

## GDRI meeting program, October 23-25, 2017

### "The developing plant in its environment"

#### Sunday, October 22

Arrival of attendees; Invited speakers will be located at Domaine Lyon Saint-Joseph (website: <http://www.domaine-lyon-saint-joseph.fr/>), where the meeting will be held.

**Japanese attendees (15):** 12 speakers (\*) and Drs Toru Fujiwara, Kimitsune Ishizaki and Tetsuro Mimura.

#### Monday, October 23

8h30 - 8h50 Registration

8h50 - 9h00 Opening of the symposium: **Tetsuro MIMURA / Gwyneth INGRAM / Thierry GAUDE**

#### Session 1: New advances and concepts in plant development

9h00 – 9h25 **Olivier HAMANT** (RDP ENS Lyon)

Mechanical conflicts in growth heterogeneity: how plants read their own shapes

9h25 – 9h50 **Patrick LAUFS** (IJPB Versailles)

Novel insights into leaf margin development

\*9h50 – 10h15 **Toshiro ITO** (Nara Institute of Science and Technology)

Multi-step termination of floral stem cell activities

#### 10h15 – 10h45 Coffee break / Posters

10h45 – 11h10 **Chloé ZUBIETA** (LPCV Grenoble)

Molecular mechanisms of MADS transcription factor function in flowering and floral organ development

\*11h10 – 11h35 **Hidehiro FUKAKI** (Kobe University)

Control of root system architecture through auxin-mediated lateral root formation

11h35 – 12h00 **Teva VERNOUX** (RDP ENS Lyon)

Understanding the control of noise in shoot architecture

12h00 – 12h25 **Yvon Jaillais** (RDP ENS Lyon)

Anionic phospholipids in the definition of cellular territories

#### 12h25 – 14h00 Lunch / Posters

#### Session 2: Emerging models in developmental cell biology

14h00 – 14h25 **Bénédicte CHARRIER** (LBI2M Roscoff)

Shape dynamics in the filamentous brown alga *Ectocarpus*

\*14h25 – 14h50 **Takayuki KOHCHI** (Kyoto University)

Regulation of growth-phase transition and sex determination in the liverwort *Marchantia polymorpha*

14h50 – 15h15 **Susana COEHLO** (LBI2M Roscoff)

Basal cell fate determination in the brown alga *Ectocarpus*

\*15h15 – 15h40 **Yoshihisa ODA** (National Institute of Genetics Mishima)

Molecular basis of secondary cell wall patterning

#### 15h40 – 15h55 Relaxing break

- 15h55 – 16h20 **François-Yves BOUGET** (LOMIC Banyuls sur Mer)  
Role for ferritin in the day/night regulation of iron homeostasis in marine phytoplankton
- 16h20 – 16h45 **Corinne RIVASSEAU** (LPCV Grenoble)  
Extreme radioresistance and radionuclide concentration in *Coccomyxa actinabiotis*, a green microalga living in a nuclear facility

### Session 3: Plant development under biotic stress conditions

- \*16h45 – 17h10 **Tomohiro UEMURA** (University of Tokyo)  
The TGN is an essential organelle for pre-invasive defense system in *Arabidopsis* against pathogenic powdery mildew

### 17h10 – 19h00 Poster session and welcome snack

### Tuesday, October 24

- 9h00 – 9h25 **Bruno FAVERY** (ISA Sophia Antipolis)  
Root-knot nematodes manipulate plant cell development to induce multinucleate and hypertrophied feeding cells
- \*9h25 – 9h50 **Shin-ichiro SAWA** (Kumamoto University)  
Molecular mechanisms of gall development during plant parasitic nematode, *M. incognita* infection
- 9h50 – 10h15 **Laurent DESLANDES** (LIPM Toulouse)  
Plant immune receptors: sensing of pathogen interference and regulation of post-activation signaling

### 10h15 – 10h45 Coffee break / Posters

### Session 4: Impact of symbiotic associations on host development

- 10h45 – 11h10 **Jean-Philippe COMBIER** (LRSV Toulouse)  
Use of AM symbiosis to identify new regulation mechanisms of microRNA biology
- \*11h10 – 11h35 **Masashi KAWAGUCHI** (National Institute for Basic Biology Okazaki)  
Long-distance control of root nodulation
- 11h35 – 12h00 **Peter MERGAERT** (I2BC Gif -sur-Yvette)  
Antimicrobial peptides control symbiotic bacterial populations in plants and animals
- \*12h00 – 12h25 **Yusuke SAIJO** (Nara Institute of Science and Technology)  
Phosphate status-dependent control of plant immunity to root-infecting fungi in *Arabidopsis thaliana*

