The 33rd International Conference on Arabidopsis Research

Arabidopsis for SDGs

CHIBA, Japan
June 5-9
Makuhari Messe

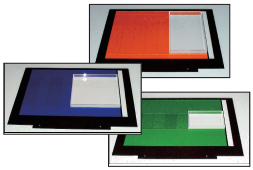
Image Analysis Tools for Roots and Seedlings

WinRHIZO™ • Four Versions

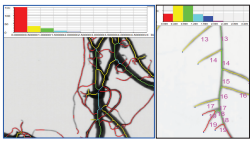
• Basic, Regular & Pro

Automatic Analysis Systems for Washed Roots

Scan washed roots with Regent's scanners and accessories.



See analysis results summarized on screen after scanning.



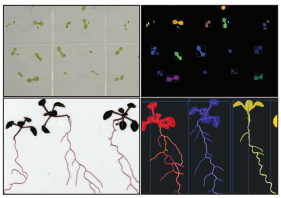
- √ Root morphology in function of root diameter and color: length, area, volume and number of tips
- √ Number of forks and crossings
- √ Root overlap detection for accurate measurement
- √ Topology, link and architecture with fractals
- √ Developmental classification
- •• Available measurements and features vary according to WinRHIZO's version.

• Arabidopsis

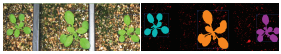
Automatic Analysis System for Washed Roots and Seedlings grown in Petri Dish

Analyse seedlings and leaves:

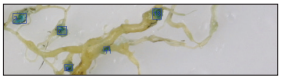
Globally *Individually*



- √ Leaf area of seedlings in Petri dish
- √ Germination Count
- √ Leaf area - leaf/hypocotyl distinction
- √ Root morphology
- √ Topology and developmental analysis



- √ Leaf area, length and width of plant in soil



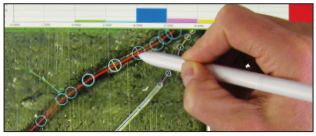
- √ Surface area and automatic count of non-touching nodules
- •• Includes also all measurements and features of WinRHIZO Pro.

WinRHIZO™ Tron • Two Versions

• Tron & Tron MF

Software Programs for Interactive Analysis of Images of Roots in Soil and Rhizotron

Trace roots manually with a mouse or by touching the screen of all-in-one or tablet computers.



Monitor root growth by analysing Multiple Frames (images) of a root system taken at different times.

- √ Root morphology in function of root diameter and color: length, area, volume and number of tips
- √ Topology and developmental analysis
- √ Data retrievable from file names using the ICAP naming scheme
- √ Previous analysis can be retrieved to resume analysis of the same location at a later time simply by adding new or dead roots since the last analysis.

We offer eight software product families for research on plants and trees.
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SESSION OVERVIEW

Monday, June 5,2023	
14:00-15:00	Work shop 1-4
15:50-16:00	Opening
16:00-17:30	Keynote 1-2
18:00-20:00	Reception

Tuesday, June 6, 2023	
9:00-10:30	Plenary 1: From single cells to an organism
11:00-12:30	Plenary 2: Interactions between organism
	Work shop 5
14:30-16:00	Concurrent 1: Advances in plant nutrition under changing environment
	Concurrent 2: The environmentally responsive plant epigenome
	Concurrent 3: New tools and applications in plant molecular genetics
	Concurrent 4: Cellular reprogramming in regeneration and development
	Concurrent 5: Organelle- organelle communication under stress
	Concurrent 6: Plant proteostasis: The dynamic proteome in plant cell signalling
16:30-18:00	Concurrent 7: Arabidopsis and its translational research in the Global South
	Concurrent 8: Understanding circadian regulation in unpredictable environments
	Concurrent 9: Guard cell signaling and metabolism
	Concurrent 10: Development and environmental respomes: What are kept and what are lost over the evolutionary history or land plants
	Concurrent 11: Role of biomolecular condensates in abiotic stress signaling
	Concurrent 12: Translation regulation in plants
18:00-20:00	Poster discussion

Wednesday, June 7, 2023	
9:00-10:30	Concurrent 13: Integration of Arabidopsis and research in plant biotic interactions
	Concurrent 14: Stress-induced signaling peptides
	Concurrent 15: Arabidopsis relatives from laboratories to natural fields
	Concurrent 16: Plant epigenetic and chromatin dynamics
	Concurrent 17: Hidden message of RNAs for environmental responses
	Concurrent 18: Making contacts: Membrane contact sites between pant organelles

11:00-12:30	Concurrent 19: Temporal regulation of environmental responses, growth, and development
	Concurrent 20: Interdisciplinary approaches applied to plasmodesmata research
	Concurrent 21: Molecular signaling in plant-insect interactions
	Concurrent 22: Molecular condensation for reproductive and biotic stress regulation: From cell biology to biophysical mechanism
	Concurrent 23: A systems perspective: Omics Integration and modeling
	Concurrent 24: Transposable elements, epigenetics, and environmental adaptation
14:30-16:00	Plenary 3: Sustainable society and plants
16:30-18:00	Plenary 4:Functional metabolomics
18:00-20:00	Poster Discussion

Thursday, June 8, 2023

9:00-10:00	Workshop 6-10
10:30-12:00	Concurrent 25: The road recovery: Elucidating stress recovery pathways and reversing stress effects
	Concurrent 26: Receptor kinase signaling in development
	Concurrent 27: Chemical priming as a sustainable tool for improved productivity under stress conditions
	Concurrent 28: Cross-kingdom RNA communications and innocative disease comtrol solitions
	Concurrent 29: Visualizing the dynamic of the circadian clock
12:45-	Workshop 11
14:00-15:30	Concurrent 30: Living on the edge: Adaptation of Arabidopsis extremophyte relatives to harsh environments
	Concurrent 31: Short and long range signaling by RNA
	Concurrent 32: Mechanisms and functions of endocytosis in plants
	Concurrent 33: Front-line of plant genome engineering
	Workshop 12 MASC: Arabidopsis for SDGs/4th Decadal Vision
16:00-17:30	Plenary 5: Evolution and ecology
18:00-22:30	Banquet

Friday, June 9, 2023

9:00-10:30	Plenary 6: Integration of environmental cues
11:00-11:45	Keynote: 3
11:45-12:00	Closing

Meeting information

Contact

If you have any questions, please contact:

Corporate 3rd Office, Kinki Nippon Tourist Co., Ltd
General inquiries: secretariat@icar2023.org
Abstract submission: icar2023-abst@or.knt.co.jp
Registration: icar2023-rgst@or.knt.co.jp

Registration desk Opening hours

The registration and information booth will be open from:
June 5th: 1:00 pm- 7:00 pm
June 6th: 8:00 am- 18:00 pm
June 7th: 8:00 am- 18:00 pm
June 8th: 8:00 am- 17:00 pm
June 9th: 8:00 am- 12:00 noon

Meeting Venue

Makuhari Messe
International Conference hall
2-1, Nakase, Mihama-ku, Chiba-city, 261-8550 Japan

- Approx. 5 minutes on foot from Kaihimmakuhari Station on the JR Keiyō Line
  (approx. 30 minutes on the rapid train from Tokyo Station)
  *Approx. 20 minutes on foot from Makuharitoyosuna Station on the JR Keiyō Line

- Approx. 17 minutes by bus for Makuhari Messe Chuo from Makuharihongō Station on the JR Sōbu Line or Keisei Line

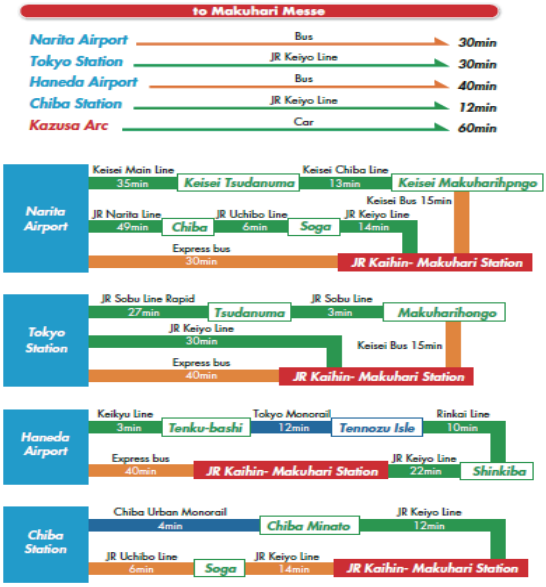
Banquet

“YAKATABUNE” Traditional Cruising Japanese Style
Website: http://yakatabune-tokyo.com/index.html
■ Date : June 8 (Thu) From 19:00 ~ (2.5 hour)
■ Bus will depart at 18:00 from Makuhari Messe to “YAKATABUNE”.
*Please make your own way home for return.
■ Boarding place of “YAKATABUNE” : Kasaibashi Boat Pier
■ Disembarkation place : Harumi Asashio Boat Pier

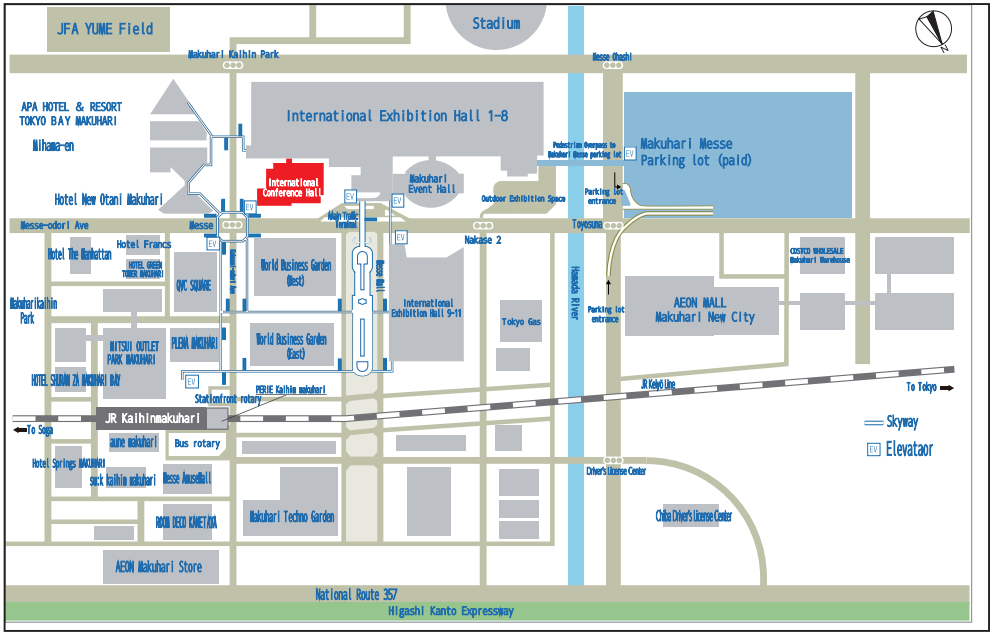
Local Access

With world-class transportation networks such as trains, subways, and buses allows easy access to your destination to any part of Japan. Multilingual signage and digital apps are available for easy navigation. IC passes such as SUICA and PASMO allow hop on and off trains and buses with ease.

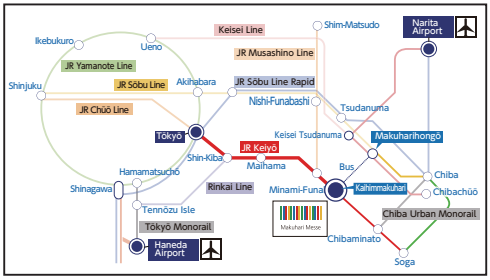
Makuhari Messe is only 30 minutes away from Central Tokyo.



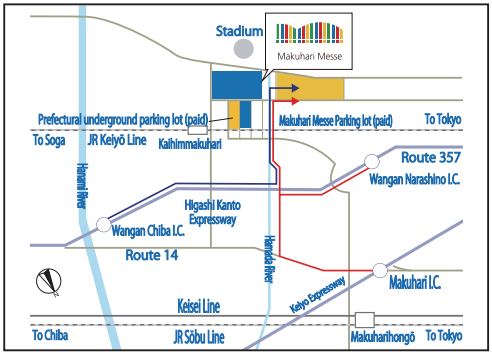
Area MAP



■By train

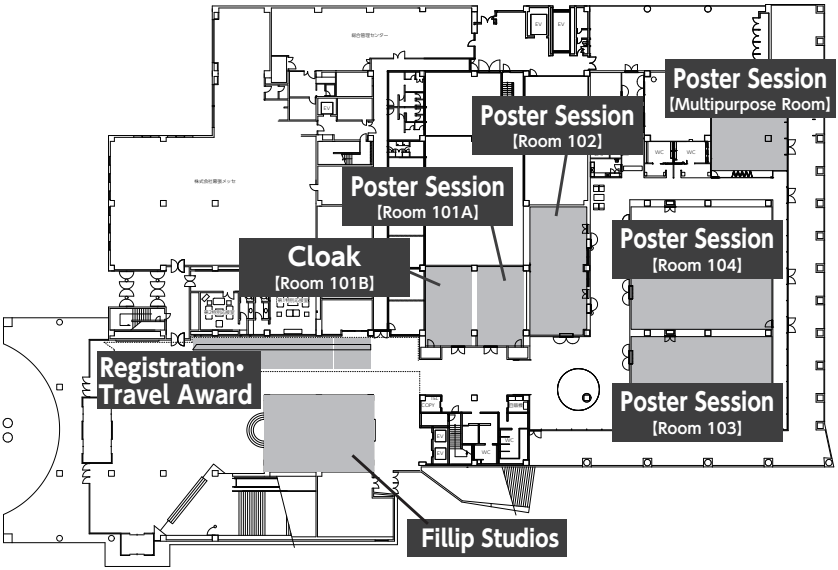


■By car



Layout of the venue

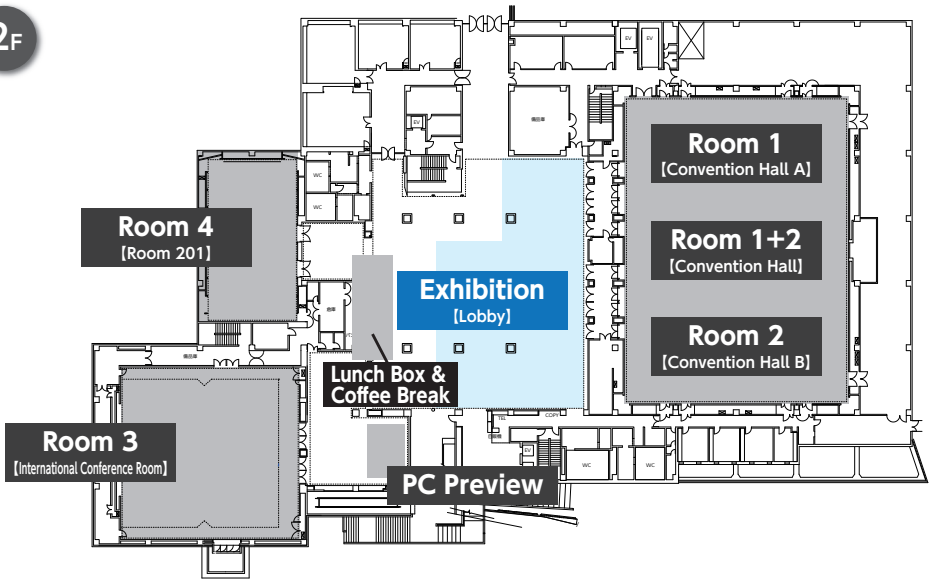
1F



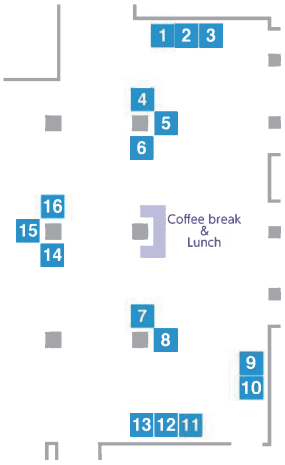
Poster Session

	ODD	EVEN
Room101A	PO001-PO039	PO002-PO040
Room102	PO041-PO119	PO042-PO120
Room103	PO121-PO249	PO122-PO250
Room104	PO251-PO379	PO252-PO380
Multipurpose Room	PO381-PO479	PO382-PO480
Room303	PO481-PO603	PO482-PO604
Room304	PO605-PO719	PO606-PO720

2F



1	Yale University - Plant Molecular Biology (PMB)
2	RIKEN CSRS
3	RIKEN BRC / NBRP Arabidopsis
4	Bio Medical Science Inc.
5	LECO Japan Corporation
6	Agrisera antibodies
7	Nottingham Arabidopsis Stock Centre (NASC) / ABRC
8	Berthold Technologies GmbH& Co. KG
9	Oxford University Press
10	Journal of Experimental Botany
11	Journal of Integrative Plant Biology
12	The Arabidopsis Information Resource / Phoenix
13	Plant Cell Atlas
14	XUNON INSTRUMENTS
15	PhytoAB Inc
16	Kazusa DNA Research Institute



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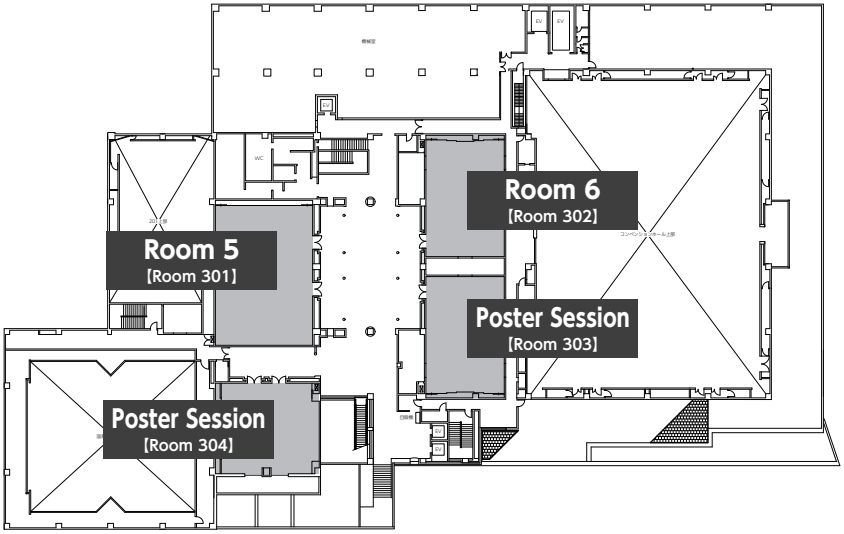

ICAR2023 Code of Conduct.

The Multinational Arabidopsis Steering Committee (MASC) and the organisers of ICAR2023 are committed to ensuring that ICAR conferences are a welcoming and inclusive space for sharing of ideas, knowledge exchange and for developing collaborative opportunities for everyone who attends.

To this end, ICAR2023 will provide a safe environment that promotes equal opportunity and treatment for all participants and that is free of harassment and discrimination.

This code of conduct applies to all registered attendees, speakers, exhibitors, staff, contractors, volunteers, and guests; and it applies both within the ICAR2023 conference venue, within the online-platform and in associated events and locations where ICAR2023 conference delegates are present.

Download full Code of Conduct from MASC website.

Cooperated Research Institutions

RIKEN RIKEN BRC CSRS SCHOOL OF SCIENCE THE UNIVERSITY OF TOKYO

Cooperated Academic Societies

JSB JSPB Japanese Society for Plant Biotechnology PGR MBSJ

JSPP 一般社団法人 日本植物生理学会 The Japanese Society of Plant Physiologists

日本遺伝学会 THE GENETICS SOCIETY OF JAPAN

BSJ 日本植物学会 The Botanical Society of Japan

CSSJ

Academic Sponsors and Scientific Journals

tair

ABRC Arabidopsis Biological Resource Center abrc.osu.edu

NAASC The North American Arabidopsis Steering Committee

Periodicity and its Modulation in Plants 植物の周期と変調

IPMB ACADEMIA SINICA

ABRC ACADEMIA SINICA

Innovative plant reproductive systems
Genomic dynamics underlying the plastic hermaphroditism in plants: the basis of exploratory reproductive adaptations.

Plant Molecular Biology Springer

KIBR YOKOHAMA CITY UNIVERSITY Kihara Institute for Biological Research

京都大学 生態学研究センター Center for Ecological Research, Kyoto University.

文部科学省 科学研究費助成事業 学術変革領域研究(A) 不均一環境と植物 Plant Resilience under Fluctuating Environment

KEPLR Key-Molecule-Network in Plant Reproduction

Molecular Plant

JIPB Journal of Integrative Plant Biology

Kazusa DNA Res. Inst.

Current Biology A Cell Press journal

Plant Physiology

OXFORD UNIVERSITY PRESS

PCP PLANT & CELL PHYSIOLOGY

PLANT CELL ATLAS

THE PLANT CELL

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Chiba prefecture

CHIBA CITY

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EXPO'70 FUND KANSAI OSAKA 21st Century Association

THE NAITO FOUNDATION JAPAN

THE NAITO FOUNDATION

Host City and Venue

Chiba prefecture

CHIBA CITY

公益財団法人 ちば国際コンベンションビューロー Chiba Convention Bureau and International Center(CCB-IC)

Start your future 幕張メッセ Makuhari Messe

Keynote | Keynote | Keynote

[Keynote 01] Transcriptional regulatory network of plant abiotic stress responses

Kazuko Yamaguchi-Shinozaki(Tokyo University of Agriculture)
Chair:Motoaki Seki(RIKEN CSRS)
Mon. Jun 5, 2023 4:00 PM - 4:45 PM Makuhari Messe 2F(Room 1+2)
This session is sponsored by RIKEN BRC and RIKEN CSRS.

