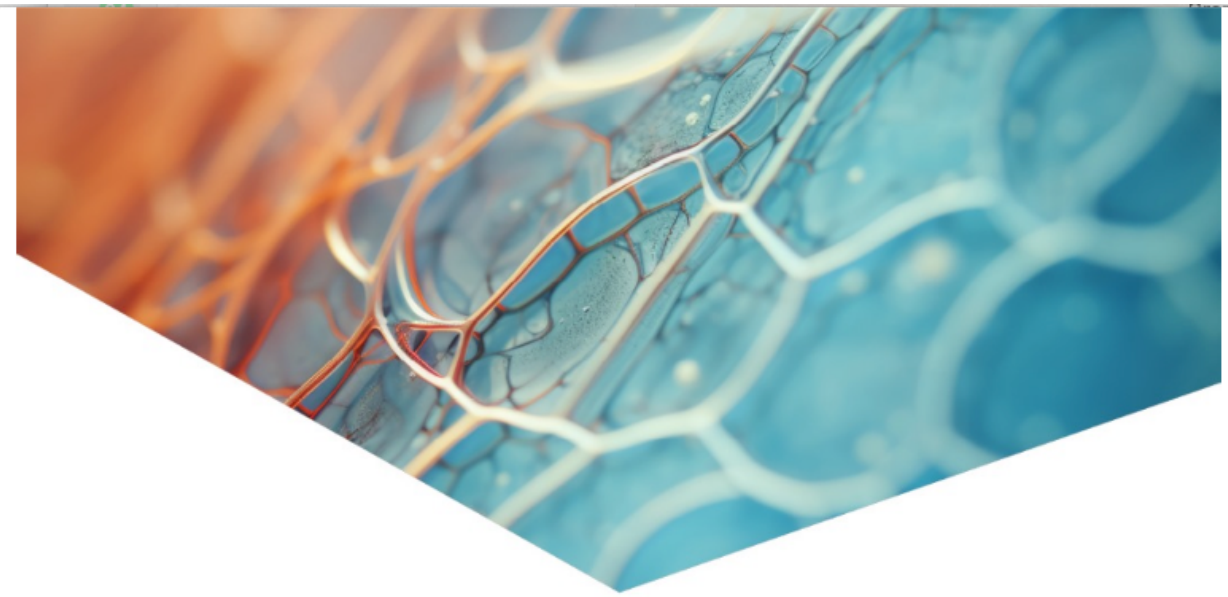
8th International Conference on Plant Cell Wall Biology

VIII PLANT CELL WALL



8th International Conference on Plant Cell Wall Biology

PROGRAM

VIII PLANT CELL WALL

June 17 to 21, 2024

Casona Las Condes Campus, UNAB

Santiago, Chile

Facultad de Ciencias de la Vida

CENTRO DE BIOTECNOLOGÍA VEGETAL

Mizutani Foundation for Glycoscience

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CHILEAN SOCIETY OF PLANT BIOLOGISTS

8th International Conference on Plant Cell Wall Biology

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Mon 17		
14:00-20:30	**Registration**	
15:30-16:30	**Workshop Analytical Tools**	
16:30-17:00	**Coffee Break**	
17:00-17:30	Welcome Opening	
17:30-18:15	**Keynote Lecture 1** **Daniel Cosgrove**	Growing cell walls - connecting mechanics to structure
18:15-19:00	**Keynote Lecture 2** **Paul Dupree**	The molecular architecture of plant cell walls
19:00-20:30	**Welcome Reception**	
Tue 18		
	1. Cell Wall Structure and Composition: **Chairs: Breeanna Urbanowicz; Charles Anderson**	
8:30-8:45	**Charles Anderson** Pennsylvania State University	Cell wall architecture underpins efficient stomatal dynamics in *Arabidopsis thaliana*
8:45-9:00	**Alberto Echevarría-Poza** University of Cambridge	Xylan coating influences glucosyl conformations in cellulose fibrils
9:00-9:15	**Jan (she/they/them) Xue** University of British Columbia	Xylan influences cellulose production at the cell surface of Arabidopsis protoxylem
9:15-9:30	**Aleksandra Lizka** Jagiellonian University	Unexplored diversity of xyloglucan structure in gymnosperm species
9:30-9:45	**Lubana Shahin** University of Georgia	A deep dive into pectin O-acetylation reveals surprises
9:45-10:00	**Chetana Tamadaddi** Pennsylvania State University	Ectopic secondary walls formed by NST3 induction exhibit diverse patterns and composition in *Arabidopsis thaliana*
10:00-10:15	**Breeanna Urbanowicz** University of Georgia	Development of a rhamnogalacturonan II (RG-II) glycoform library to study identify the sequence-structure determinants of borate diester formation
10:15-11:00	**Coffee Break/Posters**	

