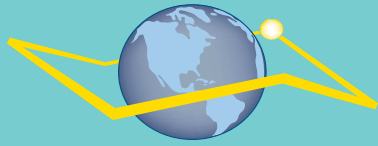


2018  
Annual Meeting



SOCIETY for  
**Glycobiology**



# PROGRAM BOOK

**November 5-8, 2018**

Glycobiology: Glycan function and  
biology from molecules to organisms

**New Orleans, LA, USA**

Hilton New Orleans Riverside

Chair: Dr. Kelley Moremen, CCRC, University of Georgia

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2019 ANNUAL MEETING



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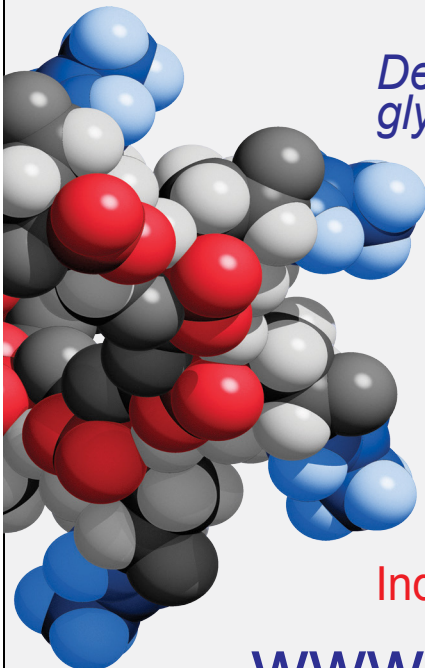


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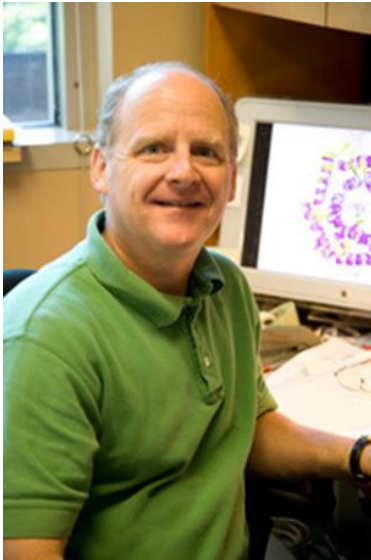
**SOCIETY for  
Glycobiology**

The Society for Glycobiology is a nonprofit scholarly society devoted to the pursuit of knowledge of glycan structures and functions, and to the sharing of that knowledge among scientists worldwide.

The society's mission is to research and stimulate personal communication in an inter-disciplinary sense, using as the common meeting ground an interest in the complex carbohydrates of glycoproteins, glycolipids, and glycosaminoglycans and the biological systems in which they are found.

[www.glycobiology.org](http://www.glycobiology.org)





Dear Glycoscientists –

Welcome to the 2018 Society for Glycobiology Meeting in New Orleans, Louisiana! It is an exciting time for glycobiology. We have seen enormous advances in our field in the last year and the discoveries will continue to accelerate into the future based on the strong foundation of biochemical, biomedical, and biological studies that have recently come to fruition. We hope that this meeting will be an opportunity to hear about some new exciting science, network with colleagues, present and discuss your new glycobiology progress, and get feedback and recognition for your accomplishments. The Society meeting theme is ‘**Glycan function and biology from molecules to organisms**’ and will be focused on the latest cutting-edge developments ranging from exciting new protein structures of enzymes and transporters, advances in understanding transport process in the secretory pathway, numerous developments on the glycobiology of human disease, the latest developments in

glycoengineering and glycosynthesis, the roles and functions of glycans in parasites, pathogens and microbes, glycan structures in mammalian development and disease, and the roles and machinery of glycan polymers in plants.

Unlike prior meetings of the Society, where presentations from established leaders and icons in the field dominated the meeting program, this year the meeting format is focused more on presentations from the younger glycoscience research community, including new independent investigators and postdocs. Many presentations will also be from investigators in associated fields that are new to our meeting. The talks will draw on cutting-edge research connecting glycobiology, structural biology, glycans in disease, including glycans in cancer, inflammatory diseases, virus and parasite infection, and genetic and developmental disorders, as well as approaches to exploit glycans to treat these diseases and disorders. As glycobiology has expanded into many new disciplines, it will be exciting to hear how our core technologies and discoveries have led to advances in new fields and development of new strategies to treat disease.

This year we have two returning satellite meetings – ***Tools for Glycoscience*** organized by Lance Wells and Richard Cummings is an extension of the long-standing satellite meetings from the Consortium for Functional Glycomics. The second satellite meeting on ***Glyco-Bioinformatics*** organized by René Ranzinger will focus on a combination of presentations and a hands-on workshop using the latest bioinformatic tools in the glycosciences field.

It is also important to recognize and congratulate the individuals who have won key Society awards this year. Each award winner will be presenting an award lecture during the meeting. In the opening session on Monday evening we will honor two truly outstanding awardees: Naoyuki Taniguchi, the winner of the **Karl Meyer Lectureship Award**, and John Lowe, the winner of the **Rosalind Kornfeld Lifetime Achievement Award**. On Tuesday evening, we will hear from Henrik Clausen, the winner of the 2017 **President’s Innovator Award**, who has spearheaded the development of numerous technical advances and resources in our field, particularly focused on O-glycosylation. Finally, on Wednesday evening we will honor the **Molecular and Cellular Proteomics (MCP) Award** winner, Kay-Hooi Khoo, and the **Glycobiology Significant Achievement Award** winner, Galit Alter. We are grateful to the



American Society for Biochemistry and Molecular Biology (ASBMB) for sponsoring the MCP Award, and to Oxford University Press for sponsoring the Glycobiology Significant Achievement Award.

The Society also congratulates the 38 undergraduate, graduate student, and postdoctoral trainees selected to receive travel awards, with support from Elsevier as the publishers of *Biochimica et Biophysica Acta*, and the 19 speakers selected from the abstract submissions to present short talks. We also received significant support from our sponsors, who are essential for the success of this meeting. Please visit their booths and tables, learn about their products and services, and let them know that the Society very much appreciates their sponsorships.

I also want to extend my heartfelt thanks to the Program Committee/Session Chairs for helping with the development of the program, the society officers and the Board of Directors who have provided important advice during the planning of the meeting, and Silvy Song, Karen Wrublik and members of the staff at FASEB for their organizational support.

Most of all, we hope that you enjoy the venue and surrounding environs of New Orleans. It is an active and vibrant city that pulsates with a thriving music scene and presents endless options for wonderful gastronomy and memorable activities that will complement the exciting meeting program. Please take the time to enjoy the city in all of its diversity of sights, sounds, and tastes.

I look forward to sharing a memorable Society for Glycobiology Annual Meeting in New Orleans with you!

Sincerely,



Kelley Moremen

President of the Society for Glycobiology



# GENERAL INFORMATION

**Meeting Venue:** Hilton New Orleans Riverside - 2 Poydras St New Orleans, LA 70130 USA

**Awards:** Those who have been notified that they are Student Travel Award recipients may pick-up their checks at the registration desk (signature required).

**Badges:** In an effort to enhance security, we ask all attendees to please wear your badge for the duration of the conference. Badges will be required for admission to sessions and refreshment functions. Your badge not only indicates that you are fully registered for conference, but is also a courtesy to other registrants.

**Catering:** Included in registration fees are the following catered events:

- Sunday night reception light hors d'oeuvres
- Monday, Tuesday, Wednesday light breakfast fare and coffee
- Daily coffee breaks

**Dress:** Dress during the conference is business casual. Be sure to dress in layers and carry a sweater as temperature in the meeting rooms is difficult to regulate, and meeting rooms may be cold or warm.

**Exhibition:** Please take time to visit the exhibit displays in The District during the opening reception, breaks and poster sessions. See the exhibitor listing for detailed information regarding our sponsoring companies.

<b>Exhibit Hours:</b>	Monday November 5, 2018	7:30PM – 9:30PM
	Tuesday November 6, 2018	1:30PM - 4PM
	Wednesday November 7, 2018	1:30PM - 4PM

**Internet Access:** Internet access is complimentary in the guest rooms for those staying on site at the hotel within the meeting block and in the common areas of the hotel. Complimentary access is also provided by the conference for attendees in meeting spaces. **Use network: Hilton Meetings Password: Glyco2018**

**Liability:** Neither the host venue nor the organizers can be held responsible for any personal injury, loss, damage to private property or additional expense incurred as a result of delays or changes in air, rail, sea, road or other services. All participants are encouraged to make their own arrangements for health and travel insurance.

**Poster Sessions:** Poster boards will be set-up in St. Charles Ballroom. Organizers are not responsible for any materials posted. Posters will be presented in two separate sessions with an accompanying coffee break and will be up for the duration of the conference.

*Poster session 1: Tuesday, Nov 6, 2018 @ 1:30 – 4:00PM*  
*Poster session 2: Wednesday, Nov 7, 2018 @ 1:30 – 4:00PM*

**Set-up:** Begin mounting posters starting Monday, Nov 5, 2018 starting 5PM until any time before poster session 1.

**Break-down:** Wednesday, Nov 7, 2018 after poster session 2 (approx. 4PM)

**Registration:** Registration fees exclude travel, accommodations, abstract submission, pre-conference satellites, and banquet tickets. These are separate from the main conference registration and must be purchased separately. On-site registration will be accepted with payment via checks and credit cards.

**Speakers:** Presenters are asked to upload their presentations as soon as possible to: <https://goo.gl/PsQ9Fg> then visit the on-site technician in the general session room at least 2 hours prior to their sessions for final tech check. Please arrive in your session room at least 30 minutes prior to your start time.

**Special Needs:** Registrants with special needs are invited to contact the Registration Desk or hotel concierge for assistance.





# SOCIAL EVENTS

**Monday, November 5, 2018 @ 7:30PM – 9:30PM**

**Opening Reception & Exhibits** (*The District and St. Charles Ballroom*)

This event will mark the opening of the conference. Exhibits will be open, light hors d'oeuvres will be served, along with a cash bar. Please come and join your fellow attendees to celebrate the official opening of the program.

**Wednesday, November 7, 2018 @ 7:00PM – 10:00PM**

**Banquet** (*St. Charles Ballroom*)

\*\*\*ADVANCE TICKET PURCHASE REQUIRED\*\*\* Limited availability, first come first served.

Enjoy this banquet reception with full buffet dinner, cash bar, live band entertainment, dancing, and conversation with fellow professionals.

