



Workshop on Plant Biology 2026

Centro Residenziale Universitario di Bertinoro
25-27 February 2026



SOCIETA' ITALIANA di
BIOLOGIA VEGETALE

Workshop SIBV 2026

Scientific and Organizing Committee

Alessandro Alboresi	University of Padova
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Sara Cimini	Campus Bio-Medico University of Roma
Alex Costa	University of Milano
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Vincenzo Lionetti	University of Roma "La Sapienza"
Francesco Loreto	University of Napoli Federico II
Andrea Pagano	University of Pavia
Benedetta Pizziconi	University of Roma "Campus Bio-Medico"
Maria Manuela Rigano	University of Napoli Federico II
Giovanna Salbitani	University of Napoli Federico II
Mirko Zaffagnini	University of Bologna
Michela Zottini	University of Padova

Conference venue

Centro Residenziale Universitario di Bertinoro (Forlì-Cesena)

Conference Language

The official conference language is English

Conference Dinner on February 25

Ca' de Bè – Osteria Enoteca, Piazza della Libertà, 9/b

GENERAL INFORMATION



Wednesday, February 25, 2026

01:30 pm **Registration and Welcome buffet**

02:15 pm **Workshop Opening**

Francesco Loreto, President of the Italian Society of Plant Biology – University of Napoli Federico II

Session 1: Adaptation mechanisms to environmental stress

Chairs: Aldo Sutti, Ginevra Marie Eloise Peppi

Invited:

02:30 pm **Spatiotemporal Integration of Environmental Stimuli in Plants: Towards a Single-Cell Perspective**

Paolo Triozzi PhD – University Sant'Anna of Pisa

Oral Presentations:

03:10 pm **Evaluation of reduced-activity Plant Cysteine Oxidase 4 variants effects on submergence tolerance in *Arabidopsis thaliana***

Arianna Del Greco - University of Pisa

03:25 pm **Strigolactones-gibberellin crosstalk via the miR319-LANCEOLATE module, and its relevance to stomatal functioning in tomato**

Shuo Liang – University of Torino

Flash Talks:

03:40 pm **Role of thallium hyperaccumulation in plant protection against biotic stress: insights from *Silene latifolia* and *Botrytis cinerea*.**

Beatrice Chiavacci, University of Firenze

03:45 pm **Priming-induced DDR (DNA Damage Response) signatures contributing to heat stress tolerance in tomato (*Solanum lycopersicum* L.)**

Ridwan Diaguna - University of Pavia

03:50 pm **An Integrative Multi-Omic Approach to Decode Adaptive Strategies of *Atropa belladonna* in Saline Environments**

Rosa D'Alessandro - University of Salerno

03:55 pm **Investigating stress memory in tomato plants exposed to recurrent water deficit**

Giulia Giannetti - IPSP-CNR, Torino

04:00 pm **COFFEE BREAK**

Oral Presentations:

- 04:45 pm **Trophic transitions from dark to light in the unicellular red alga *Galdieria phlegrea***
Rosanna Bossa - University of Napoli Federico II
- 05:00 pm **Understanding the impact of photoprotection mechanisms on ROS regulation in the moss *Physcomitrium patens***
Francesco Paolo Tranne - University of Padova
- 05:15 pm **Secretion and Regulation of Pectin Methylesterases as Mechanisms of Plant Adaptation to Environmental Stress**
Gabriele Pecatelli – University of Roma “La Sapienza”
- 05:30 pm **Transcriptomic and metabolic reprogramming of durum wheat under polystyrene nanoplastics exposure**
Benedetta Pizziconi – University of Roma Campus Biomedico
- 05:45 pm **Activity organized by SIBV Junior members: Escape Plant Lab**
- 08:00 pm **GET TOGETHER PARTY DINNER AT CA' DE BÈ RESTAURANT**

Thursday, February 26, 2026

Session 2: Plant Nutrition and Metabolism

Chairs: Davide Canini, Shraddha Shridhar Gaonkar

Invited:

- 09:00 am **Phosphoribulokinase: how to torment an enzyme to study carbon metabolism**
Libero Gurrieri –University of Bologna

Oral Presentations:

- 09:40 am **Heterologous expression of phosphoenolpyruvate carboxylase in *Nannochloropsis oceanica***
Jacopo Gelmetti - University of Verona
- 09:55 am **Iodine: a new weapon in the battle against abiotic stress**
Angelo Candito – University Sant’Anna of Pisa
- 10:10 am **Investigation of the metabolic coordination in diazotrophic cyanobacteria using genetically encoded fluorescent probes.**
Filippo Fiorin - University of Padova

Flash Talks:

- 10: 25 am **Physiological and Molecular Effects of Exogenous Strigolactone-like Molecules in Nutrient Use Efficiency in Tomato**
Ruihan Shen – University of Torino

- 10:30 am **Re-Waste: a green, sustainable and circular strategy for crop resilience**
Lucrezia Anastasia Ortelli - *University of Tuscia*
- 10:35 am **Recombinant production and characterisation of chloroplastic pentose phosphate pathway dehydrogenases from *Chlamydomonas reinhardtii***
Noemi Russo - *University of Napoli Federico II*
- 10:40 am **Structural determinants of functional and regulatory features of photosynthetic phosphoglycerate kinase**
Tancredi Bin - *University of Bologna*
- 10:45 am COFFEE BREAK**
- 11:20 am **Activity organized by SIBV Junior members: Project Design**
- 13:00 pm LUNCH**

Session 3: Development and signal transduction

Chairs: Emma Olmi, Margherita Gagliano

Invited:

- 02:30 pm **Keeping Hormones in Check: Homeostatic Control of Auxin and Jasmonate Action**
Federica Brunoni - *University of Verona*

Oral Presentations:

- 03:10 pm **Isolation of extracellular vesicles and characterization of their role as shuttle of biologically active small RNAs in intercellular communication**
Tommaso Sanson - *University of Verona*
- 03:25 pm **The role of HPCA1 and GLR3.3 in ROS perception and long-distance signal propagation after wounding in *A. thaliana* seedlings**
Adriana Furlani - *University "Roma Tre"*
- 03:40 pm **Dissecting Oligogalacturonide-Mediated Pathogen Resistance and Root Development**
Sara Di Renzo - *University of Roma "La Sapienza"*

Flash Talks:

- 03:55 pm **NADKinases-Calmodulin-dependent as driver for pollen tube tip growth**
Fabio Palmigiani - *University of Milano*
- 04:00 pm **Dissecting the Mitochondrial Unfolded Protein Response (UPRmt): From Stress Signaling to Physiological Acclimation in *Arabidopsis***
Anna Maria Placentino, *University of Padova*

- 04:05 pm **Balancing Growth and Defense: Role of TOR and SnRK1 Kinases in Biotic Stress and Cell Wall Damage Responses in *Arabidopsis***
Antea Mariani, University of Roma "La Sapienza"
- 04:10 pm **Seed morphophysiological heterogeneity in *Lathyrus sativus* accessions**
Davide Pezzini - University of Pavia
- 04:15 pm COFFEE BREAK**
- 04: 50 pm **Activity organized by SIBV Junior members: Project presentation and evaluation**
- 08:00 pm DINNER**

Friday, February 27, 2026

Session 4: Emerging technologies

Chairs: Nicholas Rizzetto, Amedeo Moine

Invited:

- 09:00 am **Spectral signatures potentially allow real-time, nondestructive identification of root species in the field**
Marco Lombardi, Aarhus University

Oral Presentations:

- 09:40 am **dsRNA production in cyanobacteria and microalgae for biocontrol of invasive species *Popillia japonica***
Elia Battagini, University of Verona
- 09:55 am **Assessing an In Vivo Approach to Validate CRISPR-Cas9 RNA Guides in Durum Wheat**
Francesca Orlando, University of Tuscia
- 10:10 am **From *Arabidopsis* to crop-relative species: unrevealing the hidden world of long-distance Ca²⁺ signalling in plants**
Bianca Maria Orlando Marchesano, University of Milano

Flash Talks:

- 10:25 am **IoT Microclimate Monitoring: Single-Plant Microchambers for Precision Phenotyping**
Giulia Fiorini, University of Napoli Federico II / IPSP-CNR
- 10:30 am **Cold plasma priming as a strategy to burst rice tolerance to water scarcity**
Teodora Chiara Tonto, University of Roma Campus Bio-Medico
- 10:35 am **Mechanisms of plant stress adaptation and physiological regulation induced by olive by-product-derived elicitors**
Giulia Caminada, University of Roma "La Sapienza"

10:40 am **Evaluation of wood distillate and Spirulina biostimulants to increase nickel hyperaccumulator-based phytomining in serpentine soil**
Pablo Carril Vaglini, *University of Firenze*

10:45 am **COFFEE BREAK**

Oral Presentations:

11:10 am **Expansion of the plant CRISPR-Cas platform: evaluation of the genome editing efficiency of the CoCas9 nuclease in *Solanum lycopersicum* hairy roots**
Marco Renzetti, *University of Roma "La Sapienza"*

11:25 am **Plasma priming as a tool for modulating germination, chemical and transcriptional profiling in *Cannabis sativa* seeds**
Nicola Bosco, *University of Pavia*

11:40 am **Seed biopriming in frames: understanding and improving its effectiveness through image-based analyses**
Conrado N. Dueñas, Jr, *University of Pavia*

11:45 am **CONCLUDING REMARKS**
Francesco Loreto, President of the Italian Society of Plant Biology – *University of Napoli Federico II*

01:00 am **LUNCH**

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The role of HPCA1 and GLR3.3 in ROS perception and long-distance signal propagation after wounding in *A. thaliana* seedlings

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Plants have evolved sophisticated long-distance signaling networks to coordinate systemic responses to environmental stress. Beyond hormones and metabolites, the integration of signals such as electrical waves, hydraulic wave, reactive oxygen species (ROS), and calcium (Ca^{2+}) waves is crucial for cell-to-cell communication. In this study, we investigated the roles of HPCA1, a plasma membrane H_2O_2 receptor that triggers cytosolic Ca^{2+} increases, and GLR3.3, a glutamate receptor-like channel that also leads to cytosolic Ca^{2+} influx, in the systemic response to mechanical wounding in *Arabidopsis thaliana* seedlings. In wild-type (WT) seedlings, mechanical wounding prompts a highly coordinated stomatal closure, affecting both wounded (local) and unwounded (distal) tissues. In contrast, *hpca1* mutants failed to exhibit wound-induced stomatal closure, suggesting that HPCA1 is essential for the long-distance signal propagation and for the translation of this signal into physiological responses. Live imaging of guard cells using the CM-H2DCFDA probe revealed that, while WT stomatal guard cells show robust ROS accumulation following wounding, *hpca1* guard cells failed to exhibit significant increases in ROS-associated fluorescence. In these mutants, ROS levels remained comparable to control conditions at all analyzed time points, except for a minor, transient spike 5 minutes after root wounding. Furthermore, analysis of *in vivo* ROS accumulation in whole cotyledonary leaves of *hpca1* and *glr3.3* mutants revealed that these mutant seedlings did not display ROS accumulation in their local or systemic leaves in response to cotyledonary-leaf or root wounding, suggesting that both proteins are indispensable for wound-triggered cell-to-cell ROS signal propagation. Collectively, our findings identify HPCA1 and GLR3.3 as key components of a ROS- Ca^{2+} signaling that couples local perception of wounding to systemic acclimation, providing new insights into the crosstalk between ROS accumulation and Ca^{2+} fluxes during cell-to-cell signal propagation.