[Keynote_01] Transcriptional regulatory network of plant abiotic stress responses

*Kazuko Yamaguchi-Shinozaki[1,2], Kazuo Shinozaki[3] (1. Tokyo University of Agriculture, Japan, 2. The University of Tokyo, Japan, 3. RIKEN CSRS, Japan)
4:00 PM - 4:45 PM

Keynote | Keynote | Keynote

[Keynote 02] Regulation of Arabidopsis leaf growth and applications in crops

Dirk Inzé(VIB Center for Plant Systems Biology)
Chair:Keiko Sugimoto(RIKEN CSRS)
Mon. Jun 5, 2023 4:45 PM - 5:30 PM Makuhari Messe 2F(Room 1+2)
This session is sponsored by RIKEN BRC and RIKEN CSRS.

[Keynote_02] Regulation of Arabidopsis leaf growth and applications in crops

*Dirk Inzé[1,2] （1. VIB Center for Plant Systems Biology, 2. UGent）
4:45 PM - 5:30 PM

Keynote | Keynote | Keynote

[Keynote 03] Deconstructing Plant Processes: Cell by Cell

Joseph R. Ecker(Salk Institute for Biological Studies)
Chair:Tetsuya Higashiyama(University of Tokyo, Japan)
Fri. Jun 9, 2023 11:00 AM - 11:45 AM Makuhari Messe 2F(Room 1+2)
This session is sponsored by RIKEN BRC and RIKEN CSRS.

[Keynote_03] Deconstructing Plant Processes: Cell by Cell

*Joseph Ecker[1,2], Travis Lee[1,2], Tatsuya Nobori[1], Natanella Illouz-Eliaz[1], Joseph Swift[1], Jiaying Xu[1], Bruce Jow[2], Joseph Nery[1] (1. Salk Institute for Biological Studies, 2. Howard Hughes Medical Institute)
11:00 AM - 11:45 AM

Plenary | Plenary | Plenary

[Plenary 01] From single cells to an organism

【Plenary 01-01】 Anja Geitmann(McGill University)
【Plenary 01-02】 Kalika Prasad(Indian Institute of Science Education and Research)
【Plenary 01-03】 Bert De Rybel(Ghent University)
Chair:Keiji Nakajima(Nara Institute of Science and Technology), Ikram Blilou(King Abdullah University of Science and Technology), Ken Birnbaum(New York University)
Tue. Jun 6, 2023 9:00 AM - 10:30 AM Makuhari Messe 2F(Room 1)
This session is sponsored by MEXT Grant-in-Aid for Scientific Research on Innovative Areas "Periodicity and Its Modulation in Plants".

Periodicity and its Modulation in Plants 植物の周期と変調

[Plenary_01-01] Fast and invasive cell growth requires resilient cell wall assembly

Karuna Kapoor[1], *Anja Geitmann[1] （1. McGill University, Montreal, Canada）
9:00 AM - 9:30 AM

[Plenary_01-02] Mechanical conflict and cell polarity in *de novo* shoot initiation

*Kalika Prasad[1] （1. Department of Biology, Indian Institute of Science Education and Research, Pune, 411008 INDIA ）
9:30 AM - 10:00 AM

[Plenary_01-03] Understanding vascular development using chemical and single cell biology

BaoJun Yang[1,2], Yanbiao Sun[1,2], Akshay Gokulendran Nair[1,2], Claudia Von der Mark[1,2], Thomas Depuydt[1,2], Klaas Vandepoele[1,2], *Bert De Rybel[1,2] （1. VIB Centre for Plant Systems Biology, 2. Ghent University, Department of Plant Biotechnology and Bioinformatics）
10:00 AM - 10:30 AM

Plenary | Plenary | Plenary

[Plenary 02] Interactions between organisms

【Plenary 02-01】 Eunyoung Chae (National University of Singapore)
【Plenary 02-02】 Kee Hoon Sohn(Seoul National University)
【Plenary 02-03】 Xiufang Xin(John Innes Centre)
Chair:Satoko Yoshida(Nara Institute of Science and Technology), Yasuhiro Kadota(RIKEN Center for Sustainable Resource Science (CSRS)), Kei Hiruma(The University of Tokyo)
Tue. Jun 6, 2023 11:00 AM - 12:30 PM Makuhari Messe 2F(Room 1)
This session is sponsored by SUMITOMO CHEMICAL Co.,Ltd..

[Plenary_02-01] Leveraging *DANGEROUS MIX* Autoimmunity to Understand Host-Microbe Interactions

*Eunyoung Chae[1] （1. National University of SinGapore）
11:00 AM - 11:30 AM

[Plenary_02-02] Overlapping and distinct pathogen effector recognition specificities conferred by independently evolved NLR proteins in plants

Ye Jin Ahn[1], Haseong Kim[2], Sera Choi[1], Carolina Mazo-Molina[3], Maxim Prokchorchik[1], Ning Zhang[3], Boyoung Kim[6], Hyunggon Mang[1], Hayeon Yoon[1], Cecile Segonzac[2,6], Gregory B Martin[3], Alex Schultink[4], *Kee Hoon Sohn[1,2,5] （1. Department of Life Sciences, Pohang University of Science and Technology, Pohang 37673, Republic of Korea, 2. Plant Immunity Research Center, Seoul National University, Seoul 08826, Republic of Korea, 3. Boyce Thompson Institute for Plant Research, Cornell University, Ithaca, NY 14853, USA, 4. Fortiphyte Inc., Berkeley CA, USA, 5. Department of Agricultural Biotechnology, Seoul National University, Seoul 08826, Republic of Korea, 6. Department of Agriculture, Forestry and Bioresources, Seoul National University, Seoul 14 08826, Republic of Korea）
11:30 AM - 12:00 PM

[Plenary_02-03] Understanding environmental influence on plant-pathogen interactions

*Xiufang Xin[1], Yezhou Hu[1], Yanxia Ding[1], Lingya Yao[1], Zeyu Jiang[1], Minhang Yuan[1] （1. Center for Excellence in Molecular Plant Sciences, Institute of Plant Physiology and Ecology, Chinese Academy of Sciences; CEPAMS, Chinese Academy of Sciences-John Innes Center joint program）
12:00 PM - 12:30 PM

Plenary | Plenary | Plenary

[Plenary 03] Sustainable society and plants

【Plenary 03-01】 Gabriela Auge (CONICET / University of Buenos Aires)
【Plenary 03-02】 Kim Johnson(La Trobe Institute for Agriculture &Food (LIAF))
【Plenary 03-03】 Steven Runo(Kenyatta University)
Chair:Minako Ueda(Graduate School of Life Sciences, Tohoku University), Taku Demura(Nara Institute of Science and Technolgy), Miyo Terao-Morita(National Institute for Basic Biology)
Wed. Jun 7, 2023 2:30 PM - 4:00 PM Makuhari Messe 2F(Room 1)
This session is sponsored by RIKEN CSRS.

[Plenary_03-01] Plant environmental memory: adaptive plasticity in the context of climate change

*Gabriela Auge[1] (1. Consejo Nacional de Investigaciones Científicas y Tecnologicas (CONICET))
2:30 PM - 3:00 PM

[Plenary_03-02] Investigating the role of Wall-associated kinases (WAKs) during secondary wall development

*Kim Johnson[1,4], Yingxuan Ma[2,1], John Humphries[1], Antony Bacic[1,4], Guiqin Qu[3] (1. La Trobe University, Australia, 2. Nanjing Forestry University, China, 3. China Agricultural University, Beijing, China, 4. Zhejiang Agriculture and Forestry University, China)
3:00 PM - 3:30 PM

[Plenary_03-03] The parasitic plant (Striga) and sorghum arms race

*Steven Maina Runo[1] (1. Kenyatta University)
3:30 PM - 4:00 PM

Plenary | Plenary | Plenary

[Plenary 04] Functional metabolomics

【Plenary 04-01】 Asaph Aharoni (Weizmann Institute of Science)
【Plenary 04-02】 Sibongile Mafu(University of Massachusetts Amherst)
【Plenary 04-03】 Masami Yokota Hirai(RIKEN)
Chair:Mami Yamazaki(Graduate School of Pharmaceutical Sciences, Chiba University), Miyako Kusano(University of Tsukuba), Yuki Nakamura(RIKEN Center for Sustainable Resource Science)
Wed. Jun 7, 2023 4:30 PM - 6:00 PM Makuhari Messe 2F(Room 1)
This session is sponsored by RIKEN CSRS.

[Plenary_04-01] How do Plants Evolve Specialized Metabolites and Pathways?

*Asaph Aharoni[1] （1. Department of Plant &Environmental Sciences, Weizmann Institute of Science, Israel）
4:30 PM - 5:00 PM

[Plenary_04-02] Dissecting gene-metabolite relationships in the legume terpenome

*Sibongile Mafu[1] （1. University of Massachusetts Amherst）
5:00 PM - 5:30 PM

[Plenary_04-03] Exploring plant metabolite functions beyond the conventional view

*Masami Yokota Hirai[1,2] （1. RIKEN Center for Sustainable Resource Science, Japan, 2. Nagoya University, Japan）
5:30 PM - 6:00 PM

Plenary | Plenary | Plenary

[Plenary 05] Evolution and ecology

【Plenary 05-01】 Filip Kolář (Charles University)
【Plenary 05-02】 Cheng-Ruei Lee(National Taiwan University)
【Plenary 05-03】 Edwige Moyroud(University of Cambridge)
Chair:Takashi Tsuchimatsu(University of Tokyo), Eriko Sasaki(Kyushu University), Vincent Castric(CNRS - University of Lille)
Thu. Jun 8, 2023 4:00 PM - 5:30 PM Makuhari Messe 2F(Room 1)
This session is sponsored by Plant &Cell Physiology, the official journal of JSPP.

[Plenary_05-01] Adaptation in natural populations of outcrossing *Arabidopsis* species

*Filip Kolář Kolář[1] （1. Charles University）
4:00 PM - 4:30 PM

[Plenary_05-02] The Mendelian and polygenic bases of weedy *Arabidopsis thaliana* evolution

Cheng-Yu Lo[1], *Cheng-Ruei Lee[1] （1. National Taiwan University, Taiwan）
4:30 PM - 5:00 PM

[Plenary_05-03] All bullseyes great and small: Eco-Evo-Devo of petal patterning in Hibiscus

*Edwige Moyroud[1], May T. S. Yeo[1], Alice L.M. Fairnie[1], Lucie Riglet[1], Joseph F Walker[1,2], Elena Salvi[1], Stefano Gatti[1], Valentina Travaglia[1,3] （1. University of Cambridge, United Kingdom, 2. University of Illinois at Chicago, USA, 3. University of Copenhagen, Denmark）
5:00 PM - 5:30 PM

Plenary | Plenary | Plenary

[Plenary 06] Integration of environmental cues

【Plenary 06-01】 José M. Estevez (UNAB/Fundació n Instituto Leloir)
【Plenary 06-02】 Debora Gasperini(Leibniz Institute of Plant Biochemistry (IPB))
【Plenary 06-03】 Yoshikatsu Matsubayashi(Nagoya university)
Chair:Jian-Kang Zhu(Southern University of Science and Technology), Shu-Hsing Wu(Institute of Plant and Microbial Biology, Academia Sinica, Taiwan), Tomonao Matsushita(Graduate School of Science, Kyoto University)
Fri. Jun 9, 2023 9:00 AM - 10:30 AM Makuhari Messe 2F(Room 1+2)
This session is sponsored by MEXT Grants-in-Aid for Scientific Research (KAKENHI) , Plant Resilience under Fluctuating Environment.

文部科学省 科学研究費助成事業 学術変革領域研究(A)
不均一環境と植物
Plant Resilience under Fluctuating Environment

[Plenary_06-01] " To GROW or not to GROW": molecular mechanism of cell elongation at low temperature in single plant cells.

*José M. Estevez[1,2,3] （1. Centro de Biotecnología Vegetal, Facultad de Ciencias de la Vida, Universidad Andres Bello, Santiago, Chile, 2. Fundación Instituto Leloir-IIBBA, 3. ANID - Millennium Science Initiative Program - Millennium Institute for Integrative Biology (iBio) and Millennium Nucleus for the Development of Super Adaptable Plants (MN-SAP), Santiago, Chile.）
9:00 AM - 9:30 AM

[Plenary_06-02] Integrating osmotic potential with Jasmonate-mediated plant acclimation

*Debora Gasperini[1] （1. Leibniz Institute of Plant Biochemistry (IPB), Halle, Germany）
9:30 AM - 10:00 AM

[Plenary_06-03] Peptide signal-mediated adaptation to spatially and temporally fluctuating environments in plants

*Yoshikatsu Matsubayashi[1] （1. Nagoya University）
10:00 AM - 10:30 AM

Concurrent | Concurrent | Concurrent 01-06

[Concurrent 01] Advances in plant nutrition under changing environment

Plants have evolved highly effective transport, sensing and signaling systems to ensure acquisition of sufficient minerals for growth and development. This session aims to share new results on newly identified genes/regulatory pathways or metabolites involved in the regulation of ion homeostasis in plants. These include, but are not limited to: (i) effects of limitation or excess of various macro- and microelements on plant growth capacity; (ii) effects of components of global climate changes (drought, CO2, heat, etc.) on the regulation of ions transport and assimilation.
Chair:Hatem Rouached(Michigan State University), Benoit Lacombe(CNRS)
Tue. Jun 6, 2023 2:30 PM - 3:54 PM Makuhari Messe 2F(Room 1)

[Concurrent_01-01] *Plant growth stimulation by elevated CO2 depends on phosphorus homeostasis in chloroplasts*
*Hatem ROUACHED[1,2,3] (1. Michigan State University, 2. The Plant Resilience Institute, 3. Department of Plant, Soil and Microbial Sciences)
2:30 PM - 2:37 PM

[Concurrent_01-02] *Nutritional interactions in plants (N x P) and new type of GWAS providing full epistatic maps with a gene resolution.*
*Gabriel KROUK[1] (1. CNRS)
2:38 PM - 2:48 PM

[Concurrent_01-03] Plasticity of root permeability for nutrient acquisition
*Marie Barberon[1] (1. University of Geneva, Switzerland)
2:49 PM - 3:01 PM

[Concurrent_01-04] BUZZ: An essential gene in post-initiation root hair growth and root architecture in response to nitrate
*Karen Anne Sanguinet[1], Thiel A Lehman[4], Miguel A Rosas[1], Rhoda Brew-Appiah, Shyam Solanki[3], Zara B York, Rachel Dannay, Ying Wu[5], Eric H Roalson[1], Ping Zheng[1], Dorrie Main[1], Tobias I Baskin[2] (1. Washington State University, 2. University of Massachusetts-Amherst, 3. South Dakota State University, 4. University of North Carolina, 5. Northeast Normal University)
3:02 PM - 3:14 PM

[Concurrent_01-05] Live transcription imaging of plant Pi starvation response
*Laurent Nussaume[1], Sahar Hani[1], Pascale David[1], Neelima Boora[1], Thierry Desnos[1], Edouard Bertrand[2] (1. Institute of Biosciences and Biotechnologies of Aix-Marseille, CEA-CNRS-Université Aix Marseille UMR 7265 , FRANCE, 2. Institute of Human Genetics - CNRS UMR9002, FRANCE)
3:15 PM - 3:27 PM

[Concurrent_01-06] Nitrogen signaling mechanisms modulating root gravitropism: involvement of flowering repressor and peptide hormone signaling
Katerina S. Lay-Pruitt[1], Takao Araya[1,2], Nadia Bouain[1], Rashed Abualia[3], Ricardo F.H. Giehl[2], Eva Benková[3], Nicolaus von Wirén[2], *Hideki Takahashi[1] (1. Michigan State University, USA, 2. Leibniz Institute of Plant Genetics and Crop Plant Research, Germany, 3. Institute of Science and Technology

Austria, Austria）
3:28 PM - 3:38 PM

[Concurrent_01-07] 【 Short Talk】 Histone chaperone NAP1 proteins are involved in plant growth under nitrogen deficient conditions in *Arabidopsis thaliana*

*Jie Linnan[1], Miho Sanagi[1], Yongming Luo[1], Haruna Maeda[1], Yoichiro Fukao[2], Yukako Chiba[1], Shuichi Yanagisawa[3], Junji Yamaguchi[1], Junpei Takagi[1], Takeo Sato[1] （1. Hokkaido University, 2. Ritsumeikan University, 3. The University of Tokyo）

3:39 PM - 3:46 PM

[Concurrent_01-08] 【 Short Talk】 The genetic diversity provided by natural Arabidopsis accessions to identify potentially adaptive differences in root morphology and soil resource capture

Christopher I Vincent[1], Taraka Ramji Moturu[2], Thomas Drouet de la Thibauderie[2], Silvana Porco[2], Florence Reyé[2], Hugues De Gernier[3,4], Takehiro Kamiya[5], Natsuko Kobayashi[5], Keitaro Tanoi[5], Malcolm Bennett[6], Dirk Inzé[3,4], Mark Aarts[7], Arthur Korte[8], *Christian RM Hermans[2] （1. University of Florida, USA, 2. Université libre de Bruxelles, Belgium, 3. Ghent University, Belgium, 4. VIB Center for Plant Systems Biology, Belgium, 5. University of Tokyo, Japan, 6. University of Nottingham, United Kingdom, 7. Wageningen University, the Netherlands, 8. University of Würzburg, Germany）

3:47 PM - 3:54 PM

Concurrent | Concurrent | Concurrent 01-06

[Concurrent 02] The environmentally responsive plant epigenome

The environmental responsiveness of the plant epigenome is an emerging and fascinating research area. To shed new light on the underlying mechanisms, our speaker list covers exciting topics ranging from immediate impacts of stress over vernalization to technologies capturing epigenome dynamics.
Chair:Hong Qiao(University of Texas at Austin), Mark Zander(Rutgers, State University of New Jersey)
Tue. Jun 6, 2023 2:30 PM - 4:00 PM Makuhari Messe 2F(Room 2)

[Concurrent_02-01] Jasmonate signaling through the lens of epigenomics

*Mark Zander[1], Aanchal Choudhary[1], Moonia Ammari[1], Hyuk Sung Yoon[1] （1. Waksman Institute of Microbiology, Rutgers State University of New Jersey）

2:32 PM - 2:48 PM

[Concurrent_02-02] (Re)programming Cell Identity and Function in Response to intrinsic and extrinsic cues

Tomasz Bieluszwski[1], Sandhan Prakash[1], *Doris Wagner[1] （1. University of Pennsylvania）

2:49 PM - 3:05 PM

[Concurrent_02-03] A DNA element to remember ‘ winter cold’ in Arabidopsis

Zheng GAO[1], Yaxiao LI, *Yuehui HE[1] （1. Peking University）

3:06 PM - 3:22 PM

[Concurrent_02-04] TANDEM ZINC-FINGER/PLUS3 integrates light and temperature signalling in plant nuclear hubs.

*Eirini Kaiserli[1], Anna Zioutopoulou[1], Elisa Vellutini[1], Giorgio Perrella[1,2], Weiwei Fang[1], Tianyuan Xu[1], Micaela Milani[1] （1. School of Molecular Biosciences, College of Medical, Veterinary and Life Sciences, University of Glasgow, Scotland, UK, 2. Department of Bioscience University of Milan, Italy）

3:23 PM - 3:39 PM

[Concurrent_02-05] 【 Short Talk】 Sensory plastids in growth- and defense-related epigenetic phenotype adjustment

*Ha Eun Jeh[1], Jesús Beltrán[1,4], Robersy Sanchez[1], Xiaodong Yang[1,5], Isaac Dopp[1], Yashitola Wamboldt[2,3], Hardik Kundariya[1], Alenka Hafner[1], Sally A Mackenzie[1] （1. Pennsylvania State University, PA, USA, 2. University of Nebraska, Lincoln, NE, USA, 3. MatMaCorp, Lincoln, NE, USA, 4. University of California, Riverside, CA, USA , 5. Yangzhou University, Yangzhou, China）

3:40 PM - 3:49 PM

[Concurrent_02-06] 【 Short Talk】 Epidermal Cell Type-Specific Chromatin Dynamics Underlying Arabidopsis Heat Stress Memory

*Daniel Slane[1,2], Kenneth W Berendzen[3], Yoshihiro Yoshitake[4], Christopher Grefen[5], Takayuki Kohchi[4], Takuya Sakamoto[2,6], Sachihiro Matsunaga[1] （1. Department of Integrated Biosciences, Graduate School of Frontier Sciences, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba, 277-8562, Japan, 2. Department of Applied Biological Science, Faculty of Science and Technology, Tokyo University of Science, 2641 Yamazaki, Noda, Chiba 278-

8510, Japan, 3. Center for Plant Molecular Biology, University of Tübingen, Auf der Morgenstelle 32, Tübingen, 72076, Germany, 4. Graduate School of Biostudies, Kyoto University, Kyoto, 606-8502, Japan, 5. Faculty of Biology and Biotechnology, Molecular and Cellular Botany, University of Bochum, Universitätsstraße 150, 44780 Bochum, Germany, 6. Department of Science, Faculty of Science, Kanagawa University, 3-27-1, Rokkakubashi, Kanagawa-ku, Yokohama, Kanagawa, 221-8586, Japan）
3:50 PM - 3:59 PM

Concurrent | Concurrent | Concurrent 01-06

[Concurrent 03] New tools and applications in plant molecular genetics

The session will focus on developing new genetic and biotechnological discoveries in plant biology. This year's outstanding achievements in CRISPR biology (e.g., cell-type-specific genome editing, genome-scale sgRNA libraries), imaging mass spectrometry, TF interactomics, Cryo-electron microscopy of membrane proteins, flux metabolomics, plant phenomics, root micro-fluidics, super-resolution microscopy, and single-cell methylation, spatial transcriptomics and more have gained significant success worldwide. The session will allow scientists to present their most advanced discoveries and discuss the cutting technologies transforming plant science.
Chair:Eilon Shani(Tel Aviv University)
Tue. Jun 6, 2023 2:30 PM - 4:00 PM Makuhari Messe 2F(Room 3)
This session is sponsored by Plant Physiology.

