



PLANT BIOLOGY EUROPE 2021



JOINTLY ORGANIZED BY:



28th June
01st July

JOINTLY ORGANIZED BY:



WITH THE SUPPORT OF:



WELCOME TO THE PLANT BIOLOGY EUROPE 2021

Andrea Schubert
Convener



Plant biology is a blooming scientific area where novel developments continuously arise, opening new avenues of research and empowering innovation for agriculture and for food and non-food applications. In the frame of a well-established tradition of biennial congresses jointly organized by the Federation of European Societies of Plant Biology (FESPB) and the European Plant Science Organization (EPSO), the Plant Biology Europe (PBE) Congress was originally planned for June 2020 in Turin, but organization was abruptly halted by the Covid pandemic.

However, capitalizing on the subalpine spirit of this city, longtime trained to resilience and understatement, work was continued through the pandemic with the goal of delivering PBE a year later, performing the event from 28 June to 1 July 2021 with help from advanced tools of online conferencing.

PBE2021 focuses on delivering the latest scientific developments in plant biology, following an inclusive approach where long-standing research sectors and novel breakthrough topics are showcased, including aspects of science policy and ethics, and fostering participation of young scientists.

We regret that you will not be with us in Turin, experiencing our historical setting and the Italian way of life, but I am confident you will feel some Italian atmosphere even in the apparently aseptic frame of an online event. I wish to thank all those that contributed to the success of this Congress, in particular the Scientific Organizing Committee, the Local Organizing Committee, the Turin Task Force, and the Congress Secretariat.

I warmly welcome plant scientists from and outside Europe to present their work and results at PBE2021, sharing a vibrant and successful Congress!

Laura De Gara FESPB Secretary General



Dear colleagues and friends, dear students,
I am very pleased to welcome you, also on behalf of the other members of the Executive committee of the Federation of European Societies of Plant Biology, to the 2021 Plant Europe Congress.

As many of you probably know, in the last year, the FESPB renewed its Executive Committee with the election of new members: Christian Zörb as treasurer, Maria Isabel Diaz Rodriguez as Chair of the Awards Committee, Jana Albrechtová as Chair of the Grants committee and János Györgyey as Chair of the Publication Committee (and web media). Also for me, this has been the first year of my mandate as Secretary General.

At the beginning of this congress, I would like to thank the old members of the Executive Committee: Christin Foyer, Heinz Rennenberg and Maria Dolores Rodriguez. Each of them has made a significant contribution to our Federation, really supporting its development with their competences but also with their enthusiasm and generosity. I really thank all of them for their support to the federation and for their friendship during the year in which I had the pleasure to work with them.

As you know, the aims of FESPB are to advance research, education, and the exchange of information amongst plant researchers within Europe and beyond, and to support the publication of the results of research through the affiliated international journals. This international Congress is an example of the activity of exchange and dissemination of scientific knowledge. I hereby would like to thank the President of the FESPB and the Congress Andrea Schubert and all the colleagues involved in the congress organization for their effort (to organize an international congress in a pandemic period is really a big challenge!). I would also like to mention the positive collaboration with EPSO in organizing this congress. The **collaboration** between the two institutions allows the co-organized events to comprise all the aspects of research in plant science, from the fundamental to the very applicative aspects, from the theoretical one to social implications and policies strategies.

Finally, I would like to thank the editors of the affiliated journals for their support, in different ways, to our activities. I hope that the collaboration with the affiliated journals will further increase. I invite the editors participating in the Congress to join the meeting we have organized in these days in order to identify new activity of collaboration.

I would also like to mention the FESPB Council, the key point of FESPB's life. The Council is composed of one delegate for each member scientific society. I really hope that also the collaboration with the delegate will further increase. Their role in giving new ideas, improving the traditional activities and helping the Executive Committee in carrying them out is crucial. I thank the delegates for their last job: the selection of the winners of the grants allowing almost 70 students to participate in the congress, the identification of the evaluation committee for the selection of the two FESPB Awards and the selection of the best posters that will be shown by students during the congress.

Another issue I would like to address and make more known to this research community is our last activity approved by the Council: FESPB annually offers some travel grants to young scientists for spending a short period in other laboratories in Europe. We started this activity just before the lockdown imposed because of the pandemic situation, for this reasons very few students could take advantage of this opportunity, but we are confident that, in a near future, this initiative could help many of our students to improve their scientific expertise and knowledge.

Who is interested in knowing better the initiatives of FESPB can find more information on our website (<https://fespb.org>).

Again, I wish you very interesting scientific days, rich of excellent research and stimulating interaction with other colleagues!



Alan Schulman
EPSO President

Dear colleagues, it is a pleasure to join you as EPSO President in our virtual PBE2021. This pandemic year has been one of big challenges for all of us, both personal and professional. However, the rapid development of vaccines is an example of what science, with the right tools and priorities, is able to deliver in the public service. Likewise, plant science today has the potential to address the primary production side of the many pressing problems in delivering sufficient, sustainable, and secure food while preserving biological diversity in the face of climate change. EPSO has been working hard to extend accurate and cogent advice to policy makers regarding orientation, research areas, and topics in the formation of Horizon Europe. A major EPSO focus, especially of our AgTec Working Group, has been on the current fettered status of NBTs in Europe under the ECJ 2018 decision, which is undermining plant research, development and application. We have been interacting on multiple occasions with those making and implementing policy from Member States within the context of the EC NBT study that was published in April. We have also been very concerned with the ongoing consideration of the position of Digital Sequence Information within the Nagoya Protocol and its implications for R & D. Beyond EPSO's interactions with public servants on policy and EU funding instruments, we have strived to build networks of interactions between scientists. Our Working Groups have been very active in this regard. These WGs, in turn, provide a path for delivering science information and advice to those beyond the walls of research institutions. As widespread adoption of online meeting tools during the pandemic gave EPSO an opportunity to initiate a Zoom-based Plant Science Seminar Series, which is being held on the third Thursday of each month at 3 PM CET. Each has centred on one theme and featured three speakers. Our public outreach through Fascination of Plants Day in May went virtual this year. As we look forward to end of the pandemic and its restrictions and the emergence of a new normal, we welcome all of you to be active EPSO members and participants. We as an organisation and as a discipline are as strong and dynamic as our collective creative energy. I wish you all an inspiring meeting.

Francesco Loreto
Chair, PBE2021 Scientific Organizing Committee



When I accepted chairing the Scientific Organizing Committee of Plant Biology Europe 2021, I was afraid that the task would have been overwhelming. Then the COVID-19 pandemics came in to make our endeavor even more difficult. Defying all incumbent and unfavorable circumstances, and giving one of the best proof of "resilience" I have seen so far, one year after the set congress date, we are finally here with the usual outstanding program. This exceptional result would not have been possible without the strong will and dedication of all members of the SOC, the local organizers, and the funding organizations. They all deserve my deepest acknowledgments for having brought to completion such a "mission impossible". Our work has also highlighted that plant biology is alive and kicking despite the pandemics. If experimental work has often and unavoidably been restrained to comply with the strict regulations set up to combat COVID-19 worldwide, we have seen theoretical, in-silico, and modeling work flourishing with new and important ideas. Minds flew over the pandemics, which gave us an opportunity to rest and think. There is now growing awareness of the multi-faceted and increasingly important role of plants. Plants have created the world as we see it (plant power came first), and plants will help us fight the problems and address the grand challenges of our time: overpopulation and consequent overexploitation of resources, climate change mitigation, and food security attainment among the main ones. We need to better know plants to let them help us with our quests. We are now ready to hear and learn at the PBE 2021 congress the most brilliant new ideas on how plants will drive our society and our planet toward a more sustainable and better future.



