

New Phytologist Workshop

Molecular mechanisms of light-regulated plant development

11 – 13 December 2025

Indian Institute of Science Education and Research (IISER), Bhopal, India

Draft Programme

Day 1	Thursday 11 December 2025
09:00 – 09:40	Registration
Session 1: Light-mediated development in early land plants Chair: TBC	
09:40 – 10:00	Welcome and introduction From the Organisers: Sourav Datta, IISER Bhopal, India, and Liam Dolan, Gregor Mendel Institute, Vienna, Austria From the New Phytologist Foundation: Keith Lindsey, Chair of the New Phytologist Foundation, Maarja Öpik, <i>New Phytologist</i> Editor-in-Chief
10:00 – 10:40	1.1 Ute Hoecker, University of Cologne, Germany - Keynote Function of the COP1/SPA ubiquitin ligase in plant growth and development
10:40 – 11:00	1.2 Debabrata Laha, Indian Institute of Science, India Molecular control of growth and development by the inositol pyrophosphate messengers in land plants
11:00 – 11:10	1.3 Shubhajit Das, Institute of Science and Technology Austria (ISTA), Austria TMK interacts with Phytochrome to regulate light signaling in <i>Marchantia polymorpha</i>
11:10 – 11:20	1.4 Zohar Meir, Gregor Mendel Institute of Molecular Plant Biology, Austria Quantitative analysis of light-dependent gene regulation in <i>Marchantia</i> spores
11:20 – 11:30	1.5 Priyanshi Rana, Indian institute of Science, Bengaluru, India Molecular basis of GA-independent DELLA regulation by the VIH-type inositol pyrophosphate synthase in a non-vascular land plant.
11:30 – 12:00	Refreshments
12:00 – 12:20	1.6 Bharati Nandi, West Bengal State University, India Light impact on plant development and evolution through geological ages – a review
12:20 – 12:30	1.7 Nikhil Job, Gregor Mendel Institute of Molecular Plant Biology, Austria Cryptochrome-mediated blue light signaling controls the division of <i>Marchantia</i> spores
12:30 – 12:40	1.8 Riya Ghosh, Indian Institute of Science, Bengaluru, India Mechanistic insights into the role of IPK1 in plant thermomorphogenesis
12:40 – 12:50	1.9 Soumavo Dolui, Gregor Mendel Institute of Molecular Plant Biology, Austria Identifying and characterizing potential regulators of de-novo meristem formation and maintenance in <i>Marchantia polymorpha</i>
12:50	Lunch

Session 2: Blue and UV light-mediated development Chair: TBC	
14:00 – 14:20	2.1 John Christie, University of Glasgow, United Kingdom Cracking the phototropin phosphocode: reversible phosphorylation in directional light signalling
14:20 – 14:40	2.2 Yellamaraju Sreelakshmi, University of Hyderabad, India Loss-of-function RUP-variants influence ubiquitin-proteasome system and enhance carotenoid and folate levels in tomato
14:40 – 15:00	2.3 Shyam Masakapalli, Indian Institute of Technology Mandi, India Integrative isotopic and metabolomic profiling illuminates metabolic strategies of UV-B stress adaptation in Arabidopsis
15:00 – 15:10	2.4 Rajnish Khanna, Carnegie Institution for Science / i-Cultiver, Inc., USA Anesthetic block of phototropism involves disruption of microtubules, revealing critical mechanisms of how anesthesia acts to suppress consciousness in humans
15:10 – 15:20	2.5 Kunnappady Princy, University of Hyderabad, India Illuminating hidden layers of light signalling: functional analysis of PHOTOTROPIN2 promoter via CRISPR/Cas9-mediated editing
15:20 – 15:30	2.6 Rucha Kulkarni, University of Geneva, Switzerland Role and functions of CONSTANS-LIKE B-Box family transcription factors in UVR8 signaling
15:30 – 16:00	Refreshment break
Session 3: Light and post translational modifications Chair: TBC	
16:00 – 16:20	3.1 Riddhi Datta, Barasat Government College, India Glutathione at the crossroads: integrating redox and light signals to control ethylene biosynthesis
16:20 – 16:40	3.2 Moumita Srivastava, Rajiv Gandhi Centre for Biotechnology / Regional Centre for Biotechnology, India Decoding the potential of post-translational modifications in fine-tuning plant growth and development
16:40 – 16:50	3.3 Ira Trivedi, University of Cologne, Germany Analysis of the COP1/SPA–photoreceptor complex formation in <i>Arabidopsis thaliana</i>
16:50 – 17:00	3.4 Annayasa Modak, IISER-Kolkata, India The E3 ubiquitin ligases RDU1 and RDU2 control photosensory hypocotyl growth via inhibiting PIF3 and PIF4 activity in Arabidopsis
17:00 – 18:00	Poster Session
18:45	Bus for Dinner
19:15 – 21:00	Dinner – offsite
21:00 (TBC)	Return bus to IISER

