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Director

2003 GORDON RESEARCH CONFERENCE

on 2003 Plant Cell Walls Gordon Conference

FINAL PROGRESS REPORT

DOE

DE-FG02-03ER15433

The Gordon Research Conference (GRC) on 2003 Plant Cell Walls Gordon Conference was held at Kimball Union, Meriden, NH from August 10-15, 2003. The Conference was well-attended with 137 participants (attendees list attached). The attendees represented the spectrum of endeavor in this field coming from academia, industry, and government laboratories, both U.S. and foreign scientists, senior researchers, young investigators, and students.

In designing the formal speakers program, emphasis was placed on current unpublished research and discussion of the future target areas in this field. There was a conscious effort to stimulate lively discussion about the key issues in the field today. Time for formal presentations was limited in the interest of group discussions. In order that more scientists could communicate their most recent results, poster presentation time was scheduled. Attached is a copy of the formal schedule and speaker program and the poster program. In addition to these formal interactions, "free time" was scheduled to allow informal discussions. Such discussions are fostering new collaborations and joint efforts in the field.

I want to personally thank you for your support of this Conference. As you know, in the interest of promoting the presentation of unpublished and frontier-breaking research, Gordon Research Conferences does not permit publication of meeting proceedings. If you wish any further details, please feel free to contact me. Thank you.

Dr. Daniel J. Cosgrove
2003 Conference Chair

Plant Cell Walls

Program

August 10-15, 2003
Kimball Union Academy
Meriden, NH

Chair: [Daniel J Cosgrove](#)
Vice Chair: [Nicholas C Carpita](#)

This conference will address recent progress in many aspects of cell wall biology. Molecular, genetic, and genomic approaches are yielding major advances in our understanding of the composition, synthesis, and architecture of plant cell walls and their dynamics during growth, and are identifying the genes that encode the machinery needed to make their biogenesis possible. This meeting will bring together international scientists from academia, industry and government labs to share the latest breakthroughs and perspectives on polysaccharide biosynthesis, wood formation, wall modification, expansion and interaction with other organisms, and genomic & evolutionary analyses of wall-related genes, as well as to discuss recent 'nanotechnological' advances that take wall analysis to the level of a single cell.

SUNDAY

2:00 pm - 9:00 pm	Arrival and Check-in
6:00 pm	Dinner
7:30 pm - 9:30 pm	Cell Walls in Development
	Discussion Leader: Maura C. Cannon , University of Massachusetts
7:30	Mary Tierney , University of Vermont "Proline-rich structural cell wall proteins are essential for root hair and guard cell function in Arabidopsis"
8:10	Elizabeth Lord , University of California, Riverside "Wall molecules involved in adhesion and guidance in lily pollination"
8:50	Alan Showalter , Miami University of Ohio "Structure, Expression and Function of the Tomato LeAGP-1 Arabinogalactan-Protein with its Distinctive Lys-rich Subdomain: GPI Anchoring and LeAGP-1 Overexpression Studies"
9:15	General Discussion followed by Reception

MONDAY

7:30 am - 8:30 am	Breakfast
8:45 am	Photo
9:00 am - 12:30 pm	Wall Loosening Mechanisms
	Discussion Leader: Taka Hayashi , University of Kyoto
9:00	Peter Schopfer , University of Freiburg "Peroxidase-generated hydroxyl radicals effect cell wall loosening and extension growth"
9:40	Jan Derksen , Catholic University of Nijmegen "Plant lipid transfer proteins with wall extension activity"
10:20	Coffee Break
10:50	Daniel J. Cosgrove , Penn State University "Crystal structure and functional analysis of expansins"
11:30	Akane Okamoto-Nakazato , Showa Pharmaceutical University "Yieldin, a wall bound protein regulating the acid-induced change in the yield threshold"
12:10	General Discussion
12:30 pm	Lunch
1:30 pm - 6:00 pm	Free Time
6:00 pm	Dinner
7:30 pm - 9:30 pm	Cell Biology of Cell Walls