Scientific Organizing Committee

Isabel Bäurle, Potsdam
Pilar Cubas, Madrid
Giulia De Lorenzo, Roma
Robert Hancock, Dundee
Michel Havaux, Saint-Paul-lez-Durance
Dirk Inzé, Ghent
Martin Lascoux, Uppsala
Antonio Leyva, Madrid
Francesco Loreto, Rome
Jos Schippers, Gatersleben
Kirk Overmyer, Helsinki
Eva Stöger, Vienna
Miroslav Strnad, Olomouc
Paolo Trost, Bologna
Przemyslaw Wojtaszek, Poznan

Local Organizing Committee

CHAIR

Andrea Schubert, University of Turin, FESPB

VICE-CHAIR

Aldo Ceriotti, IBBA-CNR, Milan, EPSO

Roberto Bassi, University of Verona, FESPB
Maria Concetta De Pinto, University of Bari, FESPB
Giulia De Lorenzo, Sapienza University of Rome, FESPB
Stefania Grillo, IBBR-CNR, Naples, EPSO
Fiorella Lo Schiavo, University of Padua, FESPB
Massimo Maffei, University of Turin, FESPB
Pierdomenico Perata, Sant'Anna School of Advanced Studies of Pisa, SIBV
Francesca Secchi, University of Turin, FESPB
Chiara Tonelli, University of Milan, EPSO
Roberto Tuberosa, University of Bologna, EPSO
Giovanni Vendramin, IBBR-CNR, Florence, EPSO

Turin Task Force

Andrea Schubert
Massimo Maffei
Cinzia Bertea
Francesca Cardinale
Claudio Lovisolo
Francesca Secchi
Giampiero Vigani

Plenary Speakers

Vincent Colot

Biography:



Vincent Colot has a long-standing interest in the study of transposable elements as a source of heritable phenotypic variation, through either their mobilization and the creation of insertion alleles near or within genes, or as a result of stable epigenetic variation and the creation of “epialleles” at gene targets. His group uses mainly molecular genetics as well as population genomic approaches and focuses on *Arabidopsis thaliana* as a model system.

Vincent Colot is a member of EMBO and a recipient of the Prix Prix Jean Dufrenoy of the French Academy of Agriculture and of the Grand Prix Charles-Léopold Mayer of the French Academy of Sciences.

Short affiliation

Institut de Biologie de l'ENS, Paris, France

Talk title

Transposable element mobilization in *Arabidopsis thaliana*: highly deleterious yet a major force of local adaptation

Synopsis: Our recent work in the model plant *Arabidopsis thaliana* shows that unlike what is commonly thought, transposition is very frequent in nature and a force to be reckoned with for rapid adaptation in the face of climate change.

Roberta Croce

Biography



Roberta Croce (www.robertacroce.nl) studied chemistry in Padova and completed her Ph.D. in Plant Biology/Biophysics in Milano in 1998. After two postdoc periods in Germany and Italy, she got a permanent position at the CNR. In 2006 she moved to the University of Groningen and since 2011 she is Professor of Biophysics/Photosynthesis at VU Amsterdam. Her research focuses on the molecular mechanisms of photosynthesis, using an integrated approach including molecular biology, biochemistry and ultrafast spectroscopy. She published more than 150 papers. She is a member of the Royal Holland Society of Science and Humanity and recipient of several personal research grants.

Short affiliation

Biophysics of Photosynthesis, Vrije Universiteit Amsterdam

Talk title and synopsis

Harvesting the sun...safely and efficiently

Photosynthesis sustains nearly all life on earth, but the simultaneous presence of excitation energy and molecular oxygen in the membrane makes it a hazardous business. To avoid photodamage while keeping the process working efficiently, plants regulate the amount of excitation energy in the photosynthetic membrane. In this presentation, I will discuss our recent data on light-harvesting regulation in plants and algae.

Caroline Gutjahr

Biography



The research group of Caroline Gutjahr aims at understanding the development and function of arbuscular mycorrhiza, a symbiosis between land plants and beneficial fungi. The research of her team focuses in particular on the role of plant hormones and transcriptional networks in physiological, molecular and plant cell developmental changes required to accommodate arbuscular mycorrhiza fungi inside roots. The fungi can enhance nutrition and increase stress resistance of plants. For these reasons, there is increasing interest in the use of the fungi in sustainable agricultural practices. Therefore, her lab also investigates the genetic underpinnings of fungus-mediated increases in plant-performance with the aim to enable breeding of mycorrhiza-optimized crops.

Short affiliation

Technical University of Munich, Germany

Talk title and synopsis

Arbuscular mycorrhiza development and function

Arbuscular mycorrhiza is a symbiosis between the majority of land plants and obligate biotrophic fungi, which improves plant mineral nutrition. Caroline Gutjahr will present progress in understanding plant molecular mechanisms, which allow arbuscular mycorrhiza fungi to colonize plant roots.

Zach Lippman

Biography



Zachary Lippman's research focuses on the process of flowering and flower production. His research program integrates genetics, development, genomics, and genome editing to study the variation in inflorescence production and architecture in tomato and related nightshade species observed in nature and agriculture. Discoveries on the genes and networks underlying this diversity have led to a broader exploration of the roles of genomic structural variation, gene regulation, gene redundancy, and epistasis in development, domestication, and breeding. Based on these fundamental discoveries, Lippman is developing and applying innovative concepts and tools for crop improvement.

Short affiliation

Professor at Cold Spring Harbor Laboratory and HHMI Investigator

Talk title and synopsis

Revealing cis-regulatory complexity and the principles of quantitative trait variation.

We are applying genome editing to investigate the genetic architecture of cis-regulatory regions that control transcriptional and phenotypic outputs. Our results show that gene promoters are also highly dose-sensitive and can serve as "tunable" transcriptional control regions, which can be manipulated to create novel alleles and quantitative variation that goes beyond what nature has provided.

Ülo Niinemets

Biography



Professor Ülo Niinemets is Head of the Department of Crop Science and Plant Biology at the Estonian University of Life Sciences and member of the Estonian Academy of Sciences. He has got BSc, MSc, and PhD from the University of Tartu, Estonia and carried out research in more than 20 countries. He has specific expertise in quantification and predictive modelling of plant carbon gain and trace gas exchange from leaf to ecosystems, landscapes and biomes under globally changing climates. He has collaborated with more than 700 scientists and has co-authored more than 300 peer-reviewed articles in leading scientific journals.

Short affiliation

Estonian University of Life Sciences, Tartu, Estonia

Talk title and synopsis

Plant adaptation to environmental change: potentials, limits and feedbacks to global change.

Plant adaptation to environmental alterations improves plant performance under changed environmental conditions, but there is a large variation in the adaptability among different species and in dependence on the rate and severity of environmental change. Understanding the factors controlling plant adaptation capacity to environmental perturbations is of utmost importance for predicting future changes in vegetation productivity, and release of biogenic volatile compounds and vegetation role in global biosphere-atmosphere interactions.

Pierdomenico Perata

Biography



Pierdomenico Perata is professor of plant physiology at the Sant'Anna School of Advanced Studies, Pisa (Italy), where since 2012 he was Rector of the university (2012-2019). In 1994 he received the "FESPB Award", which is awarded by the Federation of European Societies of Plant Physiology (FESPB) Congress for excellence in scientific achievements. His publication record includes papers in the most important plant science journals, including Nature, Science, Nature Communications, Nature Plants, PLOS Biology, The Plant Cell, The Plant Journal, Plant Physiology, Trends in Plant Science and many others. His research interests include plant hypoxia physiology and sugar sensing and signaling.