Plant Physiology®

[Concurrent_03-01] Identifying Transcriptional Activation Domains

*Lucia Strader[1], Nicholas Morffy[1], Clean Miller[1], Lisa Van den Broeck[2], Max Staller[3], Rosangela Sozzani[2] （1. Duke University, 2. North Carolina State University, 3. University of California Berkeley）

2:32 PM - 2:47 PM

[Concurrent_03-02] Natural and artificial regulation of plant cell states

*Ryan Lister[1] （1. University of Western Australia）

2:48 PM - 3:03 PM

[Concurrent_03-03] Time to sow: *In planta* CRISPR screens are ready

*Thomas Benjamin Jacobs[1,2], Ward Develtere[1,2], Marie Pfeiffer[1,2], Ward Decaestecker[1,2], Debbie Rombaut[1,2], Tom Ruttink[3], Moritz K. Nowack[1,2] （1. Department of Plant Biotechnology and Bioinformatics, Ghent University, Ghent, Belgium, 2. VIB Center for Plant Systems Biology, Ghent, Belgium, 3. ILVO, Flanders Research Institute for Agriculture, Fisheries and Food, Plant Sciences Unit, Melle, Belgium）

3:04 PM - 3:19 PM

[Concurrent_03-04] 【Short Talk】 Location, location, location: a system-wide assesment of subcellular protein localization in Arabidopsis roots by mass-spectrometry

*Monique van Schie[1], Mark Roosjen[1], Dolf Weijers[1] （1. Wageningen University, the Netherlands）

3:20 PM - 3:32 PM

[Concurrent_03-05] 【Short Talk】 A single-nucleus transcriptome atlas of seed-to-seed development in Arabidopsis

*Travis Lee[1,2,3], Tatsuya Nobori[1,2], Natanella Illouz-Eliaz[1,2], Bruce Jow[1,2], Joseph Nery[1,2], Joseph Ecker[1,2,3] （1. Plant Biology Laboratory, Salk Institute for Biological Studies, La Jolla, CA 92037, 2. Genomic Analysis Laboratory, Salk Institute for Biological Studies, La Jolla, CA 92037, 3. Howard Hughes Medical Institute, Salk Institute for Biological Studies, La Jolla, CA 92037）

3:33 PM - 3:45 PM

[Concurrent_03-06] Multi-Knock – a multi-targeted genome-scale CRISPR toolbox to overcome functional redundancy in plants

*Eilon Shani[1] (1. Tel Aviv University, Israel)

3:46 PM - 3:58 PM

Concurrent | Concurrent | Concurrent 01-06

[Concurrent 04] Cellular reprogramming in regeneration and development

At the heart of plants' developmental plasticity is the broad ability of their cells to undergo rapid and coordinated changes in cell identity and function. This is manifested during post-embryonic formation of new organs and in their ability to repair damaged organs and tissues. The session will focus on the parallels and convergences in cellular reprogramming mechanisms during development and regeneration.
Chair:Idan Efroni(The Hebrew University), Alexis Maizel(Heidelberg University), Momoko Ikeuchi (Nara Institute of Science and Technology)
Tue. Jun 6, 2023 2:30 PM - 4:00 PM Makuhari Messe 2F(Room 4)

[Concurrent_04-01] Specific regulation on diverse regenerative responses in Arabidopsis

*Momoko Ikeuchi[1] （1. Nara Institute of Science and Technology）
2:32 PM - 2:48 PM

[Concurrent_04-02] Born Again: The Early Stages of Plant Cell Reprogamming

*Kenneth David Birnbaum[1], Bruno Guillotin[1], Laura Lee[1], Ramin Rahni[1], Graeme Vissers[1], Alyaa Hessin[1] （1. New York University）
2:49 PM - 3:05 PM

[Concurrent_04-03] A molecular framework for regeneration competency in plants

*Abdul Kareem[1], Charles Melnyk[1] （1. Swedish University of Agricultural Sciences, Uppsala, Sweden）
3:06 PM - 3:22 PM

[Concurrent_04-04] 【 Short Talk】 Transcriptional Regulation of Cell-cell Movement During Root Tip Regeneration

*Itay Cohen[1], Idan Efroni[1] （1. Hebrew University of jerusalem）
3:23 PM - 3:34 PM

[Concurrent_04-05] 【 Short Talk】 It' s All in the Timing: Enhancing Regeneration Efficiency Using Morphogenic Factors

*Bastiaan Bargmann[1], Kelsey Reed[1] （1. Virginia Tech）
3:35 PM - 3:46 PM

[Concurrent_04-06] 【 Short Talk】 Leaf epidermal patterning and fate determination

*Chin-Min Kimmy Ho[1] （1. Institute of plant and microbial biology, Academia Sinica）
3:47 PM - 3:58 PM

Concurrent | Concurrent | Concurrent 01-06

[Concurrent 05] Organelle-organelle communication under stress

Organelles coordinate the complex intracellular metabolism in eukaryotic cells by imposing a physical barrier to sequester metabolites and macromolecules. The intricate organization of organelle-organelle communication under biotic and abiotic stresses is a recently emerging research topic and highly relevant to understanding the plant' s responses to the changing environment. In this concurrent session, we will highlight the recent findings in a broad range of inter-organellar communication pathways under various stresses.

Chair:Eunsook Park(University of Wyoming), Inge De Clercq(VIB Center for Plant Systems Biology, Ghent University)

Tue. Jun 6, 2023 2:30 PM - 4:00 PM Makuhari Messe 3F(Room 5)

[Concurrent_05-01] Chloroplast-nuclear communication in plant immunity

*Eunsook Park[1], Seungmee Jung[1], Jongchan Woo[1], Ashley Park[1], Solhee In[1] (1. Department of Molecular Biology, University of Wyoming, USA)

2:32 PM - 2:42 PM

[Concurrent_05-02] Energy Metabolism vs. Moonlighting: A Balancing Act To Prevent Oxidative Stress

*Jennifer Selinski[1] (1. Christian-Albrechts University Kiel)

2:43 PM - 2:58 PM

[Concurrent_05-03] Investigating how chloroplast-initiated intracellular signals control intercellular trafficking mediated by plasmodesmata in *Nicotiana benthamiana*

*Andrea Alejandra Zanini[1], Mohammad Fazle Azim[1], Tessa Burch-Smith[1] (1. Donald Danforth Plant Science Center)

2:59 PM - 3:14 PM

[Concurrent_05-04] 【 Short Talk】 Light-induced chloroplast biogenesis: photobodies control alternative promoter selection as a mechanism of nucleus-chloroplast communication

Jaehyung Lee[1], Sandhya Senthilkumar[1], Scott Perkins[1], Heejin Yoo[1], *Chan Yul Yoo[1] (1. School of Biological Sciences, University of Utah, Salt Lake City, UT, 84112, USA)

3:15 PM - 3:25 PM

[Concurrent_05-05] 【 Short Talk】405nm Photostimulation of the Endoplasmic Reticulum-Chloroplast Contact Site in *Arabidopsis* Hypocotyls Causes Rapid Cytoskeletal Depolymerization, Elevated Cytoplasmic Calcium, and Elevated Organellar ROS

*Sara Maynard[1], Lawrence R Griffing[1] (1. Texas A&M University)

3:26 PM - 3:36 PM

[Concurrent_05-06] 【 Short Talk】 Functional characterization of *Arabidopsis thaliana* Synaptotagmin1 domains using Tricalbin3 chimeras in *Saccharomyces cerevisiae.*

*Francisco Benitez-Fuente[1], Javier Collado[2], Vito Amorim-Silva[1], Ruben Fernández-Busnadiego[2], Miguel Angel Botella[1] (1. Departamento de Biologia Molecular y Bioquimica, Instituto de Hortofruticultura Subtropical y Mediterranea “La Mayora”, Universidad de Malaga-CSIC, Malaga 29071, Spain,

2. Institute of Neuropathology, University Medical Center Goettingen, Goettingen 37099, Germany）

3:37 PM - 3:47 PM

[Concurrent_05-07] Elucidating organelle-organelle and organelle-to-nucleus signaling pathways during plant stress responses

*Inge De Clercq[1,2], Jonas De Backer[1,2], Xiaopeng Luo[1,2], Laura Antuña Hörlein[1,2], Elena Sanchez Martin-Fontecha[1,2], Siel Goethals[1,2] （1. Department of Plant Biotechnology and Bioinformatics, Ghent University, Ghent, Belgium., 2. Vlaams Instituut voor Biotechnologie (VIB)-Center for Plant Systems Biology, Ghent, Belgium.）

3:48 PM - 3:58 PM

Concurrent | Concurrent | Concurrent 01-06

[Concurrent 06] Plant proteostasis: The dynamic proteome in plant cell signalling

This ICAR session has a dual purpose in highlighting recent discoveries in plant Proteostasis as well as the tools that have been made available through the Plant Proteostasis community to enable new researchers to explore the role of proteostasis in diverse aspects of plant development and response to environment.

Chair:Uli Bechtold(Durham University), Ari Sadanandom(Durham University)

Tue. Jun 6, 2023 2:30 PM - 4:00 PM Makuhari Messe 3F(Room 6)

[Concurrent_06-01] SUMOcode: Deciphering how SUMOylation enables plants to adapt to their environment.

*Ari Sadanandom Sadanandom[1], Kathryn Lilley[3], Malcolm Bennett[2], Andrew Jones[4], Miguel DeLucas[1], Anthony Bishopp[2], Rahul Bhosale[2], Leah Band[2], Darren Wells[2], Jonathan Atkinson[2], Sumesh Kakkunath[1], Dipan Roy[1], Shraboni Ghosh[1], Lisa Clark[1], Kawinnat Sue-Ob[4], Jason Banda[2] （1. University of Durham, 2. University of Nottingham, 3. University of Cambridge, 4. University of Liverpool）

2:32 PM - 2:48 PM

[Concurrent_06-02] Regulation of proteostasis and activation of Ca^{2+} channels by two distinct receptor kinases in maintaining immune integrity

*Libo Shan[1] （1. Texas A&M University）

2:49 PM - 3:05 PM

[Concurrent_06-03] Proximity labeling proteomics identified an inner nuclear membrane protein degradation system in plants

*Yangnan Gu[1] （1. University of California, Berkeley）

3:06 PM - 3:22 PM

[Concurrent_06-04] Regulation of the homeostasis of immune signaling proteins through proteasome-mediated degradation

*Xin Li Li[1] （1. University of British Columbia）

3:23 PM - 3:39 PM

[Concurrent_06-05] 【Short Talk】 Identification of interacting factors of the TARANI/ Ubiquitin-specific protease 14 (UBP14) in *Arabidopsis thaliana*

*Anjana S Hegde[1], Dr. Utpal Nath[1] （1. Department of Microbiology and Cell Biology, Indian Institute of Science, Bengaluru, India）

3:40 PM - 3:49 PM

[Concurrent_06-06] 【Short Talk】 Molecular mechanism for peroxisomal protein transport via the ubiquitin system

*Shoji Mano[1,2], Shino Goto-Yamada[3], Yasuko Hayashi[4], Kazumi Hikino[1], Masatake Kanai[1], Mikio Nishimura[5] （1. National Institute for Basic Biology, Japan, 2. The Graduate University for Advanced Studies, Japan, 3. Jagiellonian University, Poland, 4. Niigata University, Japan, 5. Konan University, Japan）

3:50 PM - 3:59 PM

Concurrent | Concurrent | Concurrent 07-12

[Concurrent 07] Arabidopsis and its translational research in the Global South

Arabidopsis research globally has provided invaluable tools to understand the plant world at different biological scales. A sizable proportion of that research is carried out by researchers in the Global South (i.e. countries located around the tropics and the Southern hemisphere), even though these countries face many political and budget limitations for scientific endeavours. This symposium aims to highlight the work of researchers from the Global South, oftentimes under-represented in international conferences, to bring a more diverse perspective to the meeting.

Chair:Gabriela Auge(CONICET - iB3, University of Buenos Aires), José Estevez(Fundación Instituto Leloir - CONICET, Argentina / Universidad Andrés Bello, Chile)

Tue. Jun 6, 2023 4:30 PM - 6:00 PM Makuhari Messe 2F(Room 1)

This session is sponsored by The Plant Cell.

THE PLANT CELL

[Concurrent_07-01] The power of haploid genetics in plants - Lessons from *Arabidopsis thaliana*

*Ravi Maruthachalam[1], Ramesh Bondada[1], Mohit Pradip Rajabhoj[1], Sudev Sankar[1], Saravanakumar Somasundaram[1], Mohan Premanand Marimuthu[3], Mohammed Afsal Badarudeen[1], Vaishak Kanjirakol Puthiyaveedu[1], Anju P Shanmukhan[2], Mohammed Aiyaz[2], Kalika Prasad[2] （1. Indian Institute of Science Education and Research(IISER), Thiruvananthapuram, 2. Indian Institute of Science Education and Research(IISER), Pune, 3. University of California, Davis）

4:32 PM - 4:47 PM

[Concurrent_07-02] Plants to humans: Arabidopsis for translational research

*Sridevi Sureshkumar[1] （1. Monash University, Clayton, Australia）

4:48 PM - 5:03 PM

[Concurrent_07-03] TOC1 is a direct regulator of the Arabidopsis defence response against necrotrophic pathogens

Shannon Leigh-Sparks[1], Laura Roden[2], *Robert Ingle[1] （1. University of Cape Town, 2. University of Coventry）

5:04 PM - 5:19 PM

[Concurrent_07-04] 【Short Talk】 ROLE OF THE ARABIDOPSIS AtbZIP63 TRANSCRIPTION FACTOR STABILITY IN ENERGY MANAGEMENT

*Pamela Carlson[1], Luis Felipe Correa da Silva[2], João Guilherme Portugal Vieira[1], Raphael de Araújo Campos[1], Thyelen Engel de Jesus[1], Nubia Barbosa Eloy[2], Cleverson Carlos Matiolli[3], Michel Vincentz[1] （1. University of Campinas, 2. University of São Paulo, 3. UNIVERSIDADE NOVA DE LISBOA）

5:20 PM - 5:29 PM

[Concurrent_07-05] 【Short Talk】 NLP7 is a central integrator of transcription networks in nitrogen signaling and drought stress

Nathan Johnson[3], Tomás C Moyano[1], Viviana Araus[2], Jonathan Canan[3], Ji Huang[4], Carly Shanks[4], Samantha Frangos[4], Ariel Herrera[1], Francisca Blanco-Herrera[1,2], Gloria M Coruzzi[4], Elena A Vidal[3,2], *Jose M Alvarez[1,2] （1. Centro de Biotecnologia Vegetal, Facultad de Ciencias de la Vida, Universidad Andres Bello, Santiago 8370186, Chile, 2. ANID–Millennium Science Initiative–Millennium Institute for Integrative Biology (iBIO), Santiago 7500565, Chile, 3. Centro de Genómica y Bioinformática, Facultad de Ciencias, Universidad Mayor, 8580745 Santiago, Chile., 4. Center for Genomics and Systems Biology, New York University, New York, NY 10003）
5:30 PM - 5:39 PM

[Concurrent_07-06] 【 Short Talk】 A B-Box protein suppresses flowering in Arabidopsis through multi-level regulation of the photoperiod pathway

*Rahul Puthan Valappil[1], Yadukrishnan Premachandran[1], Sourav Datta[1] （1. Plant Cell and Developmental Biology Laboratory, Indian Institute of Science Education and Research (IISER) Bhopal, Madhya Pradesh - 462066, India）
5:40 PM - 5:49 PM

[Concurrent_07-07] 【 Short Talk】 What did the grasses gain by losing PEAPOD?

Evolution and conserved functionality of organ size and shape regulator PEAPOD

*Ruth Cookson[1], Somrutai Winichayakul[1], Hong Xue[1], Kim Richardson[1], Roger Moraga[2], Aurelie Laugraud[2], Ambarish Biswas[2], Greg Bryan[1], Nick Roberts[1] （1. Plant Biotechnology, Grasslands Research Centre, AgResearch Ltd., Palmerston North, New Zealand, 2. Bioinformatics and Statistics, Grasslands Research Centre, AgResearch Ltd., Palmerston North, New Zealand）
5:50 PM - 5:59 PM

Concurrent | Concurrent | Concurrent 07-12

[Concurrent 08] Understanding circadian regulation in unpredictable environments

Circadian clocks provide a temporal structure within plants, which contributes their responses to the fluctuating environment. Understanding how the circadian clock adapts plant physiology and development to environmental fluctuations forms a crucial part of forecasting the responses of plants- including crops- to an increasingly unpredictable climate.

Chair:Antony Dodd(John Innes Centre), Tokitaka Oyama(Kyoto University)

Tue. Jun 6, 2023 4:30 PM - 6:00 PM Makuhari Messe 2F(Room 2)

[Concurrent_08-01] Integration of circadian and environmental cues

*Antony Dodd[1] （1. John Innes Centre）

4:32 PM - 4:46 PM

[Concurrent_08-02] Behaviors of cell-autonomous- and non-cell-autonomous circadian rhythms in the plant body

*Tokitaka Oyama[1] （1. Kyoto University, Graduate School of Science）

4:47 PM - 5:01 PM

[Concurrent_08-03] A spatial model of the plant clock reveals design principles for coordinated timing under noisy environments

*James Locke[1] （1. Sainsbury Laboratory, University of Cambridge）

5:02 PM - 5:16 PM

[Concurrent_08-04] Gene expression noise reduction for a robust circadian clock in Arabidopsis

*Shu-Hsing Wu[1], Ho-Wei Wu[1], Erickson Fajiculay[2], Jing-Fen Wu[1], Ching-Cher Yan[2], Chao-Ping Hsu[2] （1. Institute of Plant and Microbial Biology, Academia Sinica, Taiwan, 2. Institute of Chemistry, Academia Sinica, Taiwan）

5:17 PM - 5:31 PM

[Concurrent_08-05] Molecular mechanisms underlying light-induced resetting of the circadian clock in the green alga Chlamydomonas

*Takuya Matsuo[1] （1. Kitasato University, Japan）

5:32 PM - 5:46 PM

[Concurrent_08-06] 【Short Talk】 Quantity regulation of TOC1 and PRR5 for temperature compensation in the Arabidopsis circadian clock

*Akari Maeda[1], Hiromi Matsuo[1], Norihito Nakamichi[1] （1. Nagoya university, Japan）

5:47 PM - 5:57 PM

Concurrent | Concurrent | Concurrent 07-12

[Concurrent 09] Guard cell signalling and metabolism

Over the past few years, it has become evident that guard cell signalling and membrane ion transport are tightly coordinated with the metabolic changes occurring within the guard cells. How this intricate network is regulated at the molecular level is a fascinating question with global influence. In our session, we will discuss some of the most recent breakthrough discoveries on this topic.

Chair:Diana Santelia(ETH Zurich), Toshinori Kinoshita(Nagoya University)

Tue. Jun 6, 2023 4:30 PM - 6:00 PM Makuhari Messe 2F(Room 3)

[Concurrent_09-01] Light regulation of stomatal movement and plasma membrane H^+-ATPase in guard cells

*Toshinori Kinoshita[1] （1. ITbM, Nagoya University）

4:32 PM - 4:40 PM

[Concurrent_09-02] Sugars are mesophyll messengers regulating stomatal opening under red light

*Yotam Zait[1,2], Mengmeng Zhu[2], Masami Hirai [5], Sixue Chen[4], Eigo Ando[3], Toshinori Kinoshita [3], Sarah M. Assmann[2] （1. Hebrew University of Jerusalem, 2. Dept. of Biology, Penn State University, 3. Nagoya University, 4. Dept. of Biology, University of Mississippi, 5. RIKEN Center for Sustainable Resource Science ）

4:41 PM - 5:06 PM

[Concurrent_09-03] Hydrogen peroxide promotes stomatal development and opening through inducing the nuclear localization of KIN10

*Mingyi Bai[1], Wen Shi[1], Lingyan Wang[1], Lianmei Yao[1], Chao Han[1] （1. The Key Laboratory of Plant Development and Environmental Adaptation Biology, Ministry of Education, School of Life Sciences, Shandong University, Qingdao, 266237, China.）

5:07 PM - 5:32 PM

[Concurrent_09-04] 【 Short Talk】 Investigating the Role of Carbohydrate Metabolism in Bacterial-Triggered Stomatal Movements Using the Model System *Arabidopsis thaliana* and *Pseudomonas syringe pv tomato*

*Lucia Piro[1] （1. ETH Zurich）

5:33 PM - 5:41 PM

[Concurrent_09-05] 【 Short Talk】 Phosphorylation of WD-repeat protein WDR by phototropins is essential for starch degradation to promote stomatal opening

*Shota Yamauchi[1], Naoyuki Sugiyama[2], Yutaka Kodama[3], Luca Distefano[4], Haruki Fujii[5], Mika Nomoto[6,7], Yasuomi Tada[6,7], Kazuhiro Hotta[8], Diana Santelia[4], Ken-ichiro Shimazaki[9], Atsushi Takemiya[1] （1. Department of Biology, Graduate School of Sciences and Technology for Innovation, Yamaguchi University, Yamaguchi, Japan, 2. Department of Molecular &Cellular BioAnalysis, Graduate School of Pharmaceutical Sciences, Kyoto University, Kyoto, Japan, 3. Center for Bioscience Research and Education, Utsunomiya University, Tochigi, Japan, 4. Institute of Integrative Biology,

ETH Zürich, Zürich, Switzerland, 5. Department of Electrical and Electronic Engineering, Graduate School of Science and Technology, Meijo University, Nagoya, Aichi, Japan , 6. Center for Gene Research, Nagoya University, Nagoya, Japan, 7. Division of Biological Science, Graduate School of Science, Nagoya University, Aichi, Japan, 8. Department of Electrical and Electronic Engineering, Faculty of Science and Technology, Meijo University, Nagoya, Aichi, Japan, 9. Department of Biology, Faculty of Science, Kyushu University, Fukuoka, Japan）

5:42 PM - 5:50 PM

[Concurrent_09-06]【 Short Talk】 Stomatal CO_2/bicarbonate Sensor Consists of Two Interacting Protein Kinases HT1 and MPK4/12 in Arabidopsis

*Yohei Takahashi[1,2], Krystal C Bosmans[1], Po-Kai Hsu[1], Karnelia Paul[1], Christian Seitz[1], Chung-Yueh Yeh[3], Yuh-Shuh Wang[3], Dmitry Yarmolinsky[3], Maija Sierla[4], Triin Vahisalu[4], J. Andrew McCammon[1], Jaakko Kangasjarvi[4], Li Zhang[1], Hannes Kollist[3], Thien Trac[1], Julian I Schroeder[1] （1. University of California San Diego, USA, 2. Nagoya University, Japan, 3. University of Tartu, Estonia, 4. University of Helsinki, Finland）

5:51 PM - 5:59 PM

Concurrent | Concurrent | Concurrent 07-12

[Concurrent 10] Development and environmental responses: What are kept and what are lost over the evolutionary history of land plants

Developmental strategies for adaptations to ever-changing environment have been diversified during the long history of land plant evolution. This session focuses on developmental processes and stress responses commonly present or different between the bryophyte models and Arabidopsis, and discusses how the complexity, specificity, and divergence have evolved.

