



SOCIETY for
Glycobiology

2015 ANNUAL MEETING

December 1-4 • San Francisco, CA • Hilton San Francisco Union Square

GLYCOBIOLOGY: Accelerating Impact Across the Biomedical Sciences

PROGRAM BOOK

www.glycobiology.org



Organizer: J. Michael Hawkeye Pierce, University of Georgia

THANK YOU TO OUR SPONSORS

PLATINUM

Thermo
SCIENTIFIC

SILVER

Waters
THE SCIENCE OF WHAT'S POSSIBLE.®

PROzyme®

 NEW ENGLAND
BioLabs® Inc.

**Sbio**®
BRINGING GLYCOMICS TO LIFE®

cevec 

BRUKER 

 **Sussex**
Research
Glycosylation & GlycodeSIGN

 **GENWAY**
BIOTECH INC

Genentech
A Member of the Roche Group

 **TCI AMERICA**
Division of TOKYO CHEMICAL INDUSTRY

BRONZE

 **Galen**
Laboratory Supplies
connecting scientists, educators,
and service for the life sciences
iduron
The Glycosaminoglycan Company

 **Promega**

 **caisson**
BIOTECH LLC

Carbosynth


 **Premier**

 **Glycan**
Therapeutics

 **Z BIOTECH**

Partnered With **Oxford University Press**, **FASEB MARC**, **Consortium for Functional Glycomics**

DAY 1*Tuesday, December 1, 2015***7:30 AM - 6:00 PM***Registration***8:00 AM - 5:00 PM****Satellite 1: Glycoprotein Technologies***Location: Union Square Rooms 19 & 20**Chairs: Sam Tep, ProZyme, Inc. & John Briggs, Genentech***8:00 AM - 5:00 PM****Satellite 2: Consortium for Functional Glycomics (CFG)***Location: Union Square Room 22**Chair: Michael Tiemeyer, University of Georgia, CCRC***8:00 AM - 5:00 PM****Satellite 3: Transformational Informatics for Glycoscience***Location: Union Square Rooms 23 & 24**Chairs: William York & Rene Ranzinger, University of Georgia, CCRC***6:00 PM - 6:05 PM****Conference Opening Remarks***Location: Plaza Ballroom**Speaker: J. Michael (Hawkeye) Pierce, University of Georgia, CCRC
President, Society for Glycobiology***6:05 PM - 7:30 PM****Session I: Innovator and Meyer Award Lectures***Location: Plaza Ballroom**Chair: J. Michael (Hawkeye) Pierce, University of Georgia, CCRC***6:05 PM****President's Innovator Award Winner Presentation***The Discovery and Development of Glycomimetic Drugs for Cancer and
Inflammatory Disease**Speaker: John Magnani, GlycoMimetics Inc.***6:45 PM****Karl Meyer Award Winner Presentation***The Secret Lives of Fucose**Speaker: Robert Haltiwanger, University of Georgia***7:30 PM - 9:30 PM****Welcome Reception & Exhibits***Location: Golden Gate Ballroom**Sponsored by Thermo Scientific*