	Discussion Leader: Keith Roberts , John Innes Centre
7:30	Maureen McCann , Purdue University "Cell wall-related gene discovery in the Zinnia system"
8:10	Peter Ulskov , Danish Institute of Agricultural Sciences "Biophysical consequences of altering rhamnogalacturonan side-chain structure"
8:50	Neil Taylor , University of York "Regulation of Secondary Cell Wall Cellulose Synthesis"
9:15	General discussion

TUESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Cell Wall Genomics, Proteomics and Evolution Discussion Leader: Chris Somerville , Carnegie Institution / Stanford Univ.
9:00	Geoffrey B. Fincher , University of Adelaide "Genomic approaches to wall biosynthesis in barley"
9:40	Pedro M. Coutinho , AFMB-CNRS, Marseille(s) "Carbohydrate-active enzymes: Arabidopsis vs. Rice"
10:20	Coffee Break
10:50	Kenneth Keegstra , MSU-DOE Plant Research, Laboratory "The genes and enzymes required for xyloglucan biosynthesis"
11:30	Wolf-Dieter Reiter , University of Connecticut "Genetic analysis of the GT47 glycosyltransferase gene family of Arabidopsis"
12:10	Joss Rose , Cornell University "Proteomic analysis of the tomato cell wall"
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session #1 (4-5pm for even # posters, 5-6pm for odd # posters)
6:00 pm	Dinner
7:30 pm - 9:30 pm	Wood Formation and Lignification Discussion Leader: Simon Turner , University of Manchester
7:30	Claire Halpin , University of Dundee "Multi-gene manipulation of lignin biosynthesis"
8:10	Eric Beers , Virginia Tech University "Gene expression profiles from xylem, phloem and non-vascular tissues of Arabidopsis"
8:50	Ewa Mellerowitz , SLU "Pectin methyl esterase regulates cell expansion and intrusive growth during wood development in poplar"
9:15	General Discussion

WEDNESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Technical Advances in Cell Wall Analysis and Use Discussion Leader: William York , CCRC and University of Georgia
9:00	Markus Pauly , Max-Planck Institute for Molecular Plant Physiology "Microanalysis of cell walls using mass spectrometry"
9:40	Herman Höfte , Laboratoire de Biologie Cellulaire, INRA, Versailles "Pushing the limits of FT-IR microspectroscopy for the analysis of variation in Arabidopsis cell walls"
10:20	Coffee Break
11:00	Michael Hahn , CCRC and University of Georgia "Monoclonal antibodies as essential tools for the study of plant cell wall structure, biosynthesis and remodeling"
11:25	John Ralph , USDA/ARS "Solubilization of Finely-Divided Cell Walls - a Platform for Improved Characterization and Analysis"

11:50	Lawrence Melton , University of Auckland "New Plant Cell Wall Models: A different way of looking at xyloglucans and cellulose microfibrils"
12:15	General Discussion
12:30 pm	Lunch
2:00 pm - 3:00 pm	Business Meeting
3:00 pm - 6:00 pm	Free Time
6:00 pm	Dinner
7:30 pm - 9:30 pm	Pathogenesis, symbiosis, and other biotic interactions
	Discussion Leader: Joss Rose , Cornell University
7:30	Nick Brewin , John Innes Centre "Cell wall remodeling during <i>Rhizobium</i> invasion of legume roots"
8:10	Eric Davis , North Carolina State University "Worms and Walls: A Dynamic Relationship"
8:40	John Bishop , Washington State University "Battle for the cell wall: Molecular evolution of glycanhydrolases and their inhibitors"
9:10	Ling Qin , University of Wageningen "A functional beta-expansin in a plant parasitic nematode"

THURSDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Polysaccharide Biosynthesis I
	Discussion Leader: Debra Mohnen , CCRC, University of Georgia
9:00	Ariel Orellana , University of Chile "Nucleotide sugar transporters: Analysis of their role in the biosynthesis of non-cellulosic polysaccharides"
9:40	Nick Carpita , Purdue University "The mixed-linkage β -glucan synthase"
10:20	Coffee Break
10:50	Vincent Bulone , CNRS-Grenoble "Unraveling the mechanisms of cellulose and callose synthesis in plants and in the Oomycete <i>Saprolegnia monoica</i> : recent developments"
11:30	Shinobu Satoh , University of Tsukuba "Molecular analysis of pectin biosynthesis and functions with T-DNA tagging in haploid tobacco"
12:10	General Discussion
12:30 pm	Lunch
1:30 pm - 6:00 pm	Free Time
4:00 pm - 6:00 pm	Poster Session #2 (4-5pm for even # posters, 5-6pm for odd # posters)
6:00 pm	Dinner
7:30 pm - 9:30 pm	Polysaccharide Biosynthesis II
	Discussion Leader: Bruce Stone , Latrobe University
7:30	Kanwarpal Dhugga , Pioneer Hi-Bred " β -mannan synthase from guar seed is a member of the cellulose synthase super gene family"
7:55	Georg Seifert , John Innes Centre "Developmental control of UDP-galactose flux into cell wall matrix polymers"
8:20	Jason Sterling , University of Georgia "A putative galacturonosyltransferase gene family in Arabidopsis"
8:45	Naomi Geshi , Danish Institute of Agricultural Sciences "Characterization of 1,4- β -galactosyltransferases in Arabidopsis"
9:10	Peter Albersheim , CCRC/University of Georgia "Studies of pectin structure"
9:25	General Discussion

FRIDAY

7:30 am - 8:30 am Breakfast

9:00 am Depart

PLANT CELL WALLS**Participant List****Kimball Union Academy
Aug 10-15, 2003**

Name	Organization	Participation	Status
PETER ALBERSHEIM	COMPLEX CARBOHYDRATE RESEARCH CENTER	Poster Presenter	Registered
TONY ARIOLI	BAYER CROPSCIENCE	Attendee	Registered
INGA C BACH	DANISH INSTITUTE OF AGRICULTURAL SCIENCES	Poster Presenter	Registered
XIAOMING BAO	PIONEER HIBRED INTERNATIONAL INC	Attendee	Registered
TOBIAS BASKIN	UNIVERSITY OF MASSACHUSETTS	Poster Presenter	Registered
ERIC BEERS	VIRGINIA POLYTECHNIC INSTITUTE	Speaker	Registered
JOHN BISHOP	WASHINGTON STATE UNIVERSITY	Speaker	Registered
GORDON H. BOKELMAN	PHILIP MORRIS U.S.A.	Attendee	Registered
MAURICE BOSCH	UNIVERSITY OF MASSACHUSETTS	Poster Presenter	Registered
N J BREWIN	JOHN INNES CENTRE	Speaker	Registered
LYNETTE R BROWNFIELD	PLANT CELL BIOLOGY RESEARCH CENTRE	Poster Presenter	Registered
MARCOS S BUCKERIDGE	INSTITUTO DE BOTANICA	Poster Presenter	Registered
VINCENT BULONE	UNIVERSITY CLAUDE BERNARD - LYON I	Speaker	Registered
MAURA C CANNON	UNIVERSITY OF MASSACHUSETTS	Discussion Leader	Registered
NICHOLAS C CARPITA	PURDUE UNIVERSITY	Vice Chair	Registered
DONGSU CHOI	MICHIGAN STATE UNIVERSITY	Poster Presenter	Registered
CAROLINA C CIFUENTES	WAGENINGEN UNIVERSITY	Poster Presenter	Registered
AMY M CLORE	NEW COLLEGE OF FLORIDA	Attendee	Registered
JIM COOPER	UNIVERSITY OF CALIFORNIA	Attendee	Registered
DANIEL J COSGROVE	PENNSYLVANIA STATE UNIVERSITY	Chair	Registered
PEDRO M COUTINHO	UNIVERSITE AIX-MARSEILLE, CNRS - AFMB	Speaker	Registered
ERIC L DAVIS	NORTH CAROLINA STATE UNIVERSITY	Speaker	Registered
ELENA M DEL CAMPILLO	UNIVERSITY OF MARYLAND AT COLLEGE PARK	Poster Presenter	Registered
TAKU DEMURA	RIKEN, PLANT SCIENCE CENTER	Poster Presenter	Registered
MARTA M.D. DERBA	INSTITUTE OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY	Poster Presenter	Registered
J W DERKSEN	CATHOLIC UNIVERSITY OF NIJMEGEN	Speaker	Registered
KANWARPAL S DHUGGA	PIONEER HI-BRED INTL., INC, A DUPONT COMPANY	Speaker	Registered
SORAYA L DJERBI	ROYAL INSTITUTE OF TECHNOLOGY	Poster Presenter	Registered
PAUL DUPREE	UNIVERSITY OF CAMBRIDGE	Poster Presenter	Registered
ANNEMIE C EMONS	WAGENINGEN UNIVERSITY	Attendee	Registered
MICHELLE R FACETTE	CARNEGIE INSTITUTION	Poster Presenter	Registered
GEOFFREY B FINCHER	UNIVERSITY OF ADELAIDE	Speaker	Registered
JUDITH FLIEGMANN	LUDWIG MAXIMILIANS UNIVERSITY	Poster Presenter	Registered
IVANA GELINEO-ALBERSHEIM	COMPLEX CARBOHYDRATE RESEARCH CENTER	Poster Presenter	Registered
NAOMI GESHI	DANISH INSTITUTE OF AGRICULTURAL SCIENCES	Speaker	Registered
DEBORAH GOFFNER	UMR CNRS/UPS N°5546	Poster Presenter	Registered
FLORENCE GOUBET	UNIVERSITY OF CAMBRIDGE	Poster Presenter	Registered

