



1st PlantACT! Conference
10-13 March, 2024
Heinrich-Heine University, Düsseldorf, Germany

Day 1 | 10 March 2024 Sunday

14:00-16:00

Registration opening

16:00-16:15

Opening remarks

Members of the program committee

16:15-17:00

Introductory lecture

Andreas Weber, Heinrich Heine Univ., Düsseldorf, Germany

17:30-20:00 **Welcome Reception & Posters**

Day 2 | 11 March 2024 Monday

Session 1: Resilience and Food Security: Plant growth and development in the context of climate change

Chair: Yvonne Stahl (Univ. Frankfurt, Germany)

09:00-09:30

Malcolm Bennett (Nottingham Univ., UK): 'Engineering crop resilience to soil environmental stresses by exploiting new mechanistic insights'

09:30-10:00

Chris Schön (TU Munich, Germany): 'Natural alleles of ZmAbh4 modulate water use efficiency in maize'

10:00-10:30

Markus Wirtz (Heidelberg Univ., Germany): 'Long-distance control of evaporation – A novel role for soil-borne sulfate in stomatal aperture regulation'

10:30-11:00 **Coffee break & Posters**

Chair: Michaël Hodges (CNRS, France)

11:00-11:30

Sotirios Fragkostefanakis (Univ. Frankfurt, Germany): 'Thermal Acclimation in Plants: The Interplay between Transcriptional Regulation and RNA Splicing'

11:30-12:00

Franziska Fichtner (Univ. Düsseldorf, Germany): 'The sugar signal trehalose 6-phosphate is a regulator of plant development'

12:00-12:30

Paula Duque (Gulbenkian Institute, Portugal): 'Decoding RNA-based control of ABA-mediated early plant development'

12:30 Group Photo

12:45-14:00 Lunch

Session 2: Nitrogen Use Efficiency: Enhancing Plant Nitrogen Use and Avoiding Nitrogenous Emissions

Chair: Anne Krapp (INRAE, France)

14:00-14:30

Chengcai Chu (South China Agric. Univ., China): 'Improvement of nitrogen use efficiency in rice: From the lab to the field'

14:30-15:00

Gabriel Krouk (CNRS, France): 'Nitrogen Signaling Interactions and a New Kind of GWAS'

15:00-15:30

Shu-Yuan Pan (National Taiwan Univ., Taiwan): 'R&D on Climate-Smart Resilient Agriculture at National Taiwan University'

15:30-16:00

Edoardo Puglisi (Università Cattolica del Sacro Cuore, Piacenza, Italy): 'Beneficial rhizosphere microorganisms for plant nutrition under changing climates'

16:00-16:30 Coffee break & **Posters**

16:30-16:45

Raissa Krone (Univ. Cologne, Germany): 'Mineral nutrition in the evolution of C4 photosynthesis'

16:45-17:00

Mayra Sánchez Olvera (IBMCP, Spain): 'Chemical activation of the ABA pathway in crops through ABA receptor antagonists confers drought protection'

17:00-17h15

Fabien Chardon (INRAE, France): 'Impact of post-flowering environmental stress on nitrogen flux and seed composition in Arabidopsis'

17:30-19:00

Panel discussion: 'Having Impact in the Real world' with Malcolm Bennet, Jill Farrant, Franziska Fichtner, Cornelia Rumpel, and David Spencer (Moderation)

Session 3: Soil-Plant Health: Impacts of Climate Change on Plant Physiology, Growth, and Development

Chair: Hannes Kollist (Tartu Univ., Estonia)

09:00-09:30

Alga Zuccaro (Cologne Univ., Germany): 'Microbial gatekeepers: root endophytes as an extended plant protection barrier in the rhizosphere'

09:30-10:00

Heribert Hirt (KAUST, Saudi Arabia): 'Enabling sustainable agriculture by soil microbiome function restoration'

10:00-10:30

Pankaj Trivedi (Colorado State Univ., US): 'Rewiring Plant-Microbiome Interactions for Drought Resilient Crop Production'

10:30-11:00 Coffee break & **Posters**

11:00-12:30

Workshops (40 min. each):

(1) 'Urgent action for climate challenges: What's next for PlantACT! ?'

