

June 12 (Tue)

9:00–9:15

Event marking the formal opening of Plant Reproduction 2018

Opening Remarks: Tetsuya Higashiyama, Tetsu Kinoshita

Session I: Flowering and Floral Development

Chair: Toshiro Ito (Nara Institute of Science and Technology)

9:15–9:45

1-1 Unravelling the molecular basis of florigen transport

Hao Yu¹

¹Department of Biological Sciences, National University of Singapore

9:45–10:15

1-2 Making flowers at the right time and in the right place

Doris Wagner¹

¹Biology, University of Pennsylvania

10:15–10:30

1-3 Phenology of epigenetic regulation: long-term analyses of H3K27me3 and H3K4me3 in a natural habitat of the perennial *Arabidopsis halleri*

Hiroshi Kudoh¹, Haruki Nishio¹, Atushi J. Nagano², Diana M. Buzas³, Koji Iwayama⁴, Tasuku Ito¹

¹Center for Ecological Research, Kyoto University, ²Ryukoku University, ³Tsukuba University, ⁴Shiga University

10:30–10:45

1-4 The role of APETALA2/ERF transcription factors in floral meristem initiation and identity and floral organ initiation in *Arabidopsis*

John William Chandler¹, Wolfgang Werr¹

¹Developmental Biology, Cologne University

10:45–11:15

COFFEE BREAK

11:15–11:30

1-5 SUPERMAN controls the auxin/cytokinin balance to promote carpel formation and stem cell termination

Nathanael Prunet^{1,4}, Xu Yifeng², Darragh Stewart³, Frank Wellmer³, Toshiro Ito², Elliot Meyerowitz¹, Thomas Jack⁴

¹Division of Biology and Biological Engineering, HHMI & Caltech, ²Nara Institute of Science and Technology,

³Trinity College, ⁴Dartmouth College

11:30–11:45

1-6 Chromatin-mediated feed-forward regulation of *YUCCA4* expression by *AGAMOUS* and *CRABS CLAW* directs gynoecium formation

Nobutoshi Yamaguchi¹, Toshiro Ito¹

¹Nara Institute of Science and Technology, Biological Science

11:45–12:00

1-7 Functional characterization of a TMS10 interacting protein, TMSIP, in mediating the thermal sensitive sterility in rice

Wenguo Cai¹, Wanqi Liang¹, Dabing Zhang^{1,2}

¹School of Life Sciences and Biotechnology, Shanghai Jiao Tong University, ²School of Agriculture, Food and Wine, University of Adelaide, Urrbrae, SA 5064, Australia

12:00–12:30

1-8 Promotion of pollen germination and lubrication the pollen tube growth path by pectate lyases in *Arabidopsis thaliana*

Youssef Chebli¹, Anja Geitmann¹

¹McGill University, Canada

12:30–14:00

LUNCH BREAK - Lunch provided by the conference

Session II: Sporogenesis, Meiosis and Apomixis

Chair: Kenichi Nonomura (National Institute of Genetics), Anna Koltunow (CSIRO)

14:00–14:30

2-1 Induced parthenogenesis in cereals

Peggy Jean Ozias-Akins¹, Joann A. Conner¹

¹Plant Breeding, Genetics and Genomics, University of Georgia

14:30–15:00

2-2 CDK activity structures the recombination landscape in *Arabidopsis*

Arp Schnittger¹, Erik Wijnker^{1,2}, Chao Yang¹, Maria Ada Prusicki¹, Kostika Sofroni¹, Yuki Hamamura¹, Hirofumi Harashima², Shinichiro Komaki^{1,3}

¹Developmental Biology, University of Hamburg, ²Laboratory of Genetics, Wageningen University, P.O. Box 16 6700 AA Wageningen, the Netherlands, ³EN Center for Sustainable Resource Science, 1-7-22 Suehiro, Tsurumi, Yokohama, 230-0045 Japan, ⁴Nara Institute of Science and Technology, Graduate School of Biological Sciences, Plant Growth Regulation Laboratory, 8916-5 Takayama, Ikoma, Nara 630-0192, Japan

15:00–15:30

2-3 The evolution and functional roles of premeiotic and meiotic reproductive phasiRNAs in plants

Blake C. Meyers¹

¹Donald Danforth Plant Science Center, St. Louis, Missouri, USA

15:30–16:00

COFFEE BREAK

16:00–16:15

2-4 Conserved sporophytic gene networks for the regulation of pollen development

Zoe A Wilson¹, Alison C Ferguson¹, Wenzhe Yin¹, Ivana Ferjentsikova¹, Jose Fernandez-Gomez¹

¹Biosciences, University of Nottingham

16:15–16:30

2-5 bHLH transcription factors activate meiotic siRNA biogenesis in rice anther tapetum

Seiji Ono¹, Hua Liu¹, Katsutoshi Tsuda^{1,2}, Eigo Fukai³, Keisuke Tanaka⁴, Takuji Sasaki⁴, Ken-ichi Nonomura^{1,2}

¹Experimental Farm, National Institute Genetics, ²Grad. U. Adv. Study/SOKENDAI, ³Niigata U., ⁴Tokyo U. Agr.

16:30–16:45

2-6 The role of somatic tissues in female germline development

Matthew Tucker¹, Laura Wilkinson¹, Dayton Bird¹, Neil Shirley¹, Sara Pinto², Anna Koltunow³, Vincent Bulone¹

¹The University of Adelaide, ²Departamento de Biologia, Faculdade de Ciências da Universidade do Porto, Porto, Portugal, ³CSIRO Agriculture, Hartley Grove, Waite Campus, Urrbrae, SA 5064, Australia

16:45–17:00

2-7 Assembly and annotation of the *Boechera retrofracta* genome and evolutionary analysis of apomixis-associated genes

Vladimir Brukhin^{1,2}, Sergei Kliver¹, Mike Rayko¹, Alexey Komissarov¹, Evgeny Bakin¹, Catherine Rushworth³, Thomas Mitchell-Olds⁴, Ueli Grossniklaus⁵

¹Dobzhansky Center for Genome Bioinformatics, St. Petersburg State University, ²Department of Plant Embryology & Reproductive Biology, Komarov Botanical Institute Russian Academy of Sciences, St. Petersburg, 197376 Russia, ³University and Jepson Herbaria, University of California, Berkeley, USA, ⁴Department of Biology, Duke University, Durham NC 27708-0338 NC, USA, ⁵Department of Plant & Microbial Biology Zurich-Basel Plant Science Center, University of Zurich, Zollikerstrasse 107, 8008 Zurich, Switzerland

17:00–17:15

2-8 Comparative transcriptomics of egg apparatus of (a)sexual dandelion (*Taraxacum*) to resolve the genetic basis of parthenogenesis

Kitty Vijverberg¹, Carla Oplaat¹, Marco Busscher¹, Tao Zhao¹, M. Eric Schranz¹

¹Plant Sciences, Biosystematics Group, Wageningen University & Research

Poster Session 1

17:15–19:15

Poster Session 1 (Presenters to stand by odd-numbered posters)

Evening Appetizers provided by the conference

Session III: Gametogenesis

Chair: Rita Groß-Hardt (University of Bremen)

9:00–9:30

3-1 Plant Gametogenesis in a Nutshell

David Twell¹, Dieter Hackenberg Zhao¹, Mingmin Zhao¹, Nicholas Rutley¹, Ugur Sari¹, Ghazwan Hasan¹, Yosra Al-Hakeem¹, Liang-zi Zhou², Thomas Dresselhaus², Jörg Becker³, Asuka Higo⁴, Tomokazu Kawashima⁵, Michael Borg⁶, Frederic Berger⁶, Takashi Araki⁴

¹Department of Genetics and Genome Biology, University of Leicester, ²Department of Cell Biology and Plant Biochemistry, University of Regensburg, Universitätsstraße 31, 93053 Regensburg, Germany, ³Instituto Gulbenkian de Ciência Plant Genomics Oeiras, Portugal, ⁴Graduate School of Biostudies, Kyoto University, Kyoto 606-8501, Japan, ⁵Department of Plant and Soil Sciences, University of Kentucky, Lexington, Kentucky, 40546, USA, ⁶Gregor Mendel Institute, Austrian Academy of Sciences, Vienna Biocenter, Dr. Bohr Gasse 3, 1030 Vienna, Austria

9:30–10:00

3-2 Ion signaling and reproduction: molecular basis and integrative mechanisms

Jose Feijó¹

¹Univ. Maryland

10:00–10:15

3-3 AGL80 acts a transcriptional repressor in the central cell

Mengxia Zhang¹, Pengfei Jia¹, Hongju Li¹, Weicai Yang¹

¹Institute of Genetics and Developmental Biology, and University of Chinese Academy of Sciences, Beijing 100101, China

10:15–10:30

3-4 Pollen development and pollen tube growth: a look beyond transcription

David Honyš¹, Said Hafidh¹, David Potesil^{2,3}, Zbynek Zdrahal^{2,3}

¹Pollen Biology Lab, Institute of Experimental Botany ASCR, ²Central European Institute of Technology, Masaryk University, Brno, Czech Republic, ³National Centre for Biomolecular Research, Masaryk University, Brno, Czech Republic

10:30–11:00

COFFEE BREAK

11:00–11:30

3-5 Molecular origin of sperm differentiation in plants

Frederic Berger¹, Asuka Higo², Tomokazu Kawashima^{1,3}, Michael Borg¹, Mingmin Zhao⁴, Irene Lopez-Vidriero⁵, Hidetoshi Sakayama⁶, Sean A Montgomery¹, Hiroyuki Sekimoto⁷, Dieter Hackenberg⁴, Masaki Shimamura⁸, Tomoaki Nishiyama⁹, Keiko Sakakibara¹⁰, Yuki Tomita², Taisuke Togawa¹¹, Kan Kunimoto², Akihisa Osakabe¹, Yutaka Suzuki¹², Katsuyuki T. Yamato¹¹, Kimitsune Ishizaki⁶, Ryuichi Nishihama², Takayuki Kohchi², José M. Franco-Zorrilla⁵, David Twell⁴, Takashi Araki²

¹Gregor Mendel Institute, ²Graduate School of Biostudies, Kyoto University, Kyoto 606-8501, Japan,

³Department of Plant and Soil Sciences, University of Kentucky, Lexington, Kentucky, 40546, USA,

⁴Department of Genetics and Genome Biology, University of Leicester, University Road, Leicester LE1

7RH, UK, ⁵Unidad de Genómica, Centro Nacional de Biotecnología, CNB-CSIC, Campus de Cantoblanco,

C/ Darwin 3, 28049 Madrid, Spain, ⁶Department of Biology, Graduate School of Science, Kobe University,

1-1 Rokkodai, Nada-ku, Kobe 657-8501, Japan, ⁷Department of Chemical and Biological Sciences, Faculty

of Science, Japan Women's University, 2-8-1 Mejirodai, Bunkyo-ku, Tokyo 112-8681, Japan, ⁸Department

of Biology, Graduate School of Science, Hiroshima University, 1-3-1 Kagamiyama, Higashi-Hiroshima 739-

8526, Japan, ⁹Advanced Science Research Center, Kanazawa University, 13-1 Takara-machi, Kanazawa, 920-

0934, Japan, ¹⁰Department of Life Science, College of Science, Rikkyo University, Tokyo, Japan 11Faculty

of Biology-Oriented Science and Technology, Kindai University, Kinokawa, 649-6493, Japan, ¹¹Department

of Computational Biology and Medical Sciences, Graduate School of Frontier Sciences, The University of

Tokyo, 5-1-5, Kashiwanoha, Kashiwa-shi, Chiba, 277-8562, Japan

11:30–11:45

3-6 A bidirectional transcription switch controls sexual differentiation in *Marchantia polymorpha*

Tetsuya Hisanaga¹, Keitaro Okahashi², Shohei Yamaoka², Ryuichi Nishihama², Masaki Shimamura³, Katsuyuki T Yamato⁴, Takayuki Kohchi², Keiji Nakajima¹

¹Nara Institute of Science and Technology, ²Kyoto University, ³Hiroshima University, ⁴Kindai University

11:45–12:00

3-7 Pollen number controlling gene revealed by GWAS and CRISPR/Cas9

Hiroyuki Kakui^{1,2}, Takashi Tshuchimatsu^{1,3,4,5}, Misako Yamazaki¹, Cindy Marona⁶, Hiroki Tsutsui^{7,8}, Afif Hedhly³, Dazhe Meng^{4,9}, Yutaka Sato¹⁰, Thomas Stadler¹¹, Ueli Grossniklaus³, Masahiro Kanaoka⁷, Michael Lenhard⁶, Magnus Nordborg⁴, Kentaro K Shimizu^{1,2,3}

¹Institute of Evolutionary Biology and Environmental Studies, University of Zurich, ²Kihara Institute of

Biological Research, Yokohama City University, Yokohama 244-0813, Japan, ³Department of Plant and

Microbial Biology & Zurich-Basel Plant Science Center, University of Zurich, 8008 Zurich, Switzerland,

⁴Gregor Mendel Institute, Austrian Academy of Sciences, A-1030 Vienna, Austria, ⁵Department of Biology,

Chiba University, Chiba 263-8522, Japan, ⁶Institute of Biochemistry and Biology, University of Potsdam,

14476 Potsdam, Germany, ⁷Graduate School of Science, Nagoya University, Nagoya 464-8602, Japan,

⁸JST ERATO Higashiyama Live-Holonics Project, Nagoya University, Nagoya 464-8602, Japan, ⁹Molecular

and Computational Biology, University of Southern California, Los Angeles, California, 90089-0371 USA,

¹⁰Graduate School of Agricultural Sciences, Nagoya University, Nagoya 464-8601, Japan, ¹¹Institute of

Integrative Biology, ETH Zurich, 8092 Zurich, Switzerland

12:00–12:15

3-8 Suppression of a pollen fertility defect in Hydroxyproline O-Arabinosylation-deficient Arabidopsis mutants identifies both known and novel pollen fertility genes

Cora A MacAlister¹

¹Molecular, Cellular and Developmental Biology, University of Michigan

12:15–13:45

LUNCH BREAK - Lunch provided by the conference

Session IV: Pollen Pistil Interactions

Chair: Sota Fujii (The University of Tokyo)

Supported by JSPS KAKENHI Grant-in-Aid for Scientific Research(S)
"Molecular Mechanism and Evolution of Self-Incompatibility in Plants"



13:45–14:15

4-1 The directional control of pollen tube growth by REN4-mediated endocytosis

Hui Li^{1,2,3}, Nan Luo¹, Weidong Wang¹, Zengyu Liu⁴, Jisheng Chen^{1,4}, Liangtao Zhao², Li Tan², Chunyan Wang², Yuan Qin⁴, Chao Li³, Tongda Xu^{2,4}, Zhenbiao Yang^{1,4}

