

SFG Meeting 2017

Sunday November 5, 2017

- 9 am-1 pm Glycoprotein Technologies Satellite (Parastoo Azadi)
- 9 am-3 pm Trainee Mentoring Program (Lance Wells/Karen Colley)
- 1-5 pm Bioinformatics Satellite (Rene Ranzinger)
- 3:30-5:00 pm: Board of Directors Meeting

Session 1. Meyer and Kornfeld Awards Lectures

Chair: Karen Colley (President)

- 5:30-5:45 Opening Remarks
- 5:45-6:30 Karl Meyer Award Lecture
Jamey Marth (University of California, Santa Barbara)
- 6:30-7:15 Rosalind Kornfeld Award Lecture
Gillian Air (University of Oklahoma)
- 7:30-9:30 Reception

Monday November 6, 2017

Session 2. Glycans in metabolic regulation and development (8:30-10:00 am)

Chair: Kelley Moremen (CCRC/University of Georgia)

- 8:30- 9:00 Heparan sulfate in lipid and iron homeostasis.
Jeff Esko (UCSD) and Maura Poli (University of Brescia, Brescia, Italy)
- 9:00-9:20 Studying atypical dystroglycanopathies using zebrafish models.
Chiara Manzini (George Washington University)
- 9:20-9:50 Cell-specific regulation and roles of O-GlcNAc: key to understanding
brain function.
Jerry Hart (Johns Hopkins) and Olof Lagerlöf (Karolinska Institute).
- 9:50-9:55 Poster talk: Structures of human O-GlcNAcase and its complexes reveal a new
substrate recognition mode.
Jiaoyang Jiang (University of Wisconsin-Madison)
- 9:55-10:00 Poster talk: Dynamic splicing of a glycosyltransferase modulates enzyme
activity and secretory granule morphology.
Leslie Revoredo (NIH/NIDCR, Developmental Glycobiology Section)

Coffee (10:00-10:30 am)

Session 3: Glycan biosynthesis and function (10:30 am-12:25 pm)

Chair: Nancy Dahms (Medical College of Wisconsin)

- 10:30-11:00 Stress, glycomics, and disease-A combined perspective.
Stuart Haslam (Imperial College London) and Matthew Shoulders (MIT)
- 11:00-11:05 Poster talk: Siglec-8 Is an activating receptor on human eosinophils mediating integrin-dependent adhesion, ROS generation and apoptosis.
Daniela J. Carroll (Northwestern University Feinberg School of Medicine)
- 11:05-11:25 Orchestration of mucin type O-glycosylation by the multiple activities of the ppGalNAc-T family of transferases.
Tom Gerken (Case Western Reserve University)
- 11:25-11:45 Targeting site-specific O-glycosylation for novel therapeutics.
Adam Linstedt (Carnegie Mellon University)
- 11:45-11:50 Poster talk: Bone marrow macrophage galectin-3 regulates platelet production through recognition of O-glycans on megakaryocytes.
Melissa M. Lee-Sundlov (Blood Research Institute, BloodCenter Wisconsin and the Department of Hematology, Brigham & Women's Hospital & Harvard Medical School)
- 11:50-12:20 Structural and functional perspectives on the glycan-mediated tuning of Notch activity.
Bob Haltiwanger (University of Georgia/CCRC) and Vincent Luca (Moffitt Cancer Center)
- 12:20-12:25 Poster talk: C-mannosylation of thrombospondin repeats.
Hans Bakker (Hannover Medical School)
- 12:25-1:30 Lunch on your own
- 1:30-4:00 Poster Session I

Session 4: Glycan related diseases and disorders I (4:00-5:30 pm)

Chair: Susan Bellis

- 4:00-4:30 Genetic and pharmacologic regulation of the oligosaccharyltransferase.
Reid Gilmore (University of Massachusetts Medical School) and Joe Contessa (Yale University)
- 4:30-4:35 Poster talk: Anti-inflammatory functions of Siglec-E and Siglec-9 and alteration of their ligands in mouse airway inflammation and lung emphysema.
Zhou Zhu (Yale University School of Medicine)