Chair:Daisuke Urano(Temasek Life Sciences Laboratory), Kimitsune Ishizaki(Kobe University)

Tue. Jun 6, 2023 4:30 PM - 6:00 PM Makuhari Messe 2F(Room 4)

This session is sponsored by The Botanical Society of Japan (Journal of Plant Research) and Institute of Plant and Microbial Biology, Academia Sinica.

[Concurrent_10-01] Adapting to Adversity: Evolutionary Insights into G-protein Networks and Stress Readiness in Land Plants

*Ting-Ying Wu[1], Shalini Krishnamoorthi[2], Kulaporn Boonyaves[6], Isam Al-Darabsah[5], Richalynn Leong[2], Alan M Jones[3], Kimitsune Ishizaki[4], Kang-Ling Liao[5], Daisuke Urano[2] (1. IPMB, AS, Taiwan, 2. Temasek Life Sciences Laboratory, SinGapore, SinGapore, 3. Departments of Biology and Pharmacology, University of North Carolina, Chapel Hill, NC, USA, 4. Graduate School of Science, Kobe University, Kobe, Hyogo 657-8501, Japan, 5. Department of Mathematics, University of Manitoba, Winnipeg, MB, Canada, 6. Department of Biology, Faculty of Science, Mahidol University, Thailand)

4:31 PM - 4:49 PM

[Concurrent_10-02] Reproductive strategy control by a Marchantia GRAS transcriptional regulator

David Hoey[1], Philip Carella[1,2], *Sebastian Schornack[1] (1. University of Cambridge, Sainsbury Laboratory, Cambridge, UK, 2. John Innes Centre, Norwich, UK)

4:50 PM - 5:08 PM

[Concurrent_10-03] Functional evolution of thermospermine in land plants

Anna Solé-Gil[1], Yuuki Sakai[2], Cristina Urbez[1], Kimitsune Ishizaki[2], Barbara A Ambrose[3], *Miguel A Blázquez[1], Javier Agustí[1] (1. IBMCP (CSIC-U Politècnica de València), Spain, 2. Graduate School of Science, Kobe University, Japan, 3. The New York Botanical Garden, USA)

5:09 PM - 5:27 PM

[Concurrent_10-04] Cross-stress gene expression atlas of *Marchantia polymorpha* reveals the hierarchy and regulatory principles of abiotic stress responses

*Marek Mutwil Mutwil[1], Qiao Wen Tan[1], Peng Ken Lim[1], Chen Zhong, Asher Pasha, Nicholas Provart, Marius Arend, Zoran Nikoloski (1. Nanyang Technological University)

5:28 PM - 5:46 PM

[Concurrent_10-05] 【 Short Talk】 Analysis of stem cell-promoting CLE peptide signaling in the shoot apical meristems of land plants

*Yuki Hirakawa[1], Go Takahashi[1], Tomohiro Kiyosue[1] （1. Gakushuin University, Japan）

5:47 PM - 5:59 PM

Concurrent | Concurrent | Concurrent 07-12

[Concurrent 11] Role of biomolecular condensates in abiotic stress signaling

The session focuses on the role of biomolecular condensates in abiotic stress response. Abstracts related to BMC, formation mechanism, composition of BMC under abiotic stress are very welcome.
Chair:Monika Chodasiewicz(King Abdullah University of Science and Technology (KAUST)), Emilio Gutierrez-Beltran(University of Sevilla)
Tue. Jun 6, 2023 4:30 PM - 6:00 PM Makuhari Messe 3F(Room 5)

[Concurrent_11-01] Functional idling in membrane-bound condensates

*Panagiotis N Moschou[1] （1. University of Crete）

4:35 PM - 4:55 PM

[Concurrent_11-02] Uncovering the function of FLOE1, a phase separating and prion-like hydration sensor protein involved in seed germination

*Sterling Field[1], Yanniv Dorone[1], Seung Y. Rhee[1] （1. Carnegie Institution for Science, Stanford, CA 94305, USA ）

4:56 PM - 5:16 PM

[Concurrent_11-03] 【 Short Talk】 Control of meiosis under heat stress

Joke de Jaeger-Braet[1], Lev Boettger[1], Yinqi Wang[1], *Arp Schnittger[1] （1. University of Hamburg, Germany）

5:17 PM - 5:30 PM

[Concurrent_11-04] 【 Short Talk】 Heat-regulated phosphorylation of TOT43 is a switch for stress granule association to contribute to heat tolerance in *Arabidopsis*

*Shao-Li Yang[1,2], Cassio Flavio Fonseca De Lima[1,2], Tingting Zhu[1,2], Brigitte Van de Cotte[1,2], Lam Dai Vu[1,2], Ive De Smet[1,2] （1. Department of Plant Biotechnology and Bioinformatics, Ghent University, Ghent, Belgium, 2. VIB Center for Plant Systems Biology, Ghent, Belgium）

5:31 PM - 5:44 PM

[Concurrent_11-05] 【 Short Talk】 Characterization of Arabidopsis ECT family in stress tolerance and stress granules assembly

*Nicolas Figueroa Fuentealba[1], Laura Arribas-Hernandez[2], Peter Brodersen[2], Monika Chodasiewicz[1] （1. King Abdullah University of Science and Technology (KAUST), Saudi Arabia, 2. University of Copenhagen, Denmark）

5:45 PM - 5:58 PM

Concurrent | Concurrent | Concurrent 07-12

[Concurrent 12] Translation regulation in plants

Translation is an integral component of the Central Dogma of molecular biology. Although its general mechanism is relatively well understood, little is known about the selective translation of specific mRNAs and its regulation. The emergence of technologies that allow in-depth study of translation resulted in new plant-specific translation mechanisms being unveiled and translationally-regulated mRNAs have been found to be key in the plant's adaptational responses. Recent examples have demonstrated the biological significance of translational regulation in plants and its potential in the generation of new, powerful biotechnological tools.

Chair:Catharina Merchante(Universidad de Málaga), Gemma Sans-Coll(Universidad de Málaga), Jose Antonio Duarte-Conde(Universidad de Málaga)

Tue. Jun 6, 2023 4:30 PM - 6:00 PM Makuhari Messe 3F(Room 6)

This session is sponsored by Agricultural Biotechnology Research Center, Academia Sinica.

[Concurrent_12-01] Uncovering the Hidden Message of mRNAs: The Exploration of Alternative Translation Initiation Sites

*Ming-Jung Liu[1] （1. Academia Sinica, Taiwan）

4:32 PM - 4:44 PM

[Concurrent_12-02] Diel and Circadian Dynamics of Translation in Arabidopsis via Ribosome Profiling

*Michael Ting[1,2], Reimo Zoschke[1], Michael J Haydon[2] （1. Max Planck Institute of Molecular Plant Physiology, Potsdam Germany, 2. The University of Melbourne, Melbourne Australia）

4:45 PM - 4:57 PM

[Concurrent_12-03] Dynamic regulation of translation upon pathogen infection

*Jinlong Wang[1], Xing Zhang[1], George H. Greene[2,1], Guoyong Xu[3,1], Xinnian Dong[1] （1. Duke University, USA, 2. Upstream Biotechnology Inc., UAS, 3. Wuhan University, USA）

4:58 PM - 5:10 PM

[Concurrent_12-04] 【 Short Talk】 NMD and translation of intergenic splicing-mediated polycistronic transcripts

*Yukio Kurihara[1,3], Yuko Makita[2,3], Masaharu Kawauchi[3], Tomoko Kuriyama[3], Minami Matsui[3] （1. The University of Tokyo, Japan, 2. Maebashi Institute of Technology, Japan, 3. RIKEN CSRS, Japan）

5:11 PM - 5:22 PM

[Concurrent_12-05] 【 Short Talk】 Plant miRNA-target 3′-end pairing affects miRNA-mediated translational repression

*Ho-Ming Chen[1] （1. Academia Sinica, Taiwan）

5:23 PM - 5:34 PM

[Concurrent_12-06] 【 Short Talk】 Deciphering the role of specialized ribosomes in plants´ translation efficiency

*Jose Antonio Duarte-Conde[1], Gemma Sans-Coll[1], Catharina Merchante [1] （1. Instituto de Hortofruticultura Subtropical y Mediterránea, Universidad de Málaga-Consejo Superior de Investigaciones Científicas (IHSM-UMA-CSIC)）

5:35 PM - 5:46 PM

[Concurrent_12-07] 【 Short Talk】 Translation-coupled Epigenetic Regulation of Transposable Elements in Plants

*Zhen Lei[1,2], Ling Wang[1,2], Hui Li[1,2], Jungnam Cho[1,2,3] （1. CAS Center for Excellence in Molecular Plant Sciences, 2. University of Chinese Academy of Sciences, 3. CAS-JIC Centre of Excellence for Plant and Microbial Science）

5:47 PM - 5:58 PM

Concurrent | Concurrent | Concurrent 13-18

[Concurrent 13] Integration of Arabidopsis and crop research in plant biotic interactions

This session will present and discuss comparative and integrative studies on Arabidopsis and crop plants in different areas of plant biotic interactions. We hope this helps to stimulate a new way of thinking, elucidate new molecular principles and develop solutions for SDGs, in the research field and beyond.
Chair:Yusuke Saijo(Nara Institute of Science and Technology), Kenichi Tsuda(Huazhong Agricultural University)
Wed. Jun 7, 2023 9:00 AM - 10:30 AM Makuhari Messe 2F(Room 1)

[Concurrent_13-01] Mitigation of plant growth-defense trade-off through damage-associated Pep peptides and receptors under phosphate deficiency

Natsuki Tsuchida[1], Masako Fuji[1], Shota Kido[1], Masahiro Nagayasu[1], Tae-Hong Lee[1], Taiga Ishihara[1], Kentaro Okada[1], Taishi Hirase[1], Asahi Adachi[1], Takumi Murakami[2], Masanao Sato[3], Miki Fujita[4], Yuri Tajima[1], Kei Hiruma[1], Shigetaka Yasuda[1], *Yusuke Saijo[1] (1. Nara Institute of Science and Technology, Japan, 2. National Institute of Genetics, Japan, 3. Hokkaido University, Japan, 4. RIKEN CSRS, Japan)
9:01 AM - 9:16 AM

[Concurrent_13-02] Interactions between plants and root microbiome in rice and Arabidopsis

*Yang Bai[1] (1. Institute of Genetics and Developmental Biology)
9:17 AM - 9:32 AM

[Concurrent_13-03] RCR1, a pericycle-expressed ion channel, safe-guards the stele and confers broadspectrum resistance to clubroot

*Wei Wang[1], Li Qin[1], Wenjing Zhang[1], Linhui Tang[1], Xiaojing Dong[1], Pei Miao[1], Meng Shen[1], Huilong Du[1], Ke Wang[1], Xiaoyun Zhang[1], Min Su[1], Hongwei Lu[1], Chang Li[1], Hangyuan Cheng[1], Qiang Gao[1], Xiaojuan Zhang[1], Chengzhi Liang[1], Jian-min Zhou[1], Yu-hang Chen[1] (1. Institute of Genetics and Developmental Biology, Chinese Academy of Sciences)
9:33 AM - 9:47 AM

[Concurrent_13-04] 【Short Talk】 Microbiome colonization leads to emergent plant phenotypes at elevated temperature.

*Hannah M. McMillan[1], Sheng Yang He[1,2] (1. Department of Biology, Duke University, Durham, NC 27708, USA, 2. Howard Hughes Medical Institute)
9:48 AM - 10:00 AM

[Concurrent_13-05] 【Short Talk】 Drought Recovery Induced Immunity Confers Pathogen Resistance

*Natanella Illouz-Eliaz[1], Kathryn Lande[1], Jingting Yu[1], Joseph R Ecker[1] (1. Salk Institute)
10:01 AM - 10:13 AM

[Concurrent_13-06] Plant immunity and microbiota tame potentially harmful commensal bacteria

Miaomiao Ding[1], Frederickson Entila[2], Qingyun Zhang[1], *Kenichi Tsuda[1,2] （1. State Key Laboratory of Agricultural Microbiology, Hubei Hongshan Laboratory, Hubei Key Lab of Plant Pathology, College of Plant Science and Technology, Huazhong Agricultural University, China, 2. Department of Plant Microbe Interactions, Max Planck Institute for Plant Breeding Research, Germany）
10:14 AM - 10:29 AM

Concurrent | Concurrent | Concurrent 13-18

[Concurrent 14] Stress-induced signalling peptides

The workshop focuses on plant peptides and receptors, other components of signalling pathways and downstream signalling events in plant development, adaptation, and in particular plant response to the environment.

Chair:Nijat Imin(Western Sydney University), Cyril Zipfel(University of Zurich)

Wed. Jun 7, 2023 9:00 AM - 10:30 AM Makuhari Messe 2F(Room 2)

[Concurrent_14-01] Regulation and execution of plant immunity by phytocytokines

*Cyril Zipfel[1,2] （1. Institute of Plant and Microbial Biology, University of Zurich, Zurich, Switzerland, 2. The Sainsbury Laboratory, University of East Anglia, Norwich, United Kingdom）

9:00 AM - 9:16 AM

[Concurrent_14-02] 【Short Talk】 Wound induced small-peptide mediated signalling cascade regulated by a receptor like kinase- RLK1 dictates growth vs defense decision in rice

*HARSHITH CHITHAVALLI YOGESH GOWDA[1], Avik Kumar Pal[1], Ashwin Nair[1,2], Monoswi Chakraborty[3], Steffi Raju[1,2], Shivaprasad P V[1] （1. National Centre For Biological Sciences, TIFR, India, 560 065, 2. SASTRA University, Thirumalaisamudram, Thanjavur 613401, India., 3. Institute of Bioinformatics and Applied Biotechnology, Electronics City, Bangalore, India, 560 100）

9:17 AM - 9:26 AM

[Concurrent_14-03] Elucidating the peptide-receptor signalling pathways that regulates root architecture and nitrogen acquisition

*Nijat Imin Imin[1,2], Sarah Jessup[1], Michael Taleski[3], Kelly Chapman[3], Katia Taylor[3], Han-Chung Lee[3] （1. University of Auckland, New Zealand, 2. Western Sydney University, 3. Australian National University）

9:27 AM - 9:43 AM

[Concurrent_14-04] Coordination of cell surface immunity and N limitation by CEP-mediated signalling

Jakub Rzemieniewski[1], Henriette Leicher[1], Hyun Kyung Lee[2], Caroline Broyart[2], Sharan Nayem[4], Christian Wiese[1], Julian Maroschek[1], Zeynep Camgöz[1], Vilde Olsson Lalun[5], Michael Anthony Djordjevic[3], A. Corina Vlot[4], Ralph Hückelhoven[1], Julia Santiago[2], *Martin Stegmann[1] （1. Phytopathology, TUM School of Life Sciences, Technical University Munich, Germany, 2. University of Lausanne, Switzerland, 3. Australian National University, Canberra, Australia, 4. Helmholtz Zentrum Munich, Germany, 5. University of Oslo, Norway）

9:44 AM - 10:00 AM

[Concurrent_14-05] 【Short Talk】 A cell wall-modifying gene-dependent CLE peptide transport in conferring drought resistance

*Satoshi Endo[1], Hiroo Fukuda[1,2] （1. Kyoto Univ. Adv. Sci., Japan, 2. Akita Pref. Univ., Japan）

10:01 AM - 10:10 AM

[Concurrent_14-06] 【 Short Talk】 An Evolutionarily Conserved Long-distance Migrating Peptide Regulates Lignin Biosynthesis Pathway and Plant Immunity

Chang-Hung Chen[1,2], Pin-Chien Liou[1,2], Kuan-Hao Huang[1], Ying-Chung Jimmy Lin[2], *Ying-Lan Chen[1] （1. Department of Biotechnology and Bioindustry Sciences, College of Bioscience and Biotechnology, National Cheng Kung University, Tainan, Taiwan, 2. Department of Life Sciences and Institute of Plant Biology, College of Life Science, National Taiwan University, Taipei, Taiwan）

10:11 AM - 10:20 AM

[Concurrent_14-07] 【 Short Talk】 The phytocytokine AtCAPE9 and its receptor AtCAPER1 functions on plant systemic stomatal immunity

*Chi-Hsin Chang[1,2,3], Kai-Tan Cheng[1], Fan-Wei Lin[1], Yet-Ran Chen[1] （1. Agricultural Biotechnology Research Center, Academia Sinica, Taiwan, 2. Molecular and Biological Agricultural Sciences, Taiwan International Graduate Program, Academia Sinica, Taiwan, 3. Graduate Institute of Biotechnology, National Chung Hsing University, Taiwan）

10:21 AM - 10:30 AM

Concurrent | Concurrent | Concurrent 13-18

[Concurrent 15] Arabidopsis relatives from laboratories to natural fields

The phenotype of wild-type and mutants in natural fields is often distinct from that in regulated laboratory conditions. Recently, Arabidopsis and its relatives are emerging as model systems to understand gene function in naturally fluctuating environments, which is coined in natura. The workshop will welcome researchers from diverse disciplines including long-term regular monitoring of gene expression, epigenome and phenome in natura, predicting plant responses to global climate changes, ecological networks of diverse herbivores and pathogens, laboratory experiments capturing natural complexity such as the food web.

Chair:Kentaro K. Shimizu(University of Zurich), Hiroshi Kudoh(Kyoto University)

Wed. Jun 7, 2023 9:00 AM - 10:30 AM Makuhari Messe 2F(Room 3)

This session is sponsored by Center for Ecological Research, Kyoto University and Kihara Institute for Biological Research, Yokohama City University.

京都大学 生態学研究センター Center for Ecological Research, Kyoto University.

YOKOHAMA CITY UNIVERSITY Kihara Institute for Biological Research

[Concurrent_15-01] A keystone genes underlies the persistence of an experimental food web

*Matthew Barbour[1,2], Daniel Kliebenstein[3], Jordi Bascompte[2] （1. Université de Sherbrooke, 2. University of Zurich, 3. University of California Davis）

9:03 AM - 9:22 AM

[Concurrent_15-02] Seasonality of virus-host interactions between Turnip mosaic virus and *Arabidopsis halleri* during the long-term infection in a natural environment

*Mie N. Honjo[1], Mari Kamitani[1,2], Hiroshi Kudoh[1] （1. Center for Ecological Research, Kyoto University, Japan, 2. CiRA Foundation, Kyoto University, Japan）

9:23 AM - 9:42 AM

[Concurrent_15-03] Keystone pairs of *Arabidopsis* accessions increase plant resistance to field herbivory

*Yasuhiro Sato[1,2], Rie Shimizu-Inatsugi[1], Kazuya Takeda[2], Atsushi J. Nagano[2,3], Kentaro K. Shimizu[1,4] （1. University of Zurich, 2. Ryukoku University, 3. Keio University, 4. Yokohama City University）

9:43 AM - 10:02 AM

[Concurrent_15-04] 【Short Talk】 Rapid evolution in Arabidopsis thaliana in global field experiments in the pan-genomic era

*Xing Wu[1], Yunru Peng[1], Lucas Czech[1], Tati Bellagio[2,1], Meixi Lin[1], Francois Vasseur[4], Niek Scheepens[3], Moises Exposito-Alonso[1,2] （1. Carnegie Institution for Science, USA, 2. Stanford University, USA, 3. Goethe University, Germany, 4. University of Tübingen, Germany）

10:03 AM - 10:14 AM

[Concurrent_15-05] 【Short Talk】 Time-series field phenotyping system PlantServation using machine learning revealed seasonal pigment fluctuation trends in diploid and polyploid

Arabidopsis

*Toshiaki Tameshige[1,2], Reiko Akiyama[3], Takao Goto[4], Jiro Sugisaka[5,1], Ken Kuroki[6], Jianqiang Sun[7], Junichi Akita[8], Masaomi Hatakeyama[3,9], Hiroshi Kudoh[5], Tanaka Kenta[10], Aya Tonouchi[4], Yuki Shimahara[4], Jun Sese[11,12,13], Natsumaro Kutsuna[4], Rie Shimizu-Inatsugi[3], Kentaro K Shimizu[1,3] (1. Yokohama City University, Japan, 2. Nara Institute of Science and Technology, Japan, 3. University of Zurich, Switzerland, 4. LPixel Inc., Japan, 5. Kyoto University, Japan, 6. The University of Tokyo, Japan, 7. NARO, Japan, 8. Kanazawa University, Japan, 9. Functional Genomics Center Zurich, Switzerland , 10. University of Tsukuba, Japan, 11. AIST, Japan , 12. Humanome Lab, Inc., Japan, 13. AIST-Tokyo Tech RWBC-OIL, Japan)

10:15 AM - 10:26 AM

Concurrent | Concurrent | Concurrent 13-18

[Concurrent 16] Plant epigenetics and chromatin dynamics

Chromatin modifications have emerged as an important regulatory mechanism for versatile biological processes. Although the DNA in each nucleus of an individual is essentially identical, the manner in which it is interpreted by the cell is dependent on its spatial and environmental context. Research incorporating innovative methods to unravel these mechanisms as well as those that incorporate the study of histone and DNA modifications, transcription factor dynamics, small RNAs, and chromatin structure will be featured within this session.

