylakoid membrane plasticity is required for fine-tuning photosynthesis and plant fitness*

Mathias Pribil

*Stomata acclimation to low CO<sub>2</sub> and low light in C<sub>3</sub> and C<sub>4</sub> grasses representing different photosynthetic subtypes*

Walther Krystler Israel

10:45 - 12:15

## Subsession 2: Phenotyping on Different Scales - Traits

Chair: Christian Bachem, Wageningen University, Netherlands

Keynote: *Advanced phenotyping in a breeding setup*  
Christian Sig Jensen, DLF Seed and Science, Denmark

Selected talks:

*Unravelling internal rhythms in the bryophyte Porella platyphylla*  
Raquel Esteban

*Phenotyping of different winter wheat varieties in a free air CO<sub>2</sub> enrichment (FACE) experiment. Assessing physiological parameters by active and passive chlorophyll fluorescence techniques*  
Andre Krause

*Characterization of Carbohydrate Metabolism During the Transition from Primary Root Growth to Taproot Development in Sugar Beet by Physiological Phenotyping*  
Alexandra Jammer

12:15 - 13:15

Lunch Break & Exhibition

## Open Science: Inspirational notes and discussion with high profile experts

Chair: Karin Metzloff, EPSO, Belgium

Open Science is about the way research is carried out, disseminated, deployed and transformed by digital tools, networks and media. This includes: Opening up data; Traceability; Independent scientific advice; Collaborations and partnerships.

- *Open Science – basis for science, innovation and our societies today and in future. How can plant scientists contribute?*, Alan Schulman, Research Professor, LUKE, Finland
- Niels Goetke, Member of the Bioeconomy Panel of the European Commission
- *Openness and connectivity go hand in hand*, Peter Olesen, Chairman of the European Institute of Innovation and Technology (EIT)
- *Open Science – how the ERC can contribute*, Nils Stenseth, Member of the Scientific Council of the European Research Council (ERC)
- John Bell, European Commission - Director Bioeconomy in DG Research and Innovation
- Pekka Pesonen, Director General CopaCogeca
- Annette Schneegans, European Commission - Senior Expert in DG Agriculture and Rural Development

Each panel expert will have 5 min to give an inspirational note on “Open Science” and then the audience will engage in an open discussion with the panel experts.

15:00 - 15:45

## Plenary: Genome Evolution

*Adaptive evolution of meiosis in Arabidopsis arenosa*

Kirsten Bomblies, John Innes Centre, UK

Chair: Alan Schulman, LUKE, Finland

15:45 - 16:30

Refreshment Break & Exhibition

16:30 - 18:00

## Concurrent Sessions

### Subsession 1: Genome Evolution - Computational

Chair: Alan Schulman, LUKE, Finland

Keynote: *Omics for plant breeding*

Sanwen Huang, Chinese Academy of Agricultural Sciences, China

Selected talks:

*Conservation and diversification of the CONSTANS gene family in photoperiod-mediated flowering*

Darshan Young

*Characterisation of the pan-genome of Vitis vinifera using Next Generation Sequencing*

Gabriele Magris

*Respiratory type II NAD(P)H dehydrogenases in plants - NDB type*

Mengshu Hao

16:30 - 18:00

### Subsession 2: Plant Microbiome - Biotic Interactions

Chair: Jens Stougaard, Aarhus University, Denmark

Keynote: *A central role of multivesicular bodies in plant immunity*

Hans Thordal-Christensen, University of Copenhagen, Denmark

Selected talks:

*Sesquiterpenes produced in roots of Medicago truncatula play a role in defense mechanism against Aphanomyces euteiches*

Heena Yadav

*Yr15 (WTK1) encodes a tandem kinase conferring broad-spectrum resistance to wheat stripe rust*

Alan Schulman

*Unravelling the epigenetic basis of plant immunity*

Ana Lopez Sanchez



16:30 - 18:00

### Subsession 3: Beyond the Scope of Sessions

Chair: Urte Schlüter, University of Düsseldorf, Germany

Selected talks:

*Root proliferation in response to neighbors in wheat (Triticum aestivum)*  
Jacob Weiner

*Implication of hybrid necrosis in Petunia speciation*  
Mathieu Hanemian

*How do defence compounds accumulate in phloem-cap cells for vascular protection?*  
Deyang Xu

18:30 - 22:00

Informal Social gathering at Toldboden



Wednesday, June 20

08:30 - 18:00

Registration

08:30 - 09:15

## Plenary: Plant Microbiome

*Lotus japonicus and rhizobia interactions; from simple to complex associations*

Simona Radutoiu, Aarhus University, Denmark

Chair: Michael Palmgren, University of Copenhagen, Denmark



09:15 - 09:45

EPSO award talk: *The Delivery of Cytoplasmic Effector in P. infestans Mediated by Secreted Exosomes*

Shumei Wang, The James Hutton Institute, United Kingdom

09:45 - 10:45

Poster Session: *Niche Crops and Plant Microbiome*

10:45 - 12:15

Concurrent Sessions

## Subsession 1: Plant Microbiome

Chair: Jens Stougaard, Aarhus University, Denmark

Keynote: *The role of plant host rhizosphere signalling in root microbiome recruitment*

Harro Bouwmeester, University of Amsterdam, Holland

Selected talks:

*Breeding for microbiome-mediated disease resistance*  
Gwendolin Wehner

*Understanding the Rhizosheath: Opportunities for Manipulating the Soil Root Interface*  
Timothy George

*Identification of novel priming agents by monitoring the expression of defence genes in rice cell suspension cultures*  
Tina Kyndt

10:45 - 12:15

## Subsession 2: Genome Evolution - Epigenetics

Chair: Robbie Waugh, The James Hutton Institute, UK

Keynote: *Oscillating long non-coding RNAs are novel regulators of circadian-mediated processes*

Rossana Henriques, University College Cork, Ireland

Selected talks:

*DNA repair in plant mitochondria - A complete base excision repair pathway in potato tuber mitochondria*

Ian Max Møller

*Molecular regulator mechanisms associated with bud dormancy in *Quercus suber**

Helena Silva

*Identification and characterization of regulatory elements in grapevine*

Rachel Schwope

12:15 - 13:15

Lunch Break & Exhibition

13:15 - 14:00

## Plenary: Seeds For The Future

*How do seeds prepare for their future?*

Wim Soppe, Rijk Zwaan Breeding B.V, Netherlands



Chair: Ilse Kranner, University of Innsbruck,

14:15 - 15:00

## Plenary: Natural Products

*Production of high value natural plant products: from the laboratory bench to the drugstore shelf.*

Massimo Maffei, University of Turin, Italy

Chair: Cathie Martin, John Innes Centre, UK

15:00 - 16:00

Poster Session: *Environmental Resilience and Genome evolution*

Authors Workshop - How to publish in a scientific journal

16:00 - 17:30

Concurrent Sessions

### Subsession 1: Natural Products

Chair: Cathie Martin, John Innes Centre, UK

Keynote: *The place to be for metabolic engineering: the ER*  
Alain Goossens, VIB life sciences research institute, Belgium

Selected talks:

*Novel Plantago mucilages for health and industrial uses*  
Rachel Burton

*The enzymes OSC1, LUP and CYP716A263 produce a high variety of triterpenoids in the latex of the dandelion species Taraxacum koksaghyz*  
Katharina Pütter

*NPF - A long-sought family of specialized metabolite transporters*  
Hussam H. Nour-Eldin

16:00 - 17:30

### Subsession 2: Seeds for the Future - Seeds & Nutrition

Chair: Christian Bachem, Wageningen University, Netherlands

Keynote: *Ionome to Genome: Tales of gene discovery*  
Mary Lou Guerinot, Dartmouth University, US

Selected talks:

*The Highs and Lows of Wheat Phytase Activity*  
Claus Krogh Madsen

*Combating Hidden Hunger: Zinc Localization and Speciation in Barley Grains*  
Amelie Detterbeck