Short affiliation

Sant'Anna School of Advanced Studies, Pisa, Italy

Talk title and synopsis

Plants and hypoxia: occurrence, sensing and adaptation

Plant life is greatly impaired under conditions of oxygen deficit. When the supply of oxygen is hampered, a variety of acclimation responses is activated to reduce detrimental effects of energy depletion. The most recent discoveries in the field of oxygen sensing will be presented.



Eugenia Russinova

Biography

Eugenia Russinova is a group leader at the Center for Plant Systems Biology, VIB and a Professor at Ghent University, Ghent, Belgium. She completed her Master's degree from Sofia University, Sofia, Bulgaria, her PhD from De Montfort University, Leicester, UK and did postdoctoral training at Wageningen University, Wageningen, The Netherlands. Her work examining the brassinosteroid signaling pathway has provided key information on the subcellular localization and trafficking of brassinosteroid receptor complex and how downstream factors such as GSK3-like kinases crosstalk with other signaling pathways. Dr. Russinova is a reviewing editor for *Plant Cell* (2015-) and an EMBO member (2018-).

Short affiliation

VIB-UGent

Talk title and synopsis

Cell biology meets development: endocytic regulation of signaling pathways in plants

Plants deploy numerous plasma membrane receptors to sense and rapidly react to environmental changes. Correct localization and adequate protein levels of the cell-surface receptors are critical for signaling. I will summarize the up-to-date knowledge of receptor complex endocytosis and its effect on the signaling outcome, in the context of plant development and immunity.



Roberto Solano

Biography

PhD in Biology (1995), University of Alcalá de Henares (Madrid; Spain): Molecular characterization of MYB transcription factors from *Petunia hybrida* (supervisor Prof. J. Paz-Ares). -Postdoc in the laboratory of Prof. Joseph Ecker (1996 to 1999). Characterization of the ethylene signalling pathway in *Arabidopsis thaliana*. Identification of ETHYLENE-INSENSITIVE3 (EIN3) as the first member of a new family of transcription factors, the EIN3/EIL family. I also identify ERF1, a transcriptional target of EIN3/EILs, which activates defence gene expression. In 2000, I joined the National Centre for Biotechnology (CNB) in Madrid where I got a permanent position to lead a research group on jasmonate signalling in the department of Plant Molecular Genetics. In 2005, I became research associate and in 2009, full professor. From 2004 to 2010, I also headed the Genomics facility of the CNB. I have been a Highly Cited Researcher (Thomson-Reuters) since 2014. In 2016, I was elected an EMBO member.

Short Affiliation

National Centre for Biotechnology (CNB-CSIC) - Madrid, Spain

Talk title: Evolution of jasmonates in land plants and their role in thermotolerance

Synopsis: Jasmonate signalling appeared in the last common ancestor of land plants and evolved from a preexisting function in thermotolerance. All signaling components are functionally conserved between bryophytes and vascular plants. However, the hormone activating the pathway is different, dn-OPDA in bryophytes and JA-Ile in vascular plants.

Anna N. Stepanova

Biography



Anna Stepanova is Associate Professor of Plant Biology and Genetics at North Carolina State University, USA. She earned her BS and MS degrees in Biology from the University of Nevada, Reno, USA, and Lobachevsky State University of Nizhny Novgorod, Russia. For her PhD training, Anna joined the laboratory of Prof. Joseph Ecker at the University of Pennsylvania and The Salk Institute for Biological Studies, USA, to investigate nuclear events in ethylene signalling in Arabidopsis and characterize direct targets of the master transcriptional regulator EIN3. In 2001, Anna moved to North Carolina State University, where together with Jose Alonso, she initiated the study of hormone signal interactions using ethylene and auxin as her experimental system. Anna's pioneering work has been instrumental to several ground-breaking discoveries in plant biology, including identification of the first complete route of auxin biosynthesis in plants, establishment of the critical role of local auxin production in plant development, determination of the key players in ethylene-auxin crosstalk, and characterization of a novel molecular mechanism that links ethylene perception to the activation of gene-specific translational control in plants. Anna's current research continues to focus on plant hormones and leverages state-of-the-art technologies in molecular genetics and synthetic biology to build genetic devices to monitor and control hormone activity.

Short affiliation

Department of Plant and Microbial Biology, Program in Genetics, North Carolina State University, USA

Talk title and synopsis

Building a synbio toolbox to monitor and control plant hormone activity.

Dr. Stepanova's group has built a synthetic biology toolbox to enable rapid DNA-part assembly. Using this toolbox, a collection of multi-hormone transcriptional reporters and a series of CRISPR-based logic gate devices are being generated to examine and precisely control hormone activity in plants.

Spencer Whitney

Biography



Dr Whitney's career began with the discovery of unique forms of the photosynthetic CO₂-fixing enzyme, Rubisco, in the symbiotic marine microalgae of corals and clams. In 1996 he moved to the Australian National University to begin postdoctoral studies where he showed crop Rubisco was not the pinnacle of evolution and began bioengineering Rubisco in plants by plasmid transformation biotechnology. Since 2014 he has been a chief investigator in the ARC Centre of Excellence for Translational Photosynthesis where, using SynBiol approaches, his team have been able to successfully improve the CO₂-fixing properties of Rubisco above that evolved by nature.

Short affiliation

ARC Centre of Excellence for Translational Photosynthesis, Australian National University

Talk title and synopsis

Improving Rubisco function and plant growth

Simulations of natural Rubisco kinetic diversity has identified variants beneficial to C₃-photosynthesis. In this talk I will examine whether this diversity is sufficient to alter plant productivity and discuss the feasibility of directed evolution as a more feasible pathway towards generating the step change in Rubisco performance needed to visibly improve higher rates of leaf photosynthesis and plant growth.

Cathie Martin

Biography



Biosketch: Cathie Martin researches into the relationship between diet and health and how crops can be fortified to improve diets and address the global challenge of escalating chronic disease. This work has involved linking leading clinical and epidemiological researchers with plant breeders and metabolic engineers to develop scientific understanding of how diet can help to maintain health, promote healthy ageing and reduce the risk of chronic disease. She is undertaking collaborative research on Chinese Medicinal Plants, particularly those producing anti-cancer metabolites used for complementary therapies. She is co-director of the EDESIA PhD program on Plants, Food and Health at Norwich, UK.

Short affiliation

Short affiliation: Department of Biochemistry and Metabolism, John Innes Centre, Norwich NR4 7UH, United Kingdom.

Talk title;The benefits of a colourful diet.

Synopsis; Synopsis: Understanding which nutrients from plants confer greatest benefits and how they protect against specific chronic diseases is key to achieving dietary improvement for all levels in society. I aim to illustrate the potential of dietary improvement using plant-based foods to improve health and quality of life and to reduce the economic burden on our health-care systems.

Milios Tsiantis

Biography



Biosketch: Born in 1969 in Horley, UK. Study of Biology in Athens, D. Phil. at New College, University of Oxford (1997). Glasstone Research Fellow at Department of Plant Sciences, University of Oxford (1996-1999) and Research Fellow at Plant Gene expression Center, University of California, Berkeley (1999-2000). Return to the University of Oxford as Royal Society University Research Fellow (1999-2003). Junior Research Fellow in Biology at Trinity (1996-1999) and St Cross (1999-2001) Colleges, then Browne Research Fellow at Queens College, (2001-2003). University Lecturer in Developmental Biology (2003-2008), Reader (2009) and Professor (2009-2013) of Plant Developmental Genetics, University of Oxford. Additionally, Tutorial Fellow in Biology (2002-2010) and Senior Research Fellow in Biology (2010-2013) at Wadham College; Dean Wadham College (2009). Since 2013 Director and Scientific Member at the Max Planck Institute for Plant Breeding Research, Honorary Professor University of Cologne (2014). Selected Awards: BBSRC Research Development Fellowship (2010-2013); EMBO membership (2010); Royal Society Wolfson Merit Award (2007); Balfour Lecturer of the Genetics Society (2007); President's Medal of the Society of Experimental Biology (2004)

Short affiliation

Max Planck Institute for Plant Breeding Research, Cologne, Germany

Talk title;Talk title: The genetic basis for diversification of leaf form: from understanding to reconstructing.