DAY 2

Wednesday, December 2, 2015

7:30 AM - 4:00 PM*Registration***7:30 AM - 8:30 AM***Continental Breakfast**Location: Golden Gate Ballroom***8:30 AM - 10:05 AM*****Session II: Glycan Regulation of Immunity and Infection I****Location: Plaza Ballroom**Chair: Galit Alter, Ragon Institute of MGH, MIT and Harvard***8:30 AM***Glycans as Antigens and Modulators of Immune Responses to Parasites**Speaker: Richard Cummings, Harvard Medical School***8:55 AM***N- and O-glycosylation of gp120 Isolated from HIV Virions**Speaker: Anne Dell, Imperial College***9:20 AM***Glycan Regulation of Immunoglobulins**Speaker: Robert Anthony, Harvard Medical School***9:45 AM***Analysis of Protein O-fucosyltransferase 1 Regulation of Toll-like Receptor Signaling in Macrophages**Speaker: Aleksandra Nita-Lazar, NIAID, NIH***selected talk: poster #B1***9:55 AM***Muc5b is an Endogenous Ligand of Siglec-F Expressed on Alveolar Macrophage and Siglec-F Activation Modulates Cellular Function**Speaker: Adrienne L. Stefanski, University of Colorado Denver***selected talk: poster # B2***10:05 AM - 10:30 AM***Coffee Break**Location: Golden Gate Ballroom***10:30 AM - 12:15 PM*****Session III: Glycan Binding Proteins, Glycosyltransferases, and Glycosidases- Structure and Function****Location: Plaza Ballroom**Chair: Karen Colley, University of Illinois, Chicago***10:30 AM***Lectins in the Secretory Pathway**Speaker: Nancy Dahms, Medical College of Wisconsin***10:55 AM***Viral Lectin Initiates B cell Activation and Signaling**Speaker: Daniel Lingwood, The Ragon Institute of MGH, MIT and Harvard***11:20 AM***Hemicellulose Biosynthesis is Becoming Crystal Clear**Speaker: William S. York, Complex Carbohydrate Research Center, University of Georgia***11:45 AM***How Notch Sees Its Ligands**Speaker: Vincent Luca, Stanford University School of Medicine*

DAY 2

Wednesday, December 2, 2015

12:05 PM - 1:30 PM	<i>Lunch on your own</i>
12:05 PM - 1:30 PM	<i>Glycobiology Editorial Board Meeting: Invitees only</i> <i>Location: Union Square Rooms 17 & 18</i>
1:30 PM - 3:30 PM	<i>Poster Session I and Exhibits</i> <i>Coffee break provided</i> <i>Location: Golden Gate Ballroom</i>
1:30 PM - 3:30 PM	<i>Glycoinformatics Hands-On Workshop</i> <i>Location: Union Square Rooms 15 & 16</i>
3:30 PM - 6:10 PM	Session IV: Glycomics and Glycoengineering <i>Location: Plaza Ballroom</i> <i>Chair: Gerald W. Hart, Johns Hopkins University School of Medicine</i>
3:30 PM	<i>Glycocalyx Engineering Toward Probing Cancer Glycome Evolution</i> Speaker: Carolyn Bertozzi, Stanford University & Howard Hughes Medical Institute
3:55 PM	<i>Shaping Glycans by DNA Scissors – Turning Glycosciences Into Lego Toying</i> Speaker: Henrik Clausen, University of Copenhagen
4:20 PM	<i>Glycoengineering the Baculovirus-Insect Cell System for Therapeutic Glycoprotein Production</i> Speaker: Don Jarvis, University of Wyoming
4:45 PM	MCP Award Winner Presentation: Discovery to Translation Speaker: Nicolle Packer, Macquarie University
5:10 PM	<i>Intestinal Fucosylation Maintains Host-Microbe Symbiosis During Sickness</i> Speaker: Joseph Pickard, University of Chicago
5:30 PM	<i>Dysregulation of Proteoglycan Expression in Astrocytoma: Assessment Using an Integrated Omics Approach</i> Speaker: Joseph Zaia, Boston University School of Medicine <i>*selected talk: poster #B88</i>
5:50 PM	<i>Labeling Cell Surface Glycoproteins by Selective Exo-Enzymatic Labeling (SEEL) and Metabolic Labeling</i> Speaker: Peng Zhao, University of Georgia <i>*selected talk: poster #B89</i>
6:00 PM	<i>One-Pot Consolidated Glycomics and Glycoproteomics Experiment Using Permethylated Glycopeptides and High-Resolution Tandem MS Analysis</i> Speaker: Parastoo Azadi, University of Georgia <i>*selected talk: poster #B104</i>

