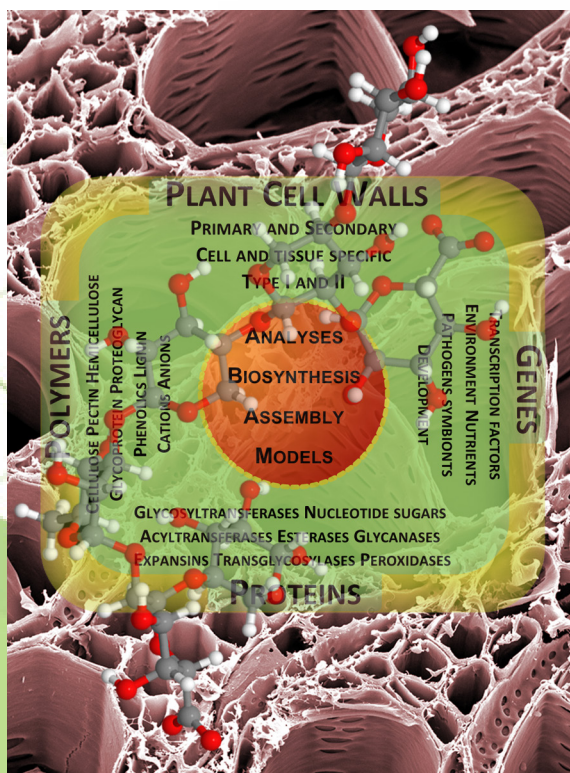


8th Annual Glycoscience Symposium

“Integrating Models of Plant Cell Wall Structure, Biosynthesis and Assembly”

Complex Carbohydrate Research Center
University of Georgia, Athens, GA

April 7, 2014



Continental Breakfast & Registration 8:00 – 8:30 am
Welcome and Introduction 8:30 – 8:35 am
Alan Darvill / Debra Mohnen (University of Georgia)

Session A: Cellulose and Hemicellulose Synthesis, Assembly and Architecture

Session Chair:

Ken Keegstra, Michigan State University 8:35 – 8:45 am
Emerging themes and unanswered questions

Vincent Bulone, Royal Institute of Technology 8:45 – 9:05 am
Cellulose structure and biosynthesis: challenges and future prospects

Tony Bacic, University of Melbourne 9:05 – 9:25 am
New insights into the synthesis of the major non-cellulosic cell wall polysaccharides of grasses

Paul Dupree, University of Cambridge 9:25 – 9:45 am
Xylan decoration patterns suggest a two-fold helical screw interaction of xylan with cellulose fibrils

William York, University of Georgia 9:45 – 10:05 am
Xylan biosynthesis: model du jour, déjà-vu or something new

Daniel Cosgrove, Penn State University 10:05 – 10:25 am
What's wrong with our current models of growing cell walls: insights from bio-mechanics and the action of expansins and substrate-specific endoglucanases

Refreshment Break 10:25 – 10:50 am

Session B: Pectin and Cell Wall Protein/Proteoglycan Structure and Biosynthesis

Session Chair:

Markus Pauly, University of California-Berkeley 10:50 – 11:00 am
Introduction to the Session

Maor Bar-Peled, University of Georgia 11:00 – 11:20 am
TBD

Debra Mohnen, University of Georgia 11:20 – 11:40 am
Deciphering the enzymatic and biological function of GAUTs in pectin synthesis

Li Tan, University of Georgia 11:40 – 12:00 pm
Functional characterization of AtAGP57C, the gene encoding the protein part of APAP1

Henrik Scheller, Lawrence Berkeley National Laboratory 12:00 -12:20 pm
Enzymes and nucleotide sugar transporters involved in biosynthesis of RG-I

Lunch and Poster Presentations 12:20– 1:50 pm

Session C: Secondary Walls and Lignin Structure and Biosynthesis

Session Chair:

Nick Carpita, Purdue University 1:50 – 2:00 pm
New perspectives on lignin recalcitrance to saccharification

Clint Chapple, Purdue University 2:00 – 2:20 pm
Evidence for metabolite-driven feedback mechanisms in Arabidopsis

John Ralph, University of Wisconsin 2:20 – 2:40 pm
The metabolic malleability of lignification: increasing complexity and simplicity at the same time!

Shawn Mansfield, University of British Columbia 2:40 – 3:00 pm
Beyond CesAs - altering secondary cell wall ultrastructure and chemistry

Refreshment Break 3:00 – 3:25 pm

Session D: *Diversity in Wall Structure*

Session Chair:

Maureen McCann, Purdue University 3:25 - 3:35 pm
Dissecting cell wall architecture with catalysts: insights gained from application of chemical conversion technologies to lignocellulosic biomass

Mei Hong, University of Iowa 3:35 – 3:55 pm
Plant cell wall structure, dynamics, and hydration by sensitivity-enhanced solid-state NMR

Michael Hahn, University of Georgia 3:55 – 4:15 pm
Insights into wall structure and dynamics using immunological approaches

Bryon Donohoe, National Renewal Energy Laboratory 4:15 – 4:35 pm
Multi-scale imaging and modeling to investigate changes in cell wall Architecture

Federica Brandizzi, Michigan State University 4:35 – 4:55 pm
A Golgi-proteomics approach to identify novel cell wall enzymes

Closing 4:55 – 5:00 pm
Alan Darvill / Debra Mohnen (University of Georgia)

Reception (by invitation) 6:00 – 7:00 pm
Ashford on Main

Dinner (by invitation) 7:00 pm
Ashford on Main

Conference Organizers

Alan Darvill, University of Georgia
Director and Professor, Biochemistry and Molecular Biology

Parastoo Azadi, University of Georgia
Technical Director - Analytical Services

Debra Mohnen, University of Georgia
Professor, Biochemistry and Molecular Biology

William York, University of Georgia
Professor, Biochemistry and Molecular Biology

Theme

The focus of this year's symposium is on the role of glycans in plant cell wall structure and synthesis. The goal is to discuss the newest results on plant cell wall structure, biosynthesis and assembly and to explore the implication of these results in regards to existing models of plant cell wall architecture. The potential for cell walls as a source of biomaterials and biofuels will also be re-examined.



Venue

The Complex Carbohydrate Research Center (CCRC) is housed in a 140,000 sq. ft. building at the edge of the University of Georgia campus. It houses 17 faculty groups with research devoted to various aspects of carbohydrate science. The CCRC is home to the UGA Cancer Center and four federally designated centers for carbohydrate research. The CCRC also provides analytical services and laboratory training courses to scientists in academia and industry. The Center has a modern auditorium that seats 250. The campus itself is 70 miles from the Atlanta Airport. For more information on registration, visit the symposium website at: <http://glycomics.ccruc.uga.edu/symposium/>

Cover Art

We thank Malcolm O'Neill, Associate Research Scientist, and Stefan Eberhard, Research Professional II for the cover art.

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