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	2. Cell Wall Biosynthesis and Metabolism: **Chairs: Berit Ebert; Toshihisa Kotake**	
11:00-11:15	**Fleur Dolman** University of Adelaide	Characterisation of developmentally critical cell-wall biosynthesis genes in Arabidopsis
11:15-11:30	**Berit Ebert** Ruhr University Bochum	Examining the roles of members of the UDP-arabinofuranose transporter family in Arabidopsis
11:30-11:45	**Pradeepa Jayawardhane** University of Georgia	Determining whether all eight members of the Arabidopsis Glycosyltransferase family 116 (GT 116) have RG-I:GalAT activity.
11:45-12:00	**Toshihisa Kotake** Saitama University	Functions of atypical endo-β-1,4-mannanases in the synthesis and deposition of glucomannan
12:00-12:30	**The Bruce Stone Award**	
12:30-14:00	**Lunch (Colonial Hall)**	
	2. Cell Wall Biosynthesis and Metabolism: **Chairs: Debra Mohnen; Susana Saez-Aguayo**	
14:00-14:15	**Debra Mohnen** University of Georgia	Enzymatic, anchoring, and biological functions of the GAUT family in synthesis of multi-domain pectins
14:15-14:30	**Staffan Persson** University of Copenhagen	Implementation of pupylation-based proximity labelling in plant biology reveals regulatory factors in sugar signalling and cellulose biosynthesis
14:30-14:45	**Clifford Okoye** University of Georgia	Integrating computational modeling and mutagenesis to study the pectic homogalacturonan de novo biosynthetic activity of GAUT13 and GAUT14 and its biological function in Arabidopsis
14:45-15:00	**Juan Pablo Parra** Andres Bello University	URGT4, a key nucleotide sugar transporter for RG-II pectin in *Arabidopsis thaliana* roots
15:00-15:15	**Susana Saez-Aguayo** Andres Bello University	Mucilage Matters: Regulating HG methylation in seed coat epidermal cells
15:15-15:30	**Louis Wilson** University of Virginia	In cell wall biosynthesis, GT47-family enzymes reign supreme: Uncovering their rapid evolution and myriad undiscovered functions through structural biology, bioinformatics, and *in vivo* characterisation
15:30-17:00	**Posters Session/Coffee Break/Refreshments (Odd Numbers)**	

3. Cell Biology of the Plant Cell Wall:

Chairs: Georgia Drakakaki; Olga Zabotina

17:00-17:15	**Tracy Nixon** Pennsylvania State University	Lobe-lobe tethering and subunit-subunit communication in cellulose synthase complexes of CesA and CSLD
17:15-17:30	**Georgia Drakakaki** University of California, Davis	Dissecting cell wall formation during plant cytokinesis
17:30-17:45	**Lukas Hoermayer** University of Lausanne	Origin of anisotropic growth – Investigation of symmetry breaking during protoplast regeneration
17:45-18:00	**Olga Zabotina** Iowa State University	The XXT2-XXT5 heterodimer: Structure, mechanism of action and what determines their Golgi localization.

4. Glycoproteins in the Plant Cell Wall:

Chairs: Silvia Coimbra; Jose Estevez

18:00-18:15	**Sílvia Coimbra** University of Porto	The crucial role of eight Hydroxyproline-O-Galactosyltransferases in Arabidopsis plant reproduction
18:15-18:30	**Jose M.Estevez** Andres Bello University/ Leloir Institute	NAC1 directs CEP1-CEP3 peptidase expression and modulates the glycoproteins Extensins linked root hair growth in Arabidopsis
18:30-18:45	**Georg Seifert** University of Natural Resources and Life Sciences	Searching for the molecular mechanism of fasciclin-like arabinogalactan protein 4
18:45-19:00	**Allan Showalter** Ohio University	Knockout of eight hydroxyproline-O-galactosyltransferases cause multiple vegetative and reproductive growth defects