Synopsis; Synopsis: This presentation will discuss how a combination of genetics, confocal live imaging and computational analysis has illuminated our understanding of emergence and diversification of plant organ form.

Session Speakers



Alexandra Baekelandt

VIB-UGent Center for Plant Systems Biology, Ghent, Belgium



Francesca Cardinale

Department of Agriculture, Forestry and Food Science (DISAFA),
University of Turin, Grugliasco (TO) Italy



Gabriel Castrillo

Future Food Beacon of Excellence and the School of Biosciences, University
of Nottingham, Sutton-Bonington, United Kingdom



Martin Crespi

Institute of Plant Sciences Paris Saclay IPS2, CNRS-INRA-University of Paris
Saclay, 91192 Gif sur Yvette, France



Catherine Feuillet

Inari Agriculture (Cambridge, USA)



Jose Gutierrez-Marcos
University of Warwick



Michael Hothorn
Structural Plant Biology Laboratory, University of Geneva, Switzerland



Kerstin Kaufmann
Humboldt-Universität zu Berlin, Germany



Chanhong Kim
Shanghai Center for Plant Stress Biology and Center of Excellence
in Molecular Plant Sciences, Chinese Academy of Sciences



Tomas Morosinotto
University of Padova



Donald Richard Ort

Departments of Plant Biology & Crop Sciences,
University of Illinois, Urbana USA



Xavier Picó

Doñana Biological Station (EBD-CSIC), Seville, Spain



Hatem Rouached

B&PMP, INRA - Montpellier - France



Sabrina Sabatini

Dip. di Biologia e Biotecnologie Charles Darwin,
Università di Roma La Sapienza



Julio Salinas

Dept. of Microbial and Plant Biotechnology, CIB-CSIC, Madrid, Spain



Francois Tardieu
INRAE LEPSE, Montpellier, FR



Franziska Turck
Max Planck Institute for Plant Breeding Research, Department of Plant Developmental Biology, Cologne, Germany



Alessandro Vitale
Institute of agricultural biology and biotechnology, CNR, Milano



Sabine Zachgo
University of Osnabrück, Botany Department & Director of the Botanical Garden Osnabrück, Germany



Viktor Žárský
Department of Experimental Plant Biology, Charles University, Faculty of Science. Institute of Experimental Botany CAS, Laboratory of cell biology. Prague, Czech Republic



Giorgio Matteucci

Short affiliation: Director, Institute of BioEconomy - National Research Council of Italy - Florence



Hilde Nelissen

VIB - UGent Center for Plant Systems Biology



Lazaro Pereira Peres

Short affiliation: University of São Paulo, Brasil

Time Table

Monday 28th June 2021

8.30 am - 9.00 am	Online connection Opening of Congress		
9.00 am - 10.30 am	Plenary Lecture Theme 1 - Abiotic stress and plant performance Plenary Lecture Theme 3 - Plant metabolism and bioactive compounds		
10.30 am - 10.50 am	Comfort break		
10.50 am - 12.40 pm	Parallel Session 1A - Phenotyping plant performance under abiotic stress	Parallel Session 2A - Cell signaling in plants	Parallel Session 5B - Plant evolution and development
12.40 pm - 13.10 pm	Plenary FESPB Young Scientist Award lecture 1		
1.10 pm - 2.00 pm	lunch break		
2.00 pm - 3.30 pm	Plenary Lecture Theme 2 - Signaling at cell and plant level Plenary Lecture Theme 4 - Plant and ecosystem adaptation to environmental change		
3.00 pm - 5.20 pm	Parallel Session 4B - Plants in extreme environments	Parallel Session 3A - Plant metabolism and bioactive compounds - part 1	Parallel Session 10A - Plant nutrition
5.30 pm - 7.00 pm	Arts and Science virtual Exhibition/ Science Cooking seminars		

Tuesday 29th June 2021

8.30 am - 9.00 am	Connection time		
9.00 am - 10.30 am	Plenary Lecture - Theme 5 - Plant development and flowering Plenary Lecture - Theme 6 - Protein modifications and trafficking		
10.30 am - 11.00 am	Plenary EPSO Young Plant Scientist Award on applied science		
11.00 am - 11.20 am	Comfort break		
11.20 am - 12.50 pm	Parallel Session 6A - Trafficking and transport in plant cells	Parallel Session 12B - Translating plant research from lab to field	Parallel Session 5A - Plant development and flowering
12.50 pm - 1.30 pm	lunch break		
1.30 pm - 3.00 pm	Plenary lecture - Theme 7 - Molecular and cellular organization of the photosynthetic system Plenary lecture - Theme 12 - Genomics and genome editing for crop design		
3.00 pm - 5.00 pm	Parallel Session 7A - Molecular and cellular organization of the photosynthetic system	Parallel Session 12A - Genomics and genome editing for crop design	Parallel Session 1C - Stress resilience in horticultural and fruit crops GPC Science Communication workshop
5.00 pm - 6.30 pm	Arts and Science Virtual Exhibition/Science Cooking Seminars		GPC-EPSO panel discussion on access to genetic resources

Wednesday 30th June 2021

8.30 am - 9.00 am	Connection time		
9.00 am - 10.30 am	Plenary lecture - Theme 8 - Carbon fixation and plant productivity Plenary lecture - Theme 9 - From Plant defence to plant immunity		
10.30 am - 10.50 am	Comfort break		
11.00 am - 12.20 am	Parallel Session 6B - Seeds of tomorrow	Parallel Session 9B - Priming and memory of stress - from model to crop	Parallel Session 7B - Chloroplast biology
12.20 am - 1.00 pm	Lunch break		
1.00 pm - 1.30 pm	EPSO Plenary Science Policy Session - Plant research and the European Green Deal		
2.30 pm - 4.20 pm	Parallel Session 8A - Carbon fixation and plant productivity - part 1	Parallel Session 9A - From plant defence to plant immunity	Parallel Session 1B - Plant adaptation to climate change stress
4.20 pm - 4.50 pm	Plenary EPSO Young Plant Scientist Award on Fundamental Science		
5.00 pm - 6.30 pm	ERC information session (organized by ERC and EPSO)		

Thursday 1st July 2021

8.30 am - 9.00 am	Connection time		
9.00 am - 10.30 am	Plenary lecture - Theme 10 - Plant nutrition and beneficial interactions Plenary lecture - Theme 11 - Plant epigenetics		
10.30 am - 10.50 am	Comfort break		
11.00 am - 12.20 pm	Parallel Session 4A - Plant ecosystems under environmental change	Parallel Session 11A - Plant epigenetics - part 1	Parallel Session 2B - Long-distance messages in plants Parallel Session 3 - Plant metabolism and bioactive compounds - part 2
12.20 pm - 12.50 pm	Plenary FESPB Young Scientist Award 2		
12.50 pm - 1.30 pm	Lunch break		
1.30 pm - 3.20 pm	Parallel Session 10B - The plant microbiome and new strategies for biofertilization	Parallel Session 11 - Plant epigenetics - part 2	Parallel Session 8 - Carbon fixation and plant productivity - part 2
3.20 pm - 4.00 pm	Closing of the Congress		



FESPB



08.00 - 08.30

Connection time

08.30 - 09.00

Opening of the Congress

Andrea Schubert (Convener)
Laura De Gara (FESPB Secretary General)
Alan Schulman (EPSO President)
Francesco Loreto (Chair, PBE2021 Scientific Organizing Committee)

09.00 - 09.45

Plenary Lecture Theme 1 - Abiotic stress and plant performance

Pierdomenico Perata (Pisa, Italy)
Plants and hypoxia: occurrence, sensing and adaptation
Chair Kirk Overmyer

09.45 - 10.30

Plenary Lecture Theme 3 - Plant metabolism and bioactive compounds

Cathie Martin (Norwich, UK)
The benefits of a colourful diet
Chair Robert Hancock

10.30 - 10.50

Comfort break**Parallel Session 1A - Phenotyping plant performance under abiotic stress**

Chair Kirk Overmyer

10.50 - 11.20

Keynote lecture

Francois Tardieu (Bordeaux, France)
Plant performance under abiotic stress: combining multi scale phenotyping, modelling and genomic prediction

11.20 - 11.40

100 Federico Betti - Arabidopsis ARGONAUTE 1, ARGONAUTE 3, and ARGONAUTE 4 regulate gene expression and hypoxia tolerance.