¹Center for Plant Cell Biology, Institute of Integrated Genome Biology, and Department of Botany and Plant Sciences, University of California, Riverside, CA 92508, USA, ²Shanghai Center for Plant Stress Biology and Shanghai Institute of Plant Physiology and Ecology, Chinese Academy of Sciences, Shanghai 200032, China, ³School of Life Sciences, East China Normal University, Shanghai 200241, China, ⁴FAFU-UCR Joint Center for Horticultural Biology and Metabolomics Center, Institute of Science and Technology, Fujian Agriculture and Forestry University, Fuzhou 350002, China

14:15–14:45

4-2 S-RNase-Based Self-Incompatibility in *Petunia*: A Complex Mechanism of Self/Non-Self Recognition between Pollen and Pistil

Teh-hui Kao¹

¹Biochemistry and Molecular Biology, Penn State University

14:45–15:15

4-3 Decoding the Compatible Pollen Response Pathway in the Brassicaceae Stigma

Daphne R Goring¹

¹Cell & Systems Biology, University of Toronto

15:15–15:45

COFFEE BREAK

15:45–16:15

4-4 Post-translational modifications triggered during early self-incompatibility response in incompatible *Papaver* pollen are likely to induce PCD

Vernonica (Noni) Elsa Franklin-Tong¹, Tamanna Haque², Deborah J Eaves¹, Maurice Bosch³, Jeffery F Harper^{1,4}, Helen J Cooper¹

¹School of Biosciences, University of Birmingham, ²Department of Horticulture, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh, ³Institute of Biological, Environmental & Rural Sciences (IBERS), Aberystwyth University, Gogerddan, Aberystwyth, SY23 3EB, UK, ⁴Department of Biochemistry and Molecular Biology, University of Nevada, Reno, USA

16:15–16:30

4-5 Variation in interspecific unilateral incompatibility in *Arabidopsis*

Lian Fan¹, James Doughty¹, Rod Scott¹, Simon Hiscock²

¹Department of Biology and Biochemistry, University of Bath, ²University of Oxford, Department of Plant Science

16:30–16:45

4-6 Inter-ecotype pollen-stigma incompatibility is determined by duplicated self-recognition genes in *Brassica rapa*

Yoshinobu Takada¹, Kohji Murase^{2,3}, Hiroko Shimosato-Asano², Takahiro Sato¹, Honoka Nakanishi⁴, Atsuki Mihara⁴, Yuhui He⁴, Keita Suwabe⁵, Kentaro K. Shimizu^{6,7}, Yong Pyo Lim⁸, Seiji Takayama^{2,3}, Go Suzuki⁴, Masao Watanabe¹

¹Graduate School of Life Sciences, Tohoku University, ²Graduate School of Biological Sciences, Nara Institute of Science and Technology, ³Department of Applied Biological Chemistry, The University of Tokyo, ⁴Division of Natural Science, Osaka Kyoiku University, ⁵Graduate School of Bioresources, Mie University, ⁶Department of Evolutionary Biology and Environmental Studies, University of Zurich, ⁷Kihara Institute for Biological Research, Yokohama City University, ⁸Department of Horticulture, Chungnam National University

16:45–17:00

4-7 KIRA1 and ORESARA1 terminate flower receptivity by promoting cell death in the stigma of *Arabidopsis*

Zhen Gao¹, Anna Daneva¹, Matthias Van Durme¹, Zongcheng Lin¹, Moritz Karl Nowack¹

¹VIB-UGent Center for Plant Systems Biology, VIB

17:00–17:15

4-8 TOD1 is a Conserved Pollen Tube Turgor Pressure Regulator in Angiosperms

Liyu Chen¹

¹Haixia Institute of Science and Technology, Fujian Agriculture and Forestry University

Poster Session 2

Invited Poster Presentation by High School Students

17:15–19:15

Poster Session 2 (Presenters to stand by even-numbered posters), and Invited Poster Presentation by High School Students

Evening Appetizers provided by the conference

Session V: Gametophyte Interactions & Fertilization

Chair: Thomas Dresselhaus (University of Regensburg)

Supported by Institute of Transformative Bio-Molecules (ITbM), Nagoya University and Platforms for Advanced Technologies and Research Resources "Advanced Bioimaging Support" (ABIS)



9:00–9:30

5-1 FERONIA-mediated cell wall property and its impact on pollen tube-ovule interaction

Alice Y Cheung¹, Qiaohong Duan^{1,2}, Daniel Kita^{1,3}, Jacob Maman¹, Ming-Che Liu¹, Hen-Ming Wu¹

¹University of Massachusetts, ²Shandong Agricultural Uni., China, ³Alexion Pharmaceuticals

9:30–10:00

5-2 HAP2(GCS1) initiates gamete fusion using diverse, lineage-specific mechanisms for insertion into the target plasma membrane

Jennifer Forcina¹, Juliette Fedry², Thomas Krey³, Felix Rey², Mark Johnson¹

¹Brown University, Department of Molecular Biology, Cell Biology, and Biochemistry, 60 Olive St, Providence, RI, USA 02912, ²Unité de Virologie Structurale, Institut Pasteur, 25-28 Rue du Docteur Roux, 75724 Paris, France, ³Institute of Virology, Hannover Medical School, 30625 Hannover, Germany

10:00–10:15

5-3 Mutation of Arabidopsis SAURs impairs the efficient translation of transcripts essential for pollen tube growth

Guang-Yuh Jauh^{2,3,4}, Siou-Luan He^{1,2}

¹Institute of Plant and Microbial Biology, Academia Sinica, ²Institute of Plant Biology, National Taiwan University, Taipei, Taiwan, ³Molecular and Biological Agricultural Sciences, Taiwan International Graduate Program, National Chung-Hsing University, Academia Sinica, Taipei, Taiwan, ⁴Biotechnology Center, National Chung-Hsing University, Taichung, Taiwan

10:15–10:30

5-4 The Arabidopsis CrRLK1L Protein Kinase genes BUPSs are Required for Normal Growth of Pollen Tubes in the Pistil

De Ye¹, Lei Zhu¹, Liang-Cui Chu², Yan Liang¹, Li-Qun Chen¹, Xue-Qin Zhang¹

¹State Key Laboratory of Plant Physiology and Biochemistry, College of Biological Sciences, China Agricultural University, ²College of Agronomy and Biotechnology, China Agricultural University, 2 Yuanmingyuan Xilu, Beijing 100193, China

10:30–11:00

COFFEE BREAK

11:00–11:30

5-5 Patterning and morphogenesis in the Arabidopsis embryo

Dolf Weijers¹

¹Laboratory of Biochemistry, Wageningen University

11:30–11:45

5-6 Live-Cell Analysis of Molecules Involved in Pollen Tube Guidance

Tetsuya Higashiyama¹

¹ITbM, Nagoya Univ

11:45–12:00

5-7 Gamete activation and fusion in flowering plants

Stefanie Sprunck¹, Maria Lindemeier¹, Philipp Cyprys¹, Raphael Malka¹, Michael Kraus¹, Maria Flores-Tornero¹, Thomas Hackenberg¹

¹Institute for Plant Science, Cell Biology and Plant Biochemistry, University of Regensburg

12:00–12:15

5-8 Analysis of a novel sperm cell surface-resident protein involved in double fertilization of *Arabidopsis*

Tomoko Igawa¹, Taro Takahashi¹, Toshiyuki Mori², Lixy Yamada³, Hitoshi Sawada³, Kenji Ueda⁴, Shiori Nagahara⁵, Tetsuya Higashiyama⁵

¹Graduate School of Horticulture, Chiba University, ²Department of Tropical Medicine and Parasitology, Juntendo University, ³Graduate School of Science, Nagoya University, ⁴Department of Biological Production, Akita Prefectural University, ⁵Institute of Transformative Bio-Molecules, Nagoya University

12:15–12:30

5-9 A Functional Role for Homotypic Gamete Interactions in Double Fertilization

Leonor Chagas Boavida¹, Chandra C. Misra², Nikita Bhatnagar¹, Jörg D. Becker²

¹Botany and Plant Pathology, Purdue University/Purdue Center for Plant Biology, ²Instituto Gulbenkian de Ciência, Plant Genomics Lab, Oeiras, Portugal

12:30–14:00

LUNCH BREAK - Lunch provided by the conference

Session VI: Post fertilization; Embryo and Endosperm Development

Chair: Mengxiang Sun (Wuhan University), Minako Ueda (Nagoya University)

14:00–14:30

6-1 To explode or not to explode, that might not a big question now

Zengxiang Ge¹, Alice Cheung², Li-Jia Qu¹

¹Peking University, ²University of Massachusetts

14:30–14:45

6-2 Dynamic F-actin Movement and Structures from Fertilization through Early Developmental Stage in *Arabidopsis thaliana* Endosperm

Tomokazu Kawashima¹

¹Plant and Soil Sciences, University of Kentucky

14:45–15:15

6-3 Gene regulatory networks in maize endosperm development

Ramin Yadegari¹

¹School of Plant Sciences, University of Arizona, Tucson, Arizona 85721-0036 U.S.A.

15:15–15:30

6-4 Auxin regulates endosperm cellularization in *Arabidopsis*

Duarte Dionísio Figueiredo¹, Rita A Batista¹, Claudia Köhler¹

¹Plant Biology Department, Swedish University of Agricultural Sciences and Linnean Center for Plant Biology, Uppsala, Sweden

15:30–16:00

COFFEE BREAK

16:00–16:15

6-5 Development of gene expression and genome editing systems in rice egg cells and zygotes by direct delivery of macromolecules

Takashi Okamoto¹, Erika Toda^{1,2}, Narumi Koiso¹, Md Hassanur Rahman¹, Arika Takebayashi², Masako Ichikawa³, Takatoshi Kiba³, Keishi Osakabe⁴, Yuriko Osakabe⁴, Hitoshi Sakakibara², Norio Kato^{1,2,3}
¹Biological Sciences, Tokyo Metropolitan University, ²RIKEN Innovation Center, ³Japan Tobacco Inc.,
⁴Tokushima University

16:15–16:30

6-6 Live-cell imaging of the axis formation in Arabidopsis zygote

Minako Ueda¹, Yusuke Kimata¹, Takehide Kato², Takumi Higaki^{3,4}, Daisuke Kurihara¹, Tomomi Yamada¹, Shoji Segami¹, Miyo Terao Morita¹, Masayoshi Maeshima¹, Seiichiro Hasezawa³, Tetsuya Higashiyama¹, Masao Tasaka², Naoe Ando¹
¹Nagoya University, ²NAIST, ³The University of Tokyo, ⁴Kumamoto University

16:30–16:45

6-7 Transcription in rice zygotes reflects early activation & distinct patterns based on parent of origin

Scott D Russell¹, Sarah N Anderson², Cameron Johnson², Joshua Chesnut¹, Daniel S Jones¹, Imtiyaz Khanday², Venkatesan Sundaresan²
¹Dept of Microbiology and Plant Biology, University of Oklahoma, ²Dept of Plant Biology, University of California, Davis, CA 95616

16:45–17:15

6-8 GA as a maternal signal for triggering embryonic suspensor PCD

Mengxiang Sun¹, Pan Luo¹, Ce Shi¹, Peng Zhao¹
¹College of Life Sciences, Wuhan University

Excursion “Ukai Tour”

We'd like to ask you to arrive at Cormorant Fishing Viewing Boat Office by 18:30.
On board sequentially during 18:30–19:00.
We are preparing light meal and are waiting for you.

Session VII: Polyploidization and Evolution of Sexual Reproduction

Chair: Kentaro K. Shimizu (University of Zurich, Yokohama City University)

Supported by JST/CREST “Constructing models to confer environmental robustness by developing multiomics technology of polyploid species” and Kihara Institute for Biological Research (KIBR), Yokohama City University



9:00–9:30

7-1 Dominant self-compatible mutation conferred by small RNAs and the pattern of genome-wide selection in the allotetraploid *Arabidopsis kamchatica*

Kentaro K. Shimizu^{1,2}, Chow-Lih Yew¹, Takashi Tsuchimatsu³, Masaomi Hatakeyama¹, Rie Shimizu-Inatsugi¹, Gwyneth Halstead-Nussloch¹, Tim Paape¹, Kenta Tanaka⁴, Shinsuke Yasuda⁵, Seiji Takayama⁵, Jun Sese⁶
¹Department of Evolutionary Biology and Environmental Studies, University of Zurich, ²Kihara Institute for Biological Research, Yokohama City University, ³Chiba University, ⁴Tsukuba University, ⁵NAIST, ⁶AIST

9:30–10:00

7-2 Selection for uniform grain dimensions and germination during wheat domestication

Assaf Distelfeld¹
¹Plant Sciences, Tel Aviv University

10:00–10:30

7-3 Sibling cooperation and interparental conflict in a seed: how plant mothers, fathers, and siblings behave during reproduction in flowering plants

William (Ned) Friedman¹, Chi-Chih Wu², Rebecca Povilus³, Pamela Diggle⁴
¹Organismic and Evolutionary Biology, Harvard University, ²Uppsala University, ³Massachusetts Institute of Technology, ⁴University of Connecticut

10:30–11:00

COFFEE BREAK

11:00–11:30

7-4 Building and bypassing plant polyspermy barriers

Thomas Nakel^{1,3}, Dawit Girma Tekleyohans^{1,3}, Yanbo Mao¹, Golo Fuchert², Dieu Vo², Rita Gross-Hardt¹
¹University of Bremen, Germany, ²Max-Planck-Institute, Plasma Physics, Greifswald, Germany, ³equally contributed

11:30–11:45

7-5 Distinct features of hybrid growth abnormalities in interspecific crosses of two wild diploid wheat relatives to tetraploid wheat

Shigeo Takumi¹, Moeko Okada¹, Kentaro Yoshida¹
¹Graduate School of Agricultural Science, Kobe University

11:45–12:00

7-6 Homoeolog-specific activation of genes for heat acclimation in the allopolyploid grass *Brachypodium hybridum*

Kotaro Takahagi^{1,2,3}, Komaki Inoue¹, Minami Shimizu^{1,2}, Yukiko Uehara-Yamaguchi¹, Yoshihiko Onda^{1,2}, Keiichi Mochida^{1,2,3,4}
¹RIKEN CSRS, ²Kihara Institute for Biological Research, Yokohama City University, ³Graduate School of Nanobioscience, Yokohama City University, ⁴Institute of Plant Science and Resources, Okayama University

12:00–12:15

7-7 Natural variation for triploid block in *Arabidopsis thaliana*

Catherine-Axa Wilkins¹, Baoxiu Qi¹, James Doughty¹, Rod Scott¹

¹Biology and Biochemistry, University of Bath

12:15–12:30

7-8 Reception of pollen tube contents by the endosperm

Daisuke Maruyama¹, Daichi Susaki¹, Tetsuya Higashiyama², Tetsu Kinoshita¹

¹Kihara Institute for Biological Research, Yokohama City University, ²Institute of Transformative bio-Molecules, Nagoya University