Wed 19

5. Cell Wallomics and Synthetic Biology Approaches:

Chairs: Marcos Buckeridge; Catalin Voiniciuc

8:30-8:45	**Marcos Buckeridge** University of Sao Paulo	Building a sysyemic model for cell wall modification during aerenchyma development in roots of sugarcane
8:45-9:00	**Igor Cesarino** University of Sao Paulo	Systems biology characterization of lignin metabolism in C4 grasses: looking for new players
9:00-9:15	**Gabriel Mendez** Heinrich Heine University Düsseldorf	Heterologous production of xyloglucan in yeast: advancing synthetic biology in plant cell wall polysaccharides

9:15-9:30	**Annika Saß** University of Postdam	Uncovering principles of protoxylem wall patterning in *Arabidopsis thaliana*
9:30-9:45	**Catalin Voiniciuc** University of Florida	Novel probes for mannan synthesis and directed evolution
9:45-10:30	**Coffee Break/Posters**	
	6. Cell Wall Function and Plant Development: **Chairs: Sebastian Wolf; Henry Temple**	
10:30-10:45	**Chaowen Xiao** Sichuan University	Pectin methylesterification orchestrates phloem architecture to modulate flowering time in Arabidopsis
10:45-11:00	**Henry Temple** University of Cambridge	Breaking out of isotropy: does pectin methylation control cell growth and cell shape?
11:00-11:15	**Eleodoro Rivera** P. Catholic University of Chile	Unraveling the interplay between N-nutrition and cell wall metabolism for growth in *Arabidopsis thaliana*
11:15-11:30	**Quentin Hays** Université de Rouen Normandie	Effect of phenylboronic acid on rhamnogalacturonan-II dimerization and auxin signaling during *Arabidopsis thaliana* root growth and development
11:30-11:45	**Sebastian Wolf** University of Tübingen	Cell wall feedback signalling determines cell identity in the shoot apical meristem
11:45-12:00	**Ulrike Lehman** University of Postdam	Control and consequences of growth arrest during the secondary wall developmental transition
12:00-12:15	**Tian Zhang** Henan University	The molecular control of stomatal morphogenesis by a maize epimerase
12:15-13:45	**Lunch (Colonial Hall)**	
	7. Cell Wall Interactions and Stresses: **Chairs: Francisca Blanco; Antonio Molina**	
13:45-14:00	**Laura Bacete** Umeå University	Uncovering the intricacies of cell wall integrity in plants: A multidisciplinary approach
14:00-14:15	**Antonio Molina** Polythecnic University of Madrid	Novel insights into plant mechanisms of glycan perception and immune activation: deciphering the function of Leucine Rich Repeat-Malectin Receptor Kinases

14:15-14:30	**Laura Bartley** Washington State University	Altering grass cell wall xylan substitution increases mesophyll CO 2 conductance in rice and sorghum, but only increases intrinsic water use efficiency for sorghum
14:30-14:45	**Henrik Scheller** Joint BioEnergy Institute	Unraveling the mysteries of plant cell walls: insights from arbuscular mycorrhizal symbiosis
14:45-15:00	**Vyankatesh Zambare** The Pennsylvania State University	Cell wall dynamics of *Arabidopsis thaliana* root hairs in response to mechanical stress
15:00-15:15	**Enmanuel Arkorful** Jagiellonian University	Understanding the role of polysaccharide structure in ash dieback disease
15:15-15:30	**Daisuke Takahashi** Saitama University	Xyloglucan is associated with basal freezing tolerance and growth plasticity
15:30:15:45	**Marina Leal Gavarron** University of Helsinki	TRICHOME BIREFRINGENCE pectin O-acetyltransferase is required for epidermal cell adhesion
15:45-17:15	Posters Session/Coffee Break/Refreshments (Even Numbers)	
	8. Mechanical Properties of Plant Cell Walls: **Chairs: Anja Geitmann, Georg Seifert**	
17:15-17:30	**Anja Geitmann** McGill University	Toughness in primary plant tissues can be achieved through geometrical design features
17:30-17:45	**Leila Jaafar** Pennsylvania State University	Guard cell-subsidiary cell interactions in grass stomatal complexes rely on differential wall composition and biomechanics
17:45-18:00	**Emily Oren** University of Cambridge	Cell division as a mechanical regulator of Arabidopsis growth
18:00-18:15	**Marketa Samalova** Masaryk University	Cell-type specific expansin overexpression and proton pump activation questions the acid growth theory in Arabidopsis roots
18:15-18:30	**Noemi Svolacchia** University of Rome Sapienza	Unveiling the role of cell wall mechanical properties in regulating cell division and differentiation
18:30-18:45	**Federico Vinciarelli** University of Rome Sapienza	“Groundbreaking” ability of the root: how to cope with soil’s hardness
Thu 20		
	9. Cell Walls as a Resource for Sustainability: **Chairs: Theodora Tryfona, Nicholas Carpita**	
8:30-8:45	**Ajaya Biswal** University of Georgia	Sugar composition and yield of non-cellulosic polysaccharide during consolidated bioprocessing of switchgrass biomass over a 120 hr fermentation by Clostridium thermocellum DSM1313