# OTHER MEETINGS

**Monday, Nov 5, 2018 @ 9:00AM – 4:00PM**

**Satellite I: Bioinformatics Workshop** (*Jackson Room*)

Glycomics research has gained significant impact over the past decade due, in part, to technical advances that allow data to be generated with greater accuracy and throughput. However, computational methods for the analysis and interpretation of glycomics data have not kept pace with these advances in data generation. As a consequence, manual processing and interpretation of glycoanalytic data is still common practice, in spite of the recent development of many software programs and databases that provide tools and information that can significantly reduce data processing and interpretation time. This satellite meeting brings software developers and database providers together with biological and biomedical scientists who can benefit from these informatics resources. The aim is to provide these scientists with an overview of currently available tools and illustrate how these tools can benefit their research. The meeting consists of two parts: In the first part software developers and database providers will introduce their databases and software tools by a short presentation followed by a brief discussion. In the second part of the satellite a live demonstration session will allow attendees to get more insight into the presented software tool and have individual discussions with the developers.

**Monday, Nov 5, 2018 @ 9:00AM – 4:00PM**

**Satellite II: Tools for Glycoscience** (*Magazine Room*)

The Consortium for Functional Glycomics (CFG) is excited to support this satellite meeting". As conceived by the Head of the CFG, the President of SFG, and the Organizer of the Satellite Meeting (Rick Cummings, Kelley Moremen, and Lance Wells respectively), the purpose is to highlight the recent expansion in new tools, supported in large part from targeted efforts by NIH, designed to make glycoscience exploration more accessible to the scientific community. Talks will focus on new tools and developments in the areas of informatics, synthesis, analytics, and biology.

**Monday, Nov 5, 2018 @ 1:00PM – 3:00PM**

**Board of Directors Meeting** (*Royal Room*)

Annual in-person meeting of the SFG leadership. *For invitees only.*

**Tuesday, Nov 6, 2018 @ 12:30PM-1:30PM**

**Glycobiology Editorial Board Meeting** (*Fulton Room*)

Annual in-person meeting for the *Glycobiology* publications team. *For invitees only.*

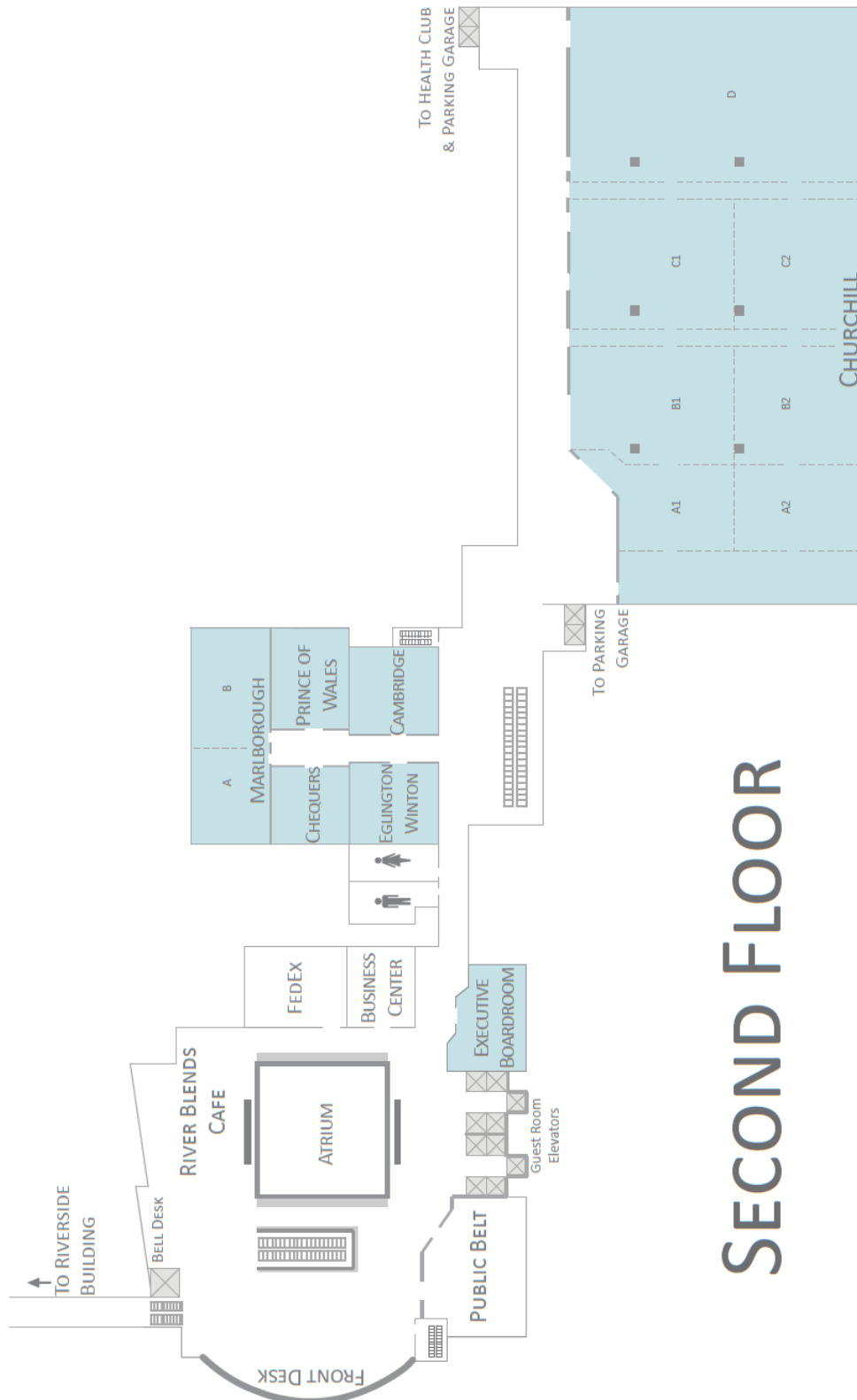
**Wednesday, Nov 7, 2018 @ 4:00PM – 4:45PM**

**SFG Business Meeting** (*St. James Ballroom*)

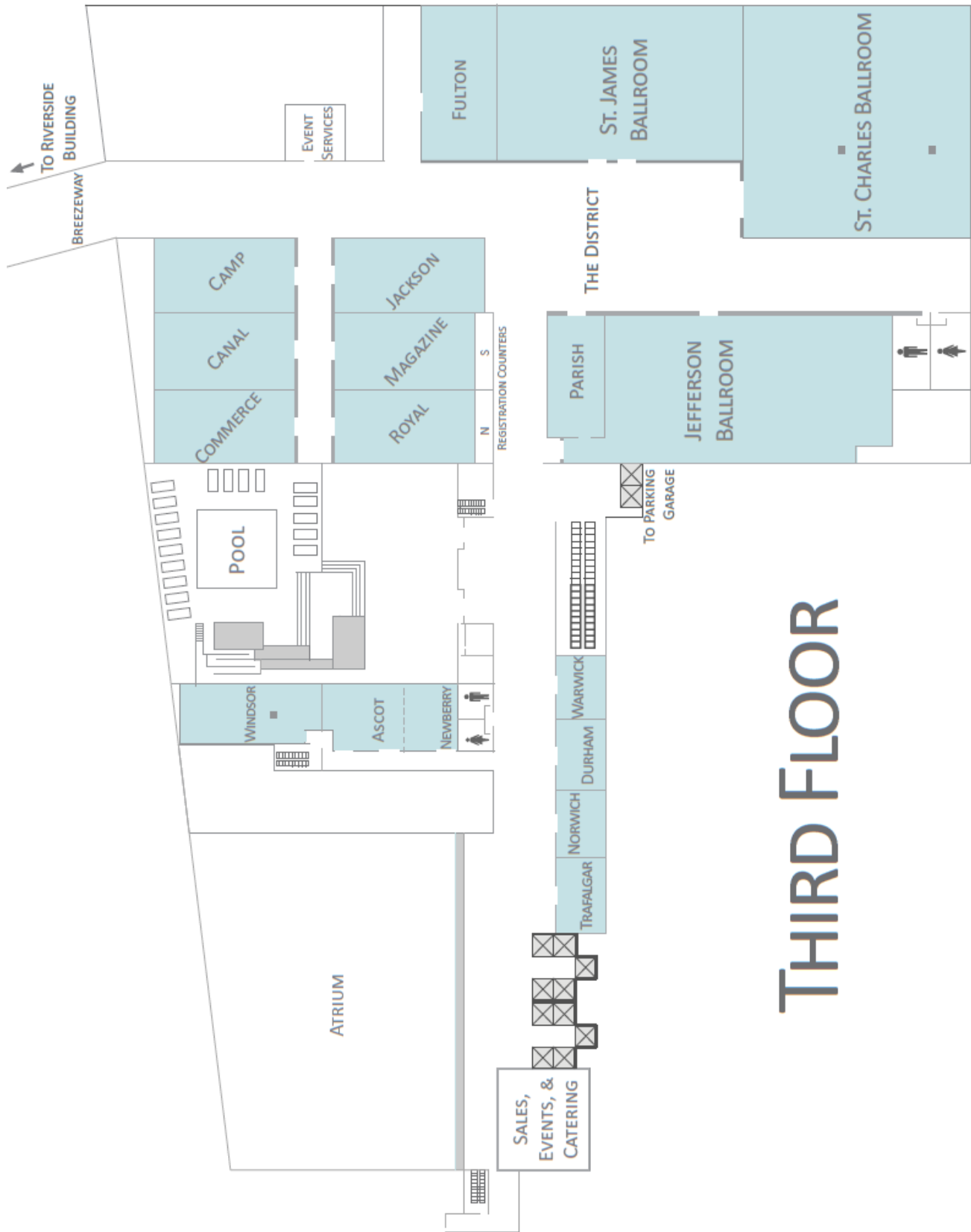
Open to all attendees. The SFG leadership will report on the organization's current overall status and announce any important updates relevant to the membership. The advice and guidance of the membership on current society issues are welcome in this "open forum" meeting. If you are not currently a member, please visit [www.glycobiology.org](http://www.glycobiology.org) and sign up today.