12:30–14:00

LUNCH BREAK - Lunch provided by the conference

Session VIII: Epigenetic Control during Sexual Reproduction

Chair: Ueli Grossniklaus (University of Zurich)

14:00–14:30

8-1 Epigenetic reprogramming in plant male sexual lineage

Xiaoqi Feng¹, James Walker¹, Hongbo Gao¹, Jingyi Zhang¹, Billy Aldridge¹, Martin Vickers¹, James D Higgins²

¹John Innes Centre, ²University of Leicester

14:30–14:45

8-2 PHERES1 controls endosperm development through regulation of auxin biosynthesis and expression of imprinted genes

Rita Adriano Batista¹, Duarte Dionísio Figueiredo¹, Jordi Moreno-Romero¹, Charlotte Siemons¹, Juan Santos-González¹, Claudia Köhler¹

¹Plant Biology, Swedish University of Agricultural Sciences

14:45–15:00

8-3 Role of DNA methylation dynamics in reproductive success

Souraya Khouider¹, Felipe Borges^{2,3}, Alex Ungru⁴, Arp Schnittger⁵, Vincent Colot¹, Robert Martienssen², Daniel Bouyer¹

¹IBENS, CNRS, ²CSHL, NY 11724, USA, ³IJPB/INRA Centre de Versailles-Grignon, 78026 Versailles, France, ⁴MPIZ/University Cologne, 50829 Cologne, Germany, ⁵University Hamburg, 22609 Hamburg, Germany

15:00–15:30

COFFEE BREAK

15:30–15:45

8-4 Epigenetic Reprogramming of the Plant Paternal Genome

Michael Borg¹, Elin Axelsson¹, Fred Berger¹

¹Gregor Mendel Institute

15:45–16:00

8-5 Strategies to differentiate between gametophytic and zygotic transcripts in early embryos of *Arabidopsis*

Jose Jaime Alaniz¹, Gerardo Del Toro-De León¹, Daoquan Xiang², Raju Datla², Stewart Gillmor¹

¹LANGEBIO-CINVESTAV, Mexico, ²Plant Biotechnology Institute, National Research Council, Canada

16:00–16:15

8-6 Small-RNA regulation of non-CG methylation dynamics through *Arabidopsis* early embryogenesis

Ranjith Papareddy¹

¹GMI -Gregor Mendel Institute of Molecular Plant Biology GmbH

16:15–16:30

8-7 Profiling of the epigenetic mark for embryogenesis competence in Norway spruce (*Picea abies*)

Miyuki Nakamura¹, Rafael Muñoz-Viana¹, Lars Hennig¹

¹Plant Biology, The Swedish University of Agricultural Sciences

16:30–16:45

8-8 Chromatin remodeling complex SWR1 coordinates with ERECTA signaling to regulate ovule patterning and female fertility

Yuan Qin¹, Hanyang Cai¹, Man Zhang¹, Lihua Zhao¹

¹Center for Genomics and Biotechnology, Fujian Agriculture and Forestry University

17:30–18:30

General Assembly

19:00–21:00

Congress Award & Congress banquet dinner

Session IX: Fruit and Seed Development —Application of ICSPR to Crop Plants—

Chair: Luca Comai (University of California Davis)

Supported by National Bio Resource Project (NBRP)



9:00–9:30

9-1 Leveraging Haploid Induction across Multiple Crops

Luca Comai¹, Kirk Amundson¹, Benny Ordonez¹, Livingstone Nganga¹, Mohan Marimuthu¹, Peter Lynagh¹, Monica Santayana², Ek Han Tan^{1,3}, Isabelle M Henry¹, Elisa Mihovilovich², Merideth Bonierbale²

¹Genome Center, University of California, Davis, 1 Shields Avenue, Davis, CA, 95616, USA, ²International Potato Center (CIP), P.O. Box 1558, Lima 12, Peru, ³School of Biology and Ecology, University of Maine, Orono, ME 04469, USA

9:30–9:45

9-2 A Y-encoded Sex Determinant Arose via Lineage-specific Duplication of a Cytokinin Response Regulator in Kiwifruit

Takashi Akagi¹, Isabelle M. Henry², Haruka Ohtani¹, Takuya Morimoto¹, Kenji Beppu³, Ikuo Kataoka³, Ryutaro Tao¹

¹Kyoto University, ²University of California Davis, ³Kagawa University

9:45–10:00

9-3 Genomic structural variation generates a selfish speciation gene locus causing hybrid male sterility in rice

Yaoguang Liu¹, Rongxin Shen¹, Lan Wang¹, Xupeng Liu¹, Jiang Wu¹, Weiwei Jin², Xiucai Zhao¹, Xianrong Xie¹, Qinlong Zhu¹, Huiwu Tang¹, Qing Li¹, Letian Chen¹

¹College of Life Sciences, South China Agricultural University, ²China Agricultural University

10:00–10:15

9-4 Identification of the new sugar producing crops by applying the POEM phenomenon

Yujiro Homma¹, Li-Yang Xie², Xiao-Yan Liu², Keiko Kuwata¹, Ryushiro Kasahara^{1,3}

¹Institute of Transformative Bio-Molecules, Nagoya University, ²Horticultural Plant Biology and Metabolomics Center, Fujian Agriculture and Forestry University, NO.15 Shangxiadian Road, Cangshan, Fuzhou, China, ³School of Life Sciences, Fujian Agriculture and Forestry University, NO.15 Shangxiadian Road, Cangshan, Fuzhou, China

10:15–10:45

COFFEE BREAK

10:45–11:00

9-5 Progress towards synthetic clonal reproduction in sorghum

Li Yuan¹, Ping Che¹, Marissa Simon¹, Tim Fox¹, Mark Williams¹, Joann Conner², Ozias-Akins Peggy², Marc Albertsen¹

¹Crop Genome engineering, DuPont Pioneer, ²Dept of Horticulture, University of Georgia Tifton Campus, Tifton, GA

11:00–11:30

9-6 Activation of seed development in grasses - can we learn from *Arabidopsis*?

Thomas Dresselhaus¹

¹Cell Biology and Plant Biochemistry, University of Regensburg, 93053 Regensburg, Germany

11:30–12:00

9-7 Generating Clonal Seeds in Maize

Nina Chumak¹, Mark Williams², Arco Brunner¹, Tim Fox², Joana Bernardes de Assis¹, Wenjing She¹,
Frédérique Pasquer¹, Marc Albertsen², Ueli Grossniklaus¹

¹University of Zürich, Department of Plant and Microbial Biology, Zollikerstrasse 107, 8008 Zürich,
Switzerland, ²DuPont Pioneer Hi-Bred, P.O. Box 1000, Johnston, IA 50131-0184, USA

12:00–12:15

Closing Remarks: Tetsu Kinoshita

Session I: Flowering and Floral Development

- 4F-P1-1 A global view of transcriptome analysis for flower bud differentiation in *Magnolia sinostellata***
Yamei Shen¹, Lijie Fan², Mengqian Chen², Bing Dong², Ninghang Wang², Qin Yu², Xingli Wang², Lingjuan Xuan³, Yaling Wang⁴, Shouzhou Zhang⁴
¹Zhejiang Agriculture and Forestry University, ²College of Landscape and Architecture, Zhejiang Agriculture and Forestry University, ³Xian Botanical Garden of Shaanxi Academy of Science, ⁴Shenzhen Fairy Lake Botanical Garden
- 4F-P1-2 Positive regulation of *AMS* by *TDF1* and the formation of a *TDF1*–*AMS* complex are required for anther development in *Arabidopsis thaliana***
Yue Lou¹, Hai-Sheng Zhou¹, Yu Han¹, Qiu-Ye Zeng¹, Jun Zhu¹, Zhong-Nan Yang¹
¹College of Life and Environment Sciences, Shanghai Normal University
- 4F-P1-3 Functional analysis of A-, B- and B_{sister}-class MADS-box proteins in barley (*Hordeum vulgare*)**
Cindy Callens^{1,2}, Zoe A Wilson², Dabing Zhang^{1,3}, Matthew R Tucker¹
¹Plant Genomics Centre, University of Adelaide, ²University of Nottingham, ³Shanghai Jiao Tong University
- 4F-P1-4 Unfertilized ovary pushes wheat flower open for cross-pollination**
Takashi Okada¹
¹School of Agriculture, Food and Wine, The University of Adelaide
- 4F-P1-5 Flower developmental stage and pollen quality of bell pepper
How young is too young?**
Nathalia Samantha Maria Langedijk¹, Maria Godefrida Janssen¹
¹Seed Production Research, Enza Zaden Seed Operations B.V.
- 4F-P1-6 LOVE ON WINGS elaborates butterfly-like corolla by regulating floral vasculature in *Vigna radiata***
Shihao Su¹, Wuxiu Guo², Qincheng Peng², Keyuan Jiao², Da Luo²
¹Institute of Transformative Bio-Molecules (WPI-ITbM), Nagoya University, ²State Key Laboratory of Biocontrol and Guangdong Key Laboratory of Plant Resources, School of Life Sciences, Sun Yat-sen University
- 4F-P1-7 Characterization of genes encoding ubiquitin C-terminal hydrolase and ubiquitin-specific protease families in rice genome**
 Donghui Wang¹, Wei Song¹, Shao-Wei Wei¹, Zhi-Hong Xu¹, Shu-Nong Bai¹
¹College of Life Sciences, Peking University
- 4F-P1-8 Characterization of histone H3 lysine 27 tri-methylation in *Brassica rapa* L.**
Ryo Fujimoto¹, Ayasha Akter¹, Satoshi Takahashi², Namiko Nishida¹, Takashi Takasaki-Yasuda¹, Yutaka Suzuki³, Motoaki Seki², Elizabeth S Dennis⁴
¹Kobe University, ²RIKEN Center for Sustainable Resource Science, ³The University of Tokyo, ⁴CSIRO Agriculture and Food
- 4F-P1-9 The *S* locus Supergene and the Control in Heteromorphic Flower Development in *Primula vulgaris***
Jinhong Li^{1,2}, Jonathan M. Cocker^{1,2}, Philip M. Gilmartin^{1,2}
¹University of East Anglia, ²Earlham Institute, Norwich Research Park, Norwich NR4 7UZ, UK

- 4F-P1-10 The DNA methylation dynamics in rice shoot apical meristem**
Asuka Higo¹, Noriko Saihara¹, Fumihito Miura², Yoko Higashi³, Megumi Yamada³, Tasuku Ito⁴, Yoshiaki Tarutani⁴, Tomoaki Sakamoto⁵, Masayuki Fujiwara⁶, Yoichiro Fukao⁷, Satoru Moritoh⁸, Rie Terada⁹, Takashi Ito², Tetsuji Kakutani^{4,10,11}, Hiroyuki Tsuji¹
¹Kihara Institute for Biological Research, Yokohama City Univ., ²Fac. of Med. Sci., Kyushu Univ., ³Department of Biological Sciences, Nara Institute for Science and Technology, ⁴National Institute of Genetics, ⁵Fac. of Life Sci., Kyoto Sangyo Univ., ⁶Ins. for Adv. Bios., Keio Univ., ⁷Col. of Life Sci., Ritsumeikan Univ., ⁸Col. of Pharm., Ritsumeikan Univ., ⁹Fac. of Agriculture, Meijo Univ., ¹⁰Dep. of Genet., Sch. of Life sci., The Grad. Univ. for Advanced Stu., ¹¹Fac. of Sci., Tokyo Univ.
- 4F-P1-11 RCN, rice TFL1, antagonize Hd3a in inflorescence development by competition for complex formation with 14-3-3 and FD**
Ken-ichiro Taoka¹, Miho Kaneko-Suzuki², Chiaki Okushita-Terakawa³, Chojiro Kojima⁴, Hiroyuki Tsuji¹, Ko Shimamoto³
¹Kihara Institute for Biological Research, Yokohama City University, ²Faculty of Agriculture, Shizuoka University, ³Graduate School of Biological Sciences, Nara Institute of Science and Technology, ⁴Faculty of Engineering, Yokohama National University
- 4F-P1-12 Roles of Pectin Methylesterase Inhibitor Genes in the Stamen Development of Brassica oleracea**
Tingting Liu¹, Xingpeng Xiong¹, Jiashu Cao¹
¹Institute of Vegetable Science, Zhejiang University
- 4F-P1-13 OsMADS32 Regulates Rice Floral Patterning through Integrating Action of Floral Homeotic Genes**
Zheng Yuan¹, Yun Hu¹, Ru Jia¹, Li Wang¹, Ludovico Dreni¹, Wanqi Liang¹, Lichun Cao¹, Dabing Zhang¹
¹School of Life Sciences and Biotechnology, Shanghai Jiao Tong University
- 4F-P1-14 Impaired Growth under Long Day (ILD), an Integrator of Photoperiod and spikelet Development**
Peng Zhang¹
¹Shanghai Jiao Tong University
- 4F-P1-15 Cys2His2 zinc finger in flower development**
Tian Qi Lyu¹
¹Laboratory of Cell and Molecular Biology, Institute of Vegetable Science, Zhejiang University
- 4F-P1-16 Characterization of FLOWERING LOCUS T (FT) in tobacco – antagonistically acting key regulators in floral development**
Marius Max Zimmermann¹, Lena Grundmann², Andrea S. Caesar², Florentin J. Schmidt¹, Farina A. Beinecke¹, David R. Wiedmann¹, Dirk Pruefer^{1,2}, Gundula A. Noll¹
¹Institute of Plant Biology and Biotechnology, University of Muenster, ²Fraunhofer Institute for Molecular Biology and Applied Ecology, Schlossplatz 8, 48143 Münster, Germany
- 4F-P1-17 Molecular Regulatory Network of Carbon Starve Anther (CSA) for Rice Anther Development**
Jingbin Li¹
¹Shanghai Jiao Tong University
- 4F-P1-18 BcMF15, an anther-specific lipid transfer protein (LTP) gene, affects pollen development in Brassica campestris L. ssp. Chinensis**
Hui Yu¹, Ai mei Tian²
¹Laboratory of Cell and Molecular Biology, Institute of Vegetable Science, Zhejiang University, ²College of Biological and Environmental Engineering, Xi'an University
- 4F-P1-19 The role of APETALA2/ERF transcription factors in floral meristem initiation and identity and floral organ initiation in Arabidopsis**
John William Chandler¹, Wolfgang Werr¹
¹Developmental Biology, Cologne University

