



PCS 2022

MILANO

Monday, July 11th

10.00-12.30

10.00-11.15 **Registration and Poster set up**

11.15-11.30 **Welcome:** Alex Costa and Maria Cristina Bonza (*University of Milan, Italy*)

11.30-12.30 **Keynote Lecture:** Tullio Pozzan (*University of Padova, Italy*)
Temporal and spatial heterogeneity of second messenger levels

12.30-14.30 **Lunch and Poster viewing**

14.30-19.00

SESSION 1: Channels, Transporters and Regulators of Calcium Movement Across Membranes
Chair: Maria Cristina Bonza (*University of Milan, Italy*)

14.30-15.00 **Invited speaker:** Zhenming Pei (*Duke University, Durham, USA*)
Ca²⁺ genetics: identification of Ca²⁺-mediated stress sensing components

15.00-15.30 **Invited speaker:** Rainer Hedrich (*University Würzburg, Germany*)
A unique inventory of ion transporters poises the Venus flytrap to touch- and glutamate-provoked, fast-propagating action potentials and calcium waves

15.30-15.50 Matteo Grenzi (*University of Milan, Italy*)
The ligand binding domain of GLR3.3 is required for both local and systemic cytosolic Ca²⁺ increase

15.50-16.10 Réjane Carron (*Max Planck Institute for Plant Breeding, Germany*)
A novel family of environmental sensor channels in *Arabidopsis thaliana*

16.10-16.30 Karthik Ramanadane (*University of Zurich, Switzerland*)
Structural and functional basis for high affinity calcium transport by a plant NRAMP-related aluminum transporter

16.30-16.50 **Coffee Break and Poster viewing**

SESSION 2: Calcium in Organelles

Chair: Lorella Navazio (*University of Padova, Italy*)

- 16.50-17.20 **Invited speaker:** Ildiko Szabò (*University of Padova, Italy*)
The relevance of chloroplast calcium dynamics for plant response to stress
- 17.20-17.50 Myriam Charpentier (*John Innes Centre, Norwich, United Kingdom*)
Modulator of nuclear calcium signaling in root legume symbioses
- 17.50-18.10 Markus Schwarzländer (*University of Münster, Germany*)
MCU proteins dominate plant mitochondrial Ca²⁺ uptake *in vivo*
- 18.10-18.30 Barkha Ravi (*University of Delhi, India*)
A calcium signalling kinase, CIPK9 targets and regulates VDAC3 in oxidative stress responses in Arabidopsis
- 18.30-18.50 Rob Roelfsema (*University of Würzburg, Germany*)
A Ca²⁺-homeostat operates in the vacuolar membrane of root hair cells
- 19.00-20.30 **Welcome party**

Tuesday, July 12th

09.00-12.30

SESSION 3: Decoding Calcium Signals: Sensors and Effectors

Chair: Alessandra Astegno (*University of Verona, Italy*)

- 09.00-09.30 **Invited speaker:** Colin Brownlee (*University of Southampton, United Kingdom*)
Generation and interpretation of calcium signals in unicellular algae
- 09.30-10.00 Wayne Snedden (*Queen's University, Canada*)
Identification and characterization of Arabidopsis CML targets
- 10.00-10.20 Katharina Bürstenbinder (*Leibniz Institute of Plant Biochemistry, Germany*)
Orchestration of calcium signaling at the microtubule-membrane nexus
- 10.20-10.40 Anja Liese (*Leibniz Institute of Plant Biochemistry, Germany*)
Imaging of Arabidopsis calcium-sensor kinase conformation monitors real time activation dynamics *in vivo*

10.40-11.00 Marie Boudsocq (*University Paris-Saclay, France*)
In vivo identification of putative CPK5 substrates in *Arabidopsis thaliana*

11.00-11.30 *Coffee Break and Poster viewing*

SESSION 4: Calcium in Abiotic and Biotic Responses

Chair: Dale Sanders (*John Innes Centre, Norwich, United Kingdom*)

11.30--12.00 **Invited speaker:** Guo Yan (*China Agricultural University, Beijing, China*)
Regulation of plant salt response by calcium signal

12.00-12.30 Joerg Kudla (*University of Muenster, Germany*)
Formation and function of oligo-cellular Ca²⁺ signaling centers as emerging concept in ion-driven organ-scale Ca²⁺ signaling

12.30-14.20 *Lunch and Poster viewing*

14.20-19.00

14.20-14.40 Marc Knight (*Durham University, United Kingdom*)
Stress induced calcium signatures are modified by the clock and environment

14.40-15.00 Simon Stael (*VIB-UGent, Belgium*)
Damage-activated proteolysis, signaling peptides, and calcium signaling in the plant wound response

15.00-15.20 Connor Tansley (*University of East Anglia, United Kingdom*)
Salt sensitive: conservation of ancient functions in *Marchantia polymorpha*

15.20-15.40 Shruti Mishra (*Jawaharlal Nehru University, India*)
Identification of novel gene(s) involved in calcium mediated jasmonate perception using forward genetic screen in *Arabidopsis*

15.40-16.00 Leonie Steinhorst (*University of Muenster, Germany*)
A Ca²⁺ sensor switch for tolerance to elevated salt stress in *Arabidopsis*