# HOTEL MAPS



## SECOND FLOOR



# THIRD FLOOR





**President**

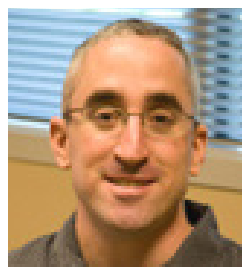
Dr. Kelley Moremen, *Complex Carbohydrate Research Center*



**President-Elect**  
Dr. Markus Aebi,  
*ETH Zurich*



**Past-President**  
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*University of Wyoming*



Dr. Kurt Drickamer,  
*Imperial College London*



Dr. Brian Cobb, Case  
*Western Reserve  
University*



Dr. Rita Gerardy-  
Schahn, *Hannover  
Medical School*



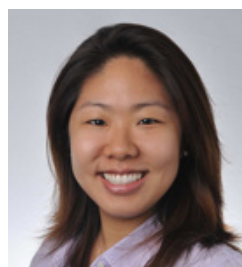
Dr. J. Michael Pierce,  
*University of Georgia*



Dr. Nancy Dahms,  
*Medical College of  
Wisconsin*



Dr. Hans Wandall,  
*University of  
Copenhagen*



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Experimental Biology  
(FASEB)*



**Membership Services**  
Karen Wrublik  
*Federation of  
American Societies for  
Experimental Biology  
(FASEB)*



# INVITED SPEAKERS

Wade Abbott (University of Lethbridge)  
Galit Alter (Ragon Institute of MGH, MIT and Harvard)  
Robert Anthony (Harvard Medical School)  
Giulia Bandini (Boston University)  
Adam Barb (Iowa State University)  
Frederic Bard (Institute of Molecular and Cell Biology, A\*STAR, Singapore)  
Federica Brandizzi (Michigan State University)  
Harry Brumer (University of British Columbia)  
Henrik Clausen (University of Copenhagen)  
Thomas Clausen (University of Copenhagen)  
Giovanni Deangelo (Institute of Protein Biochemistry, National Research Council of Italy, Naples)  
Matt Delisa (Cornell University)  
Tamara Doering (Washington University School of Medicine)  
Sabine Flitsch (University of Manchester, UK)  
Karin Hoffmeister (Medical College of Wisconsin)  
Ramon Hurtado-Guerrero (University of Zaragoza, Spain)  
Hiren Joshi (University of Copenhagen)  
Tim Keys (ETH Zurich)  
Kay-Hooi Khoo (Academia Sinica)  
Stuart Kornfeld (Washington University in St. Louis)  
Heinz Laubli (University Hospital Basel)  
Huilin Li (Van Andel Research Institute)  
Kaspar Locher (ETH Zurich)  
John Lowe (Genentech, Inc.)  
Matt Macauley (University of Alberta)  
Yoshiki Narimatsu (University of Copenhagen)  
Simon Newstead (University of Oxford)  
Vlad Panin (Texas A&M University)  
Nina Papavasiliou (German Federal Cancer Research Center)  
Sasirekha Ramani (Baylor College of Medicine)  
James Rini (University of Toronto)  
Tadashi Satoh (Nagoya City University, Japan)  
Henrik Scheller (Lawrence Berkeley National Laboratory)  
Emma Slack (ETH Zürich Switzerland)  
Kevin Strauss (Clinic for Special Children)  
Hideyuki Takeuchi (Nagoya University School of Medicine)  
Naoyuki Taniguchi, (Osaka International Cancer Institute)  
Mike Tiemeyer (University of Georgia)  
Bree Urbanowicz (University of Georgia)  
Chris Whitfield (University of Guelph)  
Zachary Wood (University of Georgia)  
Peng Wu (Scripps Research Institute)  
Liping Zhang (National Institute of Dental and Craniofacial Research)

# SESSION CHAIRS

Markus Aebi (ETH Zurich)  
Adam Barb (Iowa State University)  
Robert Haltiwanger (University of Georgia)  
Kelley Moremen (University of Georgia)  
Richard Steet (Greenwood Genetic Center)  
Mike Tiemeyer (University of Georgia)  
Bree Urbanowicz (University of Georgia)  
Hans Wandall (University of Copenhagen)  
Peng Wu (Scripps Research Institute)



# KARL MEYER LECTURESHIP AWARD

The Karl Meyer Lectureship Award was established in 1990 to honor the distinguished career of Karl Meyer and his outstanding contributions to the field of Glycobiology. This International award is given to well-established scientists with currently active research programs who have made widely recognized major contributions to the field of Glycobiology.



The 2018 Karl Meyer Award will be presented to **Dr. Naoyuki Taniguchi**, who is Professor Emeritus at Osaka University and Group Director in the Department of Glyco-Oncology and Medical Biochemistry at the Osaka International Cancer Institute. Professor Taniguchi, *aka* “Tani”, earned his MD degree in 1967 at the Hokkaido University School of Medicine. As a Ph.D. student, his research focused on  $\gamma$ -glutamyl transpeptidase (GGT), a glutathione degrading enzyme. Redox regulation and oxidative stress have been his major interests since then. Tani initially discovered GGT activity is dramatically higher in fetal liver or upon azo dye-induced hepatocarcinogenesis, as compared to normal liver, suggesting GGT has onco-fetal properties. Tani then compared the biochemical properties of GGT from various sources and found its enzymatic properties were almost the same, but its glycosylation patterns were different, depending on the source. This was Tani’s first encounter with glycobiology. He subsequently purified the enzyme from normal liver and hepatoma cells and, in collaboration

with Dr. Akira Kobata’s group, discovered GGT from hepatoma cells, but not normal liver has “bisecting GlcNAc” residues. During this period, Tani served as an Assistant Professor in the Department of Hygiene and Preventive Medicine, Hokkaido University School of Medicine (1973-1977) and as a visiting Associate Professor in the Department of Biochemistry, Cornell University Medical School (1976-1977), the Department of Environmental Medicine, Graduate School of Environmental Sciences, Hokkaido University (1977-1979), and the Biochemistry Laboratory of the Cancer Institute of Hokkaido University School of Medicine (1979-1986), which is where he began to focus his research on glycobiology under the guidance of Professor Akira Makita.

In 1986, Tani was appointed Professor and Chair in the Department of Biochemistry at Osaka University School of Medicine. His research group developed an assay for the *N*-acetylglucosaminyltransferases (GnTs) and found GnT-III activity, which produces bisecting GlcNAc, is barely detectable in normal liver, but markedly higher in fetal liver and azo dye-induced hepatoma. His group purified GnT-III to homogeneity from rat kidney using a unique affinity chromatography method with donor or acceptor substrates as ligands. After obtaining its partial amino acid sequence, they successfully identified the GnT-III gene and reported it in the *J. Biol. Chem.* (1992). Tani’s group went on to identify several other glycosyltransferase genes, including Fut8, GnT-VI, GnT-IV, GnT-V, GnT-IX (Vb), and distal type IGnT using a similar approach. At that “pre-genome” time, no comprehensive glycosyltransferase sequence data were available, so Tani’s group had to purify each enzyme in order to identify their genes.

Tani’s group subsequently tackled the biological significance of the glycan structures formed by these glycosyltransferases using gene-transfected cells, transgenic mice, and knockout mice. His group focused primarily on *N*-linked glycans and identified several target glycoproteins for glycosyltransferases such as GnT-III, IV, V, VI, IX (Vb), and Fut8. The targets included E-cadherins, integrins, matriptase and TGF $\beta$ /EGF receptors, among others, and the studies collectively indicated *N*-glycan addition produces marked changes in protein functions, which demonstrated the physiological importance of these glycans.

Among the glycosyltransferases whose genes were identified by Tani’s group, Fut8 and its reaction product, core  $\alpha$ 1,6-linked fucose (core fucose), are now drawing special attention. For example, core fucose is a key element of an important cancer biomarker, core-fucosylated  $\alpha$ -fetoprotein (AFP-L3), in hepatocellular carcinoma. Moreover, it is now well known that removal of core fucose from the Fc *N*-glycan on IgG1 enhances antibody-dependent cellular cytotoxicity by ~100 fold. Therefore, removal of core fucose is now regarded as a promising strategy for enhancing the efficacy of therapeutic antibodies, including those used to treat human cancers. Tani’s group also discovered that Fut8-knockout mice develop emphysema-like changes, as well as growth-retardation phenotypes, and core fucose on the T-cell receptor is essential for T-cell activation. Quite recently, mutations in the human





*FUT8* gene were reported to cause congenital disorders of glycosylation, further indicating the functional importance of this enzyme in mammalian development.

Working on GnT-III, Tani's other signature enzyme, his group found the product of this enzyme, bisecting GlcNAc, has a protective role against melanoma cell metastasis. This is because it inhibits the addition of  $\beta$ 1,6-linked GlcNAc by GnT-V, which produces one of the *N*-glycans involved in metastasis. This was one of the first reports to clearly show that glycan structures on cancer cells can influence their malignancy.

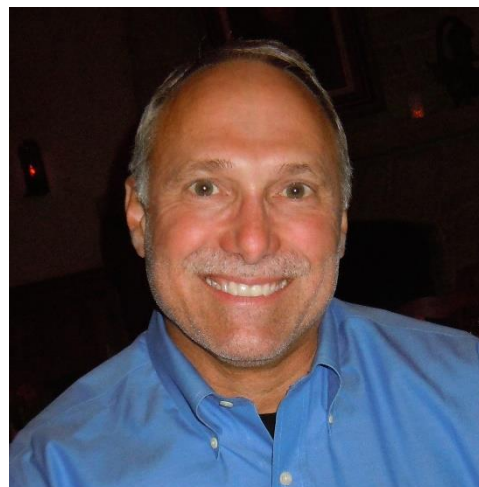
After his retirement from Osaka University Graduate School of Medicine in 2006, Tani continued his research as an Endowed Chair Professor in the Department of Disease Glycomics, Research Institute of Microbial Research, Osaka University (2006-2009), and Director of the Systems Glycobiology Research Group in RIKEN (2007-2018). His group showed *Fut8*-heterozygous knockout mice are an excellent model for COPD (chronic obstructive pulmonary disease) in humans. They also showed ablation of the GnT-III gene in mice resulted in a marked decrease in the formation of plaques derived from amyloid-beta peptides, leading to an improvement in cognitive function. Finally, they showed the subcellular localization of the amyloid-beta-producing enzyme, BACE-1, was altered in all GnT-III knockout mice, resulting in the inefficient production of amyloid-beta in these mice. These results strongly indicate GnT-III could be an attractive drug target for the treatment of Alzheimer's disease. After Tani's "second retirement" from RIKEN in March 2018, his scientific journey still continues as a Group Director, Department of Glyco-Oncology and Medical Biochemistry, Osaka International Cancer Institute. Tani is not only an exceptional scientist and long-standing leader in the field of glycobiology, he is an outstanding role model for younger colleagues. His passion for science and medicine have influenced his numerous students and post-docs, as evidenced by the fact that he has supervised over 90 PhD students and 30 postdocs. Among these, over 40 are now Professors or hold equivalent positions in Universities and Research Institutes all over Japan, China, Korea, Myanmar, Malaysia, and the USA. Tani served as President of Society for Glycobiology in 2014 and organized the highly successful annual meeting in Hawaii. He has received numerous awards from various organizations, such as the International Glycoconjugate Organization (IGO) Award, the IUBMB medal, HUPPO distinguished Service Award, and the Japanese Academy Prize.

