

14 September 2023

Symposium 6

**NOVEL TECHNOLOGIES FOR
MULTISCALE LEVELS OF INVESTIGATION
IN PLANT PHYSIOLOGY**

Chairs: LAURA DE GARA, Campus Bio-Medico
University of Rome
ANCA MACOVEI, University of Pavia

09:00 - 09:40 Coloring games: new ways of making and storing health – promoting carotenoid pigments in plant cells
MANUEL RODRIGUEZ-CONCEPCION, Spanish National Research Council

09:40 - 10:10 Plant phenotyping: past achievements, state of the art and future perspectives
FRANCESCO LORETO, University of Naples

10:10 - 10:25 Effects of light quality on carbon assimilation/emission and growth of lettuce: use of an upgraded prototype-platform to unravel mechanisms of photosynthesis/respiration control
DAVIDE PATONO, University of Turin

10:25 - 10:40 Physiological response of *Lens culinaris* Medik. to cerium and neodymium chlorides exposure
ISIDORA GJATA, University of Bari

10:40 - 10:55 Investigating holm oak forest dieback through a multiscale approach: physiological measurements and visual assessment data with remote sensing
BRUNETTI CECILIA, CNR, ISPP, Sesto Fiorentino

10:55 - 11:30 COFFEE BREAK

11:30 - 11:45 Does slow and fast wilting rates affect the recovery from embolism in poplar seedlings? New insights from micro-CT analysis
TRICERRI NICCOLÒ, University of Turin

11:45 - 12:00 New tools to study in vivo the dynamics of Ca²⁺ in plant mitochondria
FRANCESCA RESENTINI, University of Milan

12:00 - 12:15 Exploring different phenotypic and molecular approaches to unravel early events in olive-Xylella interactions
ANTONY SURANO, CNR, ISPP, Bari

12:15 - 13:00 CONGRESS CLOSURE

**XII Congress
of the Italian Society of
Plant Biology**

Scientific Committee

Laura De Gara
Fiorella Lo Schiavo
Matteo Ballottari
Alex Costa
Giuseppe Forlani
Andrea Nardini
Maria Manuela Rigano
Francesca Secchi
Gianpiero Vigani
Mirko Zaffagnini
Maria Concetta de Pinto
Sara Cimini

Local Organizing Committee

Maria Concetta de Pinto
Franca Tommasi
Costantino Paciolla
Nunzio Dipierro
Federico Vita
Sara Cimini
Silvana De Leonardis
Stefania Fortunato
Cecilia Lasorella
Isidora Gjata
Benedetta Bottiglione



**XII
SIBV**
(Italian Society of Plant Biology)
CONGRESS
BARI, 11-14 SEPTEMBER 2023
CONGRESS LOCATION:
**Department of Biosciences, Biotechnologies
and Environment**
Campus "E. Quagliariello" via Orabona 4, Bari
UNIVERSITY OF BARI ALDO MORO



11 September 2023

12:30 - 14:00 Registration
14:00 - 14:30 Opening ceremony by Stefano Bronzini
rector of University of Bari, Laura De Gara and
Chiara Tonelli

Symposium 1

**PLANT IMMUNITY AND PLANT-MICROBE
INTERACTION**

Chairs: MICHELA ZOTTINI, University of Padua
ROBERTO DE MICHELE, CNR-IBBR of Palermo

14:30 - 15:10 Calcium signalling in plant immunity: how to vaccinate a plant?
TINA ROMEIS, Leibniz Institute of Plant Biochemistry

15:10 - 15:40 The evolution of plant immunity at the crossroad between defense and development: the role of damage-associated molecular patterns (DAMPs) in tissue injury
GIULIA DE LORENZO, Sapienza University of Rome

15:40 - 15:55 Identification of a novel cellodextrin-dependent degrading activity against plant polyphenols
MANUEL BENEDETTI University of L'Aquila

15:55 - 16:10 Engineering danger sensing and signaling in plant immunity: use of oligosaccharins to enhance durum wheat resistance to fusariosis
VALENTINA BIGINI, University of Tuscia

