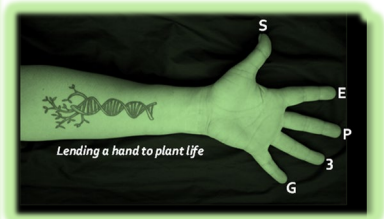


Sustainable Enhancement
of Plant Productivity
with Precision Genomics
(SEP₃G)



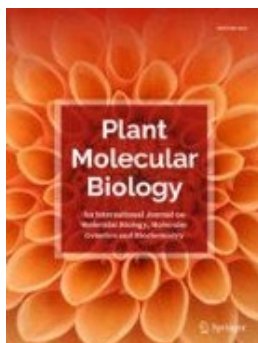
December 18th and 19th, 2023

Royal Holloway University of London



JSPS

JSPS ALUMNI ASSOCIATION
UK & IRELAND



SOCIETY FOR EXPERIMENTAL BIOLOGY



Main Scientific Leads and Organisers:

Prof. Alessandra Devoto, Royal Holloway University of London; Alessandra.Devoto@rhul.ac.uk

Dr. Motoaki Seki. Riken Institute, Centre for Sustainable Resource Science; Motoaki.Seki@riken.jp

Dr. Enrique Lopez-Juez, Royal Holloway University of London; E.Lopez@rhul.ac.uk

Dr. Kazumi Nakabayashi, Royal Holloway University of London; Kazumi.Nakabayashi@rhul.ac.uk

Locations:

Shilling Building Lecture Theatre and Shilling Seminar Room 0-04

Tea/coffee sessions

Shilling Building foyer

Monday December 18th

- 9.00 Registration
- 9.30 Opening remarks, Prof. David Simon, Director of External Engagement, School of Life Sciences and the Environment (LSE), Royal Holloway University of London
- 9.40 Opening remarks and Introduction to JSPS Funding Opportunities, Dr Yumiko Myoken, Deputy Director, JSPS London
- 9.55 Scientific Leads' opening remarks, Prof. Alessandra Devoto (RHUL), Dr. Motoaki Seki (RIKEN)

Session 1: Resilience in Plants and Novel Technologies

Chair: Alessandra Devoto

- 10.00 Prof. Colin Turnbull (Imperial College, UK). **Keynote presentation.**
Stress, immune suppression and multi-omics of plant v aphid battles
- 10.40 Dr. Hirofumi Nakagami (Max Planck Institute for Plant Breeding Research, Germany)
Evolution of pattern-triggered immunity
- 11.10 *Coffee break*
- 11.30 Dr. Motoaki Seki (Riken, Centre for Sustainable Resource Science, Japan)
Chemical Priming Research for Climate Emergency
- 12.00 Dr. Keiichi Mochida (Riken, Centre for Sustainable Resource Science, Japan)
Decoding Plant Resilience through Deep Phenotyping and Regulatory Network Reconstruction
- 12.30 *Group Photograph*
Campus tour of Royal Holloway, Royal Holloway External Space Team
Lunch - Shilling Building foyer

Chair: Motoaki Seki

- 1.30 Dr. Carolina Grandellis (Earlham Institute, UK)
Harnessing Automation and Synbio for Agritech Advancements
- 2.00 Dr. Ashleigh Lister (Earlham Institute, UK)
Single-cell and spatial analysis of plant tissues
- 2.30 Dr. Naomi Nakayama (Imperial College, UK)
Regenerative plant cultures for plant biology and biotechnology
- 3.00 *Coffee break*

Chair: Nancy McMulkin

- 3.20 Dr. Kazumi Nakabayashi (Royal Holloway, UK)
Wakeup call or lullaby, or something new? An integrative approach to understanding weed seed persistence and germination
- 3.40 Dr. Paul Devlin (Royal Holloway, UK)
Identification of phyllosphere traits for improvement of microbiome resilience
- 4.00 Dr. Stacey Vincent (Concert Bio, UK)
Harnessing the microbiome for plant health and sustainability
- 4.20- 5.30 Networking event on Research consortia
- 6.30 *Conference dinner, Location TBA*

Tuesday December 19th

Session 1: Gene regulation and Growth Enhancement

Chair: Enrique Lopez

- 9.30 Prof. Masaki Ito (Kanazawa University, Japan)
Expanding roles of transcriptional regulation during the plant cell cycle
- 10.00 Dr. Cécile Raynaud (Institute of Plant Sciences Paris Saclay, France)
E2F transcription factors as new players in the replication stress response
- 10.20 Dr. Zoltan Magyar (Biological Research Centre, Szeged, Hungary)
New roles for canonical components to establish quiescence during plant development

10.40 *Coffee break*

Chair: Paul Devlin

- 11.10 Dr. Naoki Takahashi (Meiji University, Japan)
Regulatory mechanisms of growth arrest in response to stresses
- 11.40 Dr. Pallavi Singh (University of Essex, UK)
Exploring the dynamic relationship between roots, shoots, and water use efficiency in cereal crops to boost productivity
- 12.10 *Exploration of Picture Gallery at Royal Holloway, Peggy Ainsworth, Art Collection, Royal Holloway*
Lunch - Shilling Building foyer

Chair: Colin Turnbull

- 1.30 Dr. Jie Song (Imperial College, UK)
Epigenetic reprogramming during callus formation in the model plant Arabidopsis
- 2.00 Ms. Nancy McMulkin (Royal Holloway, UK)
Chromatin landscape analysis for drought resilience to increase plant fitness potential
- 2.20 Dr. Naresh Loudya (Indian Institute of Science, Bengaluru, India) *Delivered online*
LYN1 regulates chloroplast and cell differentiation in Arabidopsis
- 2.50 Prof. Alex Jones (Warwick University)
Targeting sites of post-translational modification for precision genetic editing
- 3.10 *Coffee break*

Chair: Alessandra Devoto

- 3.30 Dr. Nicolas Kral (Phytoform Ltd., UK)
Leveraging AI-driven gene activity predictions and genome editing for sustainability traits in crops
- 3.50 Mr. Felix Trimmer (Royal Holloway and Innovation Agritech, UK)
Integrating machine vision with precision indoor agriculture
- 4.10 Prizes presentation
Closing remarks and plans for dissemination. Dr. Motoaki Seki and Prof. Alessandra Devoto
- 5.00 Symposium End

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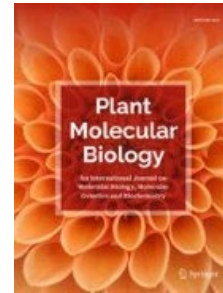
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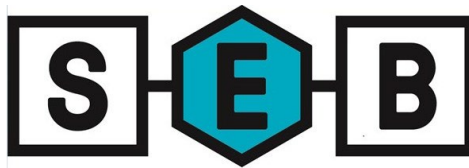
Plant Molecular Biology. An International Journal on Molecular Biology,
Molecular Genetics and Biochemistry.

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