In summary, the 2018 Karl Meyer Lectureship Award recognizes Professor Taniguchi's seminal contributions to glycobiology, and to our understanding of the functional roles of glycans in various biological contexts.

## ROSALIND KORNFELD AWARD FOR LIFETIME ACHIEVEMENT IN GLYCOBIOLOGY

The Rosalind Kornfeld Award for Lifetime Achievement in Glycobiology was established in 2008 to honor the distinguished scientific career and service to the Society by Dr. Rosalind Kornfeld. The award is given by the Society to scientists who have made significant contributions with an important impact on the field of Glycobiology over their professional lifetimes.

The 2018 Rosalind Kornfeld Award will be presented to **Dr. John Lowe** (*Senior Director and Department Head of Research Pathology at Genentech, Inc.*), who retired on September 30, 2018, after a remarkable career spanning both science and medicine. John was born and raised in Wyoming where he earned a Bachelor of Arts degree in Mathematics at the University of Wyoming while also pursuing a pre-medicine curriculum. He then matriculated at the University of Utah College of Medicine, expecting to return to Wyoming to practice medicine. However, while in medical school, John became interested in the molecular mechanisms of disease, and decided to gain experience in laboratory research – in his spare time -





studying RNA tumor viruses. This experience so interested John that he decided to pursue post-MD residency training in Laboratory Medicine, which afforded opportunities to combine clinical medicine with biomedical research. John entered the Laboratory Medicine residency training program at Barnes Hospital, which is affiliated with Washington University in St. Louis, Missouri. John's training activities included research fellowships with Dr. Douglas Berg and Dr. Jeff Gordon. John then completed Clinical Pathology training with a focus on Transfusion Medicine and became a Board-Certified Clinical Pathologist, conferred by the American Board of Pathology. Next, John assumed a faculty position in Laboratory Medicine at Washington University where he served as Assistant Director of the Barnes Hospital Blood Bank while establishing a laboratory research program. His blood bank training exposed him to the glycan-based blood group antigens and their underlying genetics. This fascinated John and he sought to develop a research program to overcome the lack of a molecular understanding – at that time - of those genes, and the biology of the glycans. John chose to focus his medical training towards biomedical research and subsequently became an accomplished pioneer in the field of glycobiology.

The initial focus of John's research was to "clone" mammalian genes encoding the glycosyltransferases that dictate expression of glycan structures. At that time (mid-1980's), virtually nothing was known about the structure of those genes or the structures of the enzymes themselves. Since these enzymes are typically present in vanishingly small quantities, "traditional" cloning approaches requiring purified protein were problematic. John therefore sought to develop gene transfer methods to overcome this problem. He embarked on this effort at Washington University, but soon relocated to the faculty of the Pathology Department at the University of Michigan, where he was also awarded a coveted position as an Investigator of the Howard Hughes Medical Institute. At Michigan, John was the Warner-Lambert/Parke-Davis Professor in Medicine, and a founding member of the Life Sciences Institute. In his 18 years at the University of Michigan, John and his colleagues successfully implemented a gene transfer strategy for mammalian glycosyltransferase gene cloning. These efforts provided entry into understanding the structures and functions of an  $\alpha$ 1-3 galactosyltransferase, a pair of  $\alpha$ 1-2 fucosyltransferases corresponding to the H and Secretor blood group loci, and a family of  $\alpha$ 1-3 fucosyltransferases. This included identifying the molecular basis for allelic variation at the H, Secretor, and Lewis blood group loci, the biochemical pathways of GDP-fucose formation and utilization, and the identification of essential roles for fucosylated glycans, including the selectin ligands, in leukocyte adhesion, lymphocyte trafficking and T lymphocyte development. John subsequently continued his research as Chair of Pathology at Case Western Reserve University Medical School/University Hospitals of Cleveland, and then as Senior Director of Pathology at Genentech, Inc.

John has served in numerous leadership roles in the course of conducting biomedical research, while holding clinical attending responsibilities in transfusion medicine, clinical immunology, and clinical chemistry. In these diverse roles, John has recruited and mentored numerous trainees, many of whom have gone on to become accomplished biomedical scientists and clinicians. John has consistently sought to ensure Institutions provided maximally effective support in the career development of trainees pursuing superlative diagnostic and treatment options for patients. John has co-authored more than 150 publications, has been supported by numerous NIH grants, and was a Howard Hughes Medical Institute Investigator for more than 18 years. He was a regular member of the NIH Pathobiology Study Section, served on numerous National and International research review panels, and was President of the Society for Glycobiology in 1998. John has also served on Editorial Boards of the Journal of Biological Chemistry and several other journals, and as Associate Editor of the Journal of Clinical Investigation. He is co-inventor on 10 issued U.S. patents, and was a co-founder of 2 biotech startup firms. Perhaps most importantly, John has been an inspiring mentor, a kind and generous colleague, and an intellectual leader in the fields of glycobiology and pathology for decades, and is most highly deserving of the Rosalind Kornfeld Lifetime Achievement award.



# GLYCOBIOLOGY SIGNIFICANT ACHIEVEMENT AWARD

The Glycobiology Significant Achievement Award is given annually by Oxford University Press (publisher of *Glycobiology*) to honor a new or mid-career scientist who has made a key discovery during their early careers with the potential to have a substantial impact on the glycoscience community.



This year, Oxford is delighted to present the Glycobiology Significant Achievement Award to **Dr. Galit Alter**, who was recently appointed as a Full Professor in the Department of Medicine at Harvard Medical School and faculty member at the Ragon Institute of MGH, MIT, and Harvard. The award will be given to Dr. Alter at the Society for Glycobiology Annual meeting this November in New Orleans, Louisiana. Dr. Alter's work has contributed significantly toward understanding the role of innate immune recruiting antibodies in the control and clearance of a number of infectious diseases, including HIV, *Mycobacterium tuberculosis*, and malaria. She has developed unique, comprehensive systems serology approaches that have revealed unexpected correlates of humoral immunity. These include previously under-appreciated mechanisms, which tune antibody glycosylation in an antigen- and pathogen-specific manner to modulate effector functions. For instance, her characterization of the glycosylation of antigen-specific antibodies demonstrated enhanced IgG Fc *N*-glycan sialylation in individuals capable of developing

neutralizing antibodies to HIV, whereas individuals able to control disease spontaneously elicit selectively afucosylated/agalactosylated virus-specific antibodies. She continues to leverage her appreciation of glycan functions to define opportunities to actively elicit selective antibody functions via vaccination, with the goal of developing therapeutics against a broader array of pathogens. Additionally, Dr. Alter has been an enthusiastic advocate and inexhaustible catalyst for building collaborations between glycoscientists, immunologists, and virologists. Oxford is proud to honor her with this year's Glycobiology Significant Achievement Award.

# PRESIDENT'S INNOVATOR AWARD

The purpose of the Society for Glycobiology President's Innovator Award is to acknowledge the contributions of one scientist each year that has made a significant impact on society.

The 2018 President's Innovator Award will be presented to **Dr. Henrik Clausen**, Professor in the Department of Cellular and Molecular Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, and Head of the Copenhagen Center for Glycomics (Centre of Excellence, Danish National Research Foundation). Dr. Clausen received his D.D.S. and D. Sc. Degrees in dentistry and glycobiology at the University of Copenhagen and was a Research Fellow and Research Assistant Professor at the University of Washington with Dr. Sen-Itiroh Hakomori, working on blood group related carbohydrates, glycosyltransferases and genes.

In 1990, he returned to the Faculty of Health and Medical Sciences at University of Copenhagen to form a glycobiology research group. Since 2007 he has been head of a Center of Excellence in Glycomics funded by the Danish National Research Foundation. Research at the Center is primarily focused on protein O-glycosylation, with isolation, cloning, and expression of many human glycosyltransferases involved in the biosynthesis of O-glycans. Dr. Clausen's work covers considerable







ground in efforts to provide a basic understanding of genetic regulation and biosynthetic mechanisms of protein glycosylation, immunity to glycans and glycoproteins, consequences of glycosylation deficiencies in diseases, all with an eye on biomedical applications. His work has led to >285 published papers, 35 reviews and book chapters, and 51 issued patents. The Clausen lab recently developed novel strategies to isolate and characterize cellular O-glycoproteomes by targeted gene disruptions, combined with lectin chromatography and mass spectrometry. The group has also taken a global “glycogenome” engineering approach to modifying protein glycosylation by deconstructing protein N-glycosylation in CHO cells and this has led to new capabilities in customized glycosylation of recombinant therapeutics. These studies also enabled generation of large libraries of isogenic cells with distinct glycosylation capacities representing a cell-based glycan array. Numerous translational accomplishments include being co-inventor of novel biomedical therapeutics, including an acellular dermal skin mesh, glycopegylated therapeutics, enzymes and processes for whole blood unit enzymatic ABO conversion, processes to procure cold storage of platelets for transfusion, and glycoengineered CHO cells for production of improved glycoprotein therapeutics. Dr. Clausen’s achievements have led to numerous honors including the Benzow Prize (Denmark), Thureus Prize (Sweden), Mizutani Prize (Japan), Carlsberg Biotechnology Prize (Denmark), Novo Nordisk Prize (Denmark), Kirsten & Freddy Johansen’s Prize (Denmark), and Merit Gold Medal (Porto, Portugal).

## MOLECULAR AND CELLULAR PROTEOMICS/AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY LECTURESHIP AWARD



The Molecular and Cellular Proteomics (MCP)/American Society for Biochemistry and Molecular Biology (ASBMB) Lectureship Award will be presented to **Kay-Hooi Khoo** at the Society for Glycobiology Annual meeting in New Orleans, Louisiana. The MCP Journal was created in 2001 to address the growing needs of the proteomics community. Subsequently the MCP/ASBMB award was established in 2013 to honor scientists that have been at the forefront of the emerging field of glycomics and glycoproteomics.