16.00-16.30 *Coffee Break and Poster viewing*

SESSION 5: Systemic Calcium Signals

Chair: Alex Costa (*University of Milano, Italy*)

- 16.30-17.00 **Invited speaker:** Mitsuyasu Hasebe (*National Institute for Basic Biology, Okazaki, Japan*)
Cytosolic calcium ion dynamics in the sensitive plant, the Venus flytrap, and the sundew by mechanical stimuli
- 17.00-17.30 **Invited speaker:** Edward Farmer (*University Lausanne, Switzerland*)
ACA pumps maintain leaf excitability during herbivory
- 17.30-17.50 Deirdre McLachlan (*University of Bristol, United Kingdom*)
Calcium channels specifically mediating long distance signalling across the leaf lamina are shared between biotic and abiotic stresses
- 17.50-18.10 Michael M. Wudick (*Heinrich-Heine-University, Düsseldorf, Germany*)
The mechanosensitive ion channel msl10 functions in systemic wound signaling in plants
- 18.10-18.30 Eleni Stavrinidou (*Linköping University, Sweden*)
Organic bioelectronics for high resolution plant electrophysiology
- 18.30-18.50 Annalisa Bellandi (*John Innes Centre, Norwich, United Kingdom*)
Apoplastic diffusion and bulk flow of amino acids mediate calcium waves transmission
- 19.10** **Free Dinner**

Wednesday, July 13th

9.00-12.30

SESSION 6: Calcium Signaling in Single Cell Systems

Chair: Michela Zottini (*University of Padova, Italy*)

- 09.00-09.30 Josè Feijo (*University of Maryland, USA*)
Molecular mechanisms of regulation and ion selectivity of Plant Glutamate-receptors
- 09.30-09.50 Matteo Pivato (*University of Verona, Italy*)
Compartment-specific Ca²⁺ imaging in the green alga *Chlamydomonas reinhardtii* reveals high light-induced plastidial Ca²⁺ signatures
- 09.50-10.10 Shouguang Huang (*University of Würzburg, Germany*)
Remote control of the watergate with Ca²⁺ signals

10.10-10.30 Galina Shevchenko (*Institute of Botany, NAS, Ukraine*)
Calcium gradient of beta root hairs is changed during clinorotation

10.30-10.50 Eleanor A. Murphy (*University of Bristol, United Kingdom*)
Cellular stress signalling in marine diatoms

10.50-11.30 *Coffee Break and Poster viewing*

SESSION 7: Calcium Cross-talk with Other Second Messengers

Chair: Elodie Vandelle (*University of Verona, Italy*)

11.30--12.00 **Invited speaker:** Cyril Zipfel (*University of Zurich, Switzerland*)
Chasing calcium-permeable channels involved in plant cell-surface immunity

12.00-12.30 Tina Romeis (*Leibniz-Institut für Pflanzenbiochemie, Germany*)
Regulation and function of calcium-dependent protein kinases as decoders of calcium changes during stress signalling in plants

12.30-14.30 *Lunch and Poster viewing*

14.30-15.30

14.30-14.50 Elisa Dell'Aglio (*University of Grenoble, CNRS, CEA; INRAE, France*)
Arabidopsis NAD kinase c (NADKc) represents a missing link between Ca²⁺ signaling, metabolism, and plant stress response

14.50-15.10 Ute C. Vothknecht (*IZMB, University of Bonn, Bonn, Germany*)
Calcium signalling in stress responses of barley

15.10-15.30 Elide Formentin (*University of Padova, Italy*)
ROS and Ca²⁺ interplay in inducing salt tolerance in rice

15.30-18.20

SESSION 8: Calcium Signaling in Plant Metabolism & Nutrition

Chairs: Doron Shkolnik (*The Hebrew University of Jerusalem, Israel*) and Andrea Genre (*University of Torino, Italy*)

- 15.30-16.00 **Invited speaker:** Petra Bauer (*University Düsseldorf, Germany*)
Calcium signaling links Fe deficiency response regulation events with the bHLH transcription factor cascade and control of the Fe acquisition machinery in the root plasma membrane
- 16.00-16.20 Chrysoula K. Pantazopoulou (*Utrecht University, The Netherlands*)
Mechanodetection of neighbor plants elicits adaptive leaf movements through calcium dynamics
- 16.20-17.00 *Coffee Break and Poster viewing***
- 17.00-17.20 Filippo Binci (*University of Padova, Italy*)
Quantitative analyses of intracellular calcium signatures in *Lotus japonicus* disentangle the early discrimination of fungal signals
- 17.20-17.40 Lukas Wallrad (*University of Münster, Germany*)
Oligo-cellular long-lasting calcium oscillations govern adaptation to manganese deficiency
- 17.40-18.00 Manuel Nieves-Cordones (*CSIC, CEBAS, Spain*)
CIPK23 targets different transport mechanisms in tomato and *Arabidopsis*
- 18.00-18.20 Stefano Buratti (*University of Milan, Italy*)
A simple methodology to study the effects of plant nutrient homeostasis on Ca²⁺ signaling
- 18.20-18.45 *Poster/Talk Prize and concluding remarks***
- 19.30-23.00 *Conference Dinner @ Orto Botanico Brera***



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