DAY 3

Thursday, December 3, 2015

7:30 AM - 3:00 PM	Registration
7:30 AM - 8:30 AM	Continental Breakfast <i>Location: Golden Gate Ballroom</i>
8:15 AM - 8:30 AM	Special Presentation: NIH funding opportunities <i>Location: Plaza Ballroom</i> <i>Speakers: Karl Krueger, National Cancer Institute; Douglas Sheeley & Pamela Marino, National Institute of General Medical Sciences</i>
8:30 AM - 10:05 AM	Session V: The Many Functions of O-GlcNAc <i>Location: Plaza Ballroom</i> <i>Chair: Naoyuki Taniguchi, RIKEN, Global Research Cluster</i>
8:30 AM	<i>Nutrient Regulation of Cell Physiology by O-GlcNAcylation</i> <i>Speaker: Gerald W. Hart, Johns Hopkins University School of Medicine</i>
8:55 AM	<i>Identification and Characterization of Missense Mutations in O-GlcNAc Transferase Associated with X-linked intellectual Disability</i> <i>Speaker: Lance Wells, University of Georgia</i>
9:20 AM	<i>O-GlcNAcylation stabilizes proteins and nascent chains</i> <i>Speaker: David Vocadlo</i>
9:45 AM	<i>Discovery of O-GlcNAc binding interactions using photocrosslinking O-GlcNAc in vitro and in cells</i> <i>Speaker: Jennifer J. Kohler, UT Southwestern Medical Center</i>
9:55 AM	<i>Discovery of a Nucleocytoplasmic O-Mannose Glycoproteome in Yeast</i> <i>Speaker: Adnan Halim, University of Copenhagen</i> <i>*selected talk: poster #B123</i>
10:05 AM - 10:30 AM	Coffee Break <i>Location: Golden Gate Ballroom</i>
10:30 AM - 12:20 PM	Session VI: Glycan Regulation of Immunity and Infection II <i>Location: Plaza Ballroom</i> <i>Chair: Steven Rosen, University of California San Francisco</i>
10:30 AM	<i>Mucosal Innate Lymphoid Cells Regulate Epithelial Cell Glycosylation</i> <i>Speaker: Hiroshi Kiyono, University of Tokyo</i>
10:55 AM	<i>Elucidating the structure and function of glycans at the interface of HIV and the adaptive immune system</i> <i>Speaker: Andrew Ward, The Scripps Research Institute</i>
11:20 AM	<i>Mucins as in vivo Moderators of Microbe-Microbe Interactions</i> <i>Speaker: Katharina Ribbeck, Massachusetts Institute of Technology</i>
11:45 AM	<i>Directing antibody glycosylation via vaccination</i> <i>Speaker: Galit Alter, The Ragon Institute of MGH, MIT and Harvard</i>
12:10 PM	<i>High-throughput characterization of the functional impact of IgG Fc glycan variability in juvenile idiopathic arthritis</i> <i>Speaker: Hao Cheng, Thayer School of Engineering, Dartmouth College</i> <i>*selected talk: poster #B197</i>

DAY 3*Thursday, December 3, 2015***12:20 PM - 1:30 PM***Lunch on your own***12:20 PM - 1:30 PM***Board of Directors Meeting: Invitees only**Location: Union Square Rooms 17 & 18***1:30 PM - 3:30 PM***Poster Session II and Exhibits**Coffee break provided**Location: Golden Gate Ballroom***3:30 PM - 4:15 PM***SFG Business Meeting: Open to all attendees**Location: Plaza Ballroom***4:15 PM - 6:00 PM***Awards Ceremony**Location: Plaza Ballroom**Chair: Christine Szymanski, University of Georgia, CCRC***4:15 PM***BBA Young Investigator Award Winner**The Tumor Associated Sialyltransferase ST6Gal-I Promotes A Cancer Stem Cell Phenotype and Upregulates Stem-Related Transcription Factors**Speaker: Matthew J. Schultz, University of Alabama at Birmingham***5:00 PM***Herbert Tabor Young Investigator Award Winner:**The Structural Role of Antibody N-glycosylation in Receptor Interactions**Speaker: Adam W. Barb, Iowa State University***selected talk: poster #B31 (Abstract 73)***5:15 PM***Rosalind Kornfeld Award Winner Presentation**The Long Road to Detailed Glycan and GAG Sequencing**Speaker: Vern Reinhold, University of New Hampshire***6:00 PM - 7:00 PM***Break***7:00 PM - 11:00 PM***Banquet**Cash bar opens 6:30PM. Pre-purchase tickets required. Nominal fee.**Extra tickets for guests may be ordered.**Location: Continental Ballroom 6**Sponsored by Chemily*