11.40 - 12.00

189 Sara Cimini - A specific intra-species modulation of redox balancing systems is crucial for the tolerance of Baldo rice cultivar against salt stress

12.00 - 12.20

443 Nadia Bazihizina -The characterisation of ion transport in stalk cells reveals their role in salt sequestration in quinoa epidermal bladder cells

Parallel Session 2A - Cell signaling in plants

Chair Pilar Cubas

10.50 - 11.20

Keynote lecture

Michel Hothorn (Geneva, Switzerland)
Plant signal transduction cascades - from atoms to phenotypes and back

11.20 - 11.40

149 Attila Fehér - ROP GTPase-activated kinase signaling in Arabidopsis

11.40 - 12.00

529 Martín Guiomar - Contribution of alternative splicing in plants and animals in response to different types of stimuli

12.00 - 12.20

136 Benoit Menand - A pharmacogenetic approach to decipher the role of the TOR signaling pathway in plant growth and development



12.20 - 12.40

Parallel Session 5B - Plant evolution and development

Chair Dirk Inzè

10.50 - 11.20

Keynote lecture

Sabine Zachgo (Osnabrück, Germany)

Evolution of plant cell proliferation control: Redox matters

11.20 - 11.40

163 Marco Maccaferri - Durum wheat pan-transcriptome as a bridge to unravel tetraploid and hexaploid wheat gene function and evolution

11.40 - 12.00

252 Gergo Palfalvi - Evolution and development of carnivorous plant leaves

12.00 - 12.20

444 Tomás Werner - Studying the evolution of gene networks through Marchantia polymorpha

12.20 - 12.50

Plenary FESPB Young Scientist Award lecture 1

Matouš Glanc

Heads and tails? Cell polarity and cell division in the context of each other

Chair Laura De Gara

12.50 - 14.00

Lunch break

14.00 - 14.45

Plenary Lecture Theme 2**Signaling at cell and plant level**

Anna Stepanova (Raleigh, USA)

Building a SynBio toolbox to monitor and control plant hormone activity

Chair Pilar Cubas

14.45 - 15.30

Plenary Lecture Theme 4**Plant and ecosystem adaptation to environmental change**

Ülo Niinemets (Tartu, Estonia)

Plant adaptation to environmental change: potentials, limits and feedbacks to global change

Chair Francesco Loreto

Parallel Session 4B - Plants in extreme environments

Chair Francesco Loreto

15.30 - 16.00

Keynote lecture

Xavier Picò (Sevilla, Spain)

Understanding the ecology and genetics of local adaptation in plants: lessons from natural Arabidopsis thaliana populations along wide environmental gradients

16.00 - 16.20

166 Laura Bertini - Global warming: friend or foe for the survival of the C. quitensis antarctic ecotype?

16.20 - 16.40

436 Payel Bhattacharjee - Exploring differential sensitivity to gamma radiation in plants: A systematic approach using growth studies, histology, and molecular biology tools.

16.40 - 17.00

499 Ilaria Colzi - Do Ni-hyperaccumulators manage the high amount of metal in their shoots without affecting the photosynthetic activity?

Parallel Session 3 - Plant metabolism and bioactive compounds - part 1

Chair Robert Hancock

15.30 - 16.00

Keynote lecture

Lazaro Pereira Peres (Piricicaba, Brasil)
Crop improvement for healthy diet. Tomato as a model system

16.00 - 16.20

191 Carpaneto Armando - I Tonoplast cytochrome b-561 controls ascorbate homeostasis in Arabidopsis plants exposed to high light

16.20 - 16.40

240 Cohen Hagai - The multifaceted networks regulating suberin metabolism in plants

Parallel Session 10 - Plant nutrition

Chair Antonio Leyva

15.30 - 16.00

Keynote lecture

Hatem Rouached (East Lansing, USA)
Getting to the root of plant mineral nutrition: system genetics to study how plants make sense of various nutrient signals

16.00 - 16.20

187 Grmay Lilay - F-bZIPs - the Sensors and Molecular Switches for Plant Zinc Acquisition

16.20 - 16.40

547 Valéria Custódio - Uncovering factors that modulate the microbiota assembly in Zea mays

16.40 - 17.00

483 Esther Riemer - ITPK1-dependent generation of inositol pyrophosphates is required for systemic regulation of phosphorus homeostasis



28th June

08.30 - 09.00

Connection time

09.00 - 09.45

Plenary Lecture - Theme 5 - Plant development and flowering

Miltos Tsiantis (Köln, Germany)

The genetic basis for diversification of leaf form: from understanding to reconstructing

Chair Jos Schippers

09.45 - 10.30

Plenary Lecture - Theme 6 - Protein modifications and trafficking

Eugenia Russinova (Gent, Belgium)

Cell biology meets development: endocytic regulation of signalling pathways in plants

Chair Eva Stöger

10.30 - 11.00

Plenary EPSO Young Plant Scientist Award on applied science

Ann-Katrin Beuel (Aachen, Germany)

LEDitGROW - Lighting Systems to Optimize the Secondary Metabolite Content of Plant Cell Cultures Chair Ernst van den Ende

11.00 - 11.20

Comfort break

Parallel Session 6A - Trafficking and transport in plant cells

Chair Przemyslaw Wojtaszek

11.20 - 11.50

Keynote lecture

Viktor Zarsky (Prague, Czech Republic)

Exocyst complex functions in plant secretory pathway

11.50 - 12.10

63 Mathieu Bruggeman - Functional Interactions of Nuclear RNase P in Arabidopsis

12.10 - 12.30

133 Mirko Zaffagnini - Glutathionylation of plant glyceraldehyde-3-phosphate dehydrogenase triggers late and irreversible collapse into insoluble aggregates

12.30 - 12.50

426 Agata Cieśla - The post-translational modifications are crucial for Arabidopsis type III ACC synthases regulation

Parallel Session 12B - Translating plant research from lab to field

Chair Eva Stöger

11.20 - 11.50

Keynote lecture

Hilde Nelissen (Gent, Belgium)

Translating plant organ growth from model to crop

11.50 - 12.10

115 Martina Huber - Rice growing in high density: Elucidating the genetic networks of weed-competitive rice architectures

12.10 - 12.30

427 Joseph Swift - Single-nuclei sequencing reveals drought's impact on hormone activity and leaf development

12.30 - 12.50

457 Shimizu Kentaro - The pattern of genome-wide polymorphisms in natural and crop polyploid species

Parallel Session 5A - Plant development and flowering

Chair Jos Schippers

11.20 - 11.50

Keynote lecture

Kerstin Kaufmann (Berlin, Germany)