Chair:Robert Schmitz(University of Georgia), Xuehua Zhong(Washington University, St. Louis)

Wed. Jun 7, 2023 9:00 AM - 10:30 AM Makuhari Messe 2F(Room 4)

[Concurrent_16-01] Molecular basis of non-CG methylation landscape in plants

*Xuehua Zhong[1] （1. Washington University in St. Louis ）

9:01 AM - 9:15 AM

[Concurrent_16-02] Dynamic regulatory mechanism of H3K27me3 demethylase REF6 responding to environment

Jiaping Zhu[1], Yan Yan[1], Kaixuan He[1], Ying Liu[1], Falong Lu[1], Xian Deng[1], *Xiaofeng Cao[1] （1. Institute of Genetics and Developmental Biology, Chinese Academy of Sciences,）

9:16 AM - 9:30 AM

[Concurrent_16-03] Crosstalk among epigenetic marks during establishment of heterochromatin

*Taiko Kim To[1,2], Shoko Oda[1], Tetsuji Kakutani[1] （1. The University of Tokyo, School of Science, Japan, 2. Tokyo Institute of Technology, School of Life Science and Technology, Japan）

9:31 AM - 9:45 AM

[Concurrent_16-04] An evolutionary epigenetic clock in plants

Nan Yao[2], Zhilin Zhang[1], Lei Yu [3], Rashmi Hazarika[1], Chengyou Yu[1], Hosung Jang [2], Lisa Smith[4], Jurriaan Ton[4], Liang Liu[5], Jay Stachowicz [6], Thorsten Reusch[3], Robert Schmitz[2], *Frank Johannes[1] （1. Plant Epigenomics, Technical University of Munich, Freising, Germany, 2. Department of Genetics, University of Georgia, Athens, USA, 3. Marine Evolutionary Ecology, GEOMAR Helmholtz Centre for Ocean Research Kiel, Kiel, Germany, 4. School of Biosciences, University of Sheffield, UK, 5. Department of Statistics, University of Georgia, Athens, USA, 6. Department of Evolution and Ecology, University of California, Davis, USA）

9:46 AM - 10:00 AM

[Concurrent_16-05] 【 Short Talk】 Distinct chromatin signatures in the Arabidopsis male gametophyte

*Zhe Wu[1], Danling Zhu[1], Yi Wen[1], Xi Chen[1] （1. School of Life Sciences, Southern University of Science and Technology, China）

10:01 AM - 10:10 AM

[Concurrent_16-06] 【 Short Talk】 Erasure of Epigenetic Memory in Arabidopsis Flowering Control

*Toshiro Ito[1], Nana Otsuka[1], Makoto Shirakawa[1] （1. Nara Institute of

Science and Technology）
10:11 AM - 10:20 AM

[Concurrent_16-07]【 Short Talk】 Temporal expression of *BLADE-ON-PETIOLE 1* and *2* in successive leaves define the shape of their lamina

*Mingli Xu[1], Tieqiang Hu[1], Darren Manuela[1]（1. University of South Carolina, USA）

10:21 AM - 10:30 AM

Concurrent | Concurrent | Concurrent 13-18

[Concurrent 17] Hidden messages of RNAs for environmental responses

How do the regulatory networks between environmental factors and RNA molecules trigger plant physiological and stress responses? This concurrent session will feature the recent advances in RNA sequences- and structure-based strategies for regulating gene expression. How plant mRNAs produce novel proteins, how non-coding RNAs and RNA-binding proteins regulate RNA fates, and how RNA functionalities are diversified both at genome-wide and single-molecule levels will be discussed.
Chair:Ming-Jung Liu(Academia Sinica, Taiwan), Misato Ohtani(University of Tokyo, Japan)
Wed. Jun 7, 2023 9:00 AM - 10:30 AM Makuhari Messe 3F(Room 5)
This session is sponsored by Plant Molecular Biology (Springer).

[Concurrent_17-01] Long non coding RNAs modulate the transcriptome by modifying alternative splicing regulations in Arabidopsis

*Martin Crespi[1], Michel Heidecker[1], Aurelie Christ[1], Richard Rigo[1], Thomas Blein[1], Moussa Benhamed[1], Celine Charon[1], Federico Ariel[2], Jeremie Bazin[1] (1. Institute of Plant Sciences Paris Saclay IPS2, CNRS, INRA, Universities Paris-Saclay, Evry and Paris- Cité, 91192 Gif sur Yvette, France, 2. Instituto de Agrobiotecnología del Litoral, CONICET, FBCB, Universidad Nacional del Litoral, Santa Fe, Argentina)

9:02 AM - 9:15 AM

[Concurrent_17-02] Plants can sense and respond to environmental stress via pre-mRNA splicing regulation

*Misato Ohtani[1,2,3], Hirokazu Takahashi[2], Natsu Takayanagi[1], Kodai Ishibashi[1], Toshihiro Arae[1] (1. The University of Tokyo, Japan, 2. Nara Institute of Science and Technology, Japan, 3. RIKEN, Japan)

9:16 AM - 9:29 AM

[Concurrent_17-03] RNA structure, a hidden regulator in living cells

*YILIANG DING[1] (1. JOHN INNES CENTRE)

9:30 AM - 9:43 AM

[Concurrent_17-04] Prevalent Unannotated ORFs Revealed by Improved Super-Resolution Ribosome Profiling

Hsinyen Larry Wu[1], Qiaoyun Ai[1], Rita Teixeira[1], Gaoyuan Song[2], J. Mitch Elmore[2], Christian Montes[2], Justin Walley[2], *Polly Hsu[1] (1. Michigan State University, 2. Iowa State University)

9:44 AM - 9:57 AM

[Concurrent_17-05] Ribosomal RNA turnover and cellular homeostasis

*Gustavo MacIntosh[1], Ang-Yu Liu[1], Zakayo Kazibwe[1], Brice Floyd[1], Diane Bassham[1] (1. Iowa State University)

9:58 AM - 10:11 AM

[Concurrent_17-06] 【Short Talk】 Arabidopsis DXO1, a decapping enzyme for NAD-capped RNAs, activates RNMT1 to methylate the mRNA guanosine cap

*Chen Xiao[1], Hailei Zhang[1], Kaien Li[1], Jingmin Hua[1], Feng Zhang[1], Qiongfang Li[1], Shumin Liang[1], Wuzhen Liu[1], Huan Zhong[1], Zongwei Cai[1], Yiji Xia[1] （1. HongKong Baptist University, HongKong）

10:12 AM - 10:19 AM

[Concurrent_17-07] 【 Short Talk】 siRNAs derived from nitrate reductases, *NIA1* and *NIA2*, play vital roles in growth and stress adaptation

*Yan Yan[1], Yinpeng Xie[1], Qian Gao[1], Yajie Pan[1], Xianli Tang[1], Wei Yan[1], Hongwei Guo[1] （1. Institute of Plant and Food Science, Department of Biology, Southern University of Science and Technology, Shenzhen, 518055, China）

10:20 AM - 10:27 AM

Concurrent | Concurrent | Concurrent 13-18

[Concurrent 18] Making contacts: Membrane contact sites between plant organelles

Membrane contact sites (MCSs) are defined as areas of close apposition and tethering between the membranes of two organelles but crucially, the membranes do not fuse. These sites function as specific microdomains for the bi-directional exchange of molecular cargo and are linked to the propagation of intracellular signals enabling a coordinated cellular response to internal and external cues. This session will bring together plant cell biologists researching the molecular mechanisms of MCS tethers using new experimental tools and imaging techniques, with plant physiologists and pathologists interested in the wider role of MCSs in developmental and stress signalling.

Chair:Joe McKenna(University of Warwick), Emily Breeze(University of Warwick)

Wed. Jun 7, 2023 9:00 AM - 10:30 AM Makuhari Messe 3F(Room 6)

[Concurrent_18-01] Near-UV light signaling at the chloroplast-endoplasmic reticulum-plasma membrane contact site.

*Lawrence Griffing[1], Sara Maynard[1] (1. Texas A&M University, Biology Department, 3258 TAMU, College Station, USA 77843)

9:02 AM - 9:20 AM

[Concurrent_18-02] Plant endoplasmic reticulum-membrane contact sites and selective autophagy

*Pengwei Wang[1,2,3] (1. College of Horticulture &Forestry Sciences, Huazhong Agricultural University, Wuhan, China, 2. National Key Laboratory for Germplasm Innovation &Utilization of Horticultural Crops, Huazhong Agricultural University, Wuhan, China, 3. Hubei Hongshan Laboratory, Wuhan, China)

9:21 AM - 9:39 AM

[Concurrent_18-03] Lipid transport at chloroplast-mitochondria contact sites in *Arabidopsis thaliana*

Matteo Arrighi[1,2], Paul Montmayeul[1], Sébastien Leterme[1], Catherine Albrieux[1], Sabine Brugière[3], Marianne Tardif[3], Myriam Ferro[3], Yohann Coutté[3], Juliette Jouhet[1], *Morgane Michaud[1] (1. Univ. Grenoble Alpes, CNRS, UGA, INRAE, CEA, LPCV, 2. Present adress: Univ. of Geneva, 3. Univ. Grenoble Alpes, INSERM, CEA, UMR BioSanté U1292, CNRS, CEA)

9:40 AM - 9:58 AM

[Concurrent_18-04] Structure and functions of plant synaptotagmins

*Miguel A Botella[1] (1. Instituto de Hortofruticultura Subtropical y Mediterránea UMA-CSIC)

9:59 AM - 10:17 AM

[Concurrent_18-05] 【Short Talk】 SEED LIPID DROPLET PROTEIN 1 and 2 and LD-PLASMA MEMBRANE ADAPTOR form a lipid droplet-plasma membrane contact site that might play a role under stress

*Janis Dabisch[1], Till Ischebeck[1] (1. Uni Münster)

10:18 AM - 10:23 AM

[Concurrent_18-06] 【 Short Talk】 The role of DGK1 and DGK2 in Membrane Contact Sites and Stress Tolerance

*Selene Garcia-Hernandez[1], Noemi Ruiz-Lopez[1], Miguel A. Botella Mesa[1] （1. Instituto de Hortofruticultura Subtropical y Mediterránea, Universidad de Má laga-Consejo Superior de Investigaciones Científicas (IHSM-UMA-CSIC)）

10:24 AM - 10:29 AM

Concurrent | Concurrent | Concurrent 19-24

[Concurrent 19] Temporal regulation of environmental responses, growth, and development

Plant cells respond to the same types of stimuli differently depending on when (time of the day, season, developmental ages, etc.), how often (frequency, gradual changes, and stochasticity), and how long (duration – secs, mins, hours, days, etc. - and kinetics) they were given. In this session, we will discuss plant responses (from cellular to developmental) that are impacted by environmental stress and regulated by time in different scales and context.

Chair:Takato Imaizumi(University of Washington), Dawn Nagel(University of California, Riverside)

Wed. Jun 7, 2023 11:00 AM - 12:30 PM Makuhari Messe 2F(Room 1)

This session is sponsored by MEXT Grants-in-Aid for Scientific Research (KAKENHI) , Plant Resilience under Fluctuating Environment.

[Concurrent_19-01] The induction of florigen *FLOWERING LOCUS T* gene is controlled by phytochrome A high-irradiance response and external coincidence mechanism under natural long-day conditions

*Takato Imaizumi[1] （1. University of Washington）

11:02 AM - 11:17 AM

[Concurrent_19-02] Cold tolerance of membranes is a matter of timing and metabolic state – not just a saturation story

*Rebecca Roston[1], Zachery Shomo[1], Allison C Barnes[1,2], Sunil K Kenchanmane Raju[1,3], James C Schnable[1] （1. University of Nebraska-Lincoln, USA, 2. North Carolina State University, USA, 3. New York University, USA）

11:18 AM - 11:33 AM

[Concurrent_19-03] Circadian effects in seconds, minutes, hours, weeks and months.

Gareth Steed[1], Laura Taylor[1], Dora Ramirez[1], Gabby Pingarron-Cardenas[1], Basi Teng[1], Jorge Gonclaves[1], James Locke[1], *Alex Webb[1] （1. University of Cambridge）

11:34 AM - 11:49 AM

[Concurrent_19-04] 【 Short Talk】 Phloem cells - from single cell transcriptomics to development and function

*Jiyun Kim[1], Diana Weidauer[1], Shahrzad Majari Kasmaei[1], Marcela Renger[1], Wolf B. Frommer[1,2] （1. Institute for Molecular Physiology, Heinrich-Heine-University Düsseldorf, Düsseldorf 40225, Germany, 2. Institute of Transformative Bio-Molecules (WPI-ITbM), Nagoya University, Chikusa, Nagoya 464-8601, Japan）

11:50 AM - 11:59 AM

[Concurrent_19-05] 【 Short Talk】 Nitrogen-responsive SnRK1-FBH4 module affects flowering time and metabolism in Arabidopsis

*Miho Sanagi[1], Akio Kubo[1], Van Quoc Giang[1], Filip Rolland[2], Junpei Takagi[1], Takeo Sato[1] （1. Hokkaido University, Japan, 2. KU Leuven, Belgium）

12:00 PM - 12:09 PM

[Concurrent_19-06] 【 Short Talk】 Rational approaches to synchronizing germination in seed populations

*Liam Walker[1], Iain G. Johnston[2], George W. Bassel[1] （1. School of Life Sciences, University of Warwick, 2. Department of Mathematics, University of Bergen）

12:10 PM - 12:19 PM

[Concurrent_19-07] 【 Short Talk】 A Comparative Study of Adaptive Stress Tolerance in the Brassicaceae Family

*Andrea Ramirez Ramirez[1], Prashanth Ramachandran[1], José Dinneny[1] （1. Stanford University）

12:20 PM - 12:29 PM

Concurrent | Concurrent | Concurrent 19-24

[Concurrent 20] Interdisciplinary approaches applied to plasmodesmata research

Plasmodesmata provide a route for the transport of signalling proteins and RNAs, metabolites and hormones to coordinate cellular functions within tissues and across distant organs. This session aims to uncover the broad range of interdisciplinary approaches that have been recently applied to understand plasmodesmata formation and function. We will hear from researchers combining genetic and bioorthogonal chemistry approaches, and physico mechanical models to dissect plasmodesmata function as well as developing new devices and using interfamily grafts and bryophytes to follow Plasmodesmata development and their role in multicellularity. We will also discuss the potential of engineering this mechanism to improve crops in a changing environment

Chair:Yoselin Benitez-Alfonso(Centre for Plant Sciences. University of Leeds)

Wed. Jun 7, 2023 11:00 AM - 12:30 PM Makuhari Messe 2F(Room 2)

[Concurrent_20-01] Plasmodesmata walls: a study of the mechanical and structural properties that control their biological function

*Yoselin Benitez-Alfonso[1], Pallavi Kumari[1,2], Lazar Novakovic[1], Richa Yeshvekar[1], Simon Connell[2] (1. Centre for Plant Sciences. University of Leeds, UK, 2. Bragg Centre for Material Research. School of Physics and Astronomy. University of Leeds, UK)

11:01 AM - 11:15 AM

[Concurrent_20-02] The development of a microfluidic chip for entrapping tobacco BY-2 cells has enabled the analysis of plasmodesmata permeability using cultured cells in real-time.

*Ken-ichi Kurotani[1], Kazunori Shimizu[2,3], Yaichi Kawakatsu[1], Masahiro Kikkawa[2], Ryo Tabata[3,4], Daisuke Kurihara[5,6], Hiroyuki Honda[2], Michitaka Notaguchi[1,3,4,5] (1. Nagoya University, Bioscience and Biotechnology Center, Japan, 2. Nagoya University, Department of Biomolecular Engineering, Graduate School of Engineering, Japan, 3. Nagoya University, Institute for Advanced Research, Japan, 4. Nagoya University, Graduate School of Bioagricultural Sciences, Japan, 5. Nagoya University, Institute of Transformative Bio-Molecules (ITbM), Japan, 6. Nagoya University, Institute for Advanced Research (IAR), Japan)

11:16 AM - 11:30 AM

[Concurrent_20-03] Regulation of brassinosteroid homeostasis in the Arabidopsis root

*Jenny Russinova[1,2] (1. Department of Plant Biotechnology and Bioinformatics, Ghent University, 9052 Ghent, Belgium, 2. Center for Plant Systems Biology, VIB, 9052 Ghent, Belgium)

11:31 AM - 11:45 AM

[Concurrent_20-04] Environmental fluctuation and regulation of intercellular communication in the moss, *Physcomitrium patens*

*Tomomichi Fujita[1], Munenori Kitagawa[1,2], Takumi Tomoi[1,3], Kensuke Kawade[1,4], Chiyo Jinno[1] (1. Hokkaido University, 2. Huazhong Agricultural University,

3. Utsunomiya University, 4. National Institute for Basic Biology）
11:46 AM - 12:00 PM

[Concurrent_20-05] 【 Short Talk】 A long-distance top-down movement of a transcription factor regulating the root phloem development

*Ji-Young Lee[1], Hyoujin Kim[1], Jongsung Park[1], Heewon Shin[1], Sooyoun Kim[1]
（1. Seoul National University）
12:01 PM - 12:10 PM

[Concurrent_20-06] 【 Short Talk】 A novel mechanism for plasmodesmata mediated cell-cell communication in plants

*Marija Smokvarska[1], Jessica Perez Sancho[1], Marie Glavier[1], Ziqiang Li[1], Magali Grison[1], Laetitia Fouillen[1], Patrick Moreau[1], Matthieu Platre[2], Yaowei Yang[3], Yongming Luo[3], Wolfgang Busch[2], Eugenia Russinova[3], Emmanuelle Bayer[1] （1. Laboratoire de Biogenèse Membranaire, UMR5200, CNRS, Université de Bordeaux, Villenave d'Ornon, France, 2. Salk Institute for Biological Studies, La Jolla, California, 3. Department of Plant Biotechnology and Bioinformatics, Ghent University, Ghent, Belgium. Center for Plant Systems Biology, VIB, Ghent, Belgium）
12:11 PM - 12:20 PM

[Concurrent_20-07] 【 Short Talk】 Cellular adaptations for long-distance transport through the phloem sieve tube

*Lothar Kalmbach[1], Yka Helariutta （1. University of Lausanne, Department of Plant Molecular Biology）
12:21 PM - 12:30 PM

Concurrent | Concurrent | Concurrent 19-24

[Concurrent 21] Molecular signaling in plant-insect interactions

Molecular signaling in plant defense against herbivory is an emerging area of study with identity of receptors, channels and early signaling genes that connects it to jasmonate pathway relatively unknown. The regulation of phytohormone and glucosinolate pathway by various signaling components are also unexplored. The session will cover the latest discoveries in the field

Chair:Jyothilakshmi Vadassery(National Institute of Plant Genome Research (NIPGR)), Gen-Ichiro Arimura(Tokyo University of Science)

Wed. Jun 7, 2023 11:00 AM - 12:30 PM Makuhari Messe 2F(Room 3)

[Concurrent_21-01] Geographic, Ecological and Transcriptional Forces Shaping Glucosinolate Defense Metabolite Variation

*Daniel Kliebenstein[1] （1. University of California, Davis）

11:01 AM - 11:17 AM

[Concurrent_21-02] Plant defense system in arabidopsis-*Spodoptera* interactions

*Gen-ichiro Arimura[1], Yoshitake Desaki[1] （1. Tokyo University of Science）

11:18 AM - 11:34 AM

[Concurrent_21-03] Hunting for insect secreted proteins that modulate plant immunity: *Spodoptera litura*- Arabidopsis interaction as a model system

Vinod Prajapati[1], Paramita Bera[1], Sameer Dixit[1], Vishakh Vijayan[1], *Jyothilakshmi Vadassery[1] （1. National Institute of Plant Genome Research(NIPGR), Delhi）

11:35 AM - 11:51 AM

[Concurrent_21-04] Damage-activated proteolysis as a potential key player in the plant wound response

*Simon Stael[1] （1. Swedish University of Agricultural Sciences）

11:52 AM - 12:08 PM

[Concurrent_21-05] 【 Short Talk】 CIRCADIAN CLOCK-ASSOCIATED1 (CCA1) controls resistance to aphid by altering indole glucosinolate production

*Keyan Zhu Salzman[1], Jiaxin Lei[1] （1. Texas A&M University）

12:09 PM - 12:18 PM

[Concurrent_21-06] 【 Short Talk】 Is Ca^{2+}-induced activation of Arabidopsis lipoxygenase 2 involved in green leaf volatile burst?

*Kenji Matsui[1], Moena Tanaka, Kano Yamanaka, Mone Ohtaguro, Satoshi Mochizuki[2] （1. Yamaguchi University, Japan, 2. RIBS Okayama, Japan）

12:19 PM - 12:28 PM

Concurrent | Concurrent | Concurrent 19-24

[Concurrent 22] Molecular condensation for reproductive and biotic stress regulation: From cell biology to biophysical mechanism

Biomolecular condensation (BMC) has emerged as a critical regulatory mechanism that dynamically tunes the constituents and biophysical properties of signaling complexes during plant response to diverse developmental and environmental cues. This session focuses on BMC-mediated signaling research that integrates advanced imaging, biochemical, biophysical, and mathematical approaches to understand the spatiotemporal regulation of plant immune responses and reproduction.