This year’s recipient is currently a Distinguished Research Fellow and Acting Director of the Institute of Biological Chemistry, Academia Sinica in Taiwan. Dr Khoo was trained in glycoconjugate mass spectrometry in Anne Dell’s lab at Imperial College London before moving to Colorado State University as a Heiser Fellow for Research in Leprosy and Tuberculosis. He commenced his independent career at the Academia Sinica in 1996 where he rapidly established a world class proteomics/glycomics research facility. This facility is now a beacon for glycobiochemists seeking his specialist expertise. Dr Khoo specializes in devising exquisitely sensitive techniques for mapping functionally important glycan epitopes in complex glycomes. Particularly notable is his high-throughput nanoLC-MS<sup>2</sup>/MS<sup>3</sup>-based high precision glycomics platform, which exploits in-house computational tools for data mining of glycotopes. Dr Khoo is also internationally recognized for his robust and sensitive sulfoglycomics methodologies, which he has exploited in collaborative research to gain novel insights into the roles of sulfosialylated glycans in the immune system. Other exciting applications of his versatile mass spectrometric technologies include the quantitative determination of site-specific cysteine modifications, and unravelling pathways involved in the biosynthesis of the core domains of the highly unusual phosphorylated O-glycans of alpha-dystroglycan. As well as being an outstanding scientist, Dr Khoo is an exemplar of excellent citizenship. He has given continued service to the Editorial Boards of Glycobiology and MCP since 2001 and 2012, respectively, has been a Member of the Councils of the Taiwan Societies of Mass Spectrometry and Proteomics for more than a decade, and served on the Steering Committee of the Asian Community of Glycoscience and Glycotechnology from 2009 to 2017.



# SOCIETY TRAVEL AWARDEES

These awards are given to help students and post-docs gain the experience and exposure that comes from attending and presenting at SFG conferences. The travel awards are intended to help students defray some of the costs of their attendance.

Kelsey Abernathy (University of Maryland)  
Yukie Akune (Imperial College London)  
Karen Barnard (Cornell University)  
Donella Beckwith (Florida Atlantic University)  
Asmi Chakraborty (University of Alabama – Birmingham)  
Ishita Chandel (Texas A&M)  
Chelsea Desbiens (University of Georgia)  
Michelle Dookwah-Smith (University of Georgia)  
Seung Yeop Han (Baylor College of Medicine)  
Robert Jones (University of Alabama – Birmingham)  
Nicholas Kegley (Marshall)  
Hyunwoo Kim (University of Georgia)  
Masaaki Matsubara (University of Georgia)  
Kenjiro Matsumoto (University of Georgia)  
Robert Mealer (Harvard University)  
Dustin Middleton (University of Georgia)  
Douglas Oswald (Case Western Reserve)  
Amy Paschall (University of Georgia)  
E James Paul Daniel (Case Western Reserve)  
Ryan Porell (Johns Hopkins University)  
Damien Restagno (Sanford Burnham Prebys)  
Jacob Roberts (Iowa State University)  
Emily Rodrigues (University of Alberta)  
Pratima Saini (National Inst of Immunology)  
Aniruddha Sasmal (University of California - San Diego)  
Nandini Singh (Florida Atlantic University)  
Akshi Singla (Texas A&M University)  
Peter Smith (University of Georgia)  
Paulina Sosicka (Sanford Burnham Prebys)  
Hannah Stephen (University of Georgia)  
Mitali Tambe (Sanford Burnham Prebys)  
Divya Thomas (University of Nebraska Medical Ctr)  
Julia Westman (Sanford Burnham Prebys)  
Maomao Yan (Emory University)  
Yang Yang (Georgetown University)  
Jingwen Yue (University of Georgia)  
Yuyang Zhu (Emory University)



# SCIENTIFIC PROGRAM

## DAY 1: Monday, Nov 5, 2018

8:00AM – 6:00PM	<i>Registration</i> The District Registration Counters
9:00AM – 4:00PM	<b>Satellite 1: Bioinformatics Workshop</b> Jackson Room
9:00AM – 4:00PM	<b>Satellite 2: Tools for Glycoscience</b> Magazine Room
1:00PM – 4:00PM	<b>Board of Directors Meeting</b> ( <i>by invitation only</i> ) Royal Room
5:30PM – 7:15PM	<b>Session 1: Meyer and Kornfeld Awards Lectures</b> Session chair: Kelley Moremen (University of Georgia) St. James Ballroom
5:30PM - 5:45PM	<b>Conference Opening Remarks</b>
5:45PM - 6:30PM	<b>Karl Meyer Award Lecture: Naoyuki Taniguchi</b> (Osaka International Cancer Institute)
6:30PM - 7:15PM	<b>Rosalind Kornfeld Award Lecture: John Lowe</b> (Genentech, Inc.)
7:30PM – 9:30PM	<b>Welcome Reception &amp; Exhibits</b> The District/St. Charles Ballroom

## DAY 2: Tuesday, Nov 6, 2018

7:30AM – 2:00PM	<i>Registration</i> The District Registration Counters
7:30AM – 8:30AM	Continental Breakfast The District
8:30AM – 10:00AM	<b>Session 2: Glycan biosynthesis, transport and quality control</b> Session chair: Richard Steet (Greenwood Genetic Center) St. James Ballroom
8:30AM - 9:00AM	<b>Stuart Kornfeld</b> (Washington University in St. Louis) #3 <i>Recycling of Golgi Glycosyltransferases Requires Direct Binding to Coatamer</i>
9:00AM - 9:20AM	<b>Simon Newstead</b> (University of Oxford) #4 <i>Structural basis for nucleotide sugar transport across the ER and Golgi membranes</i>
9:20AM - 9:40AM	<b>Frederic Bard</b> (Institute of Molecular and Cell Biology, A*STAR, Singapore) #5 <i>The GALA pathway and the O-glycans invasion program</i>
9:40AM - 9:45AM	<b>Poster talk: Vladimir Lupashin</b> (Univ of Arkansas for Medical Sciences) #6   B001 <i>COG and GARP protein complexes are essential for the maintenance of Golgi glycosylation machinery and for endosomal to Golgi vesicular trafficking.</i>
9:45AM - 9:50AM	<b>Poster talk: Marie-Estelle Losfeld</b> (ETH, Zurich) #7   B002 <i>In vivo kinetic analysis of the heterogeneous N-glycan-processing</i>
9:50AM – 10:10AM	<b>Coffee Break</b> The District
10:10AM – 12:30PM	<b>Session 3: Structural basis for glycan biosynthesis</b> Session chair: Robert Haltiwanger (University of Georgia) St. James Ballroom
10:10AM - 10:35AM	<b>Kaspar Locher</b> (ETH Zurich) #8 <i>Structure and mechanism of eukaryotic oligosaccharyltransferase complex</i>





10:35AM - 11:00AM	<b>Huilin Li</b> (Van Andel Research Institute) #9 <i>Structural mechanism of the eukaryotic oligosaccharyl transferase complex</i>
11:00AM - 11:15AM	<b>Tadashi Satoh</b> (Nagoya City University, Japan) #10 <i>Structural mechanisms underlying the ER quality control associated with glucose tagging</i>
11:15AM - 11:35AM	<b>Ramon Hurtado-Guerrero</b> (University of Zaragoza, Spain) #11 <i>Structural and mechanistic insights into GalNAc-type O-glycosylation</i>
11:35AM - 12:05PM	<b>James Rini</b> (University of Toronto) #12 <i>The structural basis for Protein-O-glycosylation of EGF-like and TSR domains</i>
12:05PM - 12:20PM	<b>Zachary Wood</b> (University of Georgia) #13 <i>Origin of acceptor specificity in GT-A fold GlcNAc transferases</i>
12:20PM - 12:25PM	<b>Poster talk: Nadine Samara</b> (NIDCR, NIH) #14   B015 <i>The structure of GalNAc-T12 reveals the molecular basis of its substrate recognition mode</i>
12:25PM - 12:30PM	<b>Poster talk: Agata Steenackers</b> (NIDDK, NIH) #15   B016 <i>Optimization of expression of O-GlcNAc cycling enzymes for Cryo-Electron Microscopy</i>
12:30PM – 1:30PM	<b>Lunch on your own</b>
12:30PM – 1:30PM	<b>Glycobiology Editorial Board Meeting</b> (by invitation only) Fulton Room
1:30PM – 4:00PM	<b>Poster Session I and Exhibits</b> (Coffee break provided) The District/St. Charles Ballroom
4:00PM – 5:30PM	<b>Session 4: Glycan Function and Disease I</b> Session chair: Hans Wandall (University of Copenhagen) St. James Ballroom
4:00PM - 4:20PM	<b>Adam Barb</b> (Iowa State University) #16 <i>Cell lineage impacts CD16a / Fc gamma Receptor 3a structure and antibody binding affinity through N-glycan composition</i>
4:20PM - 4:35PM	<b>Hiren Joshi</b> (University of Copenhagen) #17 <i>Data in the driver's seat for exploring the glycome</i>
4:35PM - 4:55PM	<b>Robert Anthony</b> (Harvard Medical School) <i>Engineering anti-inflammatory IgG in vivo</i>
4:55PM - 5:10PM	<b>Karin Hoffmeister</b> (Medical College of Wisconsin) #19 <i>Novel Insights into the Role of Glycans in the Bone marrow Niche</i>
5:10PM - 5:15PM	<b>Poster talk: Yuji Kondo</b> (Oklahoma Medical Research Foundation) #20   B027 <i>Site-1 protease is essential for activation of ER stress response for skeletal development but indispensable for the for the mannose-6-phosphate modification of lysosomal enzymes</i>
5:15PM - 5:20PM	<b>Poster talk: Asmi Chakraborty</b> (University of Alabama at Birmingham) #21   B028 <i>Glycosyltransferase ST6Gal-I promotes pancreatic ductal adenocarcinoma progression and metastasis.</i>
5:20PM - 5:25PM	<b>Poster talk: Riccardo Rizzo</b> (National Research Council, Napoli, Italy) #22   B029 <i>GOLPH3 promotes oncogenesis by controlling the intra-Golgi trafficking of glycosphingolipid synthases.</i>
5:25PM - 5:30PM	<b>Poster talk: Edward Campbell</b> (Loyola University Chicago) #23   B030 <i>A Role for Galectin Proteins and Glycans in Parkinson's Disease Pathogenesis</i>
5:30PM – 6:30PM	<b>Session 5: Innovator Award Lecture: Henrik Clausen</b> (University of Copenhagen) #24 <i>Turning glycomics into Lego-toying</i> St. James Ballroom