- 4F-P1-20 Using natural variation to identify novel regulators of ovule number in *Arabidopsis thaliana***
Jing Yuan¹, Sharon A Kessler¹
¹Botany and Plant Pathology, Purdue University
- 4F-P1-21 *SUPERMAN* controls the auxin/cytokinin balance to promote carpel formation and stem cell termination**
Nathanael Prunet^{1,4}, Xu Yifeng², Darragh Stewart³, Frank Wellmer³, Toshiro Ito², Elliot Meyerowitz¹, Thomas Jack⁴
¹Division of Biology and Biological Engineering, HHMI & Caltech, ²Nara Institute of Science and Technology, ³Trinity College, ⁴Dartmouth College
- 4F-P1-22 Florigen gene expression in every leaf throughout rice development**
Aya Yoshida¹, Akiko Yoshida¹, Hiroyuki Tsuji¹
¹Kihara Institute for Biological Research, Yokohama City University
- 4F-P1-23 Imaging of cytokinin signaling in the shoot apical meristem of rice**
Moeko Sato¹, Shu Taira², Katsuhiko Shiono³, Naoko Fujita¹, Hiroyuki Tsuji¹
¹Plant Genetic Resources, Kihara Institute for Biological Research, Yokohama City University, ²Fukushima University, ³Fukui Prefectural University
- 4F-P1-24 The role of miR319 in pollen development in *Brassica campestris* ssp. *chinensis***
Ziwei Hu¹
¹Laboratory of Cell and Molecular Biology, Institute of Vegetable Science, Zhejiang University, Hangzhou, China
- 4F-P1-25 Genome-wide identification, phylogeny, evolution, and expression patterns of MtN3/Saliva/SWEET genes and functional analysis of *BcNS* in *Brassica rapa***
Xiaolin Yu¹, Liming Miao¹, Yanxia Lv¹, Lijun Kong¹, Qizhen Chen¹, Chaoquan Chen¹, Jia Li¹, Fanhaun Zeng¹, Shenyun Wang², Jianbin Li², Li Huang¹, Jiashu Cao¹
¹Laboratory of Cell & Molecular Biology, Institute of Vegetable Science, Zhejiang University, ²Jiangsu Academy of Agricultural Sciences
- 4F-P1-26 Identification of long non-coding RNAs before and after prolonged cold treatment in *Brassica rapa* L.**
Namiko Nishida¹, Daniel John Shea², Satoko Takada³, Etsuko Itabashi⁴, Takeshi Takasaki-Yasuda³, Keiichi Okazaki², Elizabeth Salisbury Dennis⁵, Ryo Fujimoto³
¹Agriculture, Kobe University, ²Graduate School of Science and Technology, Niigata University, ³Graduate School of Agricultural Science, Kobe University, ⁴National Institute of Vegetable and Tea Science, ⁵Commonwealth Scientific and Industrial Research Organisation, Plant Industry
- 4F-P1-27 Two Long-noncoding RNAs participate in pollen development by working as endogenous target mimics for miR160 in *Brassica rapa***
Dong Zhou¹, Ming Li¹, Heng Dong¹, Fang Zhang¹, Huang Li¹
¹Institute of Vegetable Science, Zhejiang University
- 4F-P1-28 Plasticity of flowering time in response to environmental cues at the shoot apex in field-grown barley varieties**
Jun Ito¹, Daisuke Saisho², Keiichi Mochida^{2,3}, Takashi Hirayama², Hiroyuki Tsuji¹
¹KIBR, Yokohama City University, ²IPSR, Okayama University, ³CSRS, RIKEN
- 4F-P1-29 BrLMAp, a long non-coding RNA may be involved in pollen development by regulating the expression of MYB80 in *Brassica rapa***
Yanhong Liu¹, Jie Cui¹, Fang Zhang¹, Li Huang¹
¹Zhejiang University
- 4F-P1-30 Effects of Different Low Temperature Treatment on Pollen Development in *Brassica rapa***
Yaoyao Feng¹
¹Laboratory of Cell & Molecular Biology, Institute of Vegetable Science, Zhejiang University

- 4F-P1-31 Flowering Locus T from *Panax ginseng* shows age specific expression and increases root length in the transgenic *Arabidopsis***
Padmanaban Mohanan¹, Davaajargal Myagmarjav¹, Dabing Zhang³, Deok-Chun Yang², Yu-Jin Kim²
¹Graduate School of Biotechnology, Kyung Hee University, ²Department of Oriental Medicinal Biotechnology, College of Life sciences, KyungHee University, Yongin, Gyeonggi do, Republic of Korea, ³Join international research laboratory of metabolic and developmental sciences, Shanghai Jiao Tong University, Shanghai, China
- 4F-P1-32 *Primula* genomics: insights on the heterostyly supergene through whole-genome studies**
Jonathan Cocker^{1,2}, Jinhong Li^{1,2}, Jonathan Wright¹, David Swarbreck¹, Sarah Dyer³, Mario Caccamo³, Philip Gilmartin^{1,2}
¹Earlham Institute, ²University of East Anglia, ³National Institute for Agricultural Botany
- 4F-P1-33 Structural and functional analysis of tomato flowering genes belong to FT clade**
Koji Goto¹, Chie Moriya¹
¹Research Institute for Biological Sciences, Okayama
- 4F-P1-34 Functions, mechanisms of action and regulation of plant ploygalacturonases in plant reproductive development**
Yang Yang¹, Youjian Yu², Ying Liang¹, Jiashu Cao¹
¹Laboratory of Cell and Molecular Biology, Institute of Vegetable Science, Zhejiang University, ²Department of Horticulture, College of Agriculture and Food Science, Zhejiang A & F University, Lin' an, China
- 4F-P1-35 A PPR protein controls the number of ovule primordium in *Arabidopsis thaliana***
Xiongbo Peng¹, Feng Gong¹, Rongxin Lin¹, Mengxiang Sun¹
¹Department of Developmental Biology, College of Life Science, Wuhan University
- 4F-P1-36 Distribution of FLOWERING LOCUS T protein coordinates downstream gene expression and hormonal response during floral transition in the shoot apical meristem**
Naoko Fujita¹, Akiko Fujita², Yukihiro Imai², Megumi Yamada², Masaru Fujimoto³, Kazuo Kurokawa⁴, Saki Ando¹, Yoshikatsu Sato⁵, Tetsuya Higashiyama^{6,7}, Akihiko Nakano^{4,8}, Hiroyuki Tsuji¹
¹Kihara Institute for Biological Research (KIBR), Yokohama City University, ²Graduate School of Biological Sciences, Nara Institute for Biological Research, ³Laboratory of Plant Molecular Genetics, Graduate School of Agricultural and Life Sciences, The University of Tokyo, ⁴Live Cell Super-Resolution Imaging Research Team, RIKEN Center for Advanced Photonics, ⁵Institute of Transformative Bio-Molecules (WPI-ITbM), ⁶Department of Bioinformatics, Ritsumeikan University, ⁷Division of Biological Science, Graduate School of Science, Nagoya University, ⁸Department of Biological Sciences, Graduate School of Science, The University of Tokyo
- 4F-P1-37 Molecular mechanisms of BASIC PENTACYSSTEINE PROTEINS (BPCs) and the MADS-domain factor SHORT VEGETATIVE PHASE in the regulation of homeotic genes during flower development in *Arabidopsis thaliana***
Rosanna Petrella¹, Veronica Gregis¹, Valentina Vignati¹
¹Biosciences, University of Milan
- 4F-P1-39 The benefits of sterility: characterization of the multiovary mutant *mov1* in barley to facilitate hybrid seed production**
Caterina Selva¹, Matthew Tucker¹, Ute Baumann¹, Ryan Whitford¹
¹Faculty of Science; School of Agriculture, Food and Wine, University of Adelaide, Australia

- 4F-P1-40 Protein phosphatase 2A subunits B'α and B'β are crucial regulators of anther development that mediate the dephosphorylation of BZR1 and other substrates to participate in a variety of cell biological processes in Arabidopsis**
Ying Sun¹, Yulan Zhang¹, He Zhang¹, Yingjie Gao¹, Qixiu Chen¹, Lianfeng Ai², Shulei Bu¹, Chenli Zhu¹, Cuixia Pu¹, Shengwei Zhang¹
¹College of Life Science, Hebei Normal University, Hebei, P.R.China, ²Hebei entry-exit inspection and quarantine bureau, Shijiazhuang, Hebei, P.R. China
- 4F-P1-41 Chromatin-mediated feed-forward regulation of *YUCCA4* expression by *AGAMOUS* and *CRABS CLAW* directs gynoecium formation**
Nobutoshi Yamaguchi¹, Toshiro Ito¹
¹Nara Institute of Science and Technology, Biological Science
- 4F-P1-42 Utilizing the advantages of flow cytometry for evaluating pollen viability and flavonoid content**
Gilad Luria¹, Gad Miller¹, Eitay Lazar¹
¹The Mina and Everard Goodman Faculty of Life Sciences, Bar-Ilan University
- 4F-P1-43 The Role of Fertility in Controlling Global Proliferative Arrest (GPA) in Arabidopsis**
Alexander Ware¹, Anthony Bishopp¹, Zoe A Wilson¹
¹Plant and Crop Sciences Division, School of Biosciences, Sutton Bonington Campus, University of Nottingham, LE12 5RD, UK

Session II: Sporogenesis, Meiosis and Apomixis

- 4F-P2-1 Dynamics of two CENH3 variants in cowpea (*Vigna unguiculata*)**
Takayoshi Ishii¹, Andreas Houben²
¹Arid Land Research Center Tottori University, ²Leipzig Institute of Plant Genetics and Crop Plant Research (IPK)
- 4F-P2-2 Meiotic Control on Gametophyte Development**
Saurabh Pandey¹, Ramesha A. Reddy², Hardik Gala³, Aparna Singh¹, Aravind L.⁴, Imran Siddiqi¹
¹CSIR-CCMB, ²Seri-Biotech Research Laboratory, Central Silk Board, Bangalore, ³Department of Biology, University of Washington, Seattle, USA, ⁴National Center for Biotechnology Information, National Institutes of Health, Bethesda, USA
- 4F-P2-3 Delineation of the apospory (*LOA*) locus in *Hieracium***
Steven Henderson¹, Melanie Hand¹, Andrew Spriggs¹, Susan Johnson¹, Marc Goetz¹, Elise Tucker¹, Jen Taylor¹, Anna Koltunow¹
¹Agriculture and Food, CSIRO
- 4F-P2-4 Identification of new players involved in surface patterning and formation of specific membrane domains during Arabidopsis microspore development**
Anna Dobritsa¹, Byung Ha Lee¹, Zachary T. Weber¹
¹Molecular Genetics, Ohio State University
- 4F-P2-5 Rice *No Pollen 1* (*NP1*) is required for pollen exine patterning**
Ze Liu¹, Sen Lin¹
¹Shanghai Jiaotong University
- 4F-P2-6 A Member of Heat shock protein affects male fertility during flower development in rice**
Sen Lin¹
¹Shanghai Jiaotong University

- 4F-P2-7 Progress towards synthetic clonal reproduction in sorghum**
Li Yuan¹, Ping Che¹, Marissa Simon¹, Tim Fox¹, Mark Williams¹, Joann Conner², Ozias-Akins Peggy², Marc Albertsen¹
¹Crop Genome engineering, DuPont Pioneer, ²Dept of Horticulture, University of Georgia Tifton Campus, Tifton, GA
- 4F-P2-8 The role of pollen for the transfer of apomixis into sexual populations of the genus *Boechera***
Yelyzaveta Fomenko¹, Martin Mau^{1,2}, Tiina Liiving^{1,2}, Richard Goertzen¹, Timothy F. Sharbel^{1,2}
¹Global Institute for Food Security, University of Saskatchewan, ²Apomixis Research Group, Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), D-06466 Gatersleben, Germany
- 4F-P2-9 24-nt reproductive phasiRNAs are broadly present in angiosperms**
Rui Xia¹, Blake Meyers², Chengjie Chen¹
¹Horticulture, South China Agricultural University, ²Danforth Plant Science Center, St Louis, MO 63132, USA
- 4F-P2-10 Sugar partitioning mediated by a novel glycosyl hydrolase, CSM, is important for rice anther development**
Yu-Jin Kim^{1,2}, Chong Wang², HuanJun Li², Kihong Jung¹, Jong-Seong Jeon¹, Wanqi Liang², Dabing Zhang^{1,2,3}
¹Kyung Hee University, ²Shanghai Jiao Tong University, ³University of Adelaide
- 4F-P2-11 SPOROCTELESS/NOZZLE: new insights to understand the mechanism that controls sporogenesis**
Edoardo Vignati¹, Marta A. Mendes¹, Lucia Colombo¹
¹Dipartimento di BioScienze, Università degli studi di Milano
- 4F-P2-12 Deciphering SEEDSTICK role in cellular communication during early ovule development**
Sara Cristina Pinto¹, Matthew Tucker², Sílvia Coimbra¹
¹Biology, University of Porto, ²University of Adelaide, Faculty of Sciences
- 4F-P2-13 Comparative transcriptomics of egg apparatus of (a)sexual dandelion (*Taraxacum*) to resolve the genetic basis of parthenogenesis**
Kitty Vijverberg¹, Carla Oplaat¹, Marco Busscher¹, Tao Zhao¹, M. Eric Schranz¹
¹Plant Sciences, Biosystematics Group, Wageningen University & Research
- 4F-P2-14 Conserved sporophytic gene networks for the regulation of pollen development**
Zoe A Wilson¹, Alison C Ferguson¹, Wenzhe Yin¹, Ivana Ferjentsikova¹, Jose Fernandez-Gomez¹
¹Biosciences, University of Nottingham
- 4F-P2-15 Dynamics of cohesion regulation in *Arabidopsis* male meiocyte**
Yuki Hamamura¹, Chao Yang¹, Franziska Böhwer¹, Shinichiro Komaki¹, Viola Kuttig¹, Arp Schnittger¹
¹Developmental Biology, University of Hamburg
- 4F-P2-16 bHLH transcription factors activate meiotic siRNA biogenesis in rice anther tapetum**
Seihiro Ono¹, Hua Liu¹, Katsutoshi Tsuda^{1,2}, Eigo Fukai³, Keisuke Tanaka⁴, Takuji Sasaki⁴, Ken-ichi Nonomura^{1,2}
¹Experimental Farm, National Institute Genetics, ²Grad. U. Adv. Study/SOKENDAI, ³Niigata U., ⁴Tokyo U. Agr.
- 4F-P2-17 Male-specific argonaute (MAGO) proteins are required for meiosis in maize**
Yang-Seok Lee¹, Robert Maple¹, Saleh Tamim², Anding Luo³, Ann W. Sylvester³, James Birchler⁴, Jacques Rouster⁵, Blake Meyers⁶, Jose Gutierrez-Marcos¹
¹School of Life Sciences, University of Warwick, ²Plant and Soil Sciences Delaware Biotechnology Institute 15 Innovation Way Newark, DE 19711, ³Department of Molecular Biology University of Wyoming Department #3944 1000 E. University Ave. Laramie, WY 82071, ⁴Biological Sciences University of Missouri 105 Tucker Hall Columbia, MO 65211-7400, ⁵Biogemma Centre de Recherche de Chappes Route d'Ennezat 63720 Chappes, France, ⁶Donald Danforth Plant Science Center 975 N. Warson Rd., Room 384 St. Louis, MO 63132