Chair:Yansong Miao(Nanyang Technological University, Singapore), Yangnan Gu(University of California Berkeley)

Wed. Jun 7, 2023 11:00 AM - 12:30 PM Makuhari Messe 2F(Room 4)

[Concurrent_22-01] Molecular Condensation at Host-Pathogen Interface for Plant Immunity

*YANSONG MIAO[1] (1. Nanyang Technological University SInGapore)

11:00 AM - 11:13 AM

[Concurrent_22-02] Formation of NPR1 condensates promotes cell survival during the plant immune response

*Xinnian Dong[1], Raul Zavaliev[1], Rajinikanth Mohan[1], Tianyuan Chen[1] (1. Howard Hughes Medical Institute and Duke University)

11:14 AM - 11:34 AM

[Concurrent_22-03] Dynamic proteostasis and protein condensation in malectin-like receptor kinase-mediated activation of an intracellular immune receptor

*Ping He[1], Jun Liu[1], Fausto Andres Ortiz-Morea[1], Libo Shan[1] (1. Texas A&M University)

11:35 AM - 11:50 AM

[Concurrent_22-04] Phenolic acid-induced stress granule formation mediates plant interspecific competition

Zhouli Xie[1,2], Shuai Zhao[1,2], Ying Li[1,2], Yuhua Deng[1], Yabo Shi[1], Xiaoyuan Chen[1], Yue Li[1], Haiwei Li[3,4], Changtian Chen[1,2,5], Xingwei Wang[1], Enhui Liu[3,4], Yuchen Tu[1], Peng Shi[1,2], Jinjin Tong[1,2], Emilio Gutierrez-Beltran[6,7], Peter Bozhkov[6], Weiqiang Qian[1,2], Mian Zhou[3,4,5], *Wei Wang[1,2,5] (1. Peking University, China, 2. Center for Life Sciences, China, 3. Capital Normal University, China, 4. Beijing Key Laboratory of Plant Gene Resources and Biotechnology for Carbon Reduction and Environmental Improvement, China, 5. Iowa State University, USA, 6. Swedish University of Agricultural Sciences and Linnean Center for Plant Biology, Sweden, 7. Universidad de Sevilla, Spain)

11:51 AM - 12:06 PM

[Concurrent_22-05] The compaction of flowering plant sperm through chromatin phase separation

Toby Buttress[2], Shengbo He[2], Liang Wang[3,4], Shaoli Zhou[2], Gerhard Saalbach[2], Martin Vickers[2], Guohong Li[4], Pilong Li[3], *Xiaoqi Feng[1,2] (1. Institute of Science and Technology, Austria, 2. John Innes Centre, UK, 3. Tsinghua

University, China, 4. Institute of Biophysics, Chinese Academy of Science, China）

12:07 PM - 12:22 PM

[Concurrent_22-06] 【 Short Talk】 AGO2 condensates behavior after bacterial inoculation

*Moriaki Saito[1], Po Hu[1], Hailing Jin[1] （1. Department of Microbiology and Plant Pathology, Center for Plant Cell Biology, Institute for Integrative Genome Biology, University of California, Riverside, USA）

12:23 PM - 12:30 PM

Concurrent | Concurrent | Concurrent 19-24

[Concurrent 23] A systems perspective: Omics integration and modeling

The characterization and quantification of interconnections among molecules is fundamental to providing a systemic view about how plants integrate, attenuate, and respond to developmental and environmental cues. Complementary, predictive modeling of gene regulatory networks, phosphorylation cascades, hormone signaling, or metabolic pathways are powerful approaches to guide new hypotheses and base future experiments. This session will focus on studies that aim to integrate -omics datasets, unravel molecular networks, and elaborate predictive models to address functional questions in Arabidopsis.

Chair:Lisa Van den Broeck(North Carolina State University), Antoni Garcia(Centre for research in agricultural Genomics)

Wed. Jun 7, 2023 11:00 AM - 12:30 PM Makuhari Messe 3F(Room 5)

This session is sponsored by Cambridge University Press (Quantitative Plant Biology Journal, co-published with John Innes Centre).

[Concurrent_23-01] Functional characterization of Arabidopsis protein-coding genes and lincRNAs using multi-omics networks

*Klaas Vandepoele[1], Li Liu[1], Michel Heidecker[2], Thomas Depuydt[1], Nicolas Manosalva Perez[1], Martin Crespi[2], Thomas Blein[2] (1. VIB-UGent Center for Plant Systems Biology, Belgium, 2. Université Paris-Saclay, CNRS, INRAE, Université Evry, France)

11:03 AM - 11:18 AM

[Concurrent_23-02] A quantitative model of carbon partitioning during plant cold acclimation

*Anastasia Kitashova[1], Stephan Adler[2], Andreas Richter[3], Svenja Eberlein[1], Dejan Dziubek[1], Edda Klipp[2], Thomas Nägele[1] (1. Plant Evolutionary Cell Biology, Faculty of Biology, Ludwig Maximilian University of Munich, Germany, 2. Theoretical Biophysics, Institute of Biology, Humboldt University of Berlin, Germany, 3. Institute for Biosciences, Physiology of Plant Metabolism, University of Rostock, Germany)

11:19 AM - 11:34 AM

[Concurrent_23-03] Modelling hormone transport within the *Arabidopsis* root

*Kristian Kiradjiev[1], Leah Band[1], Eilon Shani[2], Hussam Nour-Eldin[3], Jenia Binenbaum[4], Nikolai Wulff[3] (1. University of Nottingham, 2. University of Tel Aviv, 3. University of Copenhagen, 4. University of Cambridge)

11:35 AM - 11:50 AM

[Concurrent_23-04] Understanding the Molecular Mechanisms Underlying FERONIA Receptor Kinase-mediated Signalling Using Multiomics Approach

*Hongqing Guo Guo[1], Jie Tang[1], Ping Wang[1], Trevor M Nolan[2], Justin W Walley [1], Philip N Benfey[2], Yanhai Yin[1], Hongqing Guo[1] (1. Iowa State University, 2.

Duke University）
11:51 AM - 12:06 PM

[Concurrent_23-05] 【 Short Talk】 New elements of cis-regulatory code of plant genes revealed by deep learning models

Fritz Frobang Peleke[2], Simon Maria Zumkeller[1], *Jedrzej Szymanski Szymanski[1,2] （1. Forschungszentrum Juelich, CEPLAS, BioSC, Institute of Bio- and Geosciences, IBG4 Bioinformatic, 52428 Juelich, Germany, 2. Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Correnssstraße 3, D-06466 Seeland, OT Gatersleben, Germany）
12:07 PM - 12:17 PM

[Concurrent_23-06] 【 Short Talk】 Assessing the impacts of genetic defects on starch metabolism in *Arabidopsis* plants using the carbon homeostasis model

*Shuichi Kudo[1], Anthony Artins[2], Carolina C. M. Bello[2], Camila Caldana[2], Akiko Satake[1] （1. Kyushu Univ., Japan, 2. Max Planck Inst. of Mol. Plant Physiol., German）
12:18 PM - 12:28 PM

Concurrent | Concurrent | Concurrent 19-24

[Concurrent 24] Transposable elements, epigenetics, and environmental adaptation

This concurrent session will cover multiple aspects of epigenetic regulation and its role in environmental adaptation: DNA methylation, chromatin modifications, transposon control, reproduction, transgenerational epigenetics, and population epigenomics.

Chair:Leandro Quadrana(Institut of Plant Science Paris-Saclay (IPS2)), Eriko Sasaki(Kyushu University)

Wed. Jun 7, 2023 11:00 AM - 12:30 PM Makuhari Messe 3F(Room 6)

[Concurrent_24-01] The genetic basis of non-CG transposon methylation variation in *Arabidopsis thaliana*

*Eriko Sasaki[1], Magnus Nordborg[2] (1. Kyushu University, 2. Gregor Mendel Institute of Molecular Plant Biology)

11:01 AM - 11:13 AM

[Concurrent_24-02] Transposable element sequences and their epigenetic control in plants: engines of rapid adaptation?

*Pierre Baduel[1], Louna De Oliveira[1], Grégoire Bohl-Viallefond[1], Mounia El Messaoudi[1], Vincent Colot[1] (1. Institut de Biologie de l'École Normale Supérieure (IBENS))

11:14 AM - 11:26 AM

[Concurrent_24-03] Novel mechanism of transposon repression by histone deacetylases

*Hidetaka Ito[1], Xiaoying Niu[1], Yoko Ikeda[2], Hidetoshi Saze[3], Reiko Kanehira[1], Xin Sun[1] (1. Hokkaido University, Japan, 2. IPSR, Japan, 3. OIST, Japan)

11:27 AM - 11:39 AM

[Concurrent_24-04] Targeted integrations of retrotransposons into centromeric regions in *Arabidopsis*

*Sayuri Tsukahara[1], Akira Kawabe[2], Kae Kato[3], Leandro Quadrana[4], Basile Laduque[4,1], Tetsuji Kakutani[1] (1. The University of Tokyo, Japan, 2. Kyoto Sangyo University, Japan, 3. National Institute of Genetics, Japan, 4. Institute of Plant Sciences Paris-Saclay, France)

11:40 AM - 11:52 AM

[Concurrent_24-05] Targeted Transposition in Arabidopsis

*Richard Keith Slotkin[1,2], Peng Liu[1], Seth A. Edwards[1,2], Pratheek Pandesha[1,3], Ryan Swanson[1,2], Yu-Hung Hung[1], Gerald Trey Klaas[1], C. Nathan Hancock[4] (1. Danforth Plant Science Center &University of Missouri, 2. Division of Biological Sciences, University of Missouri-Columbia, 3. Department of Biology, Washington University in St. Louis, 4. University of South Carolina-Aiken)

11:53 AM - 12:05 PM

[Concurrent_24-06] Unique aspects of transposable element silencing in duckweeds (lemnaceae)

*Arturo Mari-Ordonez[1], Rodolphe Dombey[1], Daniel Buendia-Avila[1], Veronica Barragan-Borrero[1], Rana Elias[1], Arturo Ponce-Mane[1] (1. Gregor Mendel Institute (GMI))

12:06 PM - 12:18 PM

[Concurrent_24-07] 【 Short Talk】 RNA deadenylation pathway suppresses transposable elements in *Arabidopsis*

*Ling Wang[1,2], Hui Li[1,2], Mengxiao Yan[3], Jun Yang[1,3], Jungnam Cho[1,2,4] （1. CAS Center for Excellence in Molecular Plant Sciences / Institute of Plant Physiology and Ecology, 2. University of Chinese Academy of Science, 3. Shanghai Key Laboratory of Plant Functional Genomics and Resources, Shanghai Chenshan Botanical Garden, 4. CAS-JIC Centre for Excellence in Plant and Microbial Science）

12:19 PM - 12:24 PM

[Concurrent_24-08] 【 Short Talk】 Gene-transposon transcripts can be epigenetically regulated and impact gene response to stress conditions in *Arabidopsis thaliana*

*Jeremy Berthelier[1], Leonardo Furci[1], Shuta Asai[2], Munissa Sadykova[1], Tomoe Shimazaki[1], Ken Shirasu[2], Hidetoshi Saze[1] （1. Plant Epigenetics Unit, Okinawa Institute of Science and Technology (OIST), Okinawa, Japan, 2. Center for Sustainable Resource Science, RIKEN, Yokohama, Japan）

12:25 PM - 12:30 PM

Concurrent | Concurrent | Concurrent 25-29

[Concurrent 25] The road to recovery: Elucidating stress recovery pathways and reversing stress effects

Plants manifest a plethora of responses from the molecular to the phenotypic level when exposed to different environments. For example, plants under water deprivation often develop smaller and darker leaves than their well-watered counterparts. Extensive empirical work has shown that gene expression is a key determinant of the physiological and developmental responses of plants to environmental cues. Further, the return to homeostasis following environmental challenges can be associated with processes distinct from the stressor proper, yet are of equal importance for plant survival. In this session, we will focus on the frontier between stress tolerance and recovery to understand mechanisms affecting reproductivity and yield after encountering stress. Although some studies consider stress recovery, it is mostly presented as a control that stressful conditions have relieved. In order to reshape a plant' s ability to cope with stress and recovery responses and to enhance plant performance under fluctuating environments there is a need to gain a greater understanding of the margin between the stress, differences in response to various stress severities, and stress recovery as a process that can be studied and improved.

Chair:Natanella Illouz-Eliaz(Salk Institute), Travis Lee(Salk Institute)

Thu. Jun 8, 2023 10:30 AM - 11:59 AM Makuhari Messe 2F(Room 1)

[Concurrent_25-01] Conflicts in phenotypic natural selection constrain adaptation to climate change in Arabidopsis thaliana

Megan Ruffley[1], Laura Leventhal[1,2], Shannon Hateley[1], Sue Rhee[1], *Moi Exposito-Alonso[1,2] （1. Carnegie Institution for Science, 2. Stanford University）

10:35 AM - 10:55 AM

[Concurrent_25-02] Molecular and evolutionary basis of selective autophagy-mediated heat stress recovery in plants

*Yasin Dagdas[1] （1. Gregor Mendel Institute）

10:56 AM - 11:16 AM

[Concurrent_25-03] Leveraging ecological specialization to understand plant drought tolerance strategies and their genetic modulation: a focus on ecological divergent Arabidopsis species

*Juliette de Meaux[1] （1. University of Cologne）

11:17 AM - 11:37 AM

[Concurrent_25-04] 【 Short Talk】 Transcription factor and chromatin-based heat memory in plants

*Nobutoshi Yamaguchi[1] （1. Nara Institute of Science and Technology ）

11:38 AM - 11:48 AM

[Concurrent_25-05] 【 Short Talk】 Response of *Arabidopsis thaliana* to flooding with physical flow

*Nobuhiro Suzuki[1], Momoko Kaji[2], Kazuma Katano[3], Ryotaro Yamaji[2], Hiroshi Nitta[2], Rio Shimizu[1], Shunsuke Shigaki[4], Hiroyuki Suzuki[5] （1. Sophia University, Japan, 2. National Institute of Technology, Ishikawa College, Japan, 3. University of Massachusetts, Amherst, USA, 4. National Institute of Informatics, Japan, 5. Hokkai-Gakuen University, Japan）

11:49 AM - 11:59 AM

Concurrent | Concurrent | Concurrent 25-29

[Concurrent 26] Receptor kinase signaling in development

In recent years, receptor kinase pathways have gained prominence in developmental processes. This session features the latest developments in their characterization in phenomena as diverse as polarity, cell division orientation or regeneration.

Chair:Christian Hardtke(University of Lausanne), Jamie Van Norman(UC Riverside)

Thu. Jun 8, 2023 10:30 AM - 12:00 PM Makuhari Messe 2F(Room 2)

[Concurrent_26-01] Which side are you on? Linking polarized receptor kinases to root cell division control

*Jaimie M. Van Norman[1], R.M. Imtiaz Karim Rony[1], Roya Campos[1], Jason Goff[1] （1. University of California, Riverside）

10:31 AM - 10:50 AM

[Concurrent_26-02] Beyond stem cells: Novel roles for CLE peptide signaling in shoot apical meristems and the environmental control of plant growth.

*Zachary Nimchuk[1,2] （1. Department of Biology, University of North Carolina at Chapel Hill. , 2. Curriculum in Genetics and Molecular Biology, University of North Carolina at Chapel Hill. ）

10:51 AM - 11:10 AM

[Concurrent_26-03] CLE-BAM/CIK signaling in root vascular patterning

*Pingping Qian[1], Tatsuo Kakimoto[1] （1. Osaka University）

11:11 AM - 11:30 AM

[Concurrent_26-04] 【 Short Talk】 Coordinating root system architecture: the intersection of CEP and Cytokinin hormone pathways in Arabidopsis

*Michael Taleski[1], Kelly Chapman[1], Ondřej Novák[4], Thomas Schmülling[3], Manuel Frank[2], Michael Djordjevic[1] （1. ANU, Australia, 2. Aarhus University, Denmark, 3. Freie Universität Berlin, Germany, 4. The Czech Academy of Sciences, Czech Republic）

11:31 AM - 11:40 AM

[Concurrent_26-05] 【 Short Talk】 Stomata-derived intercellular signaling that directs mesophyll air space formation

*Yuki Yoshida[1], Shinichiro Sawa[1] （1. Kumamoto University, Japan）

11:41 AM - 11:50 AM

[Concurrent_26-06] 【 Short Talk】 A phosphoinositide hub connects CLE peptide signaling and polar auxin efflux regulation

*Qian Wang[1], A. Cecilia Aliaga Fandino[1], Moritz Graeff[1], Thomas A. DeFalco[2,3], Cyril Zipfel[2], Christian S. Hardtke[1] （1. Department of Plant Molecular Biology, University of Lausanne, CH-1015 Lausanne, Switzerland, 2. Institute of Plant and Microbial Biology, University of Zurich, Zurich-Basel Plant Science Center, CH-8008 Zurich, Switzerland, 3. Department of Biology, Western University, London, Canada）

11:51 AM - 12:00 PM

Concurrent | Concurrent | Concurrent 25-29

[Concurrent 27] Chemical priming as a sustainable tool for improved productivity under stress conditions

Chemical biology could contribute towards crop improvement while improving farmers' income and ultimately contributing towards good health and sustainable agricultural practices. This could also help achieve sustainable development goals (SDGs) such as SDG1: No Poverty (Through improving farmers' income) SDG2: Zero hunger (Through enhanced crop production) SDG3: Good Health and Well-being (Through improved nutritional quality) The session would provide an opportunity to share the latest trends in the chemical biology of plants.

Chair:Vassilis Fotopoulos(The Cyprus University of Technology), Khurram Bashir(Lahore University of Management Sciences)

Thu. Jun 8, 2023 10:30 AM - 12:00 PM Makuhari Messe 2F(Room 3)

This session is sponsored by Plant Molecular Biology (Springer).

[Concurrent_27-01] Signalling and epigenetic maintenance of plant immune memory by chemical priming agents.

*Jurriaan Ton[1], David Pascual-Pardo[1], Adam Hannan Parker[1], Roland Schwarzenbacher[1], Chia-Nan Tao[1], Louis Tirot[1], Sam Wilkinson[1], Mustafa Yassin[1], Peijun Zhang[1] (1. University of Sheffield, School of Biosciences)

10:31 AM - 10:46 AM

[Concurrent_27-02] Employment of functionalized nanoparticles and polymers towards climate-smart crops

*Vasileios Fotopoulos[1] (1. Cyprus University of Technology)

10:47 AM - 11:02 AM

[Concurrent_27-03] Ethanol-mediated chemical priming to mitigate drought stress in plants

*Khurram Bashir Bashir[1,2], Sultana Rasheed[2], Daisuke Todaka[2], Kaori Sako[2,3], Maho Tanaka[2], Satoshi Takahashi[2], Shunsuke Watanabe[2], Eigo Ando[4,5], Kwang-Chul Shin[4], Miki Fujita[2], Miyako Kusano[2,7], Yoshiki Habu[7,8], Kanako Kawaura[6], Jun Kikuchi[2,4,6], Kazuki Saito[2], Masami Yokota Hirai[2,4], Mitsunori Seo[2], Kazuo Shinozaki[2], Toshinori Kinoshita[2], Motoaki Seki[2,6] (1. Lahore University of Management Sciences, 2. RIKEN, Kanagawa, 230-0045, Japan, 3. Kindai University, Nara, 631-8505, Japan, 4. Nagoya Univ., Aichi, 464-8602, Japan, 5. The University of Tokyo, Tokyo, 113-0033, Japan , 6. Yokohama City Univ., Kanagawa, 244-0813, Japan, 7. University of Tsukuba, Ibaraki, 305-8577, Japan, 8. NARO, Ibaraki, 305-8602, Japan)

11:03 AM - 11:18 AM

[Concurrent_27-04] Screening chemicals regulating ion channels and modulating plant growth mechanism

*Nobuyuki Uozumi[1], Kanane Sato[1], Shunya Saito[1], Yasuhiro Ishimaru[1] (1. Tohoku University, Japan)

11:19 AM - 11:30 AM

[Concurrent_27-05] VDAL, a new protein biostimulant from Verticillium dahliae and its applications in Agriculture

*Zhizhong Gong[1], Junsheng Qi[1] （1. China Agricultural University, Beijing, China）

11:31 AM - 11:42 AM

[Concurrent_27-06] 【 Short Talk】 Chemical biology study of jasmonate signaling by development of a biased agonist derived from stereoisomers of coronatine

*Kengo Hayashi[1], Nobuki Kato[1], Khurram Bashir[2,3], Haruna Nomoto[1], Misuzu Nakayama[1], Andrea Chini[4], Satoshi Takahashi[2], Hiroaki Saito[5], Raku Watanabe[6], Yousuke Takaoka[1], Maho Tanaka[2], Atsushi J. Nagano[7,8], Motoaki Seki[2], Roberto Solano[4], Minoru Ueda[1,6] （1. Graduate School of Science, Tohoku University, Japan, 2. RIKEN, Japan, 3. Syed Babar Ali School of Science and Engineering, Lahore University of Management Sciences, Pakistan, 4. Department of Plant Molecular Genetics, Centro Nacional de Biotecnología, Consejo Superior de Investigaciones Científicas, Spain, 5. Faculty of Pharmaceutical Sciences, Hokuriku University, Japan, 6. Graduate School of Life Science, Tohoku University, Japan, 7. Faculty of Agriculture, Ryukoku University, Japan, 8. Institute for Advanced Biosciences, Keio University, Japan）

11:43 AM - 11:51 AM

[Concurrent_27-07] 【 Short Talk】 Identification of new targets for improving abiotic stress tolerance in plants

*María del Rosario González Bermúdez[1], Irene García-Maquilón[1], Jorge Lozano-Juste[1] （1. Instituto de Biologia Molecular y Celular de Plantas (IBMCP-UPV-CSIC), Universitat Politècnica de València (UPV), Consejo Superior de Investigaciones Científicas (CSIC), 46022, Spain.）

11:52 AM - 12:00 PM

Concurrent | Concurrent | Concurrent 25-29

[Concurrent 28] Cross-kingdom RNA communications and innovative Eco-friendly disease control solutions

Cross-kingdom RNA communications between plants and interaction organisms is a newly emerging field. Understanding the molecular mechanisms and regulatory pathways underlying the RNA communications will help us design RNA-based new generation of plant protection solutions that are more effective and environmentally friendly.