Mechanisms underlying cellular differentiation in flowers

- 11.50 - 12.10 80 Alexis Porcher - Light-dependent H₂O₂ scavenging as a critical process in the photo control of axillary bud outgrowth?
- 12.10 - 12.30 429 Alice Pajoro - The anti-florigen TERMINAL FLOWER 1 orchestrate plant architecture coordinating floral transition and vascular bundle development
- 12.30 - 13.30 **Lunch break**
- 13.30 - 14.15 **Plenary lecture - Theme 7 - Molecular and cellular organization of the photosynthetic system**
Roberta Croce (Amsterdam, The Netherlands)
Harvesting the sun...safely and efficiently
Chair Michel Havaux
- 14.15 - 15.00 **Plenary lecture - Theme 12 - Genomics and genome editing for crop design**
Zachary Lippman (Long Island, USA)
Revealing cis-regulatory complexity and the principles of quantitative trait variation
Chair Dirk Inzè
- Parallel Session 7A - Molecular and cellular organization of the photosynthetic system**
Chair Paolo Trost
- 15.00 - 15.30 **Keynote lecture**
Donald Ort (Urbana, USA)
Improving photosynthetic efficiency for increased yield
- 15.30 - 15.50 17 Cristina Pagliano - Molecular determinants of grana stacking in plant thylakoid membranes
- 15.50 - 16.10 111 Radoslaw Mazur - The influence of LHCII complex composition on the grana structural regularity in Arabidopsis thaliana plants
- 16.10 - 16.30 181 Pedro Carvalho - Novel function for an iron regulator: OsbHLH60 activates a C4 PEPC1 promoter
- Parallel Session 12A - Genomics and genome editing for crop design**
Chair Dirk Inzè
- 15.00 - 15.15 **Samplix Company talk**
Peter Mouritzen - Xdrop®: targeted enrichment to overcome challenges in long- and short-read sequencing of large and complex plant genomes
- 15.15 - 15.40 **Keynote lecture**
Catherine Feuillet (Cambridge, USA)
Seeds for a changing planet
- 15.40 - 16.00 247 Marie Pfeiffer - Overcoming genetic redundancy and lethality: Novel CRISPR tools for plant loss-of-function studies
- 16.00 - 16.20 72 Andrea Moglia - CRISPR/Cas9-Based Mutagenesis of PPO genes in eggplant for the improvement of the berry quality
- 16.20 - 16.40 279 Enikő Lörincz-Besenyi - Developing a viral based genome editing tool for plant editing

Parallel Session 1C - Stress resilience in horticultural and fruit crops

Chair Isabel Bäurle

15.00 - 15.30

Keynote lecture

Francesca Cardinale (Turin, Italy)

A tale of plant hormones: how strigolactones cross-talk with ABA to set drought responses in tomato

15.30 - 15.50

539 Andrea Schrader - Characteristics of a salt stress resilient transcriptome - splice variants in tomato roots

15.00 - 17.00

The Global Plant Council (GPC) Science Communication workshop

Michele Catanzaro, Isabel Mendoza

An interactive, hands-on workshop to provide tools for communicating research based on presentation and discussion of selected press releases.

17.00 - 18.30

GPC-EPSO panel discussion on access to genetic resources

Roslyn Gleadow, Jens Sundström: Introduction

Jane Anderson: What we are talking about

Nils Stein: A researcher's perspective

KC Bansal: Potential conflicts related to DSI

Amber Hartman Scholz: What to do now

29th June

08.30 - 09.00

Connection time

09.00 - 09.45

Plenary lecture - Theme 8 - Carbon fixation and plant productivity

Spencer Whitney (Canberra, Australia)
Improving RuBisCO function and plant growth
Chair Francesco Loreto

09.45 - 10.30

Plenary lecture - Theme 9 - From plant defence to plant immunity

Roberto Solano (Madrid, Spain)
Evolution of jasmonates in land plants and their role in thermotolerance
Chair Giulia De Lorenzo

10.30 - 10.50

Comfort break**Parallel Session 6B - Seeds of tomorrow**

Chair Eva Stöger

10.50 - 11.20

Keynote lecture

Alessandro Vitale (Milan, Italy)
How to make a protein body: a cell biologist's evolutionary view

11.20 - 11.40

402 Davide Gerna - Seed physical state critically affects the influence of oxygen on seed deterioration.

11.40 - 12.00

106 Rocío Soledad Tognacca - A novel role for athb2/hat4 as a regulator of germination in *Arabidopsis thaliana* seeds

12.00 - 12.20

535 Elsa Arcalis - Multiscale imaging reveals novel trafficking routes and novel roles for the storage vacuole in maize endosperm

Parallel Session 9B - Priming and memory of stress - from model to crop

Chair Miroslav Strnad

10.50 - 11.20

Keynote lecture

Josè Gutierrez Marcos (Warwick, UK)
Molecular changes induced by stress and developmental reprogramming in plants

11.20 - 11.40

48 Simone Ferrari - The *Arabidopsis thaliana* LysM-containing receptor-like kinase AtLYK2 is required for elicitor-induced priming of defenses against fungal infection independently of chitin perception

11.40 - 12.00

222 Ivan Visentin - From tomato to *Arabidopsis* and back: role of strigolactones in the stomatal memory of drought stress

Parallel Session 7B - Chloroplast biology

Chair Michel Havaux

10.50 - 11.20

Keynote lecture

Chanhong Kim (Shanghai, China)
From singlet oxygen signalling to chloroplast protein import pathways:
An unforeseen adventure

11.20 - 11.40

105 Stefano D'Alessandro - Detox them all! Promiscuous detoxification contributes to plant stress tolerance

11.40 - 12.00

477 Matteo Ballottari - LPA2 protein is involved in Photosystem II assembly in *Chlamydomonas reinhardtii*

- 12.00 - 12.20 486 Luca Tadini - GUN1 promotes the accumulation of NEP-dependent transcripts and chloroplast protein import upon perturbation of plastid protein homeostasis in Arabidopsis cotyledons
- 12.20 - 13.00 **Lunch Break**
- 13.00 - 14.30 **EPSO Plenary Science Policy Session - Contributions of plant science to the European Green Deal and the UN Sustainable Development Goals (SDGs) and the role of the Horizon Europe R&I Programme**
Opening speaker:
Dorothee André, Head Plant Health, European Commission, DG SANTE
Brussels, Belgium
Panel experts:
Jingyuan Xia, Director of Plant Production and Protection Division, FAO Rome, Italy
Raffaele Maiorano Chair, FAO Global Forum on Agricultural Research and Innovation (GFAR), Rome, Italy
Ulrich Schurr, EPSO Vice-President, Julich, Germany
Alan Schulman, EPSO President, Helsinki, Finland
Massimiliano Giansanti, President Confagricoltura Farmers Association, Rome, Italy
- Parallel Session 8 - Carbon fixation and plant productivity - part 1**
Chair Michel Havaux
- 14.30 - 15.00 **Keynote lecture**
Tomas Morosinotto (Padova, Italy)
Lessons from evolution to improve photosynthetic productivity
- 15.00 - 15.20 93 Stefan Schillberg - Two strategies for promoting carbon fixation in plants to increase biomass production
- 15.20 - 15.40 281 Nelson Saibo - Unveiling the regulatory networks underlying C4 photosynthesis
- Parallel Session 9A - From plant defence to plant immunity**
Chair Andrea Schubert
- 14.30 - 15.00 **Keynote lecture**
Giulia De Lorenzo (Roma)
Plant cell-wall derived DAMPs in immunity and development
- 15.00 - 15.20 220 Tetiana Kalachova - Disrupted actin cytoskeleton : a switch from immunity to senescence
- 15.20 - 15.40 64 Lucia Marti - Orchestration of the oxidative burst in elicitor-induced immunity requires the multiple organelle-targeted Arabidopsis NPK1-related protein kinases (ANPs)
- 15.40 - 16.00 263 Roslyn Gleadow - The end of the trade wars: a new paradigm in plant defence theory
- Parallel Session 1B - Plant adaptation to climate change stress**
Chair Przemislav Wojtaszek
- 14.30 - 15.00 **Keynote lecture**
Julio Salinas (Madrid, Spain)
Unveiling a new plant molecule involved in tolerance to abiotic stress
- 15.00 - 15.20 481 Melo Fredilson - Functional characterization of drought-responsive RING E3-Ubiquitin ligases in rice

15.20 - 15.40

498 Anna Johanna - Wiese Arabidopsis bZIP18 and bZIP52 accumulate in nuclei following heat stress where they regulate the expression of a similar set of genes.