- 4F-P2-19 RNA binding protein MEL2, a regulator of mitosis-meiosis transition, forms cytoplasmic granule-like structures in rice cells**
Manaki Mimura¹, Seijiro Ono¹, Ken-Ichi Nonomura¹
¹Experimental Farm, National Institute of Genetics
- 4F-P2-20 Dissecting the role of plant hormones in meiotic recombination in Arabidopsis**
Baskar Ramamurthy¹, Ramswaroop Saini¹
¹Biotechnology, Indian Institute of Technology-Madras
- 4F-P2-21 Increased size of meiotic cells bypasses the requirement of the organelle band during meiosis II**
Jun Yi¹, David Kradolfer¹, Lynette Brownfield², Claudia Köhler¹
¹Plant Biology, Swedish University of Agricultural Sciences & Linnean Center for Plant Biology, Uppsala, Sweden, ²Department of Biochemistry, University of Otago, PO Box 56, Dunedin 9054, New Zealand
- 4F-P2-22 Appearance of non-graining ear in the whole plant within transgenic rice of ASG-1, an apomixis-specific gene isolated from apomictic Panicum maximum**
Lanzhuang Chen¹
¹Grad. Sch. Hort. Food Sci., Minami Kyushu U.
- 4F-P2-23 PROTEIN PHOSHATASE 2A protects sister chromatid cohesion in meiosis**
Guoliang Yuan¹, Behzad Heidari Ahootapeh², Shinichiro Komaki³, Arp Schnittger³, Cathrine Lillo², Nico De Storme¹, Danny Geelen¹
¹Plant and Crop, Ghent University, ²Department of Chemistry, Bioscience and Environmental Technology, University of Stavanger, N-4036 Stavanger, Norway, ³University of Hamburg, Biozentrum Klein Flottbek, Department of Developmental Biology, Ohnhorststrasse 18, D-22609 Hamburg, Germany

Session III: Gametogenesis

- 4F-P3-1 Transferring our understanding of female reproductive development to barley**
Laura G Wilkinson¹, Kelly Houston², Caitlin S Byrt¹, Rachel A Burton¹, Matthew R Tucker¹
¹ARC Centre of Excellence in Plant Cell Walls, School of Agriculture, Food and Wine, The University of Adelaide, Australia, ²Cell and Molecular Sciences, The James Hutton Institute, Dundee, UK
- 4F-P3-2 Genomic structural variation generates a selfish speciation gene locus causing hybrid male sterility in rice**
Yaoguang Liu¹, Rongxin Shen¹, Lan Wang¹, Xupeng Liu¹, Jiang Wu¹, Weiwei Jin², Xiucai Zhao¹, Xianrong Xie¹, Qinlong Zhu¹, Huiwu Tang¹, Qing Li¹, Letian Chen¹
¹College of Life Sciences, South China Agricultural University, ²China Agricultural University
- 4F-P3-3 Pollen number controlling gene revealed by GWAS and CRISPR/Cas9**
Hiroyuki Kaku^{1,2}, Takashi Tshuchimatsu^{1,3,4,5}, Misako Yamazaki¹, Cindy Marona⁶, Hiroki Tsutsui^{7,8}, Afif Hedhly³, Dazhe Meng^{4,9}, Yutaka Sato¹⁰, Thomas Stadler¹¹, Ueli Grossniklaus³, Masahiro Kanaoka⁷, Michael Lenhard⁶, Magnus Nordborg⁴, Kentaro K Shimizu^{1,2,3}
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- 4F-P3-4 Auxin production in diploid microsporocytes is necessary and sufficient for male gametophyte development**
Xiaozhen Yao¹, Lei Tian¹, Jun Yang¹, Yanna Zhao¹, Yingxiu Zhu¹, Xinhua Dai², Yunde Zhao², Zhongnan Yang¹
¹Shanghai Normal University
- 4F-P3-5 Chromatin remodeling complex SWR1 coordinates with ERECTA signaling to regulate ovule patterning and female fertility**
Yuan Qin¹, Hanyang Cai¹, Man Zhang¹, Lihua Zhao¹
¹Center for Genomics and Biotechnology, Fujian Agriculture and Forestry University
- 4F-P3-6 BONOBOS, evolutionarily conserved bHLH transcription factors required for germ cell differentiation in land plants**
Shohei Yamaoka¹, Ryuichi Nishihama¹, Yoshihiro Yoshitake¹, Sakiko Ishida¹, Keisuke Inoue¹, Misaki Saito¹, Keitaro Okahashi¹, Haonan Bao¹, Hiroyuki Nishida¹, Katsushi Yamaguchi², Shuji Shigenobu², Kimitsune Ishizaki³, Katsuyuki T. Yamato⁴, Takayuki Kohchi¹
¹Graduate School of Biostudies, Kyoto University, ²Functional Genomics Facility, National Institute for Basic Biology (NIBB), ³Graduate School of Science, Kobe University, ⁴Faculty of Biology-Oriented Science and Technology, Kindai University
- 4F-P3-7 Live-cell analysis of female gametophyte development in *Arabidopsis***
Daisuke Kurihara¹, Daichi Susaki², Tetsuya Higashiyama^{1,3}
¹Graduate School of Science, Nagoya University, ²Kihara Institute for Biological Research, Yokohama City University, ³Institute of Transformative Bio-Molecules (ITbM), Nagoya University
- 4F-P3-8 A Novel Mitochondrial Mg²⁺/Mn²⁺ Dependent Endonuclease, M20, Participates in the Down-regulation of Mitochondrial DNA in Pollen Cells**
Morigen Sudu¹, Quan Zhang¹, Fei Ma¹, Hui Qi¹
¹College of Life Sciences, Peking University
- 4F-P3-9 Development of a female gametophyte-specific gene induction system in *Arabidopsis thaliana***
Shuh-ichi Nishikawa¹, Azusa Takahashi¹, Satomi Wada², Dukhyun Hwang², Hiroko Urawa³, Yasuhiro Kamei⁴
¹Faculty of Science, Niigata University, ²Graduate School of Science and Technology, Niigata University, ³Department of Education, Gifu Shotoku Gakuen University, ⁴National Institute for Basic Biology
- 4F-P3-10 Molecular basis of nuclear-mitochondrial interaction in cytoplasmic male sterility in sugar beet**
Takumi Arakawa¹, Kazuyoshi Kitazaki¹, Muneyuki Matsunaga¹, Hiroaki Matsuhira¹, Tetsuo Mikami¹, Tomohiko Kubo¹
¹Agriculture, Hokkaido University
- 4F-P3-11 Comparative transcriptome analysis provides insight into differentially expressed genes related to genic male sterility in Chinese cabbage**
Xiuping Shen¹, Liai Xu¹, Li Huang¹, Jiashu Cao¹
¹Laboratory of Cell and Molecular Biology, Institute of Vegetable Science, Zhejiang University
- 4F-P3-12 The fasciclin-like arabinogalactan protein gene, *FLA14*, is involved in microspore development of *Arabidopsis***
Yingjing Miao¹, Sue Lin², Jiashu Cao¹
¹Laboratory of Cell and Molecular Biology, Institute of Vegetable Science, Zhejiang University, Hangzhou, China, ²Institute of Life Sciences, Wenzhou University, Wenzhou 325000, China
- 4F-P3-13 A bidirectional transcription switch controls sexual differentiation in *Marchantia polymorpha***
Tetsuya Hisanaga¹, Keitaro Okahashi², Shohei Yamaoka², Ryuichi Nishihama², Masaki Shimamura³, Katsuyuki T Yamato⁴, Takayuki Kohchi², Keiji Nakajima¹
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- 4F-P3-14 A novel alpha-integrin-like protein ATDPW3 of Arabidopsis is required for pollen wall formation**
 Dawei Xu¹, Palash Chandra Mondol¹, Dabing Zhang^{1,2}, Wanqi Liang¹
¹Joint International Research Laboratory of Metabolic & Developmental Sciences, Shanghai Jiao Tong University-University of Adelaide Joint Centre for Agriculture and Health, School of Life Sciences and, Shanghai Jiao Tong University, ²School of Agriculture, Food and Wine, University of Adelaide
- 4F-P3-15 Pollen development and pollen tube growth: a look beyond transcription**
David Honys¹, Said Hafidh¹, David Potesil^{2,3}, Zbynek Zdrahal^{2,3}
¹Pollen Biology Lab, Institute of Experimental Botany ASCR, ²Central European Institute of Technology, Masaryk University, Brno, Czech Republic, ³National Centre for Biomolecular Research, Masaryk University, Brno, Czech Republic
- 4F-P3-16 RNA-binding proteins in the male gametophyte**
Alena Naprstkova¹, David Honys¹
¹Pollen Biology Lab, Institute of Experimental Botany ASCR
- 4F-P3-17 Identifying gamete development factors with EvoRepro database**
Marek Mutwil^{1,2}, Sebastian Proost²
¹School of Biological Sciences, Nanyang Technological University, ²Max Planck Institute of Molecular Plant Physiology, Golm, Germany
- 4F-P3-18 De novo assembly and characterization of the locomotory apparatus of early land plants**
Sónia Gomes Pereira¹, Mónica Bettencourt Dias¹, Jörg D. Becker¹
¹Instituto Gulbenkian de Ciência
- 4F-P3-19 Contribution of cell wall polysaccharides to the construction of the reticulate exine structure of pollen grains in Arabidopsis**
Sumie Ishiguro¹, Masayuki Yasutomi¹, Toshiya Suzuki², Joan Oñate Narciso^{3,4}, Kyoko Esaki¹, Wei Zeng^{3,5,6}, Monika S Doblin^{3,6}, Antony Bacic^{3,6}
¹Bio-agricultural Sciences, Nagoya University, ²National Institute of Genetics, ³University of Melbourne, ⁴INRA-Versailles, ⁵Zhejiang A & F University, ⁶La Trobe University
- 4F-P3-20 Identification of a microspore-specific R2R3 MYB transcription factor essential for pollen mitosis I in Arabidopsis**
Sung-Aeong Oh¹, Thi Hoai Thuong Nguyen¹, Hyo Jin Park¹, Mingmin Zhao², David Twell², Sang Ju Lee³, Jeong Heo Kim³, Soon Ki Park¹
¹Division of Plant Biosciences, KNU, ²Department of Genetics and Genome Biology, University of Leicester, Leicester LE1 7RH, UK, ³Department of Biology, Kyungpook National University, Daegu 41566, South Korea
- 4F-P3-21 A conserved DUF707 family member functions for the germ cell migration after pollen mitosis I in Arabidopsis**
Sung Aeong Oh¹, Hyo Jin Park¹, Soon Ki Park¹
¹School of Applied Biosciences, College of Agriculture and Life Sciences, Kyungpook National University
- 4F-P3-22 An L-arabinokinase is required for pollen development in higher plants**
Kenji Ueda¹, Sayuri Yamanami¹, Rie Hiratsuka², Toshihiro Suzuki¹, Kenji Sakurai¹, Akio Watanabe¹, Hidekazu Takahashi¹, Hiroetsu Wabiko¹, Hiromori Akagi¹
¹Department of Biological Production, Akita Prefectural University, ²Department of Biology, Jikei University School of Medicine
- 4F-P3-23 Proper Mitochondrial Fission are Important for Pollen Production**
Der-Fen Suen¹, Pei-Ying Chen¹, Chia-Chen Wu¹, Chung-Chih Lin², Wann-Neng Jane³
¹Agricultural Biotechnology Research Center, Academia Sinica, Taiwan, ²Department of Life Sciences and Institute of Genome Sciences, National Yang-Ming University, Taipei, Taiwan, ³Institute of Plant and Microbial Biology, Academia Sinica, Taipei, Taiwan

- 4F-P3-24 Mutation in Golgi Membrane Nucleotide Sugar Transporter Impairs Gametogenesis Progression and Pollen Development in *Arabidopsis thaliana***
Sreenivasulu Yelam^{1,3}, Rimpdy Diman^{2,3}, Ramamurthy Srinivasan⁴, Shripad Ramchandra Bhat⁴
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- 4F-P3-25 AtC3H18, as well as two orthologous in *Brassica camperstris*, encode non-tandem CCCH zinc finger proteins predominantly expressed in pollen, function as nuclear transcriptional activators and localize to cytoplasmic foci**
Liai Xu¹, Jiashu Cao¹
¹Institute of Vegetable Science, Zhejiang University
- 4F-P3-26 Suppression of a pollen fertility defect in Hydroxyproline O-Arabinosylation-deficient *Arabidopsis* mutants identifies both known and novel pollen fertility genes**
Cora A MacAlister¹
¹Molecular, Cellular and Developmental Biology, University of Michigan
- 4F-P3-27 The Grass-Specific Exine Pollen Wall Designer 1 (EPAD1) Is Essential for Pollen Exine Pattern Formation in Rice**
Wanqi Liang¹, Huanjun Li¹, Yujin Kim², Liu Yang¹, Mengyue Zhang¹
¹School of Life Sciences and Technology, Shanghai Jiao Tong University, ²Department of Oriental Medicinal Biotechnology, College of Life Science, Kyung Hee University, Yongin 446-701, Republic of Korea
- 4F-P3-28 Adaptation of the ancient DUO1/DAZ1 regulatory module is crucial for male germline differentiation in angiosperms**
Dieter Hackenberg¹, Mingmin Zhao¹, Yosra Al Hakeem¹, Ugur Sari¹, Liang-zi Zhou², Thomas Dresselhaus², David Twell¹
¹Department of Genetics and Genome Biology, University of Leicester, ²Department of Cell Biology and Plant Biochemistry, University of Regensburg, Universitätsstraße 31, 93053 Regensburg, Germany
- 4F-P3-29 Cystatin family genes play a multi-ply guaranteed role in rice to ensure anther development and male fertility**
Xiaorong Huang¹, Meng-xiang Sun¹
¹College of Life Science, Wuhan University
- 4F-P3-30 *Arabidopsis Ovule defect 1 (Ovd1)* is required for the development of inner integument**
Li-Qun Chen¹, Ya-Jun Leng¹, De Ye¹
¹College of Biological Sciences, China Agricultural University
- 4F-P3-31 The gamma-tubulin complex and the microtubule-associated protein MOR1 contribute differently to the asymmetrical division in the *Arabidopsis* microspore**
Yuh-Ru Julie Lee¹, Bo Liu¹
¹Plant Biology, UC Davis
- 4F-P3-32 Modification of Bra003491, a pectin-methylesterase gene, by CRISPR/Cas9 leading to pollen abortion and malformation in *Brassica campestris***
Xingpeng Xiong¹, Tingting Liu¹, Xiaoyan Yue¹, Jiashu Cao¹
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- 4F-P3-33 Transcriptional analysis of developing pollen isolated from a single anther**
Lynette Ruth Brownfield¹, Sreejith Padinjare Chakkatu¹, Robert Charles Day¹, Thomas Harrop¹
¹Biochemistry, University of Otago