Chair:Hailing Jin(University of California, Riverside)

Thu. Jun 8, 2023 10:30 AM - 12:00 PM Makuhari Messe 2F(Room 4)

Click here for Zoom

[Concurrent_28-01] Cross-kingdom RNA trafficking between plants and fungal pathogens

*Hailing Jin[1], Shumei Wang[1], Baoye He[1], Qiang Cai[2], Obed Ramírez-Sánchez[3], Cei Abreu-Goodger[4], Paul Birch[5], Huaitong Wu[1] (1. University of California, Riverside, USA, 2. State Key Laboratory of Hybrid Rice, College of Life Science, Wuhan University, Wuhan, China. , 3. National Laboratory of Genomics for Biodiversity (Langebio), Cinvestav, Irapuato, 36821 Guanajuato, Mexico., 4. Institute of Ecology and Evolution, School of Biological Sciences, The University of Edinburgh, Edinburgh EH9 3FL, United Kingdom, 5. Division of Plant Sciences, School of Life Science, University of Dundee at James Hutton Institute, Invergowrie, Dundee DD2 5DA, United Kingdom)

10:32 AM - 10:52 AM

[Concurrent_28-02] Extracellular vesicles: Emerging Players in Plant Defense Against Pathogens

*Qiang Cai[1] (1. Wuhan University, China)

10:53 AM - 11:13 AM

[Concurrent_28-03] Extracellular small RNAs direct gene silencing in a plant-interacting bacterium

Antinéa Ravet[1], Jérôme Zervudacki[2], Meenu Singla-Rastogi[1], Magali Charvin[1], Odon Thiebeauld[2], Alvaro L Perez-Quintero[1], Antonio Emidio Fortunato[2], Adrien Candat[1], Venugopal Mendu[1], *Lionel Navarro[1] (1. Institut de Biologie de l'École normale supérieure (IBENS), 75005 Paris, France, 2IRT, 75005 Paris, France)

11:14 AM - 11:34 AM

[Concurrent_28-04] 【Short Talk】 Proof of concept: circular antisense RNAs (caRNAs) as a new mode of action for RNA-based plant protection

*Timo Schlemmer[1,2], Aline Koch[1], Albrecht Bindereif[2] (1. University of Regensburg, Regensburg, 2. Justus-Liebig-University, Gießen)

11:35 AM - 11:45 AM

[Concurrent_28-05] 【Short Talk】 Expanding the horizons of plant RNA research using single molecule FISH

*Susan Duncan[1], Yiliang Ding[1] (1. John Innes Centre)

11:46 AM - 11:56 AM

Concurrent | Concurrent | Concurrent 25-29

[Concurrent 29] Visualizing the dynamics of the circadian clock

Plant circadian clocks continuously adjust their rhythm in accordance with the ever-changing environments at different temporal and spatial levels. The advance in techniques and imaging systems along with the development of algorithms allow us to visualize the circadian clock interacting with environments at a whole plant to single-cell levels.

Chair:Chin-Mei Lee(National Taiwan University), Huang-Lung Tsai(National Taiwan University)

Thu. Jun 8, 2023 10:30 AM - 11:52 AM Makuhari Messe 3F(Room 5)

This session is sponsored by Institute of Plant and Microbial Biology, Academia Sinica.

[Concurrent_29-01] Investigating the dynamic regulation of stress-responsive genes in plants.

*Dawn Nagel[1] (1. University of California, Riverside)

10:31 AM - 10:46 AM

[Concurrent_29-02] Characterization of the long-distance circadian communication through micro-grafting techniques

*Nozomu Takahashi[1,2], Kyohei Uemoto[1,3], Fumito Mori[4], Shota Yamauchi[5], Haruki Egashira[1], Yumi Kunimoto[1], Takashi Araki[3], Atsushi Takemiya[5], Hiroshi Ito[4], Hikari Ikeda[1], Taiga Uchikawa[1], Yohei Kondo[6], Masaaki Watahiki[7], Akane Kubota[1], Motomu Endo[1] (1. Nara Institute of Science and Technology, Japan, 2. JST PRESTO, Japan, 3. Kyoto University, Japan, 4. Kyushu University, Japan, 5. Yamaguchi University, Japan, 6. National Institutes of Natural Sciences, Japan, 7. Hokkaido University, Japan)

10:47 AM - 11:02 AM

[Concurrent_29-03] 【Short Talk】 Microfocus X-ray CT Analysis of *Arabidopsis* Petioles for Leaf Movement

*Maika Hayashi[1], Tadashi Kunieda[1], Ryo Kumagai[1], Makito Haruta[1], Yoshito Otake[1], Hirokazu Kato[1], Hiroyuki Shima[2], Taku Demura[1] (1. NAIST, Japan, 2. Univ. of Yamanashi, Japan)

11:03 AM - 11:15 AM

[Concurrent_29-04] 【Short Talk】 Identification of LWD1-interacting proteins reveals novel regulators for Arabidopsis circadian clock

*Chun-Kai Huang[1], Shu-Hsing Wu[1] (1. Institute of Plant and Microbial Biology, Academia Sinica, Taiwan, ROC)

11:16 AM - 11:28 AM

[Concurrent_29-05] 【Short Talk】 ROS around the clock: Superoxide as a metabolic signal affecting circadian rhythms and growth

*Mike Haydon[1] (1. University of Melbourne)

11:29 AM - 11:41 AM

[Concurrent_29-06] 【Short Talk】 Long-distance circadian coordination via a phloem-delivered mobile transcript

*András Székely[1], Eleftheria Saplaoura[1], Dorothee Staiger[2], Friedrich Kragler[1] (1. Max Planck Institute of Molecular Plant Physiology, 2. Bielefeld

University）
11:42 AM - 11:54 AM

Concurrent | Concurrent | Concurrent 30-33/ MASC WS

[Concurrent 30] Living on the edge: Adaptation of Arabidopsis extremophyte relatives to harsh environments

Extremophytes, plants that inhabit harsh environments, represent novel genetic resources underexplored for their adaptations to multiple environmental stresses. Specifically, extremophytes that are closely related to Arabidopsis are ideal models for comparative multi-level analyses. This session will focus on systems biology research of Arabidopsis extremophyte relatives from physiological through molecular, "omics", evolutionary, and ecological studies to elucidate mechanisms allowing these intriguing plants to survive the most extreme environments on the planet.

Chair:Maheshi Dassanayake(Louisiana State University), Simon Barak(Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev)

Thu. Jun 8, 2023 2:00 PM - 3:30 PM Makuhari Messe 2F(Room 2)

[Concurrent_30-01] A counterintuitive conundrum: Salt inhibition of halophytic seed germination

Yana Kazachkova[1], He Junyi[1], Alexandre Marques[1], Inna Khozin-Goldberg[1], Aaron Fait[1], *Simon Barak[1] (1. Ben-Gurion University of the Negev)

2:01 PM - 2:15 PM

[Concurrent_30-02] Role and Functional Differences of HIGH-AFFINITY K^+ TRANSPORTER1 (HKT1)-Type Transporters in Plants under Salt Stress

*Dae-Jin Yun[1] (1. Konkuk University, Korea)

2:16 PM - 2:30 PM

[Concurrent_30-03] Exploring plant adaptations to aquatic environments: A study of *Rorippa aquatica*, an amphibious plant living at the edge of the water

*Seisuke Kimura[1,2] (1. Faculty of Life Sciences, Kyoto Sangyo University, Japan, 2. Center for Plant Sciences, Kyoto Sangyo University, Japan)

2:31 PM - 2:45 PM

[Concurrent_30-04] Discovering how evolutionary innovations in growth regulation contribute to plant stress tolerance

*Prashanth Ramachandran[1], Andrea Ramirez[1], Evelyn Alferez[1], José Dinneny[1] (1. Stanford University)

2:46 PM - 3:00 PM

[Concurrent_30-05] 【Short Talk】 Enhanced Salt Tolerance by an Antarctic moss gene

*NoA Bae[1], Jun Hyuck Lee[2], Hyoungseok Lee[2], Byeong-ha Lee[1] (1. Sogang university, Korea, 2. Korea Polar Research Institute, Korea)

3:01 PM - 3:10 PM

[Concurrent_30-06] 【Short Talk】 Altitudinal genetic differentiation in the leaf wax-mediated flowering bud protection against frost in an early-spring flowering herb, *Arabidopsis halleri*

*Hiroshi Kudoh[1], Genki Yumoto[1], Biva Aryal[1,2], Mie N. Honjo[1], Yuko Sasaki-Sekimoto[3], Wataru Shinohara[4], Hiroyuki Ohta[3] (1. Kyoto University, Japan, 2. Tribhuvan University, Nepal, 3. Tokyo Institute of Technology, Japan, 4.

Kagawa University. Japan）

3:11 PM - 3:20 PM

[Concurrent_30-07] 【 Short Talk】 Seasonal dynamics of epigenome in a natural population of *Arabidopsis halleri*

*Haruki Nishio[1,2], Tasuku Ito[3], Mie N. Honjo[2], Tomoaki Muranaka[4], Naoko Emura[4], Hanako Shimizu[2], Hiroshi Kimura[5], Taiko Kim To[6,7], Tetsuji Kakutani[6,7], Hiroshi Kudoh[2] （1. Shiga Univ., Japan, 2. Kyoto Univ., Japan, 3. Institute of Science and Technology Austria, 4. Kagoshima Univ., Japan, 5. Tokyo Institute of Technology, Japan, 6. Tokyo Univ., Japan, 7. NIG, Japan）

3:21 PM - 3:30 PM

Concurrent | Concurrent | Concurrent 30-33/ MASC WS

[Concurrent 31] Short and long range signaling by RNA

Plant development, physiology and defense are controlled by several classes of mobile RNAs that move both cell-to-cell, through plasmodesmata, and into the phloem for systemic movement. Mobile mRNAs control meristem, leaf and tuber development, among other processes. Small RNA silencing signals and miRNAs also move systemically through plasmodesmata and the phloem, for example, to control nutrient homeostasis. The workshop will present new findings in this exciting emerging area of plant biology research.

Chair:Dave Jackson(Cold Spring Harbor Laboratory), Margaret Frank(Cornell University), Fritz Kragler(Max Planck Institute of Molecular Plant Physiology), Michitaka Notaguchi(Nagoya University)

Thu. Jun 8, 2023 2:00 PM - 3:30 PM Makuhari Messe 2F(Room 3)

Click here for Zoom

[Concurrent_31-01] Deciphering signals from the noise in the mRNA mobileome using comparative Solanaceae genomics

*Margaret Hannah Frank[1], Michelle Heeney[1] (1. Cornell University)

2:02 PM - 2:16 PM

[Concurrent_31-02] An RNA exosome subunit promotes cell-to-cell trafficking of a homeobox mRNA via plasmodesmata

*Munenori Kitagawa[1], Peipei Wu[2], Rachappa Balkunde[3], Patrick Cunniff[2], David Jackson[2] (1. Huazhong Agricultural University, China, 2. Cold Spring Harbor Laboratory, USA, 3. Bayer Crop Science LLC, USA)

2:17 PM - 2:31 PM

[Concurrent_31-03] Investigation of mRNAs that move long-distance

*Michitaka Notaguchi[1,2] (1. Kyoto University, Japan, 2. Nagoya University, Japan)

2:32 PM - 2:46 PM

[Concurrent_31-04] Lost in translation? The long-distance travel of messenger RNAs

*Friedrich Kragler[1] (1. Max-Planck-Institute of Molecular Plant Physiology)

2:47 PM - 3:01 PM

[Concurrent_31-05] 【Short Talk】 Arabidopsis cyclophilins direct intracellular transport of mobile mRNA via organelle hitchhiking

*Tien-Shin Yu[1], Kai-Ren Luo[1], Nien-Chen Huang[1], Yu-Hsin Chang[1,2], Yu-Wen Jan[1] (1. Institute of Plant and Microbial Biology, Academia Sinica, Taipei, Taiwan, 2. Institute of Plant Biology, National Taiwan University, Taipei, Taiwan)

3:02 PM - 3:10 PM

[Concurrent_31-06] 【Short Talk】 A cell wall-modifying enzyme controls symplastic movement of RNA silencing in aerial Arabidopsis tissues

*Florence Brioudes[1], Florian Brioudes[1], André Imboden[1], Lazar Novaković[2], Yoselin Benitez-Alfonso[2], Olivier Voinnet[1] (1. Swiss Federal Institute of Technology (ETH-Zürich), Switzerland, 2. Centre for Plant Science, School of Biology, University of Leeds, United Kingdom)

3:11 PM - 3:19 PM

[Concurrent_31-07]【 Short Talk】 Dose-dependent long-distance movement of microRNA399 duplex regulates phosphate homeostasis in Arabidopsis

*Chih-Pin Chiang[1], Jia-Ling Li[1], Tzyy-Jen Chiou[1] （1. Agricultural Biotechnology Research Center, Academia Sinica, Taiwan）

3:20 PM - 3:28 PM

Concurrent | Concurrent | Concurrent 30-33/ MASC WS

[Concurrent 32] Mechanisms and functions of endocytosis in plants

Plant endocytosis underlies a plethora of biological processes including nutrient uptake, signal transduction, development, polarity and tropic growth, immunity and responses to abiotic stress. However, the molecular machinery of endocytosis, its regulation and exact biological impacts are only beginning to be understood in plants. This session will cover the following topics (1) Molecular mechanisms of endocytosis in plants; (2) Endocytosis and plant polarity, development and nutrient uptake; (3) Endocytosis and plant-pathogen interactions; (4) Endocytosis and cell wall biogenesis; (5) Crosstalk between endocytosis, exocytosis and autophagy

Chair:Jenny Russinova(VIB-UGent Center for Plant Systems Biology), Takashi Ueda(NIBB)

Thu. Jun 8, 2023 2:00 PM - 3:30 PM Makuhari Messe 2F(Room 4)

This session is sponsored by MEXT Grant-in-Aid for Scientific Research on Innovative Areas "Periodicity and Its Modulation in Plants".

Periodicity and its Modulation in Plants 植物の周期と変調

[Concurrent_32-01] Mechanistic insight into plant endocytosis

*Daniel Van Damme[1,2] （1. Ghent University Department of Plant Biotechnology and Bioinformatics, Ghent, Belgium , 2. VIB Center for Plant Systems Biology, Ghent, Belgium）

2:02 PM - 2:20 PM

[Concurrent_32-02] 【 Short Talk】 Mechanisms underlying polar membrane targeting of SOSEKI protein

*Andriy Volkov[1], Dolf Weijers[1] （1. Laboratory of Biochemistry, Wageningen University, Netherlands）

2:21 PM - 2:30 PM

[Concurrent_32-03] A novel reciprocal regulation mechanism for SH3P2 in crosstalk between endocytosis and autophagy

Kai-Ching Law[1], Lanlan Feng[1], Hongbo Li[2], Caiji Gao[2], *Xiaohong Zhuang[1] （1. Centre for Cell &Developmental Biology and State Key Laboratory of Agrobiotechnology, School of Life Sciences, The Chinese University of Hong Kong, Hong Kong, China, 2. Guangdong Provincial Key Laboratory of Biotechnology for Plant Development, School of Life Sciences, South China Normal University, Guangzhou, China）

2:31 PM - 2:49 PM

[Concurrent_32-04] 【 Short Talk】 Brassinosteroid receptor BRI1 deubiquitination by UBP12/UBP13 fine-tunes plant growth

*Yongming Luo[1,2,3], Junpei Takagi[3], Lucas Alves Neubus Claus[1,2], Chao Zhang[5,6], Shigetaka Yasuda[3], Yoko Hasegawa[4], Junji Yamaguchi[3], Libo Shan[5,6], Eugenia Russinova[1,2], Takeo Sato[3] （1. Department of Plant Biotechnology and Bioinformatics, Ghent University, Belgium, 2. Center for Plant Systems Biology, VIB, Belgium, 3. Faculty of Science, Hokkaido University, Japan, 4. Graduate School of Science, Hokkaido University, Japan, 5. Department of Plant Pathology &Microbiology, Texas A&M University, USA, 6. Department of Biochemistry &Biophysics, Texas A&M University, USA）

2:50 PM - 2:59 PM

[Concurrent_32-05] Understanding the Evolution of Endosomal Sorting Mechanisms in Plants

Elizabeth Berryman[1], Ethan Weiner[1], Ariadna Gonzalez Solis[1], Felix Frey[2], Charles Hamilton[2], Andela Saric[2], *Marisa Otegui Otegui[1] （1. University of Wisconsin-Madison, USA, 2. Institute of Science and Technology, Austria）

3:00 PM - 3:18 PM

[Concurrent_32-06] 【 Short Talk】 Ca^{2+}-induced removal of inner vegetative plasma membrane in Arabidopsis sperm cells

*Naoya Sugi[1], Daichi Susaki[1], Kazuo Ebine[2,3], Tetsu Kinoshita[1], Daisuke Maruyama[1] （1. KIBR, Yokohama City Univ., 2. Div. Cellular Dynamics, NIBB, 3. Sch. Life Sci., SOKENDAI）

3:19 PM - 3:28 PM

Concurrent | Concurrent | Concurrent 30-33/ MASC WS

[Concurrent 33] Front-line of plant genome engineering

Genome engineering are revolutionizing life sciences and plant biotechnology that seek to develop new technologies for the precise manipulation of genes and genomes in vivo. In addition to its use for advancing our understanding of basic biology, genome engineering has numerous applications for improving agronomically traits. In this session, we will present and discuss recent advances in nuclear and organelle genome engineering approaches, novel tools and delivery system.

Chair:Daisuke Miki(Center of Excellence for Molecular Plant Sciences, Chinese Academy of Sciences), Masaki Endo(National Agriculture and Food Research Organization (NARO)), Yuriko Osakabe(School of Life Science and Technology, Tokyo Institute of Technology)

Thu. Jun 8, 2023 2:00 PM - 3:30 PM Makuhari Messe 3F(Room 5)

[Concurrent_33-01] Genome engineering for plastid and mitochondria

*Shin-ichi Arimura[1], Chang Zhou[1], Issei Nakazato[1] (1. University of Tokyo)

2:01 PM - 2:18 PM

[Concurrent_33-02] Towards versatile plant gene editing systems: the wisker-based direct delivery method and small-size Cas protein

*Shigeo S. Sugano[1] (1. National Institute of Advanced Industrial Science and Technology (AIST))

2:19 PM - 2:36 PM

[Concurrent_33-03] CRISPR/Cas-meditated Chromosome and Tissue Engineering in Arabidopsis

*Holger Puchta[1] (1. Karlsruhe Institute of Technology)

2:37 PM - 2:54 PM

[Concurrent_33-04] Gene editing in Arabidopsis using RNA viruses

*Daniel Voytas[1] (1. University of Minnesota)

2:55 PM - 3:12 PM

[Concurrent_33-05] 【Short Talk】 Insights into tRNA-like structures (TLS) as motifs facilitating long-distance transport of mRNAs

*Eleftheria Saplaoura[1], Lei Yang[1], Frank Machin[1], Shuangfeng Wang[1], Friedrich Kragler[1] (1. Max Planck Institute for Molecular Plant Physiology)

3:13 PM - 3:21 PM

[Concurrent_33-06] 【Short Talk】 Single-cell targeted chemical or genetic boosting of genome editing in maize

*Ling Meng[1] (1. KWS Group)

3:22 PM - 3:29 PM

Workshop | Workshop | Workshop 01-04

[Workshop 01] Integration of engineering, plant sciences, and agricultural research for translational research

This workshop focuses on the integration of engineering and biology for plant improvement. Networks of scientists that conduct basic and applied research are critical for advancing this field. The workshop aims to cover data acquisition, data intergration,and data mining while promoting knowledge transfer and skill sharing. Biotech-enabled plant advances incorporating whole-plant structure and physiology will be essential to solve global agriculture problems.

Chair:Ross Sozzani(NCSU), Lucia Strader(Duke)

Mon. Jun 5, 2023 2:00 PM - 3:00 PM Makuhari Messe 2F(Room 3)

[Workshop_01-01] Integrating Engineering, Plant Sciences, and Agricultural Research for Translational Research: An Introduction to the Workshop and Case Study Presentation

*Ross Sozzani[1] (1. North Carolina State University)

2:03 PM - 2:18 PM

[Workshop_01-02] Multi-scale modeling approaches for understanding plant and agronomic systems across biological scales

*Cranos Williams[1] (1. North Carolina State University)

2:19 PM - 2:34 PM

[Workshop_01-03] The nexus of plant peptide-receptor modules and environmental adaptation

*Akie Shimotohno[1] (1. Nagoya University, Japan)

2:35 PM - 2:50 PM

Workshop | Workshop | Workshop 01-04

[Workshop 02] Coordinating and utilizing the rapidly growing collection of independently assembled Arabidopsis genomes

Advances in long-read sequencing technology have made it possible to complement the Arabidopsis reference genome with hundreds of independently assembled genomes. For these data to be useful to the community they need to be integrated with previously existing resources from the 1001 Genomes Project. We will discuss how this can be accomplished, and what we can learn from complete genome information on species-wide scale.