15.40 - 16.20

Comfort break

16.20 - 16.50

Plenary EPSO Young Plant Scientist Award on Fundamental Science

Apolonio Huerta

Resistance to Fusarium oxysporum 1: A novel cell wall Integrity sensor required for resistance against F. oxysporum

Chair Alan Schulman

17.00 - 18.30

Plenary ERC Session - The ERC Funding For Frontier Research In Plant Science

Dirk Inzè, Miina Rautiainen, Jean-Luc Khalifaoui, Alessandra Ferrari

30th June



08.30 - 09.00

Connection time

09.00 - 09.45

Plenary lecture - Theme 10 - Plant nutrition and beneficial interactions

Caroline Gutjahr (Munich, Germany)
Arbuscular mycorrhiza development and function
Chair Antonio Leyva

09.45 - 10.30

Plenary lecture - Theme 11 - Plant epigenetics

Vincent Colot (Paris, France)
Transposable element mobilization in *Arabidopsis thaliana*: highly deleterious yet a major force of local adaptation
Chair Isabel Bäurle

10.30 - 10.50

Comfort break

Parallel Session 4A - Plant ecosystems under environmental change

Chair Martin Lascoux

10.50 - 11.20

Keynote lecture

Giorgio Matteucci (Firenze, Italy)
Plant ecosystems and environmental change: extreme events, resilience and adaptation mechanisms in nature

11.20 - 11.40

129 Fanny Petibon - Leaf pigmentomics - a new approach for better understanding of seasonal pigment dynamics?

Parallel Session 11 - Plant epigenetics - part 1

Chair Isabel Bäurle

10.50 - 11.20

Keynote lecture

Franziska Turck (Köln, Germany)
Pinpointing regulation in epigenetic gene regulation

11.20 - 11.40

15 Stéphane Maury - Evolutionary and functional impact of epigenetic variations in forest trees facing climate change

11.40 - 12.00

175 Alba Rodriguez Diez - Loss of function of an *Arabidopsis* ortholog of the mammalian MRG15 adaptor protein connecting splicing to chromatin leads to defective abscisic acid signalling

Parallel Session 2B - Long-distance messages in plants

Chair Miroslav Strnad

10.50 - 11.20

Keynote lecture

Sabrina Sabatini (Rome, Italy)
Developmental boundaries: choosing between division and differentiation

11.20 - 11.40

113 Rana Surbhi - Local and systemic effects of brassinosteroid perception in developing phloem

11.40 - 12.00

52 Giovanna Frugis - Dissecting the cytokinin genetic pathway and the main gene regulatory networks in *Cichorium endivia* leaves: fundamental biology in leafy crops

12.00 - 12.20

182 Julia Santiago - Structural basis for recognition of RALF peptides by LRX proteins during pollen tube growth

Parallel Session 3 - Plant metabolism and bioactive compounds - part 2

Chair Paolo Trost

- 10.50 - 11.10 22 Raimund Tenhaken Why are some sugars toxic to plants?
- 11.10 - 11.30 213 Richard Macknight - Vitamin C biofortification: Overcoming the complexity of metabolic pathway regulation
- 11.30 - 11.50 527 Lena Hunt - Localization of phenolic compounds in barley leaves can be modulated by irradiance and CO₂

12.20 - 12.50

Plenary FESPB Young Scientist Award 2

Sara Izquierdo Zandalinas

ROS-mediated systemic signalling during acclimation to environmental stress conditions

Chair Isabel Diaz-Rodriguez

12.50 - 14.00

Lunch break

Parallel Session 10B - The plant microbiome and new strategies for biofertilization

Chair Antonio Leyva

- 14.10 - 14.30 469 Guido Domingo - Proteomic analysis reveals how pairing of a Mycorrhizal Fungus with Plant Growth-Promoting Bacteria modulates growth and defense in wheat
- 14.30 - 14.50 531 Bradley Dotson - Breeding for Plant-Trichoderma compatibility

Parallel Session 11A - Plant epigenetics - part 2

Chair Pilar Cubas

14.00 - 14.30

Keynote lecture

Martin Crespi (Paris, France)

Plant non-coding RNAs in chromatin regulation

14.30 - 14.50

471 Francesca Lopez - Gene dosage compensation of rRNA transcript levels in Arabidopsis thaliana lines with reduced ribosomal gene copy number

Parallel Session 8 - Carbon fixation and plant productivity - part 2

Chair Francesco Loreto

14.00 - 14.30

Keynote lecture

Alexandra Baekelandt (Gent, Belgium)

CropBooster-P: a roadmap for future European plant research

14.30 - 14.50

532 Sina Schultes - Linking root carbon partitioning to inter-kingdom microbial variation in the maize rhizosphere

14.50 - 15.10

410 Nicole Salvatori - Dynamic photosynthesis in two soybean varieties: short and long term acclimation to fluctuating light conditions

15.10 - 16.00

Closing of the Congress

Extended Elevator Pitches

(10 minutes, available on the Congress platform throughout the Congress)



To this aim, the Congress will present 12 Plenary lectures each focusing on a theme, and parallel sessions that will explore different angles of the theme itself. Besides keynote speakers, the SOC selected among the more than 500 contributions sent to the Congress oral communications to complete each session. However, as the number of very well rated abstracts was way higher than the available slots, the SOC also selected a number of them to be presented as 10 min EEP that will be available on demand during the Congress.

Topic 1A - Phenotyping plant performance under abiotic stress

406 **Roel Lammerant** - Impact of experimental soil moisture manipulation on tropical tree seedling demographic fates and functional traits

424 **Cristian Mateo** - Arsenite provides a selective signal that coordinates arsenate uptake and detoxification in Arabidopsis

439 **Sivakumar Krishnamoorthy** - Identification of downstream targets of MAPKKK17/18 cascade in Arabidopsis

447 **Micaela Andrea Navarro Correa** - Regulatory interplay between root developmental programs and the arsenic response in Arabidopsis

514 **Maria Fitzner** - Influence of salinity and different light regimes on growth and metabolite profiles of halophytes

517 **Shaaban Basel** - Molecular analysis of abiotic stress response in different Capsicum genotypes

525 **Yuri Luca Negroni** - The fundamental role of plant mitochondria in stress responses is linked to the functionality of the mitochondrial nucleoid binding protein WHIRLY2

526 **Ralf Metzner** - In vivo imaging and quantification of carbon tracer dynamics in nodulated root systems of pea plants

540 **Andrej Frolov** - Does glycation of plant proteins impact on ageing and response to environmental stress?