### 12h25 – 14h00 Lunch / Posters

- 14h00 – 14h25 **Clare GOUGH** (LIPM Toulouse)  
Symbiotic signal perception in *Medicago truncatula*
- 14h25 – 14h50 **Florian FRUGIER** (IPS2 Saclay)  
Local and systemic pathways integrating developmental and environmental responses in legume roots

### Session 5: Crosstalk between developmental and environmental signaling pathways

- 14h50 – 15h15 **Gwyneth INGRAM** (RDP ENS Lyon)

- A defense related signaling pathway regulating seed development
- \*15h15 – 15h40 **Miyo TERAO-MORITA** (Nagoya University)  
The *DGE1/LAZY1* gene family plays a key role in gravity signaling within statocytes during gravitropism in *Arabidopsis thaliana*
- 15h40 – 16h05 **Patrick ACHARD** (IBMP Strasbourg)  
Integration of plant growth signals by the GA signaling pathway

#### 16h05 - 16h35 Coffee break / Posters

- \*16h35 – 17h00 **Kohki YOSHIMOTO** (Meiji University)  
Physiological meaning of plant autophagy in response to environmental stresses
- 17h00 – 17h25 **Emmanuelle BAYER** (LBM Bordeaux)  
Staying tight: Plasmodesmal membrane contact sites and the control of cell-to-cell connectivity in plants
- 17h25 – 17h50 **Catherine RAMEAU** (IJPB Versailles)  
Strigolactones and shoot branching optimization
- 17h50 – 18h35 **Selected short presentations**  
Posters

Dinner in the old town for invited speakers (bus)

### Wednesday, October 25

#### Session 6: Plant development under abiotic stress conditions

- 9h00 – 9h25 **Stéphane MARI** (BPMP Montpellier)  
Deciphering iron transport, storage and remobilization in seeds
- 9h25 – 9h50 **Gabriel KROUK** (BPMP Montpellier)  
A systems view of nitrate signaling interactions
- 9h50 – 10h15 **Martin CRESPI** (IPS2 Saclay)  
Non-coding RNAs in root growth adaptation to the environment

#### 10h15 – 10h45 Coffee break / Posters

- 10h45 – 11h10 **Karine GALLARDO** (Agroécologie Dijon)  
The role of sulfur in the control of seed quality traits in legumes: from model to crop species
- \*11h10 – 11h35 **Mitsunori SEO** (RIKEN Yokohama)  
Functional characterization of NPF proteins involved in plant stress responses
- 11h35 – 12h00 **Laurent NUSSAUME** (BIAM Cadarache)  
Real-time radio-isotopic imagery and response to low concentration of phosphate
- 12h00 – 12h25 **Nathalie LEONHARDT** (BIAM Cadarache)  
Genetic screen to identify new regulators involved in the control of one H<sup>+</sup>-ATPase isoform

#### 12h25 – 13h30 Lunch / Posters

- \*13h30 – 13h55 **Takatoshi KIBA** (RIKEN Yokohama)  
Regulation of nitrogen acquisition under low availability
- 13h55 – 14h20 **Didier ALDON or Christian Mazars** (LRSV Toulouse)  
Plant calmodulin-related proteins (CMLs): multifaceted relays to decode calcium signals
- 14h20 – 14h45 **Julia BUITINK** (IRHS Angers)

- A role for auxin in the acquisition of longevity during seed development  
14h45 – 15h10 **Helen NORTH** (IJPB Versailles)  
The contribution of mucilage to seed life expectancy and how the maternal environment influences its production
- 15h10 – 15h25 **Conclusions: Tetsuro MIMURA / Gwyneth INGRAM / Thierry GAUDE**
- 