- 4F-P3-34 A higher-order transcription factor network governs egg cell differentiation and stress homeostasis in Arabidopsis**
Olga Kirioukhova¹, Pallavi Pawar¹, Geetha Govind¹, Pramod Pantha², Rene Lemcke¹, Danae S. Larsen¹, Alagarsamy M. Rhahul¹, Jubin N. Shah¹, Chathura Wijesinghe², Yue Zhou³, Wilhelm Gruissem⁴, Franziska Turck³, Maheshi Dassanayake², Amal J. Johnston¹
¹Heidelberg University, Germany, ²Louisiana State University, USA, ³Max-Planck-Institute for Plant Breeding Research, Germany, ⁴ETH Zurich, Switzerland
- 4F-P3-35 Anaphase Promoting Complex/Cyclosome subunit 5 is essential for female gametogenesis in Arabidopsis thaliana**
Hiromasa Shikata^{1,2}, Susumu Nihei², Takeshi Nakamura², Takeshi Yoshizumi³, Tomonao Matsushita⁴, Tetsuya Higashiyama¹, Hidetaka Kaya^{2,5}, Kazuyuki Kuchitsu^{2,6}
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- 4F-P3-36 Dissection of gene networks required for development of male germ cells**
Iftikhar Ali¹, Weicai Yang¹
¹Institute of Genetics and Developmental Biology, Chinese Academy of Sciences
- 4F-P3-37 Functional analysis of calcium peak in fertilization of Arabidopsis**
Dan Chen¹
¹IGDB Chinese Academy of Science
- 4F-P3-38 The distinct functions of two classical arabinogalactan proteins BcMF8 and BcMF18 during pollen wall patterning and microspore development in Brassica campestris**
Sue Lin^{1,2}, Yingjing Miao², Li Huang², Jiashu Cao²
¹Institute of Life Sciences, Wenzhou University, ²Institute of Vegetable Science, Zhejiang University

Session IV: Pollen Pistil Interactions

- 5F-P4-1 Two-photon imaging reveals spatio-temporal regulation on the one-to-one pollen tube guidance**
Yoko Mizuta^{1,2}, Daisuke Kurihara^{1,3}, Shiori Nagahara^{1,3}, Tetsuya Higashiyama^{1,3}
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- 5F-P4-2 Exploration of pollen compatibility factor using forward genetic approach**
Surachat Tangpranomkorn¹, Sota Fujii^{1,2}, Motoko Igarashi³, Seiji Takayama¹
¹Graduate School of Agricultural and Life Sciences, The University of Tokyo, ²JST, PRESTO, ³Nara Institute of Science and Technology
- 5F-P4-3 Dissecting the molecular genetics of the Papaver self-incompatibility machinery in a heterologous Arabidopsis system**
Zongcheng Lin^{1,2}, Marina Trivino^{1,2,3}, Maurice Bosch³, Veronica Franklin-Tong⁴, Moritz Karl Nowack^{1,2}
¹Department of Plant Biotechnology and Bioinformatics, Gent University, ²Center for Plant Systems Biology, VIB, 9052 Ghent, Belgium, ³Institute of Biological, Environmental & Rural Sciences (IBERS), Aberystwyth University, Aberystwyth, SY23 3EB, UK, ⁴School of Biosciences, University of Birmingham, Birmingham, B15 2TT, UK
- 5F-P4-4 Mutation in a glycosylphosphatidylinositol (GPI) transamidase complex subunit disrupts male gametophyte function in Arabidopsis**
Nicholas James Desnoyer¹, Xunliang Liu¹, Ravishankar Palanivelu¹
¹School of Plant Sciences, University of Arizona

- 5F-P4-5 Unravelling the importance of FLA5 (Fasciclin-like Arabinogalactan Protein 5) in *Arabidopsis* reproduction**
Jessy Silva¹, Ana Marta Pereira², Rita Lima¹, Luís Gustavo Pereira¹, Sílvia Coimbra¹
¹Biology, Faculdade de Ciências da Universidade do Porto, ²Università degli Studi di Milano
- 5F-P4-6 To be, or not to be – MSL8, a Mechanosensitive Ion Channel, Monitors the Life and Death of a Pollen Grain/Germinating Tube in vitro in *Arabidopsis thaliana***
Yanbing Wang¹, Gregory Jensen¹, Elizabeth Haswell¹
¹Biology, Washington University in St. Louis
- 5F-P4-7 The *Arabidopsis* CrRLK1L Protein Kinase genes *BUPSs* are Required for Normal Growth of Pollen Tubes in the Pistil**
De Ye¹, Lei Zhu¹, Liang-Cui Chu², Yan Liang¹, Li-Qun Chen¹, Xue-Qin Zhang¹
¹State Key Laboratory of Plant Physiology and Biochemistry, College of Biological Sciences, China Agricultural University, ²College of Agronomy and Biotechnology, China Agricultural University, 2 Yuanmingyuan Xilu, Beijing 100193, China
- 5F-P4-8 ER-localized aquaporin SIP2;1 is involved in germination and cell elongation of *Arabidopsis thaliana* pollens**
Ryosuke Sato¹, Masayoshi Maeshima¹
¹Graduate School of Bioagricultural Sciences, Nagoya University
- 5F-P4-9 Genome-wide analyses of late pollen-preferred genes conserved in two sub-species of rice and functional identification of a gene involved in the key processes for late pollen development**
Ki Hong Jung¹, Sunok Moon¹, Moe Moe Oo², Sung Aeong Oh², Jin Won Lee², Soon Ki Park²
¹Graduate School of Biotechnology, Kyung Hee University, ²School of Applied Biosciences, Kyungpook National University, Daegu 41566, Korea
- 5F-P4-10 The search for Receptor Kinases that regulate Compatible Pollen Responses in the Brassicaceae Stigma**
Hyun Kyung Lee¹, Daphne Goring¹
¹Cell & Systems Biology, University of Toronto
- 5F-P4-11 The gamete fusogen GCS1/HAP2 is not required for ovule targeting**
Taro Takahashi¹, Ken Honda¹, Toshiyuki Mori², Tomoko Igawa¹
¹Graduate School of Horticulture, Chiba University, ²Department of Tropical Medicine and Parasitology, Juntendo University
- 5F-P4-12 An establishment of pollen tube growth assay by microfluidic device and analysis of stiffness in nuclear envelope**
Satsuki Nishimaki¹, Naoki Yanagisawa², Kumi Matsuura-Tokita², Tetsu Kinoshita¹, Tetsuya Higashiyama², Daisuke Maruyama¹
¹Kihara Institute for Biological Research, Yokohama City University, ²Nagoya University
- 5F-P4-13 Species recognition in pollen tube attraction**
Takuya Nagae¹, Hidenori Takeuchi^{2,3}, Ashutosh Srivastava², Florence Tama², Tetsuya Higashiyama^{1,2}
¹Graduate School of Science, Nagoya University, ²Institute of Transformative Bio-Molecules (ITbM), ³Institute for Advanced Research
- 5F-P4-14 Characterization of part of the COPI complex in stigmas during compatible pollination in *A. thaliana***
Emily Indriolo¹, Daniel A Cabada Gomez¹, Maria Isabella Chavez¹, Jonathan Teske¹, Samantha Catalano¹
¹Biology, New Mexico State University
- 5F-P4-15 Variation in interspecific unilateral incompatibility in *Arabidopsis***
Lian Fan¹, James Doughty¹, Rod Scott¹, Simon Hiscock²
¹Department of Biology and Biochemistry, University of Bath, ²University of Oxford, Department of Plant Science

- 5F-P4-16 Transcriptome dynamics of sperm cells during semi-*in-vivo* pollen tube growth**
 Jörg D Becker¹, [Chandra Shekhar Misra](#)¹
¹Plant Genomics Group, Instituto Gulbenkian de Ciência
- 5F-P4-17 Inter-ecotype pollen-stigma incompatibility is determined by duplicated self-recognition genes in *Brassica rapa***
[Yoshinobu Takada](#)¹, Kohji Murase^{2,3}, Hiroko Shimosato-Asano², Takahiro Sato¹, Honoka Nakanishi⁴, Atsuki Mihara⁴, Yuhui He⁴, Keita Suwabe⁵, Kentaro K. Shimizu^{6,7}, Yong Pyo Lim⁸, Seiji Takayama^{2,3}, Go Suzuki⁴, Masao Watanabe¹
¹Graduate School of Life Sciences, Tohoku University, ²Graduate School of Biological Sciences, Nara Institute of Science and Technology, ³Department of Applied Biological Chemistry, The University of Tokyo, ⁴Division of Natural Science, Osaka Kyoiku University, ⁵Graduate School of Bioresources, Mie University, ⁶Department of Evolutionary Biology and Environmental Studies, University of Zurich, ⁷Kihara Institute for Biological Research, Yokohama City University, ⁸Department of Horticulture, Chungnam National University
- 5F-P4-18 Investigation of the maximal efficiency of fertilization recovery in *Arabidopsis* using hap2 mutant created by CRISPR/Cas9 system**
[Meiling Liu](#)¹
¹School of Life Sciences, Peking University
- 5F-P4-19 AtMYS is Essential for Pollen Tube Growth and Embryogenesis by Mediating Endomembrane Trafficking in *Arabidopsis thaliana***
[Saiying Hou](#)¹
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- 5F-P4-20 *Arabidopsis* SSN Is Essential for Pollen Tube Growth/Guidance and Embryogenesis**
[Zhijuan Wang](#)¹
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- 5F-P4-21 Cysteine Rich Proteins and pollen-stigmatic compatibility in *Arabidopsis thaliana***
[Mutian Yang](#)¹
¹Biology&Biochemistry, University of Bath
- 5F-P4-22 Calcium dynamics of the pollen tube in ovular guidance**
[Kumi Matsuura-Tokita](#)¹, Yoko Mizuta^{2,3}, Daisuke Kurihara¹, Tetsuya Higashiyama^{1,3}
¹Grad. Sch. of Sci., Nagoya University, ²JST PRESTO, ³ITbM, Nagoya University
- 5F-P4-23 KD329, the Rab-GEF, Modulate Golgi Morphology, Vesicle Secretion from Golgi and Are Essential for Pollen Tube-Stigma Interaction in *Arabidopsis***
[Jia Peng Fei](#)¹, Yang Wei Cai¹, Li Hong Ju¹
¹IGDB, CAS
- 5F-P4-24 *Arabidopsis* pollen tube integrity and sperm release are regulated by RALF-mediated signaling**
[Zengxiang Ge](#)^{1,2}
¹Peking University, ²Department of Biochemistry and Molecular Biology, Molecular and Cell Biology Program, Plant Biology Program, University of Massachusetts, Amherst, Massachusetts 01003, USA
- 5F-P4-25 Quantifying pollen traits performance in a range of accessions that influence nonrandom mating**
[Robert J Swanson](#)¹, Adam T Hammond², Ann L Carlson¹, Hui Gong¹
¹Biology, Valparaiso University, ²The University of Chicago

- 5F-P4-26 AGP25, AGP26 and AGP27: a threesome of HDA19 regulated Arabinogalactan Proteins involved in pollen-pistil interactions**
Diana Moreira¹, Ana Marta Pereira², Andrea Guazzotti², Lucia Colombo², Simona Masiero², Sílvia Coimbra¹
¹Biology, Faculdade de Ciências da Universidade do Porto, ²Dipartimento di Bioscienze, Università degli Studi di Milano, 20133 Milano, Italy
- 5F-P4-27 Interspecific reproductive barriers in Cucumis: searching for a model to dissect genetic control**
Carlos Romero¹, Unzué Simó², Alejandro Torres¹, Belén Picó³, Antonio José Monforte¹, María Ferriol²
¹Instituto de Biología Molecular y Celular de Plantas (CSIC-UPV), ²Instituto Agroforestal Mediterráneo (IAM) Universitat Politècnica de València, ³Instituto de Conservación y Mejora de la Agrodiversidad Valenciana (COMAV) Universitat Politècnica de València
- 5F-P4-28 Characterization of a pollen-part self-compatible mutant in *Solanum arcanum***
Hidenori Sassa¹, Fumika Chino¹, Megumi Koito¹, Yuuta Mouri¹, Mai F. Minamikawa¹, Katsuhiko Kondo², Yasuo Koyama²
¹Chiba University, ²Mie University
- 5F-P4-29 *Arabidopsis thaliana* zinc transporter ZIP13 is important for pollen tube growth under heat stress**
Miki Kawachi¹, Saki Fujita², Nahoko Nagasaki-Takeuchi³, Youichiro Fukao⁴, Masayoshi Maeshima²
¹Institute for Advanced Research, Nagoya University, Japan, ²Graduate School of Bioagricultural Sciences, Nagoya University, Japan, ³Graduate School of Biological Sciences, Nara Institute of Science and Technology, Japan, ⁴Graduate School of Life Sciences, Ritsumeikan University, Japan
- 5F-P4-30 Genome re-sequencing of diverse sweet cherry (*Prunus avium*) individuals reveals a modifier gene mutation conferring pollen-part self-compatibility**
Kentarō Ono¹, Takashi Akagi¹, Takuya Morimoto¹, Ana Wünsch², Ryutarō Tao¹
¹Agriculture, Kyoto University, ²Centro de Investigación y Tecnología Agroalimentaria de Aragón (CITA) IA2 (CITA-Universidad de Zaragoza)
- 5F-P4-31 Distinct subcellular localization and dynamics of signalling lipids in pollen tubes**
Premysl Pejchar^{1,2}, Juraj Sekeres^{1,2}, Viktor Zarsky^{1,2}, Martin Potocky^{1,2}
¹Institute of Experimental Botany of the CAS, v.v.i., ²Department of Experimental Plant Biology, Faculty of Science, Charles University, Prague, Czech Republic
- 5F-P4-32 Molecular analysis of exocyst subunit EXO70 family in *Arabidopsis* and tobacco pollen tubes**
Martin Potocky^{1,2}, Juraj Sekeres^{1,2}, Premysl Pejchar^{1,2}, Lukas Synek¹, Ivan Kulich², Matyas Fendrych², Nemanja Vukasinovic^{1,2}, Klara Aldorfova^{1,2}, Viktor Zarsky^{1,2}
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- 5F-P4-33 Research Coordination Network on Integrative Pollen Biology: Report and perspectives on fostering a community of pollen biology researchers**
Alice Y Cheung¹, Jose Feijo², Mark Johnson³, Ravi Palanivelu⁴
¹Biochemistry and Molecular Biology, University of Massachusetts, ²University of Maryland, Jose Feijo, ³Brown University, Mark Johnson, ⁴University of Arizona, Ravi Palanivelu
- 5F-P4-34 PGA-mediated lipid transport is essential for pollen formation and pollen tube growth**
Ting Luo¹
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- 5F-P4-35 A Rice Mutant Defective in Perceiving Female Attraction**
Dong Jiang Xie¹
¹Institute of Genetics and Developmental Biology, Chinese Academy of Sciences