Chair:Magnus Nordborg(Gregor Mendel Institute, Austrian Academy of Sciences), Detlef Weigel(Max Planck Institute for Biology, Tübingen)

Mon. Jun 5, 2023 2:00 PM - 3:00 PM Makuhari Messe 2F(Room 4)

[Workshop_02-01] Rapid cycles of satellite homogenization and retrotransposon invasion drive Arabidopsis pancentromere evolution

*Ian Henderson[1], Piotr Wlodzimierz[1], Fernando Rabanal[2], Robin Burns[1], Matthew Naish[1], Elias Primetis[3], Alison Scott[4], Terezie Mandakova[5], Nicola Gorringe[1], Andrew Tock[1], Max Collenberg[2], Miriam Mielke[2], Gautam Shirsekar[2], Carlos Alonso-Blanco[8], Fabrice Roux[7], Martin Lysak[5], Polina Novikova[4], Magnus Nordborg[6], Alexandros Bousios[3], Detlef Weigel[2] (1. Department of Plant Sciences, University of Cambridge, 2. Department of Molecular Biology, Max Planck Institute for Biology Tübingen, Tübingen, Germany, 3. School of Life Sciences, University of Sussex, Brighton, United Kingdom, 4. Department of Chromosome Biology, Max Planck Institute for Plant Breeding Research, Cologne, Germany, 5. Central European Institute of Technology, Masaryk University, Kamenice 5, Brno 625 00, Czech Republic, 6. Gregor Mendel Institute, Vienna, Austrian Academy of Sciences, Vienna BioCenter, Dr. Bohr-Gasse 3, 1030, Vienna, Austria, 7. LIPME, INRAE, CNRS, Université de Toulouse, Castanet-Tolosan, France, 8. Departamento de Genética Molecular de Plantas, Centro Nacional de Biotecnología, Consejo Superior de Investigaciones Cientí ficas, Madrid, Spain)

2:01 PM - 2:10 PM

[Workshop_02-02] The pan-genome and local adaptation of *Arabidopsis thaliana*

*Jianquan Liu[1,2], Minghui Kang[1,2], Haolin Wu[2], Wenyu Liu[1], Mingjia Zhu[1], Yu Han[2], Wei Liu[2], Chunlin Chen[2], Kangqun Yin[2], Yusen Zhao[2], Zhen Yan[2], Huanhuan Liu[2], Shangling Lou[1,2], Yanjun Zan[3] (1. State Key Laboratory of Grassland Agro-ecosystem, College of Ecology, Lanzhou University, Lanzhou, 730000, China, 2. Key Laboratory of Bio-resource and Eco-environment of Ministry of Education, College of Life Sciences, Sichuan University, Chengdu, 610065, China, 3. Key Laboratory of Tobacco Improvement and Biotechnology, Tobacco Research Institute, Chinese Academy of Agricultural Sciences, Qingdao, 266000, China)

2:11 PM - 2:20 PM

[Workshop_02-03] Assembling and Annotating Arabidopsis Genomes to Model Protein Abundance

*Richard Mott[1], Mark Bailey[2], Ziming Zhong[1], Yong-In Kim[3], Bryony Parker[2],

Robert King[2], Gancho Slavov[4], Kirsty Hassell[2], Keywan Hassani-Pak[2], Kathryn Lilley[3], Frederica Theodoulou[2], Nazanin Pesaran Afsharyan[2] （1. University College London, 2. Rothamsted Research, 3. University of Cambridge, 4. Forest Genetics and Biotechnology, Scion Research, NZ）

2:21 PM - 2:30 PM

[Workshop_02-04] The Actual Mobilome of Arabidopsis thaliana

*Anna Igolkina[1], Magnus Nordborg[1] （1. GMI - Gregor Mendel Institute of Molecular Plant Biology）

2:31 PM - 2:40 PM

[Workshop_02-05] Benchmarking graph building pipeline on plant genome assemblies

*Zhigui Bao[1,2], Sebastian Vorbrugg[1], Sanwen Huang[2], Detlef Weigel[1] （1. Max Planck Institute for Biology Tübingen, 2. Agricultural Genomics Institute at Shenzhen, Chinese Academy of Agricultural Sciences）

2:41 PM - 2:50 PM

[Workshop_02-06] Challenges of annotating complex genes in the Arabidopsis long read genome collection

*Luisa Teasdale[1], Gautam Shirsekar[1], Max Collenberg[1], Kevin Murray[1], Adrian Contreras-Garrido[1], Leon Van Ess[1], Justina Juettner[1], Christa Lanz[1], Joffrey Fitz[1], Hajk-Georg Drost[1], Detlef Weigel[1] （1. Max Planck Institute - Department of Biology）

2:51 PM - 3:00 PM

Workshop | Workshop | Workshop 01-04

[Workshop 03] Systems biology of plant-microbes interactions

A systems perspective on mechanisms of pathogen infection and plants' responses to such biotic stresses can lead to significant advances in plant biology and agriculture in general. This session will highlight exciting new discoveries being made in plant-pathogen interactions by leveraging functional genomics and systems biology approaches in the model system Arabidopsis and agronomically important crop plants. We will seek topics pertinent to plant receptor networks to perceive diverse pathogens, transcriptional gene regulatory networks at different scales (e.g. tissue/single cell), mechanisms of pathogen manipulation of host plants, and systemic outcomes of infection.

Chair:Shahid Mukhtar(University of Alabama at Birmingham)

Mon. Jun 5, 2023 2:00 PM - 3:00 PM Makuhari Messe 3F(Room 5)

[Workshop_03-01] Spatial and systems biology of plant-microbe interactions

*Shahid M Mukhtar[1] (1. University of Alabama at Birmingham)

2:02 PM - 2:15 PM

[Workshop_03-02] MAMP and DAMP signalling contributes resistance to *Fusarium graminearum* in Arabidopsis

*Gopal Subramaniam[1,2], Maryam Nourimand[1], Nimrat Manes[1], Elizabeth Brauer[1] (1. Agriculture and Agri-Food Canada, Canada, 2. Carleton University, Canada)

2:16 PM - 2:29 PM

[Workshop_03-03] Attraction of Herbivores for Survival from Virulent Pathogens in Arabidopsis

*Kazuha Mori[1], Mika Nomoto[1,2], Liu Zhang[3], Hiroshi Mori[1], Shinya Ariyasu[4], Susumu Uehara[1,2], Osami Shoji [4], Akiko Maruyama[3], Yasuomi Tada[1,2] (1. Department of Biological Science, Graduate School of Science, Nagoya University, Japan, 2. Center for Gene Research, Nagoya University, Japan, 3. Department of Bioscience and Biotechnology Faculty of Agriculture, Kyushu University, Japan, 4. Department of Chemistry, Graduate School of Science, Nagoya University, Japan)

2:30 PM - 2:43 PM

[Workshop_03-04] Functional or NAT? RNA control of receptor expression

Hemal Bhasin[1], Hasna Khan[1], *Adam Mott[1] (1. University of Toronto - Scarborough)

2:44 PM - 2:57 PM

Workshop | Workshop | Workshop 01-04

[Workshop 04] Molecular dialogues in reproductive development

The workshop will cover different aspects of molecular dialogues controling reproduction in plants.
Chair:Julia Santiago(University of Lausanne), Tetsuya Higashiyama(University of Tokyo, Japan)
Mon. Jun 5, 2023 2:00 PM - 3:00 PM Makuhari Messe 3F(Room 6)
This session is sponsored by MEXT Grants-in-Aid for Scientific Research (KAKENHI), Innovative Plant Reproductive Systems and JSPS Grants-in-Aid for Scientific Research (KAKENHI), International Leading Research "Key-Molecule-Network in Plant Reproduction".

[Workshop_04-01] Cell wall recognition and patterning by a sensor complex coordinates cell wall architecture and drives pollen tube expansion.

*Julia Santiago[1], Steven Moussu[1], Hyung Kyung Lee[1], Kalina Haas[2], Caroline Broyart[1], Ursina Rathgeb[1], Estelle Bonnin[3], Niko Geldner[1], Bernard Catala[3], Herman Hofte[2] (1. University of Lausanne, 2. Institut Jean-Pierre Bourgin (IJPB), 3. INRAE, Nantes)
2:01 PM - 2:19 PM

[Workshop_04-02] Turning up the volume on intercellular communication during pollen tube reception.

*Sharon Kessler[1], Sienna Ogawa[1], Yan Ju[1] (1. Purdue University)
2:20 PM - 2:38 PM

[Workshop_04-03] Multiple roles of aspartic endopeptidases ECS1 and ECS2 in fertilization

*Meng-xiang Sun[1], Xuecheng Zhang[1], Ce Shi[1], Tianhe Cheng[1], Wei Wang[1], Xiaorong Huang[1] (1. Wuhan University, China)
2:39 PM - 2:57 PM

Workshop | Workshop | Workshop 05

[Workshop 05] Science as stories: From data to presentations. The untold story of your research

The aim of the workshop is to learn how to prepare scientific presentations that convey a clear message and maximize the output of your research. Our framework combines storytelling with how the brain process oral information along with images. We will dissect the anatomy of a presentation and discuss what makes it memorable.

Chair:Belén Moro(Centre for Research in Agricultural Genomics (CRAG))

Tue. Jun 6, 2023 1:15 PM - 2:15 PM Makuhari Messe 2F(Room 1)

[Workshop_05] Science as Stories: From data to presentations. The untold story of your research.

*Belén Moro[1] (1. Centre for Research in Agricultural Genomics (CRAG))

1:15 PM - 2:15 PM

Workshop | Workshop | Workshop 06-10

[Workshop 06] Single cell technologies and its diversity of applications

The fast development of single cell technology is revolutionizing the field of omics study. In the past few years, plant biologists have successfully adopted single cell technology and generated multiple plant cell atlases. These datasets allow us to capture the transcriptomic diversity in different cell types and help us understand cellular heterogeneity, as well as the basis of cell identity and cell fate transitions. For this session, we would like to focus on the most recent advances in the application of single cell technologies.

Chair:Ao Liu(HHMI-Stanford University), Bruno Guillotin(NYU-Center of Genomics and Systems Biology)

Thu. Jun 8, 2023 9:00 AM - 10:00 AM Makuhari Messe 2F(Room 1)

[Workshop_06-01] Origin and diversification of the cell types of the flower

*Luke Nikolov[1] (1. Indiana University)

9:02 AM - 9:15 AM

[Workshop_06-02] Constructing an Arabidopsis Embryonic Expression Atlas using snRNA-seq

*Ping Kao[1] (1. Graduate School of Life Sciences, Tohoku University, Japan)

9:16 AM - 9:29 AM

[Workshop_06-03] Cell Cycle Dynamics During Plant Cell Reprogramming

*Laura Rose Lee[1], Kenneth Birnbaum[1] (1. New York University)

9:30 AM - 9:43 AM

[Workshop_06-04] Time-resolved single-cell and spatial gene regulatory atlas of plants under pathogen attack

*Tatsuya Nobori[1,2], Alexander Monell[3], Travis A Lee[1,2], Joseph R Ecker[1,2] (1. Salk Institute, 2. HHMI, 3. UCSD)

9:44 AM - 9:57 AM

Workshop | Workshop | Workshop 06-10

[Workshop 07] Watching and quantifying biochemical processes in intact plants

The understanding of signaling and metabolic processes in multicellular organisms requires knowledge of the spatial dynamics of small molecules and the activities of enzymes, transporters and other proteins in vivo, as well as biophysical parameters inside cells and across tissues. Genetically encoded sensors are engineered fluorescent proteins that have been developed for a wide range of small molecules, such as ions and metabolites, or to report biophysical processes, such as transmembrane voltage or tension.
Chair:Cheng-Hsun Ho(ABRC, Academia Sinica)
Thu. Jun 8, 2023 9:00 AM - 10:00 AM Makuhari Messe 2F(Room 2)
This session is sponsored by Agricultural Biotechnology Research Center, Academia Sinica.

[Workshop_07-01] Live show of nitrate dynamics in root nd developemt of Arabidopsis

*Ho Cheng-Hsun[1] （1. ABRC, Academia Sinica, Taiwan）
9:02 AM - 9:17 AM

[Workshop_07-02] Towards Soil-on-a-Chip — structured micro-environments for root science

Christian-Frederic Kaiser[1,2], Marjorie Guichard[1,2], Milan Župunski[1], Mayuri Sadoine[1], *Guido Grossmann[1,2] （1. Heinrich-Heine-University Duesseldorf, Institute of Cell and Interaction Biology, Germany, 2. Cluster of Excellence in Plant Sciences CEPLAS, Germany）
9:18 AM - 9:38 AM

[Workshop_07-03] CO_2 Sensing and Signaling Components are Required for Stomatal Responses to Elevated Temperatures

*Nattiwong Pankasem[1], Julian I. Schroeder[1] （1. Cell and Developmental Biology Department, School of Biological Sciences, University of California San Diego, La Jolla, CA 92093-0116, USA.）
9:39 AM - 9:59 AM

Workshop | Workshop | Workshop 06-10

[Workshop 08] Spatiotemporal dynamics of protein and protein complexes in the cell

Recent advances in biochemistry and biophysics, plant molecular and cell biology revealed that the differential fate of proteins in cell space including transport, modification, and even aggregation leads to contrasting cellular output in abiotic and biotic defense responses and plant development. Hence, the need for the detection and visualization of protein complex dynamics in living cells has become the technology of utmost importance. This workshop aims to showcase cutting-edge technologies and findings in spatiotemporal dynamics of cellular proteins and protein complexes.

Chair:Hisashi Koiwa(Texas A&M University), Libo Shan(Texas A&M University), Juan Dong(Rutgers University)

Thu. Jun 8, 2023 9:00 AM - 9:58 AM Makuhari Messe 2F(Room 3)

[Workshop_08-01] Tandem fluorescent timer in Plants: A Tool for Acquiring Spatiotemporal Information about Proteins

*Yukihiro Nagashima[1], Jun Liu[2], Xue Ding[3,4], Juan Dong[3,4], Libo Shan[2,5], Hisashi Koiwa[1,5] (1. Vegetable and Fruit Improvement Center and Department of Horticultural Sciences, Texas A&M University, 2. Department of Biochemistry &Biophysics, Texas A&M University, 3. Waksman Institute of Microbiology, Rutgers, The State University of New Jersey, 4. Department of Plant Biology, Rutgers, The State University of New Jersey, 5. Molecular and Environmental Plant Sciences, Texas A&M University)

9:02 AM - 9:15 AM

[Workshop_08-02] Ironing out the issues: protein dynamics in response to iron deficiency

*Terri A. Long[1] (1. North Carolina State University)

9:16 AM - 9:29 AM

[Workshop_08-03] Plant plasma membrane nano-organization and cell polarization

*Xue Pan[1] (1. Department of Biological Sciences, University of Toronto Scarborough, Toronto, Canada)

9:30 AM - 9:43 AM

[Workshop_08-04] Unraveling the molecular and cellular mechanisms underlying a MLR-NLR complex-regulated autoimmunity

*Fausto Andres Ortiz Morea[1,2], Jun Liu[1], Libo Shan[1], Ping He[1] (1. Department of Biochemistry &Biophysics, Texas A&M University, 2. Universidad de la Amazonia)

9:44 AM - 9:57 AM

Workshop | Workshop | Workshop 06-10

[Workshop 09] Arabidopsis small RNA biology

This workshop will focus on newly discovered roles of small RNAs, highlighting two hot areas of research in the field: 1) The function of small RNAs that are generated only in very specific reproductive cells, and 2) The role of small RNA warfare during the Arabidopsis-pathogen/pest interaction.
Chair:Keith Slotkin(Donald Danforth Plant Science Center &University of Missouri)
Thu. Jun 8, 2023 9:00 AM - 10:00 AM Makuhari Messe 2F(Room 4)

[Workshop_09-01] Mating system influences the requirement for RdDM during reproduction in Brassicaceae

Kelly A Dew-Budd[1], Hiu-Tung Chow[1], Timmy Kendall[1], Mark A Beilstein[1], *Rebecca A Mosher[1] (1. The School of Plant Sciences, The University of Arizona, Tucson, AZ 85721, USA)
9:01 AM - 9:12 AM

[Workshop_09-02] Interspecies regulatory small RNAs in plant-parasite interactions

Allison Zvarick[1], Elizabeth Brandt[2], Zoe Hester[2], *Saima Shahid[2] (1. The Pennsylvania State University, USA, 2. Oklahoma State University, USA)
9:13 AM - 9:24 AM

[Workshop_09-03] Translation-dependent epigenetic silencing of transposon

*Jungnam Cho[1,2] (1. CAS Center for Excellence in Molecular Plant Sciences, China, 2. CAS-JIC Centre of Excellence for Plant and Microbial Science, China)
9:25 AM - 9:36 AM

[Workshop_09-04] Reproductive barriers established by epigenetic mechanisms in the endosperm

*Claudia Köhler[1,2], Katarzyna Dziasek[1,2], Juan Santos-González[1,2] (1. Max Planck Institute of Molecular Plant Physiology, 2. Swedish University of Agricultural Sciences)
9:37 AM - 9:48 AM

[Workshop_09-05] Regulating Pol-IV to generate epigenetic diversity

*Julie Ann Law[1] (1. Salk Institute for Biological Studies)
9:49 AM - 10:00 AM

Workshop | Workshop | Workshop 06-10

[Workshop 10] Arabidopsis bioinformatics

This workshop will feature updates and introductions of online resources that are part of the Arabidopsis scientist' s modern research toolkit, just like laboratory equipment, enzymes, and buffers. Essential resources like TAIR and BAR will be revisited in addition to highlighting resources created and maintained by community members in the Asia Pacific region that are of global importance.
Chair:Nicholas Provart(University of Toronto), Tanya Berardini(Phoenix Bioinformatics)
Thu. Jun 8, 2023 9:00 AM - 10:00 AM Makuhari Messe 3F(Room 5)
This session is sponsored by RIKEN CSRS.

[Workshop_10-01] Updates to the Bio-Analytic Resource

*Nicholas J Provart[1,2] (1. University of Toronto, 2. Centre for the Analysis of Genome Evolution and Function)

9:02 AM - 9:14 AM

[Workshop_10-02] To integrate or not to integrate: how to collaborate with conversational AI programs

*Masanori Arita[1] (1. RIKEN Center for Sustainable Resource Science)

9:15 AM - 9:27 AM

[Workshop_10-03] Complete sequence assembly of Arabidopsis ribosomal DNA (rDNA) arrays provides insight into rDNA variation, epigenetic regulation and large scale recombination

*Ramya Enganti[1,2], Dalen Fultz[1,2], Anastasia McKinlay[1,2], Craig Pikaard[1,2] (1. Howard Hughes Medical Institute, 2. Indiana University)

9:28 AM - 9:40 AM

[Workshop_10-04] The 2023 TAIR update: From basics to the progress with the community-developed v12 of the genome

*Tanya Z Berardini[1], Leonore Reiser[1], Shabari Subramaniam[1], Erica Bakker[1], Xingguo Chen[1], Swapnil Sawant[1], Trilok Prithvi[1] (1. The Arabidopsis Information Resource/Phoenix Bioinformatics)

9:41 AM - 9:53 AM

Workshop | Workshop | Workshop 11

[Workshop 11] Diversity and inclusion for excellence in science

Research and training using Arabidopsis has been vital to the success of plant science due, in large part, to sustained global collaborations in the plant science community. While recent studies indicate clear benefits of diversity and inclusion, progress in these areas is slow and has been driven by a few countries. This moderated workshop will feature a panel of plant biology faculty that will provide diverse perspectives on the challenges of working within academia, and the benefits of creating and sustaining a diverse community to achieving excellence.

Chair:Joanna Friesner(North American Arabidopsis Steering Committee), Yoselin Benitez-Alfonso(Centre for Plant Sciences. University of Leeds), Kanako Bessho-Uehara(Tohoku University), Keith Slotkin(Donald Danforth Plant Science Center &University of Missouri)

Thu. Jun 8, 2023 12:45 PM - 1:45 PM Makuhari Messe 2F(Room 1)

[Workshop_11] Diversity and Inclusion for Excellence in Science

*Joanna Friesner[1], Kanako Bessho-Uehara[3], Yoselin Benitez-Alfonso[2], R. Keith Slotkin[1,4,5], José Dinneny[6], Terri Long[7], Hironaka Tsukagoshi[8], Gabriela Auge[9], Keiko Torii[10,11] (1. North American Arabidopsis Steering Committee (NAASC), USA, 2. Leeds University, UK, 3. Tohoku University, Japan, 4. Donald Danforth Plant Science Center, USA, 5. University of Missouri, USA, 6. Stanford University, USA, 7. North Carolina State University, USA, 8. Meijo University, Japan, 9. Consejo Nacional de Investigaciones Científicas y Tecnológicas (CONICET), 10. HHMI/University of Texas, Austin, USA, 11. Nagoya University, Japan)

12:45 PM - 1:45 PM

Workshop | Workshop | Workshop 12

[Workshop 12] MASC: Arabidopsis for SDGs/4th Decadal Vision

The theme of this year's ICAR is Arabidopsis for Sustainable Development Goals. Participants will discuss how research in Arabidopsis can be leveraged to help achieve some of the United Nation's 17 SDGs, especially in the area of zero hunger, climate action, and life on land. In addition, participants will discuss how Arabidopsis research can help address important plant science questions (such as those posed in Armstrong et al., 2023; doi. 10.1111/nph.18771) and the kinds of international projects that might be considered as part of a 4th decadal vision for Arabidopsis research, following on from successful collaborations that have arisen from 3 decades of coordinated efforts.
Chair:Nicholas Provart (University of Toronto, Canada), Masatomo Kobayashi (RIKEN BRC, Japan)
Thu. Jun 8, 2023 2:00 PM - 3:30 PM Makuhari Messe 2F(Room 1)
This session is sponsored by RIKEN BRC and RIKEN CSRS.

[Workshop_12] MASC: Arabidopsis for SDGs/4th Decadal Vision

2:00 PM - 3:00 PM

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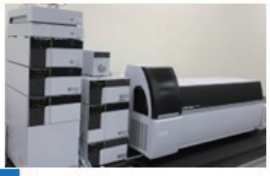

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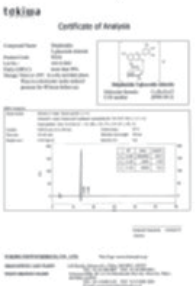

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