Day 2	Friday 12 December 2025
08:55	Opening announcements
Session 4: Light-mediated regulation of root development and activity Chair TBC	
09:00 – 09:40	4.1 Ullas Pedmale, Cold Spring Harbor Laboratory, USA - Keynote Light as an architect: How light quality shapes plant structure
09:40 – 10:00	4.2 Anjan Banerjee, IISER Pune, India Investigating the role of miR166-HD-ZIP III module in tuber shape, colour and productivity in potato
10:00 – 10:20	4.3 Santosh Satbhai, IISER Mohali, India Blue light turns on iron uptake: uncovering the CRY–HY5 regulatory network in <i>Arabidopsis thaliana</i>
10:20 – 10:40	4.4 Eswarayya Ramireddy, IISER Tirupati, India Balancing cell renewal and immunity: cytokinin regulation of root cap function
10:40 – 10:50	4.5 Surjit Singh, Sister Nivedita University, India Epigenetic and molecular mechanisms of iron deficiency response: implications for light-regulated development in plants
10:50 – 11:00	4.6 Debojyoti Kar, IISER Bhopal, India Light promotes and dark inhibits aluminium resistance in <i>Arabidopsis</i>
11:00 – 11:30	Refreshment break
Session 5: Crosstalk between light and temperature signaling Chair TBC	
11:30 – 11:50	5.1 Annapurna Devi Allu, IISER Tirupati, India Priming-mediated molecular circuits regulating plant stress responses
11:50 – 12:10	5.2 Kishore Panigrahi, NISER, Bhubaneswar, India A novel insight into light and temperature mediated plant development by Auxin Binding Protein 1
12:10 – 12:30	5.3 Chandan Sahi, IISER Bhopal, India Aggregate remodeling JDPs of <i>Arabidopsis thaliana</i>
12:30 – 12:40	5.4 Shubhi Dwivedi, IISER Bhopal, India Role of BBX protein as a molecular player in PIF4-HY5 crosstalk during thermomorphogenesis
12:40 – 12:50	5.5 Shashank Kumar Singh, Indian Institute of Technology Gandhinagar, India Unravelling the dynamics of plant circadian rhythms: integrating light intensity and temperature effects for seasonal adaptation in <i>Arabidopsis</i>
12:50 – 13:00	5.6 Ramyani Bhattacharjee, St Edmunds College / North Eastern Hill University, India Photoreceptor-mediated regulation of starch metabolism and crop productivity
13:00-14:00	Lunch