## DAY 3: Wednesday, Nov 7, 2018

7:30AM – 2:00PM	<b>Registration</b> The District Registration Counters
7:30AM – 8:30AM	<b>Continental Breakfast</b> The District
8:30AM – 10:15AM	<b>Session 6: Glycoengineering and glyco-synthetic tools</b> Session chair: Peng Wu (Scripps Research Institute) St. James Ballroom
8:30AM - 8:50AM	<b>Peng Wu</b> (Scripps Research Institute) #25 <i>Engineering cells via chemoenzymatic glycan editing</i>
8:50AM - 9:10AM	<b>Matt Delisa</b> (Cornell University) <i>Glycoengineering without borders: bacteria-enabled cell-free glycoprotein synthesis</i>
9:10AM - 9:30AM	<b>Sabine Flitsch</b> (University of Manchester, UK) #27 <i>Microbial glycoenzymes for carbohydrate synthesis and analysis</i>
9:30AM - 9:45AM	<b>Tim Keys</b> (ETH Zurich) #28 <i>Engineering the next generation of glycoprotein therapeutics and vaccines in bacteria</i>
9:45AM - 10:00AM	<b>Matt Macauley</b> (University of Alberta) #29 <i>New Platforms for the Discovery of Natural and Synthetic Siglec Ligands</i>
10:00AM - 10:05AM	<b>Poster talk: Leeann K. Klassen</b> (Agriculture and Agri-Food Canada; University of Lethbridge) #30   B121 <i>Lighting up the rumen: using fluorescent glycan conjugates to visualize diverse metabolic capabilities of rumen microbiota at the single cell level</i>
10:05AM - 10:10AM	<b>Poster talk: Marc D. Driessen</b> (Stanford University) #31   B122 <i>Making Glycoproteomics via Mass Spectrometry More Accessible to the greater Scientific Community</i>
10:10AM - 10:15AM	<b>Poster talk: M. Osman Sheikh</b> (University of Georgia) #138   B138 <i>Glycan function independent of glycoprotein identity: Cell Surface Glycan Engineering reveals that matriglycan rescues Lassa Virus infection in dystroglycan-deficient cells</i>
10:15AM – 10:30AM	<b>Coffee Break</b> The District
10:30AM – 12:30PM	<b>Session 7: Glycan synthesis and function in parasites, pathogens, and microbes</b> Session chair: Markus Aebi (ETH Zurich) St. James Ballroom
10:30AM - 10:50AM	<b>Chris Whitfield</b> (University of Guelph) #32 <i>Capsular glycolipids in Gram-negative bacterial pathogens</i>
10:50PM - 10:55PM	<b>Poster talk: Cristina Y. Zamora</b> (MIT) #33   B146 <i>An in vitro gut-immune model illuminates N-glycosylation-dependent host-pathogen interactions of Campylobacter jejuni</i>
10:55AM - 11:00AM	<b>Poster talk: Dustin R. Middleton</b> (University of Georgia) #34   B147 <i>Immunological characterization of protein glycosylation in Streptococcus pneumoniae</i>
11:00AM - 11:20AM	<b>Emma Slack</b> (ETH Zürich Switzerland) <i>How IgA-bacterial glycan interactions can protect the intestine</i>
11:20PM - 11:25PM	<b>Poster talk: Karen Barnard</b> (Cornell University) #36   B148 <i>The use of glycoengineered cell lines for investigating influenza A interactions with modified sialic acids</i>
11:25PM - 11:30PM	<b>Poster talk: Mark Lehrman</b> (UT Southwestern) #37   B149 <i>Targeting STT3A-Oligosaccharyltransferase Causes Herpes Simplex Virus 1 Dysfunction</i>
11:30AM - 11:50AM	<b>Nina Papavasiliou</b> (German Federal Cancer Research Center) #38 <i>Sugars Increase the "Diversity-Space" of Trypanosoma Brucei Antigenic Variation</i>
11:50AM - 12:10PM	<b>Giulia Bandini</b> (Boston University) #39 <i>O-fucosylation of nucleocytoplasmic proteins in Toxoplasma gondii and Cryptosporidium parvum</i>
12:10PM - 12:30PM	<b>Tamara Doering</b> (Washington University School of Medicine) #40 <i>Capsule synthesis in the fungal pathogen Cryptococcus neoformans</i>
12:30PM – 1:30PM	<b>Lunch on your own</b>



1:30PM – 4:00PM	<b>Poster Session II and Exhibits</b> (Coffee break provided) The District/St. Charles Ballroom
4:00PM – 4:45PM	<b>Society Business Meeting</b> St. James Ballroom
4:45PM – 6:15PM	<b>Session 8: MCP and Glycobiology Significant Achievement Award Lectures</b> Session chair: Kelley Moremen (University of Georgia) St. James Ballroom
4:45PM - 5:30PM	<b>Molecular and Cellular Proteomics Award Lecture: Kay-Hooi Khoo</b> (Academia Sinica) #41
5:30PM - 6:15PM	<b>Glycobiology Significant Achievement Award Lecture: Galit Alter</b> (Ragon Institute of MGH, MIT and Harvard)
6:15PM – 7:00PM	<b>Break</b>
7:00PM – 11:00PM	<b>Banquet</b> St. Charles Ballroom

## DAY 4: Thursday Nov 8, 2018

7:30AM – 12:00PM	<i>Registration</i> The District Registration Counters
7:30AM – 8:30AM	Continental Breakfast
8:30AM – 9:50AM	<b>Session 9: Developmental and model systems</b> Session chair: Mike Tiemeyer (University of Georgia) St. James Ballroom
8:30AM - 8:50AM	<b>Mike Tiemeyer</b> (University of Georgia) #43 <i>Glycan glucuronylation balances cell signaling during ovarian development</i>
8:50AM - 9:10AM	<b>Giovanni Deangelo</b> (Institute of Protein Biochemistry, National Research Council of Italy, Naples) #44 <i>Glycosphingolipid metabolic reprogramming in neural differentiation</i>
9:10AM - 9:25AM	<b>Hideyuki Takeuchi</b> (Nagoya University School of Medicine) #45 <i>Significant roles of O-glucose glycans in mammalian Notch trafficking and signaling</i>
9:25AM - 9:40AM	<b>Liping Zhang</b> (National Institute of Dental and Craniofacial Research) #46 <i>Investigating the role of mucin-type O-glycosylation in secretory granule formation</i>
9:40AM - 9:55AM	<b>Vlad Panin</b> (Texas A&M University) #47 <i>Protein O-mannosylation regulates axon wiring in the nervous system of Drosophila</i>
9:55AM - 10:00AM	<b>Poster talk: Nima Niknejad</b> (Baylor College of Medicine) #48   B168 <i>Roles of EGF repeat xylosylation in mammalian development and Notch signaling</i>
10:00AM - 10:05AM	<b>Poster talk: Eric E. Irons</b> (Roswell Park Comprehensive Cancer Ctr) #49   B169 <i>Neonatal ST6Gal-1 Expression Alters Microbiome Composition and Mucosal Immunity</i>
10:05AM – 10:30AM	Coffee Break The District
10:30AM – 12:20PM	<b>Session 10: Plant glycan and cell wall biology</b> Session chair: Bree Urbanowicz (University of Georgia) St. James Ballroom
10:30AM - 10:50AM	<b>Bree Urbanowicz</b> (University of Georgia) #50 <i>Structural and biochemical insights into the mechanism of plant polysaccharide acetylation</i>
10:50AM - 11:10AM	<b>Harry Brumer</b> (University of British Columbia) #51 <i>Strength through diversity: The evolution of plant cell wall glucan-active enzymes in GH16</i>
11:10AM - 11:30AM	<b>Henrik Scheller</b> (Lawrence Berkeley National Laboratory) #52



	<i>Sphingolipid glycosylation and its role in membrane organization and plant-microbe interactions</i>
11:30AM - 11:50AM	<b>Wade Abbott</b> (University of Lethbridge) #53 <i>Functional characterization of strain-specific glycan metabolism and single-cell visualization of glycan uptake within bacteria from the rumen microbiome</i>
11:50AM - 12:10PM	<b>Federica Brandizzi</b> (Michigan State University) #54 <i>Impact of cell wall carbohydrates on plant growth</i>
12:10PM - 12:15PM	<b>Poster talk: Timothy P. Devarenne</b> (Texas A&M University) #55   B182 <i>A Unique Hydroxyproline-rich Glycoprotein from the green microalga <i>Botryococcus braunii</i></i>
12:15PM - 12:20PM	<b>Poster talk: Debra Mohnen</b> (University of Georgia) #56   B183 <i>GAUTs synthesize diverse pectic HG glycans in structurally and functionally distinct plant cell wall polymers</i>
12:20PM – 1:30PM	Lunch on your own
1:30PM – 3:00PM	<b>Session 11: Glycan function and Disease II</b> Session chair: Adam Barb (Iowa State University) St. James Ballroom
1:30PM - 1:50PM	<b>Thomas Clausen</b> (University of Copenhagen) #57 <i>Targeting Oncofetal Chondroitin Sulfate for Cancer Therapy and Diagnosis</i>
1:50PM - 2:10PM	<b>Kevin Strauss</b> (Clinic for Special Children) <i>Plain People and Precision Medicine: Lessons from a rural clinic</i>
2:10PM - 2:30PM	<b>Sasirekha Ramani</b> (Baylor College of Medicine) <i>New Frontiers in Rotavirus and Human Milk Oligosaccharide Interactions</i>
2:30PM - 2:35PM	<b>Poster talk: Matthew S. Gentry</b> (University of Kentucky) #60   B031 <i>Targeting pathogenic polyglucosan bodies in Lafora disease using an antibody-enzyme fusion</i>
2:35PM - 2:55PM	<b>Yoshiki Narimatsu</b> (University of Copenhagen) #61 <i>Glycoengineering using GlycoCRISPR toolbox- Towards Cell-based Glycan Array for Dissection of Interactions with Glycans</i>
2:55PM - 3:15PM	<b>Heinz Laubli</b> (University Hospital Basel) #62 <i>Targeting sialoglycan-mediated immune suppression for cancer immunotherapy</i>
3:15 PM – 3:20PM	<b>Closing Remarks</b>





# POSTER PROGRAM

Poster Session 1 (PS1): Nov 6 @ 1:30 – 4:00PM

Poster Session 2 (PS2): Nov 7 @ 1:30 – 4:00PM

All posters will be on display for the duration of the conference.