- 5F-P4-36 RALF4/19 peptides interact with LRX proteins to control pollen tube growth in Arabidopsis**
Gorka Santos Fernandez¹, Martin A. Mecchia², Andrea Martínez-Bernardini¹, Tohnyui Ndinyanka Fabrice¹, Christoph Ringli¹, Ueli Grossniklaus¹
¹Department of Plant and Microbial Biology, UNIVERSITY OF ZURICH UZH, ²Instituto de Investigaciones en Ingeniería Genética y Biología Molecular, Dr. Héctor Torres (INGEBI-CONICET)
- 5F-P4-37 The Role of Lipid Transfer Proteins during the Fertilization process of Angiosperms**
Khushbu Kumari¹, Rosalia Deeken¹, Dirk Becker¹
¹Lehrstuhl für Molekulare Pflanzenphysiologie und Biophysik - Botanik I der Universität Würzburg, University of Wuerzburg

Session V: Gametophyte Interactions & Fertilization

- 5F-P5-1 Functional analysis of LURE peptides for species-specific pollen tube attraction**
Masahiro Kanaoka^{1,2}, Nao Kamiya¹, Ryoko Tsukamoto¹, Kana Hisabayashi¹, Tetsuya Higashiyama^{1,2}
¹Department of Biological Science, Graduate School of Science, Nagoya University, ²ITbM, Nagoya University
- 5F-P5-2 Identification of the female and male self-incompatibility determinants in *Citrus grandis* Osbeck**
Mei Liang¹, Huayan Yang¹, Xiuxin Deng¹, Lijun Chai¹
¹Huazhong Agricultural University
- 5F-P5-3 Ethylene signaling control is critical for female gametophyte and embryo development**
Cheng Zhang¹, Xiao-Dong Teng¹, Quan-Quan Zheng¹, Yan-Yun Zhao¹, Jie-Yang Lu¹, Yi-Chuan Wang¹, Hongwei Guo¹, Zhong-Nan Yang¹
¹Shanghai Normal University
- 5F-P5-4 Apple S-RNase triggers inhibition of tRNA aminoacylation by interacting with a soluble inorganic pyrophosphatase in growing self-pollen tubes in vitro**
Li Yang¹, Li Wei¹
¹China Agricultural University
- 5F-P5-5 A Functional Role for Homotypic Gamete Interactions in Double Fertilization**
Leonor Chagas Boavida¹, Chandra C. Misra², Nikita Bhatnagar¹, Jörg D. Becker²
¹Botany and Plant Pathology, Purdue University/Purdue Center for Plant Biology, ²Instituto Gulbenkian de Ciência, Plant Genomics Lab, Oeiras, Portugal
- 5F-P5-6 How does female gametophyte regulate the destination of sperm cells released from pollen tube?**
Daichi Susaki¹, Takao Oi², Sakiko Enomoto³, Shigeo Arai³, Tetsu Kinoshita¹, Daisuke Maruyama¹
¹Kihara Institute for Biological Research, Yokohama City University, ²Graduate School of Bioagricultural Sciences, Nagoya University, ³Institute of Materials and Systems for Sustainability, Nagoya University
- 5F-P5-7 Identification of novel genes involved in fertilization by forward and reverse genetic approaches in *Arabidopsis thaliana***
Martin Bayer¹, Patrick Buergele¹, Daniel Slane¹, Agnes Henschen¹, Martina Kolb¹
¹Cell Biology, Max Planck Institute for Developmental Biology
- 5F-P5-8 Analysis of a novel sperm cell surface-resident protein involved in double fertilization of Arabidopsis**
Tomoko Igawa¹, Taro Takahashi¹, Toshiyuki Mori², Lixy Yamada³, Hitoshi Sawada³, Kenji Ueda⁴, Shiori Nagahara⁵, Tetsuya Higashiyama⁵
¹Graduate School of Horticulture, Chiba University, ²Department of Tropical Medicine and Parasitology, Juntendo University, ³Graduate School of Science, Nagoya University, ⁴Department of Biological Production, Akita Prefectural University, ⁵Institute of Transformative Bio-Molecules, Nagoya University

- 5F-P5-9 Topology analysis of a novel protein LGM1 involved in double fertilization**
Mayu Fukuda¹, Tomoko Igawa¹
¹Graduate School of Horticulture, Chiba University
- 5F-P5-10 Deciphering the links between ROS, Ca²⁺ and cell wall remodeling during Arabidopsis thaliana pollen tube growth**
Jérémy Dehors¹, Bruno Gügi¹, Alain Mareck¹, Patrice Lerouge¹, Arnaud Lehner¹, Jean-Claude Mollet¹
¹Laboratoire GlycoMEV, University of Rouen
- 5F-P5-11 Discovery of mutants defective in central cell fertilization by a novel screening method**
Xiaoyan Liu¹, Liyang Xie¹, Yujiro Homma², Yoshihiro Kinoshita², Frederic Berger³, Tetsuya Higashiyama², Ryushiro Kasahara^{1,4}
¹Horticultural Plant Biology and Metabolomics Center, Fujian Agriculture and Forestry University, ²Institute of Transformative Bio-Molecules, Nagoya University, Furo, Chikusa, Nagoya, Aichi, Japan, ³Gregor Mendel Institute (GMI), Austrian Academy of Sciences, Vienna Biocenter (VBC), Dr. Bohr-Gasse 3, 1030 Vienna, Austria, ⁴School of Life Sciences, Fujian Agriculture and Forestry University, NO.15 Shangxiadian Road, Cangshan, Fuzhou
- 5F-P5-12 MLO genes are key regulators of female gametophyte function in Arabidopsis thaliana**
Sharon A Kessler¹, Daniel S. Jones², Jing Yuan¹, Thomas Davis¹
¹Botany and Plant Pathology, Purdue University, ²University of Oklahoma
- 5F-P5-13 Elucidating the function of NORTIA in Arabidopsis pollen tube reception**
Yan Ju¹, Jing Yuan¹, Sharon A Kessler¹
¹Department of Botany and Plant Pathology, Purdue University
- 5F-P5-14 Loss of a pollen tube gene regulatory network leads to aberrant synergid cell calcium fluctuations and unhinges tip growth dynamics from synergid responses**
Nathaniel Donaldson Ponvert¹, Alexander Leydon², Jacob Goldberg¹, Mark Johnson¹
¹Brown University, Department of Molecular Biology, Cell Biology, and Biochemistry, ²University of Washington, Department of Biology
- 5F-P5-15 Paternal role for progression of nuclear fusion in rice zygotes**
Yukinosuke Ohnishi^{1,2}, Iwao Kokubu², Takashi Okamoto²
¹Kihara Institute for Biological Research, Yokohama City University, ²Tokyo Metropolitan University
- 5F-P5-17 Mutation of Arabidopsis SAURs impairs the efficient translation of transcripts essential for pollen tube growth**
Guang-Yuh Jauh^{2,3,4}, Siou-Luan He^{1,2}
¹Institute of Plant and Microbial Biology, Academia Sinica, ²Institute of Plant Biology, National Taiwan University, Taipei, Taiwan, ³Molecular and Biological Agricultural Sciences, Taiwan International Graduate Program, National Chung-Hsing University, Academia Sinica, Taipei, Taiwan, ⁴Biotechnology Center, National Chung-Hsing University, Taichung, Taiwan
- 5F-P5-20 Ion dynamics in morphogenesis: The role of H⁺ regulation in pollen tube guidance**
Maria Teresa Portes¹, Daniel Santa Cruz Damineli¹, José Feijó¹
¹Cell Biology & Molecular Genetics, University of Maryland
- 5F-P5-21 Gamete activation and fusion in flowering plants**
Stefanie Sprunck¹, Maria Lindemeier¹, Philipp Cyprys¹, Raphael Malka¹, Michael Kraus¹, Maria Flores-Tornero¹, Thomas Hackenberg¹
¹Institute for Plant Science, Cell Biology and Plant Biochemistry, University of Regensburg

- 5F-P5-23 Discovery of novel molecular players of feronia pathway by identification of causal alleles with SNP-ratio mapping (SRM) approach**
Andrea Djura Zupunski¹, Heike Lindner¹, Aurelien Boisson-Dernier¹, Hiroko Shimosato-Asano¹, Ueli Grossniklaus¹
¹Department of Plant and Microbial Biology, University of Zurich
- 5F-P5-24 Insights into Fasciclin-like arabinogalactan proteins involved in plant reproduction; from *Quercus* to *Arabidopsis***
Maria João Nogueira Ferreira¹, Márcio Moreira Couto¹, Mário Luís Costa¹, Sílvia Coimbra¹, Maria Isabel Amorim¹
¹Biology, Faculty of Sciences of University of Porto
- 5F-P5-25 Synthetic biological approach to understand plant gametic interactions by micromanipulation techniques**
Kohdai Nakajima¹, Taeko Sasaki¹, Shiori Nagahara¹, Clari Valansi², Daisuke Kurihara¹, Yoshikatsu Sato¹, Narie Sasaki¹, Benjamin Podbilewicz², Tetsuya Higashiyama¹
¹Science, Nagoya University, ²Technion- Israel Institute of Technology
- 5F-P5-26 MAS couples ovular signal perception and selective vesicle fusion in pollen tube guidance**
Hong-Ju Li¹, Jiang-Guo Meng¹, Liang Liang¹, Wei-Cai Yang¹
¹State Key Laboratory of Molecular Developmental Biology, Institute of Genetics and Developmental Biology, CAS
- 5F-P5-27 Unraveling regulatory phenotypes in pollen tube ion dynamics and growth with CHUKNORRIS2.0: chemotropism relies on plasticity**
Daniel Santa Cruz Damineli¹, Maria Teresa Portes¹, Francisco F. A. Neves¹, José Feijó¹
¹Cell Biology & Molecular Genetics, University of Maryland
- 5F-P5-28 Identification of Gametophytic Mutations Affecting the Fusion of gametes in *Arabidopsis***
Yinjiao Xu¹
¹Institute of Genetics and Developmental Biology Chinese Academy of Sciences
- 5F-P5-29 Analysis molecular mechanism of *FG1* in regulating pollen tube guidance and funiculus development**
Hui Zhou¹
¹Institute of Genetics and Developmental Biology, Chinese Academy of Sciences
- 5F-P5-30 Multi-“omics” analysis of maize sperm cells: advances towards identifying candidates mediating gamete interactions**
Philipp Cyprys¹, Julia Mergner², Maxim Messerer³, Klaus F.X. Mayer³, Bernhard Küster², Stefanie Sprunck¹
¹Cell Biology and Plant Biochemistry, University of Regensburg, ²Technical University Munich, Chair of Proteomics and Bioanalytics, ³Helmholtz Zentrum Munich, Plant Genome and Systems Biology

Session VI: Post fertilization; Embryo and Endosperm Development

- 5F-P6-1 Intracellular dynamics controlling *Arabidopsis* zygote polarization**
Yusuke Kimata¹, Takehide Kato², Takumi Higaki^{3,4}, Daisuke Kurihara¹, Tomomi Yamada^{1,5}, Shoji Segami⁶, Miyo Terao Morita^{2,6}, Masayoshi Maeshima⁶, Seiichiro Hasezawa³, Tetsuya Higashiyama^{1,5}, Masao Tasaka², Minako Ueda^{1,5}
¹Graduate School of Science, Nagoya University, ²Graduate School of Biological Sciences, Nara Institute of Science and Technology (NAIST), ³Department of Integrated Biosciences, Graduate School of Frontier Sciences, The University of Tokyo, ⁴International Research Organization for Advanced Science and Technology (IROAST), Kumamoto University, ⁵Institute of Transformative Bio-Molecules (ITbM), Nagoya University, ⁶Graduate School of Bioagricultural Sciences, Nagoya University

- 5F-P6-2 Prolonged Expression of a Putative Invertase Inhibitor in Micropylar Endosperm Suppressed Embryo Growth in *Arabidopsis***
Dongfang Wang¹, Bongeka Zuma¹, Mason B Dana¹
¹Biology Department, Spelman College
- 5F-P6-3 Searching for factors involved in *de novo* deposition of the centromeric histone H3 variant after fertilization of *Arabidopsis thaliana***
Hidenori Takeuchi^{1,2,4}, Tetsuya Higashiyama^{2,3}, Frederic Berger⁴
¹Institute for Advanced Research, Nagoya University, ²Institute of Transformative Bio-Molecules (ITbM), Nagoya University, ³Graduate School of Science, Nagoya University, ⁴Gregor Mendel Institute of Molecular Plant Biology
- 5F-P6-4 Live-cell imaging of the mitochondrial behavior in *Arabidopsis* zygote**
Naoe Ando¹, Yusuke Kimata¹, Tetsuya Higashiyama¹, Minako Ueda¹
¹Division of Biological Science, Graduate School of Science, Nagoya University
- 5F-P6-5 Profiling of the epigenetic mark for embryogenesis competence in Norway spruce (*Picea abies*)**
Miyuki Nakamura¹, Rafael Muñoz-Viana¹, Lars Hennig¹
¹Plant Biology, The Swedish University of Agricultural Sciences
- 5F-P6-6 Strategies to differentiate between gametophytic and zygotic transcripts in early embryos of *Arabidopsis***
Jose Jaime Alaniz¹, Gerardo Del Toro-De León¹, Daoquan Xiang², Raju Datla², Stewart Gillmor¹
¹LANGEBIO-CINVESTAV, Mexico, ²Plant Biotechnology Institute, National Research Council, Canada
- 5F-P6-7 Small-RNA regulation of non-CG methylation dynamics through *Arabidopsis* early embryogenesis**
Ranjith Papareddy¹
¹GMI -Gregor Mendel Institute of Molecular Plant Biology GmbH
- 5F-P6-8 *RSE1 (REPRESSOR OF SOMATIC EMBRYOGENESIS 1)* is a transcription factor that regulates cell totipotency in *Arabidopsis***
Miho Ikeda¹, Tsubasa Yamagata¹, Masaru Ohme-Takagi¹
¹Graduate School of Science and Engineering, Saitama University
- 5F-P6-9 Avoidance of abnormal endosperm development by using hetero fertilization**
Mana Maeda¹, Tetsu Kinoshita¹, Daisuke Maruyama¹
¹Kihara Institute for Biological Research Yokohama City University
- 5F-P6-10 ENDOSPRM3 is a transcription factor that regulates fertilization-independent endosperm development**
Hironori Takasaki¹, Miho Ikeda¹, Nobutaka Mitsuda², Tetsu Kinoshita³, Masaru Ohme-Takagi¹
¹Graduate School of Science and Engineering, Saitama University, ²Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), ³Kihara Institute for Biological Research, Yokohama City University
- 5F-P6-11 RPL18aB is involved in the development of embryo proper and maintenance of suspensor identity**
Feng Gong¹, Hailong Yan¹, Fei Xie¹, Yang Sun¹, Yameng Wang¹, Mengxiang Sun¹, Xiongbo Peng¹
¹State Key Laboratory for Hybrid Rice, College of Life Sciences, Wuhan University
- 5F-P6-13 Dynamic F-actin Movement and Structures from Fertilization through Early Developmental Stage in *Arabidopsis thaliana* Endosperm**
Tomokazu Kawashima¹
¹Plant and Soil Sciences, University of Kentucky