16:10 - 16:25 Enhancing drought tolerance in *Arabidopsis thaliana* plants through beneficial grapevine endophytes: preliminary findings
SARA P. NASTASI, University of Milan

16:25 - 17:00 COFFEE BREAK

17:00 - 17:15 Barley germination tolerance to submergence stress: a genetic and a microbiome approach
EVA M. GÓMEZ ALVAREZ, Scuola Superiore S. Anna of Pisa

17:15- 17:30 Combination of arbuscular mycorrhizal fungi and natural compounds for improving tomato resilience to environmental stresses
RAFFAELLA BALESTRINI, CNR, ISPS, Turin

17:30-17:45 Psychrotolerant endophytic bacteria of wild alpine plants can improve cold tolerance in crops
MICHELE PERAZZOLI, University of Trento

17:45 - 19:00 Round Table about "The state of the art of innovation in Agriculture"
Moderator: GIOVANNI MATERA, RAI3
Speakers: CHIARA TONELLI; PIERO MORANDINI; PAOLO DE CASTRO; ELENA SGARAVATTI; DEBORAH PIOVAN;

WELCOME COCKTAIL PARTY

12 September 2023

Symposium 2

FROM SIGNALLING TO DEVELOPMENT

Chairs: FRANCESCA SECCHI, University of Turin
ALEX COSTA, University of Milan

09:00 - 09:40 Restoring a damaged root stem cell niche
LIEVEN DE VEYLDER, Ghent University

09:40 - 10:10 Strigolactone signaling at the interface of plant development and a changing environment
ANDREA SCHUBERT, University of Turin

10:10 - 10:25 Distinct roles of AtCuAO β and RBOHD in wound-induced local and systemic leaf-to-leaf and root-to-leaf stomatal closure in *Arabidopsis*
ILARIA FRAUDENTALI, Roma Tre University

10:25 - 10:40 Turgor-sensitive responses link cell wall integrity to a signalling module promoting apical hook formation in *Arabidopsis thaliana*
RICCARDO LORRAI, Sapienza University of Rome

10:40 - 10:55 The *Lotus japonicus* NPF4.6 is a KNO₃ and ABA transporter involved in the lateral root elongation process
VLADIMIR VALKOV TOTEV, Institute of Bioscience and BioResources, CNR, Naples

10:55 - 11:30 COFFEE BREAK

11:30 - 11:45 Compartment-specific Ca²⁺ imaging in the green alga *Chlamydomonas reinhardtii* reveals high light-induced chloroplast Ca²⁺ signatures
MATTEO PIVATO, University of Verona

11:45 - 12:00 Unveiling the mitochondrial unfolded protein response (UPR^{mt}) in *Arabidopsis thaliana*
ALBERTO TAMBORRINO, University of Padua

12:00 - 12:15 Study of three putative Plastid Peptide Transporters mediating chloroplast-to-nucleus signalling in response to folding stress in *Arabidopsis thaliana* chloroplasts
NICOLAJ JERAN, University of Milan

12:15 - 13:30 POSTER SESSION A

13:30 - 14:30 LUNCH

12 September 2023

Symposium 3

BIOTECHNOLOGICAL APPROACHES FOR CIRCULAR BIO-ECONOMY AND SUSTAINABILITY

Chairs: MARIA M. RIGANO, University of Naples
GIUSEPPE FORLANI, University of Ferrara

14:30 - 15:10 Next generation chemical priming as a green strategy for sustainable agriculture
VASSILIS FOTOPOULOS, Cyprus University of Technology

15:10 - 15:40 Genetic engineering approaches to produce proteins, lipids and bioplastics from algae
TOMAS MOROSINOTTO, University of Padua

15:40 - 15:55 Re-Waste: a green, sustainable and circular strategy for crop resilience
DANIEL SAVATIN, University of Tuscia – DAFNE

15:55 - 16:10 Enhancing biomass productivity and mitigating photoinhibition under high light through biotechnological engineering of astaxanthin accumulation in *Chlamydomonas reinhardtii*
STEFANO CAZZANIGA, University of Verona

16:10 - 16:25 Improving chromium removal from wastewater: the use of natural biostimulants towards circular economy
ILARIA COLZI, University of Florence

