

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Climate Change-Linked Stress Tolerance in Plants (M4)

May 13-16, 2019 • Herrenhausen Palace • Hannover, Germany

Scientific Organizers: Julian Schroeder and Julia Bailey-Serres

Organized in collaboration with Volkswagen Foundation

Global Health Travel Award Deadline: December 18, 2018 / Abstract & Scholarship Deadline: January 15, 2019 / Abstract Deadline: February 13, 2019 / Discounted Registration Deadline: March 13, 2019

MONDAY, MAY 13

Arrival and Registration

TUESDAY, MAY 14

Welcome and Keynote Address

Giles E.D. Oldroyd, University of Cambridge, UK
Reducing the Dependence on Inorganic Fertilizers with Symbiotic Microbial Associations

Harnessing Stress Tolerance from Genetic Diversity

Maria von Korff Schmising, University Düsseldorf and Max Planck Institute for Plant Breeding Research, Germany
Breeding Improved Drought and Heat Resistance in Barley

Amelia Henry, International Rice Research Institute, Philippines
Harnessing Genetic Diversity to Achieve Drought Tolerance in Rice

Julia Bailey-Serres, University of California, Riverside, USA
Dynamic Mechanisms of Water Extreme Resilience

Short Talk(s) Chosen from Abstracts

Workshop 1: Advances in GWAS and Gene-Editing Towards Stress Tolerance

Short Talks Chosen from Abstracts

Responses to Elevated Greenhouse Gases: Physiology to Productivity

Lisa Ainsworth, University of Illinois and USDA, USA
Improving Crop Physiological Responses to Rising Ozone Pollution

Julian I. Schroeder, University of California, San Diego, USA
CO₂ Sensing and Signal Transduction in Regulation of Plant Transpiration

Diana Santelia, University of Zürich, Switzerland
CO₂, Starch and Stress Survival Strategies

Short Talk Chosen from Abstracts

Poster Session 1

WEDNESDAY, MAY 15

Resilience through Synthetic Solutions

Julie E. Gray, University of Sheffield, UK
Engineering Stomata to Reduce Crop Water Use

Sean Cutler, University of California, Riverside, USA
Programmable Plants – Synthetic Approaches to Engineering Drought Tolerance

Lizhong Xiong, Huazhong Agricultural University, China
GWAS and Engineering of Drought Resistance in Rice

Short Talk(s) Chosen from Abstracts

Workshop 2: New Sustainable Alternatives for Meeting Protein and Nutrient Needs of the Future

B. Greg Mitchell, University of California San Diego Scripps Institution of Oceanography, USA
The Potential of Protein and Food production in salt tolerant algae

Short Talks Chosen from Abstracts

Developmental Reprogramming under Stress

José R. Dinneny, Stanford University, USA
Sensing and Developmental Response to Salinity

Christa Testerink, Wageningen University, Netherlands
Out of Shape during Stress: Mechanisms of Root Architecture Remodeling in Response to Salt

Mikio Nakazono, Nagoya University, Japan
Root Traits that Determine Waterlogging Resilience in Rice and Maize

Short Talk Chosen from Abstracts

Poster Session 2

THURSDAY, MAY 16

Genomes to Stress Resilience Mechanisms

Christine Queitsch, University of Washington, USA
Epigenomics of Heat Stress Responses in Model Species

Graeme L. Hammer, University of Queensland, Australia
The Physiology, Genetics and Modelling of Heat Tolerance in Grain Sorghum

Maheshi Dassanayake, Louisiana State University, USA
Learning from Nature: Salt Tolerance Strategies

Tomoaki Horie, Shinshu University, Japan
Molecular Mechanisms that Enhance Salt Tolerance in Cereals

Short Talk(s) Chosen from Abstracts

Workshop 3: GWAS and Abiotic Stress Resistance

Short Talks Chosen from Abstracts

Discovery of New Stress Tolerance Mechanisms and Loci

François Tardieu, French National Institute for Agricultural Research, INRA, France

Genetic Analysis of Drought Tolerance with a Scenario-Dependent Probabilistic Approach

Edward S. Buckler, USDA-ARS, USA

Maize NAM Population-Based Breeding for Abiotic Stress Tolerance

Vipula Shukla, Bill & Melinda Gates Foundation, USA

Abiotic Stress Resistant Crops in Africa

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

FRIDAY, MAY 17

Departure