## Glycan biosynthesis, transport and quality control

Poster #: B001 (presented @ PS1) || Abstract #: 6

**“COG and GARP protein complexes are essential for the maintenance of Golgi glycosylation machinery and for endosomal to Golgi vesicular trafficking”**; Jessica Blackburn, Zinia D’Souza, Tetyana Kudlyk, Irina Pokrovskaya, Vladimir Lupashin;

*Department of Physiology, University of Arkansas for Medical Sciences;*

Poster #: B002 (presented @ PS2) || Abstract #: 7

**“In vivo kinetic analysis of the heterogeneous N-glycan-processing”**; marie-estelle losfeld, ernesto sciona, chia-wei lin, Markus Aebi;

*ETH Zurich;*

Poster #: B003 (presented @ PS1) || Abstract #: 63

**“Thermodynamic Profiling of Binding of Human Macrophage Galactose-Type Lectin and Synthetic Tn-Bearing MUC1 Glycopeptides Analogs”**; Donella M. Beckwith<sup>1</sup>, Forrest G. FitzGerald<sup>1</sup>, Maria C. Rodriguez<sup>1</sup>, Hans-Joachim Gabius<sup>2</sup>, Maré Cudic<sup>1</sup>;

<sup>1</sup>*Department of Chemistry and Biochemistry, Charles E. Schmidt College of Science, Florida Atlantic University, 777 Glades Road, Boca Raton, Florida 33431, United States;* <sup>2</sup>*Institute of Physiological Chemistry, Faculty of Veterinary Medicine, Ludwig-Maximilians-University, Veterinärstrasse 13, 80539 Munich, Germany;*

Poster #: B004 (presented @ PS2) || Abstract #: 64

**“Impact of signal peptide mutations on secreted glycoproteins”**; Zuzana Brnakova Kennedy<sup>1</sup>, Miloslav Sanda<sup>1</sup>, Yang Pan<sup>2</sup>, Raja Mazumder<sup>2</sup>, Radoslav Goldman<sup>1</sup>;

<sup>1</sup>*Department of Oncology, Georgetown University, Washington DC ;* <sup>2</sup>*Department of Biochemistry and Molecular Medicine, The George Washington University, Washington DC ;*

Poster #: B005 (presented @ PS1) || Abstract #: 65

**“Defining O-GlcNAc Cycling Rates Utilizing Dynamic Isotopic Detection of Amino Sugars with Glutamine (IDAWG)”**; Chelsea Desbiens, Meng Fang, Brent Weatherly, Lance Wells;

*University of Georgia;*

Poster #: B006 (presented @ PS2) || Abstract #: 66

**“Regulation of terminal N-glycan modifications by bisecting GlcNAc”**; Yasuhiko Kizuka<sup>1</sup>, Miyako Nakano<sup>2</sup>, Naoyuki Taniguchi<sup>3</sup>;

<sup>1</sup>*Center for Highly Advanced Integration of Nano and Life Sciences (G-CHAIN), Gifu University;* <sup>2</sup>*Graduate School of Advanced Sciences of Matter, Hiroshima University;* <sup>3</sup>*Department of Glyco-Oncology and Medical Biochemistry, Osaka International Cancer Institute;*

Poster #: B007 (presented @ PS1) || Abstract #: 67

**“Identification and characterization of UDP-mannose in human cell lines and mouse organs: Differential distribution across brain regions and organs”**; Kazuki Nakajima<sup>1</sup>, Yasuhiko Kizuka<sup>2</sup>, Yoshiki Yamaguchi<sup>3</sup>, Yoshio Hirabayashi<sup>4</sup>, Kazuo Takahashi<sup>5</sup>, Yukio Yuzawa<sup>5</sup>, Naoyuki Takahashi<sup>6</sup>;

<sup>1</sup>*Center for Research Promotion and Support, Fujita Health University;* <sup>2</sup>*Center for highly advanced integration of nano and life sciences (G-chain), Gifu University;* <sup>3</sup>*RIKEN;* <sup>4</sup>*RIKEN Brain Science Institute;* <sup>5</sup>*Department of Nephrology, Fujita Health University School of Medicine;* <sup>6</sup>*Department of Glyco-Oncology and Medical Biochemistry, Osaka International Cancer Institute;*

Poster #: B008 (presented @ PS2) || Abstract #: 68



**“Fucose Metabolism: Rethinking old concepts and identifying new mechanisms”**; Bobby G. Ng, Zhi-Jie Xia, David Scott, Hudson H. Freeze;

*Human Genetics Program, Sanford-Burnham-Prebys Medical Discovery Institute, La Jolla, CA, USA;*

Poster #: B009 (presented @ PS1) || Abstract #: 69

**“Structural insights into GalNAc-T4 preference for prior glycosylated substrates”**; E James P. Daniel<sup>1</sup>, Matilde de las Rivas<sup>2</sup>, Ramon Hurtado-Guerrero<sup>2</sup>, Thomas Gerken<sup>1</sup>;

<sup>1</sup>*Department of Biochemistry, Case Western Reserve University, Cleveland, OH 44106;* <sup>2</sup>*University of Zaragoza;*

Poster #: B010 (presented @ PS2) || Abstract #: 70

**“Spatial organization of glycosylation enzymes in the Golgi determines its glycan output”**; Prathyush Roy<sup>1</sup>, Riccardo Rizzo<sup>1</sup>, Marinella Pirozzi<sup>1</sup>, Gabriele Turacchio<sup>1</sup>, Giovanni D'angelo<sup>1</sup>, Alberto Luini<sup>1</sup>, Gaelle Boncompain<sup>2</sup>, Franck Perez<sup>2</sup>, Seetharaman Parashuraman<sup>1</sup>;

<sup>1</sup>*National Research Council of Italy;* <sup>2</sup>*institut Curie;*

Poster #: B011 (presented @ PS1) || Abstract #: 71

**“Human Milk Oligosaccharide Analysis of large sample cohorts using a novel Capillary Electrophoresis Platform”**;

Hamutal Bonen<sup>1</sup>, Andrés Guerrero<sup>1</sup>, Elizabeth A. Brownell<sup>2,3</sup>, Kelsey C. Smith<sup>2,4</sup>, Daniela Barile<sup>5</sup>, James I. Hagadorn<sup>2,3</sup>, Carlito B. Lebrilla<sup>6</sup>, Mary M. Lussier<sup>2</sup>, Adam P. Matson<sup>2,3</sup>, David A. Sela<sup>7,8</sup>;

<sup>1</sup>*ProZyme, A part of Agilent, Hayward, CA;* <sup>2</sup>*Connecticut Human Milk Research Center, Division of Neonatology, Connecticut Children's Medical Center, Hartford, CT;* <sup>3</sup>*Department of Pediatrics, University of Connecticut School of Medicine, Farmington, CT;* <sup>4</sup>*Department of Research, Connecticut Children's Medical Center, Hartford, CT;* <sup>5</sup>*Department of Food Science and Technology, University of California Davis, Davis, CA;* <sup>6</sup>*Department of Chemistry, University of California Davis, Davis, CA;* <sup>7</sup>*Department of Food Science, University of Massachusetts Amherst, Amherst, MA;* <sup>8</sup>*Department of Microbiology & Physiological Systems, University of Massachusetts Medical School, Worcester, MA;*

Poster #: B012 (presented @ PS2) || Abstract #: 72

**“Improved Profiling of Sialylated N-Linked Glycans by HPAE-PAD”**; Jeffrey Rohrer, Sachin Patil;

*Thermo Fisher Scientific;*

Poster #: B013 (presented @ PS1) || Abstract #: 73

**Exploring the significance of xylosyl-extension of O-glucose glycans on EGF repeats for Notch signaling in mammals;**

Wataru Saiki, Yusuke Urata, Yuya Senoo, Yohei Tsukamoto, Chenyu Ma, Tetsuya Okajima, Hideyuki Takeuchi;

*Department of Molecular Biochemistry, Nagoya University Graduate School of Medicine;*

Poster #: B014 (presented @ PS2) || Abstract #: 74

**“Glycoscience mass spectrometry tools funded by the NIH Common Fund for Glycoscience”**; Joshua A. Klein<sup>2</sup>, John D. Hogan<sup>2</sup>, Heckendorf Christian<sup>1</sup>, Long Sha<sup>3</sup>, Pengyu Hong<sup>3</sup>, Luis Carvalho<sup>2</sup>, Cheng Lin<sup>1</sup>, Joseph Zaia<sup>1,2</sup>;

<sup>1</sup>*Dept. of Biochemistry, Boston University Medical Campus;* <sup>2</sup>*Bioinformatic Program, Boston University;* <sup>3</sup>*Dept. of Computer Science, Brandeis University;*

## Structural basis for glycan biosynthesis

Poster #: B015 (presented @ PS1) || Abstract #: 14

**“The structure of GalNAc-T12 reveals the molecular basis of its substrate recognition mode”**; Amy J. Fernandez<sup>1</sup>, Earnest James P. Daniels<sup>2</sup>, Thomas A. Gerken<sup>2</sup>, Lawrence A. Tabak<sup>1</sup>, Nadine L. Samara<sup>1</sup>;

<sup>1</sup>*Section on Biological Chemistry, NIDCR, NIH, Bethesda, MD 20892;* <sup>2</sup>*Department of Biochemistry, Case Western Reserve University, Cleveland, OH 44106;*

Poster #: B016 (presented @ PS2) || Abstract #: 15

**“Optimization of expression of O-GlcNAc cycling enzymes for Cryo-Electron Microscopy”**; Agata Steenackers, Huaibin Wang, Jenny Hinshaw, John A. Hanover;

*Laboratory of Cell and Molecular Biology, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD 20892;*



Poster #: B017 (presented @ PS1) || Abstract #: 75

**“Two key motifs determine topology and polyprenol substrate binding of PglC, a monotopic phosphoglycosyl transferase from *Campylobacter jejuni*”**; Sonya Entova<sup>1</sup>, Jean-Marc Billod<sup>2</sup>, Jean-Marie Swiecicki<sup>1</sup>, Sonsoles Martín-Santamaría<sup>2</sup>, Barbara Imperiali<sup>1,3</sup>;

<sup>1</sup>Department of Biology, Massachusetts Institute of Technology; <sup>2</sup>Department of Structural & Chemical Biology, Centro de Investigaciones Biológicas, CIB-CSIC; <sup>3</sup>Department of Chemistry, Massachusetts Institute of Technology;

Poster #: B018 (presented @ PS2) || Abstract #: 76

**“Glycan characterization of intact glycoproteins by NMR”**; Aaron M. Marcella<sup>1</sup>, Huifeng Yu<sup>1</sup>, Jared Orwenyo<sup>2</sup>, Chao Li<sup>2</sup>, Marcos D. Battistel<sup>1</sup>, Lai-Xi Wang<sup>2</sup>, Darón I. Freedberg<sup>1</sup>;

<sup>1</sup>CBER/FDA; <sup>2</sup>University of Maryland, College Park;

Poster #: B019 (presented @ PS1) || Abstract #: 77

**“How does glycosylation modulate Skp1 organization?”**; Hyun Woo Kim<sup>1</sup>, Alexander Eletsky<sup>2</sup>, James Prestegard<sup>1,2</sup>, Christopher M. West<sup>1</sup>;

<sup>1</sup>Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA; <sup>2</sup>Complex Carbohydrate Research Center (CCRC), UGA, Athens, GA;