16:25 - 17:00 COFFEE BREAK

17:00 - 17:15 A sustainable biotech system to extract bioactive compounds from vegetable waste and by-products
ENRICO DORIA, University of Pavia

17:15 - 17:30 Investigating the potential of microalgae-microbe interactions for efficient extraction of algal metabolites
MOIRA GIOVANNONI, University of L'Aquila

17:30 - 19:00 ELEVATOR PITCHES

13 September 2023

Symposium 4

PLANT ADAPTATION TO ENVIRONMENTAL CONDITIONS

Chairs: FIORELLA LO SCHIAVO, University of Padua
MATTEO BALLOTTARI, University of Verona

09:00 - 09:40 Hydrogen peroxide signalling in plants
FRANK VAN BREUSEGEM, Ghent University

09:40 - 10:10 Redox signalling in plant heat stress response
MARIA CONCETTA DE PINTO, University of Bari

10:00 - 10:25 The geomagnetic field (GMF) modulates *Arabidopsis thaliana* ROS metabolomics and transcriptomics
AMBRA S. PARMAGNANI, University of Turin

10:25 - 10:40 Disturbance of nitrogen-fixing symbiotic interactions by PET micro/nanoplastics: the case of *Azolla filiculoides* Lam. and *Anabaena azollae*
MARCO DAINELLI, University of Florence

10:40 - 10:55 New insights into durum wheat salt stress tolerance
SARA CIMINI, Campus Bio-Medico University of Rome

10:55 - 11:30 COFFEE BREAK

11:30 - 11:45 Exploring durum wheat germplasm to minimize drought impact on the nutritional status of plants
GIANPIERO VIGANI, University of Turin

11:45 - 12:00 Dissection of heat and drought tolerance traits in a *Solanum pennellii* introgression tomato line
FRANCESCA SILVANA, University of Naples

12:00 - 12:15 Plant responses to complex environmental stresses: investigation of molecular crosstalk between low oxygen and iron deficiency
YURI TELARA, Sant'Anna School of Advanced Studies

12:15 - 12:30 Phosphorylation-mediated regulation of alternative splicing in plant heat stress response with a focus on the role of cAMP
GUIDO DOMINGO, University of Insubria

12:30 - 13:30 POSTER SESSION B

13:30 - 14:30 LUNCH

13 September 2023

Symposium 5

IMPROVING CARBON ASSIMILATION FOR PLANT PRODUCTION

Chairs: MIRKO ZAFFAGNINI, University of Bologna
ANDREA NARDINI, University of Trieste

14:30 - 15:10 Genetic determinants of photosynthetic variation in field-grown MAGIC maize
JOHANNES KROMDIJK, University of Cambridge

15:10 - 15:40 Shedding light on dark complexes of the Calvin -Benson cycle
PAOLO TROST, University of Bologna

15:40 - 15:55 Constitutive sodium compartmentalization patterns differentially affect biomass production of two salt-treated edible halophytes
EMILY ROSE PALM, University of Milan-Bicocca

15:55 - 16:10 *Physcomitrium patens* flavodiiron proteins for the adaptation to changing environmental conditions
CLAUDIA BERALDO, University of Padua

16:10 - 16:25 Evidence from an *Arabidopsis thaliana* p5cdh mutant strengthening the occurrence of a proline-P5C cycle in plants
SIMONE BARERA, University of Ferrara

16:25 - 17:00 COFFEE BREAK

17:00 - 17:15 Novel function of isoprene in root physiology and salt stress tolerance
MANUEL BELLUCCI, Campus Bio-Medico University of Rome

17:15 - 17:30 Increasing phosphoribulokinase affinity to improve CO₂ flux: testing the approach and first results
LIBERO GURRIERI, University of Bologna

17:30 - 17:45 Krebs cycle substrates starvation explains the decrease of O₂ consumption induced by hexanoic acid in pea roots
SARA GARGIULO, University of Udine

17:45 - 19:00 General Assembly of the Italian Society of Plant Biology

20:30 - 23:30 SOCIAL DINNER