Topic 1C - Stress resilience in horticultural and fruit crops

58 **Matteo Chialva** - Comparative transcriptomics between *Solanum lycopersicum* and *S. pennellii* sheds light into adaptation to arbuscular mycorrhizal symbiosis and combined stress resilience

539 **Andrea Schrader** - Contrasting responses of two grapevine cultivar with different hydraulic behaviour to drought: the role of non-structural carbohydrates in xylem embolism

Topic 2A - Cell signaling in plants

415 **Monika Chodasiewicz** - Stress Granules as novel mechanism for stress signaling

445 **Francesca Resentini** - Simultaneous imaging of ER and cytosolic Ca²⁺ dynamics reveals long distance ER Ca²⁺ waves in plants

473 **Catarina Campos** - Involvement of small RNAs in long- and short-term heat stress response in mycorrhizal grapevine plants

Topic 2B - Long-distance messages in plants

463 **Matteo Grenzi** - At the edge of the gate: discerning the GLUTAMATE RECEPTOR-LIKE ligand-binding role in plant systemic responses

Topic 3A - Plant metabolism and bioactive compounds

184 **Katarina Šoln** - Inside of allelopathy of invasive Japanese and Bohemian knotweed: rhizome extracts stimulate programmed cell death and affect cell structure and function in young radish roots

452 **Matteo Pivato** - Heterologous expression of cyanobacterial Orange Carotenoid Protein (OCP2) as a soluble carrier of ketocarotenoids in *Chlamydomonas reinhardtii*

524 **Julie Buges** - Metabolic engineering of BAHD acyltransferases involved in the production of an unusual chemical signature in Asteraceae pollen coat

Topic 4A - Plant ecosystems under environmental change

- 139 **Cecilia Brunetti** - Widespread holm oak dieback in Mediterranean forests: the roles of carbon stress and hydraulic failure under recurrent drought events
282 **Norul Sobuj** - Effects of lateral bud removal in growth and phenolics in male and female saplings of *Populus tremula* (L.) under simulated climate change
285 **Francesca Secchi** - Inhibition of xylem cellular activity blocks recovery from drought induced embolism in poplar - insights from micro-CT analysis
521 **Oksana Lastochkina** - The role of endogenous salicylic acid in endophytic bacterium *Bacillus subtilis*-mediated drought tolerance in wheat plants

Session 4B - Plants in extreme environments

- 225 - Chiara Puciariello - Auxin is required for the long coleoptile trait in rice germination under submergence

Session 5A - Plant development and flowering

- 108 **Francesca Giaume** - A triple florigen system is essential for flowering and panicle architecture in rice
134 **Maurizio Di Marzo** - SEEDSTICK controls *Arabidopsis* fruit size by regulating cytokinin levels and FRUITFULL
158 **Misra Chandra Shekhar** - Transcriptome reprogramming in the *Arabidopsis* male germline during pollen tube growth
179 **Giulia Castorina** - Genetic control of juvenile phase-specific cuticle deposition and cuticle-mediated plant response to drought in maize
322 **Jose Muino** - Understanding meristem differentiation at single cell level during flower development
433 **Pedro Barras** - Conserved regulatory networks acting during phellem development in *Arabidopsis* and cork oak roots
464 **Ana Marques** - Functional analysis of *AtDRIF* genes during the development of *Arabidopsis thaliana* seedlings
488 **Luis Andrade** - The evening complex is necessary for rice flowering activation
522 **Tomáš Takáč** - FSD1: a plastidial, nuclear and cytoplasmic enzyme with antioxidant, osmoprotective and developmental functions

Session 5B - Plant evolution and development

- 92 **Martin Bayer** - Parental conflict or cell polarity establishment? Mechanistic insight in MAP kinase signaling in the plant embryo

Session 7A - Molecular and cellular organization of the photosynthetic system

- 476 **Federica Perozeni** - Toward an effective use of microalgae by disentangle LHCSR role on non photochemical quenching (NPQ) in *Chlamydomonas reinhardtii*

Session 7B - Chloroplast biology

- 198 **Valeriia Dmitrieva** - Chlorophyll b and far-red light influence permeability of plasmodesmata in leaves of *Arabidopsis thaliana*

Session 8 - Carbon fixation and plant productivity

- 131 **Libero Gurrieri** - Molecular clues from the redox regulation of Calvin-Benson cycle
274 **Davide Patono** - Source-sink carbon movements in grapevine under drought stress and following rehydration
479 **Inês Luis** - A novel threonyl-phosphorylation regulates the activity of maize C4-enzyme phosphoenolpyruvate carboxylase
544 **James Bunce** - Carboxylation capacity limits photosynthesis at elevated CO₂ throughout diurnal cycles

Extended Elevator Pitches

(10 minutes, available on the Congress platform throughout the Congress)



Session 9A - From plant defence to plant immunity

146 **Kriton Kalantidis** - Host factors involved in viroid and satellite RNA infections

173 **Anna Philippova** - Immune signaling peptides in early land plants

413 **Erika Sabella** - Xylella fastidiosa in olive tree: physiological evidences correlated to the resistance

419 **Gaia Salvatore Falconieri** - GLYI4: a potential key hub of primary metabolism and hormone signaling pathway in Arabidopsis thaliana

Session 9B - Priming and memory of stress - from model to crop

412 **Anne Cortleven** - Photoperiod stress protects Arabidopsis plants against pathogen attack

441 **Valentino Casolo** - Understanding the response to water stress in poplars: can the balance between non-structural carbohydrates metabolism and growth prime recovery after stress relief?

461 **Moira Giovannoni** - The Plasma Membrane-Associated Ca²⁺-binding protein PCaP1 is required for oligogalacturonide and flagellin-induced priming and immunity

Session 10A - Plant nutrition

150 **Dimitrios Savvas** - Effect of different biostimulants on tomato crop performance grown under combined nutrient and water stress

160 **Katerina Karamanoli** - PGPR isolated from the rhizosphere of plants grown under harsh environments enhance tomato seedling performance under abiotic stress

399 **Raffaella Balestrini** - Systemic responses in two hazelnut genotypes to the colonization by the black truffle Tuber melanosporum

Session 10B -

270 **Oksana Lastochkina** - Effect of seed priming by endophytic Bacillus subtilis on growth and drought stress tolerance of Triticum aestivum L. cultivars of steppe Volga and forest-steppe West Siberian agroecological groups

458 **Fracisca Reis** - Cork oak forests plant growth promoting rhizobacteria (PGPR): key partners to prevent drought stress

Session 11 - Plant epigenetics

286 **Irene Perrone** - Key transcripts and epigenetic signatures underlying the somatic embryogenesis process in different grapevine genotypes

405 **Alessandra Boccaccini** - Detection of neighbors and transcriptional reprogramming: does chromatin accessibility count?

Session 12A - Genomics and genome editing for crop design

264 **Radomiro Ortiz** - Genomic prediction to deliver heat tolerant wheat to the Senegal River basin



PLANT BIOLOGY EUROPE 2021

General info

What do I need to attend PBE 2021 virtual conference?

To attend the virtual conference, you need a good internet connection, your device or computer, and a valid registration.

When will I receive the login details?

If you have registered before June 21st you will receive login details a few days prior to the conference. If you have registered after June 21st it can take some days and we cannot assure you will receive your login details in time for the live sessions.

Can I share my login details?

No, your login details are personal and cannot be used by more than one person.

There will be live contents?

Yes. During the Conference you will have the opportunity to follow live all the Plenary sessions, the Parallel sessions and the oral presentations and to ask them live questions. But if you cannot follow them live you can watch them later on-demand.

When can I watch the recorded videos?

The videos will be available from July 2nd to September 2nd, 2021.

How can I ask questions to the Authors?

Under each video there is the possibility to post a question or a comment. The author will then reply.

I have not received any confirmation for my registration

Please write a mail to pbe2020@ccicongress.com

Will I receive a Certificate of Attendance?

Yes, you can download it from your reserved area (the same you have used for your registration): <https://registration.ccicongress.com/cmsweb/Login.asp?IDcommessa=C014/21&Lang=EN>

Organizing secretariat



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