ANDREA A GOUVEIA	JOHN INNES CENTER	Poster Presenter	Registered
JOHN H GRABBER	US DAIRY FORAGE RESEARCH CENTER	Poster Presenter	Registered
MICHAEL G HAHN	UNIVERSITY OF GEORGIA	Speaker	Registered
CANDACE H HAIGLER	NORTH CAROLINA STATE UNIVERSITY	Poster Presenter	Registered
CLAIRE HALPIN	UNIVERSITY OF DUNDEE AT SCRI	Speaker	Registered
THORSTEN K HAMANN	DEPT. OF PLANT BIOLOGY, CARNEGIE INSTITUTION	Poster Presenter	Registered
JESPER HARHOLT	PLANT BIOCHEMISTRY LABORATORY	Poster Presenter	Registered
GEORGE W HAUGHN	UNIVERSITY OF BRITISH COLUMBIA	Poster Presenter	Registered
TAKAHISA HAYASHI	KYOTO UNIVERSITY	Speaker	Registered
HERMAN R HOFTE	INRA	Speaker	Registered
KERRY L HOSMER	UNIVERSITY OF GEORGIA	Poster Presenter	Registered
TADASHI ISHII	FORESTRY AND FOREST PRODUCTS RESEARCH INSTITUTE	Poster Presenter	Registered
PHIL A JACKSON	ITQB (II)	Poster Presenter	Registered
KATJA S JOHANSEN	NOVOZYMES A/S	Poster Presenter	Registered
CHANDRA P JOSHI	MICHIGAN TECHNOLOGICAL UNIVERSITY	Poster Presenter	Registered
RUMI KAIDA	JAPAN WOMEN'S UNIVERSITY	Poster Presenter	Registered
TAKAKO S KANEKO	JAPAN WOMEN'S UNIVERSITY	Poster Presenter	Registered
KENNETH KEEGSTRA	MICHIGAN STATE UNIVERSITY	Speaker	Registered
MARCIA KIELISZEWSKI	OHIO UNIVERSITY	Poster Presenter	Registered
JOONYUP KIM	UNIVERSITY OF WISCONSIN	Poster Presenter	Registered
HEE JIN KIM	UNIVERSITY OF NEW ORLEANS	Poster Presenter	Registered
ANITA S KLEIN	UNIVERSITY OF NEW HAMPSHIRE	Poster Presenter	Registered
ROBERT J KODRZYCKI	ARBORGEN	Poster Presenter	Registered
ERIC TH KOH	HORTRESEARCH	Poster Presenter	Registered
BRUCE KOHORN	BOWDOIN COLLEGE	Poster Presenter	Registered
JOHN M LABAVITCH	UNIVERSITY OF CALIFORNIA	Poster Presenter	Registered
BENT LARSEN PETERSEN	DANISH INSTITUTE OF AGRICULTURAL SCIENCES	Poster Presenter	Registered
SANG JIK LEE	CORNELL UNIVERSITY	Poster Presenter	Registered
YI LEE	MSU-DOE PLANT RESEARCH LABORATORY, MICHIGAN STATE	Poster Presenter	Registered
LAIGENG LI	NORTH CAROLINA STATE UNIVERSITY	Poster Presenter	Registered
ANJA LISZKAY	UNIVERSITY OF FREIBURG	Poster Presenter	Registered
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ELIZABETH LORD	UNIVERSITY OF CALIFORNIA- RIVERSIDE	Speaker	Registered
ROBERT MALINOWSKI	DEPT. OF PLANT GENETICS WARSAW AGRICULTURAL UNIV.	Poster Presenter	Registered
ANDREW MAZZ MARRY	NORTH DAKOTA STATE UNIVERSITY	Poster Presenter	Registered
EMMA R MASTER	ROYAL INSTITUTE OF TECHNOLOGY	Speaker	Registered
KEN MATSUOKA	PLANT SCIENCE CENTER, RIKEN	Poster Presenter	Registered
MAUREEN MCCANN	PURDUE UNIVERSITY	Speaker	Registered
EWA MELLEROWICZ	SLU	Speaker	Registered
LAURENCE D MELTON	UNIVERSITY OF AUCKLAND	Speaker	Registered
JENNIFER MILNE	CARNEGIE INSTITUTION OF WASHINGTON	Poster Presenter	Registered
RALF MOELLER	FOREST RESEARCH	Poster Presenter	Registered
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AKANE OKAMOTO-NAKAZATO	SHOWA PHARMACEUTICAL UNIVERSITY	Speaker	Registered
ARIEL ORELLANA	UNIVERSITY OF CHILE	Speaker	Registered