(2) 'Addressing plant blindness: How plants can take centre stage in the public debate surrounding climate change'

Moderation **Catherine Walsh** (Lancaster Univ.) & **Svenja Augustin** (Düsseldorf Univ.)

12:30-13:30 Lunch

13:30 -14:00

Summary of the workshop discussions: Catherine Walsh, Svenja Augustin

Session 4: Resilience and Food Security: Plant Adaptation and Resilience Strategies in Response to Fluctuating Climates

Chair: Andreas Meyer (Univ. Bonn, Germany)

14:00-14:30

Isabel Bäurle (Potsdam Univ., Germany): 'Priming and Memory in response to heat stress – a case for epigenetics'

14:30-15:00

Katherine Denby (York Univ., UK): 'Elucidating and re-wiring gene regulatory networks to enhance crop disease resistance'

15:00-15:30

Jill Farrant (Univ. Cape Town, South Africa): 'Understanding vegetative desiccation tolerance as a tool box for food security in a hotter drier future'

15:30-16:00

Maria von Korff-Schmising (Düsseldorf Univ., Germany): 'Exploiting natural genetic diversity for improving barley resilience to high temperature'

16:00-16h30 Coffee break & **Posters**

16:30-16h45

Pia Saake (Univ. Cologne, Germany): 'Fungal lipids and their regulation of plant innate immune signaling'

16:45-17:00

Ive De Smet (VIB, Belgium): 'Capturing phosphorylation dynamics to identify conserved regulators and breeding markers -a heat stress case study'

17:00-19:30

Poster session

Day 4 | 13 March 2024 Wednesday

Session 5: Carbon Sequestration: Mitigating Climate Change

Chair: Stanislav Kopriva (Univ. Cologne, Germany)

09:00-09:30

Cornelia Rumpel (CNRS, France): 'Role of plants in soil carbon sequestration'

09:30-10:00

Laia Segura Broncano (Düsseldorf Univ., Germany): 'Photorespiratory bypasses towards more efficient carbon fixation'

10:00-10:30

Gabriel Schaaf (Bonn Univ., Germany): 'Leveraging plant-rhizobiome interactions for enhanced nutrient use efficiency and climate resilience'

10:30-11:00 Coffee break

11:00-11:15

Jeffrey George (Univ. of California, Riverside, USA): 'Climate resilience in soybean: Root plasticity confers flooding tolerance'

11:15-11:30

Alizée Weiss (Univ. Perpignan, France): 'Exploring natural variation of Arabidopsis thaliana tolerance to calcareous soil in the context of climate change'

11:30-11:45

Benni Franke (Univ. Bonn, Germany): 'Double impact –decelerated CO₂ emissions and improved water use efficiency by adjusting plant cell wall polymers'

11:45-12:00

Dunja Šamec (University North, Croatia): Understanding the stress tolerance of fossil plants –are biflavonoids involved?'

12:00-12h15

Iva Mozgová (Biology Centre of the Czech Academy of Sciences, Czech Republic): 'Acclimation of *Arabidopsis thaliana* to changing light: emerging role of facultative heterochromatin'

12:15-12:30

Concluding Remarks, Farewell

12:30-14:00 Lunch, Departure

Scientific Organizers: Heribert Hirt (KAUST, Saudi Arabia), Anne Krapp (INRAE, France), Andreas Weber (Heinrich Heine Univ., Germany)

Local Organizers: Céline Hönl, Juliane Schmid, Brigitte Haumann, Andreas Weber

Sponsors:

Funded by

DFG Deutsche
Forschungsgemeinschaft
German Research Foundation