### Annex 1: Invited speakers

#### *French speakers:*

- Patrick ACHARD** CNRS Research Director, Institut de biologie moléculaire des plantes, CNRS UPR2357, Strasbourg
- Didier ALDON** Associate Professor HC, CNRS/Université Toulouse III, UMR 5546, Laboratoire de Recherche en Sciences Végétales (LRSV), Signalisation calcique cytosolique et nucléaire chez les végétaux
- Emmanuelle BAYER** CNRS Senior scientist, CNRS/Université Bordeaux, UMR 5200, Laboratoire de Biogenèse Membranaire
- François-Yves BOUGET** CNRS Research Director, CNRS/Université Pierre et Marie Curie Paris 6, UMR7621 Laboratoire d'Océanographie Microbienne, Banyuls
- Julia BUITINK** INRA Research Director, INRA/Agrocampus Ouest/Univ Angers, UMR 1345, Institut de Recherche en Horticulture et Semences (IRHS), Conservation et tolérance aux stress des semences
- Bénédicte CHARRIER** CNRS Research Director, CNRS/Université Pierre & Marie Curie, UMR8227, Laboratoire de Biologie Intégrative des Modèles Marins (LBI2M), Morphogenèse des MacroAlgues (MMA), Roscoff
- Susana COELHO** CNRS Research Director, CNRS/Université Pierre & Marie Curie, UMR8227, Laboratoire de Biologie Intégrative des Modèles Marins (LBI2M), Roscoff
- Jean-Philippe COMBIER** CNRS Senior scientist, CNRS/Université Paul Sabatier Toulouse III, UMR 5546, Laboratoire de Recherche en Sciences Végétales (LRSV), Peptides et Petits ARNs
- Martin CRESPI** CNRS Research Director, Institute of Plant Sciences – Paris Saclay (IPS2), CNRS/INRA/Univ Paris-Sud/Univ Paris-Diderot/Univ d'Evry/Université Paris-Saclay
- Laurent DESLANDES** CNRS DR2, UMR2594/411 INRA CNRS, Laboratoire des Interactions Plantes-Microorganismes, Castanet-Tolosan
- Bruno FAVERY** INRA Research Director, UMR INRA/Université Nice Sophia Antipolis/CNRS Sophia Antipolis, UMR 1355/7254, Institut Sophia Agrobiotech (ISA), Interactions Plantes-Nématodes
- Florian FRUGIER** CNRS Research Director, Institute of Plant Sciences – Paris Saclay (IPS2), CNRS/INRA/Univ Paris-Sud/Univ Paris-Diderot/Univ d'Evry/Université Paris-Saclay
- Karine GALLARDO** INRA Research Director, Agroécologie, AgroSup Dijon, INRA, Univ. Bourgogne Franche-Comté
- Claire GOUGH** CNRS Research Director, CNRS/INRA, UMR 2594/441, Laboratoire des Interactions Plantes-Microorganismes, Castanet-Tolosan