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ALEX R PAREDEZ	STANFORD UNIVERSITY	Poster Presenter	Registered
MARKUS PAULY	MAX-PLANCK INSTITUTE FOR MOLECULAR PLANT PHYSIOLOG	Speaker	Registered
RAFAEL F PONT LEZICA	UNIVERSITE PAUL SABATIER	Poster Presenter	Registered
LING QIN	LAB OF NEMATOLOGY	Speaker	Registered
JOHN RALPH	US DAIRY FORAGE RESEARCH CENTER	Speaker	Registered
JASON W REED	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	Poster Presenter	Registered
WOLF-DIETER REITER	UNIVERSITY OF CONNECTICUT	Speaker	Registered
ALISON W ROBERTS	UNIVERSITY OF RHODE ISLAND	Poster Presenter	Registered
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JOCELYN K ROSE	CORNELL UNIVERSITY	Speaker	Registered
JOHANNES RÖSTI	JOHN INNES CENTRE	Poster Presenter	Registered
SHINOBU SATOH	UNIVERSITY OF TSUKUBA	Speaker	Registered
HENRIK V SCHELLER	ROYAL AGRICULTURAL UNIVERSITY	Poster Presenter	Registered
PETER SCHOPFER	SUNGENE GMBH & CO KGAA	Speaker	Registered
JOSE M SEGUI-SIMARRO	UNIVERSITY OF COLORADO	Poster Presenter	Registered
GEORG SEIFERT	JOHN INNES CENTRE	Speaker	Registered
ALEX RAJANGAM SELVANAYAGAM	ROYAL INSTITUTE OF TECHNOLOGY	Poster Presenter	Registered
ALLAN SHOWALTER	OHIO UNIVERSITY	Speaker	Registered
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RICKIE B TURLEY	USDA-ARS	Poster Presenter	Registered
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PETER ULVSKOV	DANISH INSTITUTE OF AGRICULTURAL SCIENCES	Speaker	Registered
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KRZYSZTOF KW WIECZOREK	INSTITUT OF PLANT PROTECTION	Poster Presenter	Registered
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OLGA A ZABOTINA	UCR	Poster Presenter	Registered
XU ZHANG	UNIVERSITY OF VERMONT	Poster Presenter	Registered