8:45-9:00	**Theodora Tryfona** University of Cambridge	Altering the substitution and cross-linking of glucuronoarabinoxylans affects cell wall architecture in *Brachypodium distachyon*
9:00-9:15	**Nicholas Carpita** National Renewable Energy Laboratory	The compound middle lamella and biomass recalcitrance in sorghum
9:15-9:30	**Marcia Buanafina** Pennsylvania State University	Reducing ferulates linkage in maize cell walls by targeted expression of a fungal ferulic acid esterase under a senescence promoter and effects on lignin solubility and tissue saccharification.
9:30-9:45	**Darragh Kelleher** University of Cambridge	Investigating the recalcitrant nature of sphagnum moss cell walls
9:45-10:00	**Nerya Zexer** Pennsylvania State University	Single-molecule studies of the inhibition of TrCel7A cellulase by non-cellulosic components of plant cell walls
10:00-10:45	Coffee Break/Posters	
	10. The cell wall of Trees and Wood Formation: **Chairs: Misato Ohtani; Shawn Mansfield**	
10:45-11:00	**Misato Ohtani** The University of Tokyo	Protein modification is key to regulate secondary wall formation for xylem vessel functionality
11:00-11:15	**Li Yu** University of Cambridge	XAPT and XLPT enzymes modify the glucuronic acid side chains of tissue-specific xylans in Arabidopsis and Eucalyptus
11:15-11:30	**Raúl Herrera** University of Talca	Novel transcription factors involved in the remodeling of secondary cell wall
11:30-11:45	**Nobutaka Mitsuda** National Institute of Advanced Industrial Science and Technology (AIST)	A single amino-acid substitution of NST transcription factor could enhance wood accumulation in tree species
11:45-12:00	**Chang-Jun Liu** Brookhaven National Laborator	Functional specialization of lignin biosynthetic electron donor cytochrome b5 in green lineages
12:00-12:15	**Justin Nichol** University of Calgary	The shatter seesaw: how the role of lignin enables two extremes for Arabidopsis pod shattering
12:15-12:45	**Bussiness Meeting**	
12:45-14:15	**Lunch (Students Cowork Hall)**	
14:15-20:30	**Social Activity & Gala Dinner (Santa Rita Vineyard)**	

Fri 21

11. Cell Walls in Fruit Biology:

Chairs: Rosie Schroeder; Alejandra Moya

9:00-9:15	**Rosie Schroeder** The New Zealand Institute for Plant and Food Research Ltd	It takes two to tango: Asynchronous softening of outer pericarp and core tissue in kiwifruit
9:15-9:30	**Yoshihisa Yoshimi** University of Cambridge	Importance of β-galactoglucomannan in tomato fruit development
9:30-9:45	**Sara Posé** University of Malaga	Cell wall modifications of strawberry roots in response to water deficit
9:45-10:00	**Dayan Sanhueza** Andres Bello University	From waste to nutritional treasure: Investigating carbohydrate diversity in food industry by-products and papaya mucilage
10:00-10:15	**María Paz Covarrubias** University of Chile	Searching for super enzymes using endemic Chilean fruit
10:15-11:00	**Coffee Break**	
11:00-12:00	**Closing Ceremony**	
12:00-14:00	**Lunch (Colonial Hall)**	
14:00	**Farewell**	