- 5F-P6-14 Development of gene expression and genome editing systems in rice egg cells and zygotes by direct delivery of macromolecules**
Takashi Okamoto¹, Erika Toda^{1,2}, Narumi Koiso¹, Md Hassanur Rahman¹, Arika Takebayashi², Masako Ichikawa³, Takatoshi Kiba³, Keishi Osakabe⁴, Yuriko Osakabe⁴, Hitoshi Sakakibara², Norio Kato^{1,2,3}
¹Biological Sciences, Tokyo Metropolitan University, ²RIKEN Innovation Center, ³Japan Tobacco Inc.,
⁴Tokushima University
- 5F-P6-15 Effects of an imbalanced parental genome ratio on development of rice zygotes and possible function of genes expressing in zygotes with paternal allele-specific manner**
Erika Toda^{1,2}, Masaaki Kobayashi³, Mirei Takahara¹, Yukinosuke Ohnishi¹, Toru Kudo³, Rahman MD Hassanur¹, Yoriko Watanabe¹, Momoka Iwami¹, Kentaro Yano³, Takashi Okamoto¹
¹Biological Sciences, Tokyo Metropolitan University, ²RInC, RIKEN, ³Meiji University
- 5F-P6-16 Differential parental contributions to the transcriptome of apical and basal cell lineages during early embryogenesis**
Peng Zhao¹, Feng Gong¹, Xuemei Zhou¹, Mengxiang Sun¹
¹Wuhan University
- 5F-P6-17 Maternally expressed MpKNOX1 triggers embryo development in *Marchantia polymorpha***
Tetsuya Hisanaga¹, Shota Fujimoto¹, Keiji Nakajima¹
¹Nara Institute of Science and Technology
- 5F-P6-18 Identification of the new sugar producing crops by applying the POEM phenomenon**
 Yujiro Homma¹, Li-Yang Xie², Xiao-Yan Liu², Keiko Kuwata¹, Ryushiro Kasahara^{1,3}
¹Institute of Transformative Bio-molecules, Nagoya University, ²Horticultural Plant Biology and Metabolomics Center, Fujian Agriculture and Forestry University, NO.15 Shangxiadian Road, Cangshan, Fuzhou, China, ³School of Life Sciences, Fujian Agriculture and Forestry University, NO.15 Shangxiadian Road, Cangshan, Fuzhou, China
- 5F-P6-19 A paternally expressed transcription factor, OsASGR-BBML1, possibly initiates rice early zygotic development**
Md Hassanur Rahman¹, Erika Toda^{1,2}, Yukinosuke Ohnishi¹, Narumi Koiso¹, Takashi Okamoto¹
¹Biological Sciences, Tokyo Metropolitan University, ²Plant Breeding Innovation Laboratory, RIKEN Innovation Center, Tsurumi-ku, Yokohama, 230-0045 Japan
- 5F-P6-20 Convergent Regulation of Auxin Action in Suspensor-derived Embryogenesis**
Tatyana Radoeva¹, Annemarie S. Lokerse¹, Cristina I. Llavata Peris¹, Jos R. Wendrich¹, Dolf Weijers¹
¹Biochemistry, Wageningen University & Research
- 5F-P6-21 Reproductive barriers in the interspecific hybridization between *Ipomoea nil* and *I. hederacea***
 Yui Hozumi¹, Maki Noguchi¹, Eiji Nitasaka², Tsutomu Kuboyama¹
¹Col. of Agr., Ibaraki U., ²Grad. Sch. Sci., Uni. Kyushu
- 5F-P6-22 Imaging Analysis of mRNA decay mutants at early plant development**
Kazuki Motomura¹, Daisuke Maruyama², Daisuke Kurihara³, Naoyoshi Kumakura⁴, Yuichiro Watanabe⁵, Tetsuya Higashiyama^{1,3}
¹WPI-ITbM, Nagoya University, ²KIBR, Yokohama City Univ, ³Grad. Sch. Sci., Nagoya Univ, ⁴CSRS, RIKEN, ⁵Grad. Sch. of Arts and Sci. The Univ. of Tokyo
- 5F-P6-23 Stay stick: how to fit each tile in the SEEDSTICK TF control frame?**
Ana Lúcia Gonçalves Lopes¹, Ana Marta Pereira², Ricardo Ferraz¹, Patrícia Sousa¹, Luís Gustavo Pereira¹, Marta Mendes², Simona Masiero², Lucia Colombo², Sílvia Coimbra¹
¹Biologia, Faculdade de Ciências da Universidade do Porto, ²Università Degli Studi di Milano

5F-P6-24 High-resolution dynamic landscapes of nucellus transcriptomes revealing the development of early seed
Fei Yi¹, Wei Gu¹, Ning Song¹, Xiang Gao¹, Xiangbo Zhang¹, Jian Chen¹, Yingsi Zhou¹, Weibin Song¹, Haiming Zhao¹, Jinsheng Lai¹

¹Crop Genomics and Bioinformatics, China Agricultural University

5F-P6-25 Comparative analysis of different types of reproductive isolation observed in interspecific-interploidy crosses between two *Nicotiana suaveolens* accessions and *N. tabacum*

Hai He¹, Shuji Yokoi¹, Takahiro Tezuka¹

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Session VII: Polyploidization and Evolution of Sexual Reproduction

5F-P7-1 Genetic mapping of the *HLA1* locus causing hybrid lethality in tobacco interspecific hybrids

Takahiro Tezuka¹, Sae Imagawa², Akira Hasegawa², Hai He¹, Shuji Yokoi¹

¹Graduate School of Life and Environmental Sciences, Osaka Prefecture University, ²School of Life and Environmental Sciences, Osaka Prefecture University

5F-P7-2 High daytime temperature induces male sterility, producing unreduced pollen in *Arabidopsis thaliana*

Moon Soo Soh¹, Tien Dung Nguyen², Sung Aeong Oh², Soon Ki Park²

¹Division of Integrative Bioscience and Biotechnology, Sejong University, ²School of Applied Biosciences, Kyungpook National University, Taegu 41566, Republic of Korea

5F-P7-3 Hybrid dwarfism observed in the cross between *Capsicum annuum* and *C. chinense*

Kumpei Shiragaki¹, Shuji Yokoi¹, Takahiro Tezuka¹

¹Graduate School of Life and Environmental Sciences, Osaka Prefecture University

5F-P7-4 Allopolyploidization induces partial remission of cytoplasmic male sterility within *Brassica napus* carrying *Diplotaxis erucooides* cytoplasm

Yoshiaki Fujita^{1,2}, Atsushi Yagi¹, Su-Hyeun Shim¹, Takayuki Ohnishi^{1,3}, Sang-Woo Bang¹

¹School of Agriculture, Utsunomiya University, ²United Grad. Sch. Agr., Tokyo Univ., ³PREST, JST

5F-P7-5 *Amborella trichopoda* as a model to explore evolutionary conserved double fertilization mechanisms in flowering plants

María Flores-Tornero¹, Frank Vogler¹, Marek Mutwil², Sebastian Proost², David Potěšil³, Ivana Ihnatová³, Zbyněk Zdráhal³, Thomas Dresselhaus¹, Stefanie Sprunck¹

¹Cell Biology and Plant Biochemistry, University of Regensburg, ²Max-Planck Institute for Molecular Plant Physiology, Am Muehlenberg 1, 14476 Potsdam, Germany, ³Core Facility – Proteomics, CEITEC, Central European Institute of Technology, Masaryk University, Kamenice 5, CZ-62500 Brno, Czech Republic

5F-P7-6 Distinct features of hybrid growth abnormalities in interspecific crosses of two wild diploid wheat relatives to tetraploid wheat

Shigeo Takumi¹, Moeko Okada¹, Kentaro Yoshida¹

¹Graduate School of Agricultural Science, Kobe University

5F-P7-7 Polyspermy in plant hybridization

Yanbo Mao¹, Thomas Nakel¹, Dawit Girma Tekleyohans¹, Golo Fuchert², Dieu Vo¹, Rita Groß-Hardt¹

¹Department of Biology and Chemistry, University of Bremen, ²Max-Planck-Institute, Plasma Physics, Greifswald, Germany

- 5F-P7-8 Homoeolog-specific activation of genes for heat acclimation in the allopolyploid grass *Brachypodium hybridum***
Kotaro Takahagi^{1,2,3}, Komaki Inoue¹, Minami Shimizu^{1,2}, Yukiko Uehara-Yamaguchi¹, Yoshihiko Onda^{1,2}, Keiichi Mochida^{1,2,3,4}
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- 5F-P7-9 Evolution and Genetics of Gene Regulatory Network in Diploid Recombination**
Kenji Okubo¹, Kunihiro Kaneko¹
¹The Department of Basic Science, The University of Tokyo
- 5F-P7-10 Shift in reproductive system and phenotypic floral traits of the introduced species *Oxalis pes-caprae* L.**
Houria Hadj-Arab¹, Nora Laouireme¹
¹Faculty of Biological Sciences, FSB, LBPO, University of Sciences and Technology Houari Boumediene, USTHB

Session VIII: Epigenetic Control during Sexual Reproduction

- 5F-P8-1 Epigenetic Reprogramming of the Plant Paternal Genome**
Michael Borg¹, Elin Axelsson¹, Fred Berger¹
¹Gregor Mendel Institute
- 5F-P8-2 Phenology of epigenetic regulation: long-term analyses of H3K27me3 and H3K4me3 in a natural habitat of the perennial *Arabidopsis halleri***
Hiroshi Kudoh¹, Haruki Nishio¹, Atushi J. Nagano², Diana M. Buzas³, Koji Iwayama⁴, Tasuku Ito¹
¹Center for Ecological Research, Kyoto University, ²Ryukoku University, ³Tsukuba University, ⁴Shiga University
- 5F-P8-3 The mechanism studies of endosperm development controlling by energy metabolism through epigenetic regulations**
Jing Li^{1,2,3}, Frederic Berger^{2,3}, Ke Yang¹, Ze Wang¹, Luo Wang¹, Wenjing Li¹
¹College of Life Science and Technology, Huazhong Agricultural University, ²Gregor Mendel Institute, ³Temasek Life Science Laboratory
- 5F-P8-4 Dynamic transcription of chromatin-related genes through the life cycle of the early land plant *Marchantia polymorpha***
Sean Akira Montgomery¹, Madalina Mirea^{1,2}, Tomokazu Kawashima^{1,3}, Frederic Berger¹
¹Gregor Mendel Institute, ²Institute of Molecular Biotechnology, ³University of Kentucky
- 5F-P8-5 DDM1 has an important function on heterosis in *Arabidopsis thaliana***
Naomi Miyaji¹, Etsuko Itabashi¹, Takeshi Takasaki-Yasuda¹, W. James Peacock², Elizabeth S. Dennis², Ryo Fujimoto¹
¹Kobe University, ²CSIRO Agriculture
- 5F-P8-6 Natural variation for triploid block in *Arabidopsis thaliana***
Catherine-Axa Wilkins¹, Baoxiu Qi¹, James Doughty¹, Rod Scott¹
¹Biology and Biochemistry, University of Bath
- 5F-P8-7 Real-time DNA methylation dynamics during reproduction in *Arabidopsis thaliana***
Caroline Michaud¹, Pauline Jullien², Daniel Grimanelli¹, Mathieu Ingouff¹
¹IRD-Universite de Montpellier, ²University of Bern, Institute of Plant Sciences, Plant Reproduction and Epigenetics, Altenbergrain 21, 3013 Bern, Switzerland

- 5F-P8-8 Imprinting Revisited: Regulation of Parent-of-Origin Allelic Expression in *Arabidopsis thaliana* endosperm**
Paul Eivind Grini¹, Karina Stensland Hornslien¹, Jason Rafe Miller^{2,3}, Katrine N Bjerkan¹, Ida M Johannessen¹, Jonathan Bramsiepe¹
¹EVOGENE, Department of Biosciences, University of Oslo, ²Shepherd University, Shepherdstown WV USA, ³J. Craig Venter Institute, Rockville, MD USA
- 5F-P8-9 PES1 and PES2 are transcriptions that regulate integument growth**
Yu Luo¹
¹Institute of Genetics and Developmental Biology, Chinese Academy of Sciences
- 5F-P8-10 Construction of a genetic map in hickory (*Carya cathayensis* Sarg.), an apomictic species**
Yanru Zeng¹, Hongbo Zhao¹
¹Zhejiang A&F University

Session IX: Fruit and Seed Development—Application of ICSPP to Crop Plants—

- 5F-P9-1 SnRK1 phosphorylation of FUSCA3 regulates reproductive development, early embryogenesis, embryo growth rate and seed yield in *Arabidopsis***
Sonia Gazzarrini¹, Aaron Chan^{1,2}, Jian Wu^{1,2}, Carina Carianopol^{1,2}, Kresanth Varatharajah^{1,2}, Rex S Chiu^{1,2}, Allen YL Tsai^{1,2,3}
¹Biological Sciences, University of Toronto Scarborough, ²University of Toronto, Department of Cell and Systems Biology, ³current address: Graduate School of Science and Technology, Kumamoto University
- 5F-P9-2 QTL Analysis of Grain Number per Panicle in Rice**
Hua-Mao Wu¹, Dong-Jiang Xie¹, Zuo-Shun Tang¹, Zi-Chao Li², Dong-Qiao Shi¹, Wei-Cai Yang¹
¹State Key Laboratory of Molecular Developmental Biology, Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, ²China Agricultural University

Invited Poster Presentation by High School Students

- 5F-P10-1 Pollen tube attraction of lilies I: Why does the stigma attract pollen tubes?**
Ryunosuke Komura¹, Ryuto Kojima¹, Nanako Muramatsu¹, Shono Yasuda¹
¹Nagoya City Koyo Senior High School
- 5F-P10-2 Pollen tube attraction of lilies II: How pollen tubes grow toward the ovary despite attraction by the apical part of the style?**
Misato Sako¹, Ryusei Sone¹
¹Nagoya City Koyo Senior High School