Session 6: Light regulation of metabolic pathways Chair TBC	
14:00 – 14:20	6.1 Prabodh Trivedi, CSIR-CIMAP, Lucknow, India Light-dependent regulation of secondary metabolism by HY5: a conserved mechanism across plant species
14:20 – 14:40	6.2 Himabindu Kilambi, NISER, India A combination of regulatory processes driving anthocyanin accumulation in <i>Abg</i> tomato mutant
14:40 – 15:00	6.3 Aditi Gupta, CSIR-NBRI, Lucknow, India BRL3 at the crossroads of growth and climate adaptation
15:00 – 15:10	6.4 Akanksha Singh, CSIR-CIMAP, Lucknow, India Light-dependent modulation of secondary plant product biosynthesis and host-associated rhizospheric microbiome in plants
15:10 – 15:20	6.5 Ajar Anupam Pradhan, IISER Bhopal, India A light regulated <i>Arabidopsis</i> MATE transporter regulates the root hair development under low phosphate stress
15:20 – 15:30	6.6 Pooja Jakhar, IISER Mohali, India Shedding light on iron nutrition: light mediated regulation of Iron homeostasis in <i>Arabidopsis thaliana</i>
15:30 – 16:00	Refreshment break
Session 7: Role of light in chloroplast development and greening Chair TBC	
16:00 – 16:20	7.1 Sreeramaiah Gangappa, IISER Kolkata, India The RDUF1/RDUF2 E3-ubiquitin ligases promote seedling photomorphogenesis via inhibiting PIF3/PIF4 activity in <i>Arabidopsis</i>
16:20 – 16:40	7.2 Naresh Loudya, Indian Institute of Science, Bengaluru, India Understanding chloroplast development: identification and characterization of the <i>CUE6</i> gene in <i>Arabidopsis</i>
16:40 – 17:00	7.3 Yogesh Mishra, Banaras Hindu University, India Do growth chambers mimic nature? A systems biology perspective on plant light responses
17:00 – 17:10	7.4 Priyanka Mishra, Indian Institute of Science, Bengaluru, India / Royal Holloway, University of London, United Kingdom An ARF2-GRF5 module, operating early, indicates genetic hierarchy during chloroplast biogenesis
17:10 – 17:20	7.5 Arpan Mukherjee, IISER Bhopal, India Functional characterization of BBX15 during early seedling development in <i>Arabidopsis</i>
17:20 – 17:30	7.6 Ritu Godara, CSIR-IHBT, Palampur, India Plastidial-oxylipins mediated priming couples light acclimation and defence governing plant development
17:30 – 18:30	Publishing workshop
18:30 – 19:30	Poster session
19:30	Dinner

Day 3	Saturday 13 December 2025
08:55	Opening announcements
Session 8: Light regulation of reproductive development and non-model plants Chair TBC	
09:00 – 09:20	8.1 Rishikesh Bhalerao, Umea Plant Science Center, Sweden CRY2-interacting CIB mediates photoperiodic control of bud break in hybrid aspen trees
09:20 – 09:40	8.2 Antony Dodd, John Innes Centre, United Kingdom Circadian regulation and signal transduction
09:40 – 10:00	8.3 Jay Prakash Maurya, Banaras Hindu University, Varanasi, India Genetic framework mediating the photoperiodic control of shoot architecture development and seasonal growth in perennial plants
10:00 – 10:10	8.4 Sukriti, CSIR-IHBT, Palampur, India Integration of light and temperature signals by <i>AtFPF</i> drives floral transition in <i>Arabidopsis</i>
10:10 – 10:30	8.5 Rameshwar Sharma, University of Hyderabad, India Decoding the genetic basis of the tomato root-suppressed (Rs) mutant by integrated genomics and metabolomics
10:30 – 10:50	8.6 Vivek Dogra, CSIR-IHBT, Palampur, India Investigating stress sensors in chloroplasts and their signaling mechanisms, shaping responses toward light and related stressors in non-model plants
10:50 – 11:00	8.7 Shweta Pawar, IIT Mandi, India Metabolic responses of red and green <i>Amaranthus tricolor</i> to distinct light wavelengths
11:00 – 11:30	Refreshment break
Session 9: Developmental regulation by light and hormones Chair TBC	
11:30 – 11:50	9.1 TBC
11:50 – 12:10	9.2 Kalika Prasad, IISER, Pune, India Cortical microtubule dynamics regulate cell fate transition to promote reunion between physically disconnected tissues
12:10 – 12:20	9.3 Dipan Roy, Durham University, United Kingdom Redox-regulated Aux/IAA multimerisation modulates auxin responses
12:20 – 13:00	9.4 Ikram Blilou, KAUST, Saudi Arabia - Keynote Molecular insights into developmental adaptations to the environment
13:00 – 13:20	Closing remarks
13:20 – 14:20	Lunch