*Affinity capture and MS identification of barley (Hordeum vulgare L.) and wheat (Triticum aestivum L.) grain proteinaceous inhibitors of bacterial subtilisin and GH11 xylanase*  
Giuseppe Dionisio

16:00 - 17:30

### Subsession 3: Environmental Resilience - Climate Change

Chair: Torgny Näsholm, Umeå Plant Science Center, Sweden

Keynote: *Global change and the questions for which we have no answer (yet)*

Hendrick Poorter, Research Center Juelich, Germany

Selected talks:

*Impacts of elevated temperature and CO<sub>2</sub> concentration on growth and phenolics in the sexually dimorphic Populus tremula (L.)*

Norul Sobuj

*Transcript, lipid and metabolite changes contribute to low temperature memory in Arabidopsis*

Ellen Zuther

*Solanum and Vitis SPCH, MUTE and FAMA bHLHs as tools to modify stomatal abundance-related physiology*

Carmen Fenoll

19:00 - 23:00

Conference dinner & dance at Langelinie Pavillion

Departure from Bella Center at 18.00 with busses (follow the conference staff with PBE2018 t-shirts and signs). Transfer to boats for a 30 minutes tour in the harbor of Copenhagen and drop off at the Little Mermaid next to the conference dinner venue, Langelinie Pavillonen.

Included is Harbor tour by boat to dinner venue.

Thursday, June 21

08:30 - 18:00

Registration

09:00 - 9:45

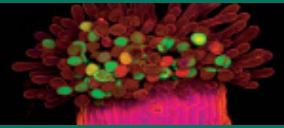
## Plenary: Environmental Resilience

*Functional biodiversity and biogeochemistry: linking plant traits and processes in a globally changing environment.*

Peter Reich, University of Minnesota, USA

Chair: Torgny Näsholm, Umeå Plant Science Center, Sweden

**plant biology**



09:45 - 10:15

FESPB award Talk: *Plant vulnerability to cavitation: recent advances and perspectives in one of the key mechanisms of vegetation shifts and forest decline.*

Josè M Torres Ruiz, Sociedad Espanola de Fisiologia vegetal, Spain

10:15 - 11:15

Poster Session: *Natural Products and Beyond the scope of sessions*

## Subsession 1: Seeds for the Future - Seeds Biology

Chair: Ilse Kranner, University of Innsbruck, Austria

Keynote: *Safeguarding genome integrity in germination and seed longevity*  
Wanda Waterworth, University of Leeds, UK

Selected talks:

*Functional divergence of DOG1 and DOG1-LIKE4 in the seed maturation program*

Hiroyuki Nonogaki

*Selective modification of the wheat seed microbiota affects hydrogen peroxide production in wheat seedlings*

Davide Gerna

*Activation of auxin biosynthesis by trehalose 6-phosphate is required for normal seed filling in pea (*Pisum sativum*)*

Tobias Meitzel

## Subsession 2: Environmental Resilience - Abiotic Stress

Chair: Michael Palmgren, University of Copenhagen, Denmark

Keynote: *Genetic characterization of salinity tolerance traits to increase salinity tolerance in crops*

Mark Tester, King Abdullah University of Science and Technology, Saudi Arabia

Selected talks:

*Regulation of sulfur deprivation responses in *Chlamydomonas* and dual role of truncated hemoglobin 1*

Elena Ermilova

*Identification of novel players in rice salt-stress responses using CRISPR/Cas genome editing*

Raquel Carvalho

*The Endodermal Passage Cell Just Another Brick In The Wall?*

Tonni Andersen

12:45 - 13:15

Closing ceremony & Awards

13:15 -

Lunch to go or stay

Afternoon

Technical Tours and Social Activities :

Career Workshop in Copenhagen Plant Science Centre (CPSC)

Copenhagen City and Harbor tour

## Friday, June 22

08:30 - 18:15

Technical Tours and Social Activities:

Royal Copenhagen Tour

Technical tour to the Radimax phenotyping facility at University of Copenhagen (Just outside Copenhagen)