- 4:35-4:55 Glycans and their binding proteins in ocular surface disease.
Pablo Argüeso (Schepens Eye Research Institute/Massachusetts Eye and Ear, Harvard).
- 4:55-5:00 Poster talk: Regulatory functions of heparan sulfate in prostate stem/progenitor cell activities and prostatic tumorigenesis.
Lianchun Wang (University of Georgia, CCRC)
- 5:00-5:20 Mucin-type O-glycans in intestinal mucus barrier homeostasis and disease.
Lijun Xia (Oklahoma Medical Research Foundation)
- 5:20-5:25 Poster talk: IgA Nephropathy: An autoimmune kidney disease involving the clustered O-glycans of IgA1 as autoantigens.
Matthew B. Renfrow (University of Alabama at Birmingham)
- 5:25-5:30 Poster talk: A semantic approach to Molecular Glycophenotype classification for disease diagnostics.
Jean-Philippe F. Gourdiere (Oregon Health and Science University and Undiagnosed Diseases Network)

Session 5. Innovator Award Lecture (5:30-6:30)

Tuesday November 7, 2017

Session 6: Glycolipids in health and disease (8:30-10:00 am)

Chair: Anant Menon (Weill Medical College/Cornell University)

- 8:30-8:55 ABC transporters as glucosyl ceramide flippases in glycosphingolipid biosynthesis.
Clifford Lingwood (The Hospital for Sick Children, University of Toronto)
- 8:55-9:20 Transport of lipopolysaccharides across the bacterial cell envelope.
Natividad Ruiz (The Ohio State University)
- 9:20-9:45 Glycolipid scramblases for protein glycosylation in the endoplasmic reticulum.
Anant Menon (Weill Medical College, Cornell University)
- 9:45-9:55 Poster talk: A new hypothesis for Lec5.
Mark Lehrman (UT Southwestern Medical Center)
- 9:55-10:00 Poster talk: LmeA, a periplasmic membrane-bound protein, is critical for lipomannan biosynthesis and cell envelope integrity in mycobacteria.
Yasu S. Morita, Sarah Osman, Kathryn C. Rahlwes (University of Massachusetts, Amherst)
- 10:00-10:30 Coffee

Session 7: Glycans in pathogenesis and infection (10:30-12:15)

Chair: Christopher West (University of Georgia)

- 10:30-10:55 Making home sweet and sturdy: Investigations into the roles of glycosylation in the cyst wall of *Toxoplasma gondii*.
Louis Weiss (Albert Einstein College of Medicine)
- 10:55-11:10 Elucidating glycomic contributions to *Toxoplasma* biology and virulence.
Christopher West (University of Georgia)
- 11:10-11:15 Poster talk: Neoglycoproteins as biomarkers for cutaneous leishmaniasis.
Katja Michael (University of Texas at El Paso)
- 11:15-11:20 Poster talk: Identifying the in vitro Arginine-GlcNAcylation targets of the NleB/SseK family of effectors.
Nicholas E. Scott (University of Melbourne)
- 11:20-11:40 Active roles for heparan sulfonated proteoglycans and growth factors in human papillomavirus infectious entry: A Trojan horse mechanism.
Michelle Ozbun (University of New Mexico)
- 11:40-11:45 Poster talk: Changes in cell surface glycans in women with bacterial vaginosis and impact on *Fusobacterium* vaginal colonization.
Kavita Agarwal (Washington University in St. Louis)
- 11:45-11:50 Poster talk: Antibody fucosylation restricts Fc gamma receptor IIIA (CD16A) N-glycan motion to reduce affinity.
Adam Barb (Iowa State University)
- 11:50-12:10 Sialic acid structures and linkages - variation within animals and effects on virus interactions
Colin Parrish (Cornell University College of Veterinary Medicine)
- 12:10-12:15 Poster talk: Inhibition of O-glycan biosynthesis using hexosamine analogs.
Sriram Neelamegham (State University of New York Buffalo)
- 12:15-1:30 Lunch on your own
- 1:30-4:00 Poster Session II
- 4:00-4:45 Business Meeting