DAY 4

Friday, December 4, 2015

8:00 AM - 1:00 PM**Registration****7:30 AM - 8:30 AM****Continental Breakfast****Location:** Golden Gate Ballroom**Sponsored by** Waters Corporation**8:30 AM - 10:15 AM****Session VII: Applied Glycobiology****Location:** Plaza Ballroom**Speakers:** Lance Wells, University of Georgia, CCRC**8:30 AM***Engineering the next generation of heparins***Speaker:** Robert Linhardt, Rensselaer Polytechnic Institute**8:55 AM***The ups and downs of heparan sulfate***Speaker:** Jeffrey Esko, University of California San Diego, School of Medicine**9:20 AM***An artificial biosynthetic pathway for N-glycosylation in E. coli***Speaker:** Timothy G. Keys, ETH, Zürich**9:45 AM***Glycosylation of plasma proteins in diagnosis of HNF1A - maturity onset diabetes of the young***Speaker:** Olga Gornik, University of Zagreb**selected talk: poster #B139***10:00 AM***A mitochondrial fucosyltransferase is essential for the viability of Leishmania major***Speaker:** Hongjie Guo, Washington University School of Medicine, St. Louis**selected talk: poster #B140***10:15 AM - 11:00 AM****Coffee Break****Location:** Golden Gate Ballroom**11:00 AM - 1:05 PM****Session VIII: Glycan Expression During Differentiation and Pathology****Location:** Plaza Ballroom**Chair:** Christopher West, University of Georgia**11:00 AM***Control of Homeostatic and Pathogenic Balance in Adipose Tissue by Ganglioside GM3***Speaker:** Jin-ichi Inokuchi, Tohoku Pharmaceutical University**11:25 AM***On-Chip Glycan Modification and Probing: A Method To Query Protein Glycosylation in Clinical Specimens***Speaker:** Brian Haab, Van Andel Research Institute**selected talk: poster #B157***11:45 AM***Bisecting glycans increase Notch expression and activity promoting the growth and progression of ovarian cancer***Speaker:** Karen Abbott, University of Arkansas for Medical Sciences**selected talk: poster #B158*

DAY 4

Friday, December 4, 2015

12:05 PM	<p><i>Mapping the Glycopathology and Glycoimmunology Features of Formalin-Fixed Prostate Cancer Tissues by N-Glycan MALDI Mass Spectrometry Imaging</i> Speaker: Richard R. Drake, Medical University of South Carolina <i>*selected talk: poster #B159</i></p>
12:25 PM	<p><i>Serum Anti-Glycan Antibodies as Immunotherapy Biomarkers</i> Speaker: Jeffrey Gildersleeve, National Cancer Institute <i>*selected talk: poster #B160</i></p>
12:45 PM	<p><i>O-glycosylation of hemopexin in the progression of liver disease</i> Speaker: Miloslav Sanda, Georgetown University <i>*selected talk: poster #B161</i></p>
1:05 PM - 2:00 PM	Lunch on your own
2:00 PM - 4:00 PM	<p>Poster Session III and Exhibits Coffee break provided Location: Golden Gate Ballroom</p>
4:00 PM - 5:15 PM	<p>Session IX: Glycan Function in Diseases and Disorders Location: Plaza Ballroom Chair: John Lowe, Genentech, Inc.</p>
4:00 PM	<p><i>Druggability of Lectins, as Exemplified by a Bacterial Adhesin</i> Speaker: Beat Ernst, University of Basel</p>
4:25 PM	<p><i>Pathogenic Cascade Downstream of Altered Processing of Sialic Acids on Glycoconjugates Due to Deficiency of the Lysosomal Sialidase NEU1</i> Speaker: Allesandra d'Azzo, St. Jude Children's Research Hospital</p>
4:50 PM	<p><i>A Glycosidic Mechanism of Secreted Protein Aging and Turnover</i> Speaker: Jamey Marth, Center for Nanomedicine, SBP Medical Discovery Institute, UCSB</p>
5:15 PM - 5:20 PM	<p>Closing Remarks Location: Plaza Ballroom Speaker: J. Michael (Hawkeye) Pierce, University of Georgia, CCRC President, Society for Glycobiology</p>