- Olivier HAMANT** INRA Research Director, CNRS/INRA/ENS Lyon/Université Lyon I, UMR 5667, Reproduction et Développement des Plantes (RDP)
- Gwyneth INGRAM** CNRS Research Director, CNRS/INRA/ENS Lyon/Université Lyon I, UMR 5667, Reproduction et Développement des Plantes (RDP)
- Yvon JAILLAIS** CNRS Senior scientist, CNRS/INRA/ENS Lyon/Université Lyon I, UMR 5667, Reproduction et Développement des Plantes (RDP)
- Gabriel KROUK** CNRS, Senior scientist, CNRS/INRA/SUPAGRO/UM, UMR5004 Biochimie et Physiologie Moléculaire des Plantes (B&PMP), Montpellier
- Patrick LAUFS** INRA Research Director, INRA/AgroParisTech/CNRS UMR 1318 ERL CNRS 3559/Université Paris-Saclay, Institut Jean Pierre Bourgin (IJPB), Versailles
- Stéphane MARI** INRA senior scientist, CNRS/INRA/SUPAGRO/UM, UMR5004 Biochimie et Physiologie Moléculaire des Plantes (B&PMP), Montpellier
- Peter MERGAERT** CNRS Research Director, CNRS/Université Paris-Sud/CEA, UMR 9198, Institute for Integrative Biology of the Cell (I2BC), Gif-sur-Yvette
- Helen NORTH** INRA Research Director, INRA/AgroParisTech/CNRS UMR 1318/Université Paris-Saclay, Institut Jean Pierre Bourgin (IJPB), Versailles
- Laurent NUSSAUME** CEA Senior scientist, Institut de Biologie Environnementale et de Biotechnologie (IBEB), UMR 7265 CNRS/CEA/Université Aix-Marseille, Service de Biologie Végétale et de Microbiologie Environnementales (SBVME) Laboratoire de Biologie du Développement des Plantes (LBDP), Cadarache
- Catherine RAMEAU** INRA Research Director, INRA/AgroParisTech/CNRS UMR 1318/Université Paris-Saclay, Institut Jean Pierre Bourgin (IJPB), Versailles
- Nathalie LEONHARDT** CEA Senior scientist, Institut de Biologie Environnementale et de Biotechnologie (IBEB), UMR 7265 CNRS/CEA/Université Aix-Marseille, Service de Biologie Végétale et de Microbiologie Environnementales (SBVME) Laboratoire de Biologie du Développement des Plantes (LBDP), Cadarache
- Corinne RIVASSEAU** CEA Engineer scientist, CNRS/CEA/INRA/Université Grenoble Alpes, UMR 5168, Physiologie Cellulaire Végétale, Plantes, Stress et Métaux, Grenoble
- Teva VERNOUX** CNRS Research Director, CNRS/INRA/ENS Lyon/Université Lyon I, UMR 5667, Reproduction et Développement des Plantes (RDP)
- Chloé ZUBIETA** CNRS Senior scientist, CNRS/INRA/CEA Univ. Grenoble-Alpes, UMR5168, Laboratoire de Physiologie Cellulaire et Végétale (LPCV), Grenoble

***Japanese speakers:***

- Hidehiro FUKAKI** Professor, Graduate School of Science, Kobe University
- Toshiro ITO** Professor, Nara Institute of Science and Technology
- Masayoshi KAWAGUCHI** Professor, National Institute for Basic Biology, Okazaki
- Takatoshi KIBA** Research Scientist, RIKEN Center for Sustainable Resource Science, Yokohama
- Takayuki KOHCHI** Professor, Graduate School of Biostudies, Kyoto University,
- Yoshihisa ODA** Associate Professor, National Institute of Genetics, Mishima
- Yusuke SAIJO** Associate Professor, Nara Institute of Science and Technology, Graduate School of Biological Sciences
- Shinichiro SAWA** Professor, Kumamoto University, Graduate school of Science and Technology
- Mitsunori SEO** Unit leader, RIKEN Center for Sustainable Resource Science, Yokohama
- Miyo TERANO MORITA** Professor, Nagoya University, Graduate School of Bioagricultural Sciences,

**Tomohiro UEMURA** Assistant Professor, University of Tokyo, Graduate School of Science,  
Department of Biological Sciences

**Kohki YOSHIMOTO** Associate Professor, Meiji University, School of Agriculture, Department of  
Life Sciences

## **Annex 2: Organizers, scientific board and local organizing committee**

**Organizers: Prof. Tetsuro MIMURA and Dr. Gwyneth INGRAM**

### ***Scientific board:***

**Thierry GAUDE**, DR CNRS, UMR RDP, **Loïc LEPINIEC**, DR INRA, IJPB Versailles, **Annie MARION-POLL**,  
DR INRA, IJPB Versailles, **Laurent NUSSAUME**, DR CEA, UMR 7265 St-Paul-lez-Durance, **Akira SUZUKI**,  
DR INRA IJPB Versailles, **Mitsunori SEO**, DU RIKEN Center for Sustainable Resource Science, Yokohama  
– Japan, **Hidehiro FUKAKI**, Pr. Kobe University, Graduate School of Science, Department of Biology, Kobe –  
Japan, **Kohki YOSHIMOTO**, Pr. associé, Department of Life Sciences, School of Agriculture, Meiji University,  
Kawasaki – Japan, **Kimitsune ISHIZAKI**, Pr associé, Kobe University, Graduate School of Science,  
Department of Biology, Kobe –Japan

### ***Local organizing committee (RDP, ENS Lyon)***

Mohammed BENDAHMANE, Arezki BOUDAOU, Thierry GAUDE, Gwyneth INGRAM, Yvon JAILLAIS,  
Angélique PATOLE, Michiel VANDENBUSSCHE, Teva VERNOUX.