Session 8. MCP and Glycobiology Significant Achievement Award Lectures (4:45-6:15)

Chair: Kelley Moremen (President Elect)

- 4:45-5:30 Molecular and Cellular Proteomics Award Lecture (5 min intro, 40 min talk)
Stuart Haslam (Imperial College London)
- 5:30-6:15 Glycobiology Significant Achievement Award Lecture (5 min intro, 40 min talk)
H. Jafar Nejad (Baylor College of Medicine)

- 6:15-7:00 Break
7:00-11:00 Banquet

Wednesday November 8, 2017

Session 9: Expect the unexpected from microbes (8:30-9:50 am)

Chair: Christine Szymanski (CCRC/University of Georgia)

- 8:30-9:00 New insights into glycoconjugate receptors for cholera toxin.
Jennifer Kohler (UT Southwestern Medical Center)
Ulf Yrlid (University of Gothenburg, Sweden)
- 9:00-9:20 Unique features of the machinery that pathogenic and commensal microbes use to attack host glycans.
Alisdair Boraston (University of Victoria)
- 9:20-9:40 Who will win? The endless battle between campylobacters and bacteriophages in the gut.
Christine Szymanski (CCRC/University of Georgia)
- 9:40-9:45 Poster talk: Understanding influenza A specificity: An evolution of paradigms.
Robert J. Woods (CCRC/University of Georgia)
- 9:45-9:50 Poster talk: Nascent microbiome and early metabolism are perturbed by pre- and post-natal exposure to artificial sweeteners
Stephanie Olivier-Van Stichelen (NIH/NIDDK)

Coffee (9:50-10:15 am)

Session 10: Glycoengineering and glycan related therapeutics (10:15-11:45)

Chair: Don Jarvis (University of Wyoming)

- 10:15-10:35 Plant based glycan engineering for the production of therapeutic proteins.
Herta Steinkellner (Universität für Bodenkultur Wien)
- 10:35-10:55 Rapid mapping of glycoprotein structure-activity relationships by shotgun scanning glycomutagenesis.
Matthew DeLisa (Cornell University)
- 10:55-11:15 Developing anti-inflammatory drugs targeting selectins.
Richard Cummings (Beth Israel Deaconess Medical Center, Harvard Medical School)
- 11:15-11:45 Lawrence Tabak (NIH) News from the NIH: Information and Q&A.
- 11:45-1:00 Lunch on your own

Session 11: Glycan related diseases and disorders II (1:00-2:30 pm)

Chair: Stuart Haslam

- 1:00-1:30 Mutations in the gene for O-GlcNAc transferase are causal for X-linked intellectual disability.
Lance Wells (CCRC/University of Georgia)
Charles Schwartz (Greenwood Genetic Center)
- 1:30-1:50 Aberrant glycosylation in breast cancer results in modulation of the immune micro-environment.
Joy Burchell (Kings College London)
- 1:50-2:10 The consequences of human ganglioside deficiency.
Michael Tiemeyer (CCRC/University of Georgia)
- 2:10-2:20 Poster talk: A family of carbohydrate tumor antigens with a proposed common mechanism of action.
Fred Brewer (Albert Einstein College of Medicine)
- 2:20-2:25 Poster talk: Fut2 is required for methacholine-induced airway hyperreactivity in a mouse model of allergic asthma.
Dorota S. Raclawska (University of Colorado Denver)
- 2:25-2:30 Poster talk: Mapping sites and molecular functions of O-glycosylation.
Katrine T. Schjoldager (University of Copenhagen)

Closing remarks: 2:30-2:40.