Poster #: B020 (presented @ PS2) || Abstract #: 78

**“Structural Characterization of Glycosylated Proteins by NMR”**; Robert V. Williams, Monique J. Rogals, Alexandre Eletsky, Gordon R. Chalmers, Laura C. Morris, Jeong Y. Yang, Digantkumar Chapla, Kelley W. Moremen, James H. Prestegard; Complex Carbohydrate Research Center / University of Georgia;

Poster #: B021 (presented @ PS1) || Abstract #: 79

**“Structural basis of glycan counting in glycosyltransferases”**; Ana S. Ramírez<sup>1</sup>, Jérémy Boilevin<sup>2</sup>, Ahmad R. Mehdipour<sup>3</sup>, Gerhard Hummer<sup>3,4</sup>, Tamis Darbre<sup>2</sup>, Jean -L Reymond<sup>2</sup>, Kaspar P. Locher<sup>1</sup>;

<sup>1</sup>Institute of Molecular Biology and Biophysics, Eidgenössische Technische Hochschule (ETH), Zürich, Switzerland; <sup>2</sup>Department of Chemistry and Biochemistry, University of Berne, Berne, Switzerland; <sup>3</sup>Department of Theoretical Biophysics, Max Planck Institute of Biophysics, Frankfurt, Germany; <sup>4</sup>Institute for Biophysics, Goethe University, Frankfurt, Germany;

Poster #: B022 (presented @ PS2) || Abstract #: 80

**“N-glycan processing in NMDA ligand binding domain depends on glycan-polypeptide and intradomain interactions”**; Ganesh P. Subedi<sup>1</sup>, Anton V. Sinitskiy<sup>2</sup>, Jacob T. Roberts<sup>1</sup>, Kashyap R. Patel<sup>1</sup>, Vijay S. Pande<sup>2</sup>, Adam W. Barb<sup>1</sup>;

<sup>1</sup>Roy J. Carver Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University, Ames, IA 50011; <sup>2</sup>Department of Bioengineering, Stanford University, Stanford, CA 94305;

Poster #: B023 (presented @ PS1) || Abstract #: 81

**“Predicting glycan biosynthesis based on enzyme-glycan accessibility”**; Oliver C. Grant, Robert J. Woods; Complex Carbohydrate Research Center / University of Georgia;

Poster #: B024 (presented @ PS2) || Abstract #: 82

**“Structural and enzymatic studies of Human N-acetylglucosaminyltransferase II (MGAT2)”**; Jeong-Yeh Yang<sup>1</sup>, Renuka Kadirvelraj<sup>2</sup>, Justin H. Sanders<sup>2</sup>, Annapoorani Ramiah<sup>1</sup>, Pradeep Kumar Prabhakar<sup>1</sup>, Lin Liu<sup>1</sup>, Geert-Jan Boons<sup>1</sup>, Zachary A. Wood<sup>2</sup>, Kelley W. Moremen<sup>1,2</sup>;

<sup>1</sup>Complex Carbohydrate Research Center, University of Georgia; <sup>2</sup>Department of Biochemistry and Molecular Biology, University of Georgia;

Poster #: B025 (presented @ PS1) || Abstract #: 83

**“Structure and substrate specificity of human  $\beta$ 1,3-N-acetylglucosaminyltransferase 2 (B3GNT2)”**; Jeong-Yeh Yang<sup>1</sup>, Renuka Kadirvelraj<sup>2</sup>, Hyunwoo Kim<sup>2</sup>, Justin H. Sanders<sup>2</sup>, Bhargavi M. Boruah<sup>1</sup>, Digantkumar Chapla<sup>1</sup>, Annapoorani Ramiah<sup>1</sup>, Rosemary Kim<sup>1</sup>, Zachary A. Wood<sup>2</sup>, Kelley W. Moremen<sup>1,2</sup>;

<sup>1</sup>Complex Carbohydrate Research Center, University of Georgia; <sup>2</sup>Department of Biochemistry and Molecular Biology, University of Georgia;



Poster #: B026 (presented @ PS2) || Abstract #: 84

**“Human Core 3 beta3 N-Acetylglucosaminyltransferase Possesses Novel beta3 N-acetylgalactosaminyltransferase Activity”**; Guozhang Zou<sup>1</sup>, Aaron Macella<sup>2</sup>, Su-Ryun Kim<sup>1</sup>, Darón Freedberg<sup>2</sup>, Tongzhong Ju<sup>1</sup>;

<sup>1</sup>Office of Biotechnology Products, Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD 20993; <sup>2</sup>Center for Biologics Evaluation and Research, Food and Drug Administration, Silver Spring, MD 20993;

## Glycan Function and Disease

Poster #: B027 (presented @ PS1) || Abstract #: 20

**“Site-1 protease is essential for activation of ER stress response for skeletal development but indispensable for the for the mannose-6-phosphate modification of lysosomal enzymes”**; Yuji Kondo<sup>1</sup>, Jianxin Fu<sup>1,2</sup>, Hua Wang<sup>3</sup>, Christopher Hoover<sup>1,4</sup>, Richard Steel<sup>5</sup>, Klaas J. Wierenga<sup>3</sup>, Patrick M. Gaffney<sup>6</sup>, Lijun Xia<sup>1,2,4</sup>;

<sup>1</sup>Cardiovascular Biology Research Program, Oklahoma Medical Research Foundation, Oklahoma City, USA; <sup>2</sup>Jiangsu Institute of Hematology, MOH Key Laboratory of Thrombosis and Hemostasis, Collaborative Innovation Center of Hematology, The First Affiliated Hospital of Soochow University, Suzhou, China; <sup>3</sup>Department of Pediatrics, University of Oklahoma Health Sciences Center, Oklahoma City, USA; <sup>4</sup>Department of Biochemistry and Molecular Biology, University of Oklahoma Health Sciences Center, Oklahoma City, USA; <sup>5</sup>Complex Carbohydrate Research Center, University of Georgia, Athens, USA; <sup>6</sup>Division of Genomics and Data Sciences, Arthritis and Clinical Immunology Program, Oklahoma Medical Research Foundation, Oklahoma City, USA;

Poster #: B028 (presented @ PS2) || Abstract #: 21

**“Glycosyltransferase ST6Gal-I promotes pancreatic ductal adenocarcinoma progression and metastasis”**; Asmi

Chakraborty, Robert B. Jones, Christopher A. Klug, Lesley E. Smythies, Susan L. Bellis;  
University of Alabama at Birmingham;

Poster #: B029 (presented @ PS1) || Abstract #: 22

**“GOLPH3 promotes oncogenesis by controlling the intra-Golgi trafficking of glycosphingolipid synthases”**; Riccardo Rizzo<sup>1</sup>, Domenico Russo<sup>1</sup>, Kazuo Kurokawa<sup>2</sup>, Domenico Supino<sup>1</sup>, Pranoy Sahu<sup>1</sup>, Bernadette Lombardi<sup>1</sup>, Francesco Russo<sup>1</sup>, Mikhail Zhukovsky<sup>1</sup>, Monica Gracia Barros<sup>7</sup>, Prathyush Pothukuchi<sup>1</sup>, Lucia Sticco<sup>1</sup>, Serena Capasso<sup>1</sup>, Laura Capolupo<sup>1</sup>, Gaelle Boncompain<sup>3</sup>, Nina Dathan<sup>1</sup>, Gabriele Turacchio<sup>1</sup>, Federica Zito Marino<sup>4</sup>, Gabriella Acquino<sup>4</sup>, Carlo Vitagliano<sup>4</sup>, Petra Henklein<sup>5</sup>, Henrik Clausen<sup>6</sup>, Ulla Mandel<sup>6</sup>, Toshiyuki Yamaji<sup>8</sup>, Kentaro Hanada<sup>8</sup>, Alfredo Budillon<sup>4</sup>, Seetharaman Parashuraman<sup>1</sup>, Franck Perez<sup>3</sup>, Lina M. Obeid<sup>7</sup>, Aki Nakano<sup>2</sup>, Yusuf A. Hannun<sup>7</sup>, Alberto Luini<sup>1</sup>, Giovanni D'Angelo<sup>1</sup>;

<sup>1</sup>Institute of Protein Biochemistry, National Research Council, Via P. Castellino 111, Napoli, Italy; <sup>2</sup>Live Cell Super-Resolution Imaging Research Team, Extreme Photonics Research Group, RIKEN Center for Advanced Photonics, Saitama, 3510198, Japan.; <sup>3</sup>Institute Curie – CNRS UMR1 44, Research Center, Paris, France; <sup>4</sup>Istituto Nazionale Tumori G. Pascale, via Mariano Semmola, Napoli, Italy; <sup>5</sup>Universitätsmedizin Berlin Institut für Biochemie Charité CrossOver Charitéplatz 1 / Sitz: Virchowweg 610117 Berlin, Germany; <sup>6</sup>University of Copenhagen, Faculty of Health Sciences, Centre for Glycomics, Department of Cellular and Molecular Medicine Nørre Alle 20, DK-2200 Copenhagen N, Denmark; <sup>7</sup>Stony Brook University Medical Center, Stony Brook 11794-8430, New York, United States; <sup>8</sup>Department of Biochemistry & Cell Biology National Institute of Infectious Diseases 1-23-1 Toyama, Shinjuku-ku, Tokyo, JAPAN;

Poster #: B030 (presented @ PS2) || Abstract #: 23

**“A Role for Galectin Proteins and Glycans in Parkinson's Disease Pathogenesis”**; Edward Campbell<sup>1</sup>, William P Flavin<sup>1</sup>, Ben Cook<sup>1</sup>, Luc Bousset<sup>3</sup>, Andrea Grillini<sup>1</sup>, Yaping Chu<sup>2</sup>, Ronald Melki<sup>3</sup>, Jeffrey Kordower<sup>2</sup>;

<sup>1</sup>Department of Microbiology and Immunology, Loyola University Chicago; <sup>2</sup>Department of Neurological Sciences, Rush University; <sup>3</sup>Paris-Saclay Institute of Neuroscience, CNRS;

Poster #: B031 (presented @ PS1) || Abstract #: 60

**“Targeting pathogenic polyglucosan bodies in Lafora disease using an antibody-enzyme fusion”**; Matthew S.

Gentry<sup>1,7,8</sup>, Mary K. Brewer<sup>1</sup>, Annette Uittenbogaard<sup>1</sup>, Grant Austin<sup>1</sup>, John J. McCarthy<sup>2</sup>, Dyann M. Segvich<sup>3,7</sup>, Anna DePaoli-Roach<sup>3,7</sup>, Peter J. Roach<sup>3,7</sup>, Bradley L. Hodges<sup>4</sup>, Jill Zeller<sup>5</sup>, James R. Pauly<sup>6</sup>, Tracy McKnight<sup>4</sup>, Dustin Armstrong<sup>4</sup>;

<sup>1</sup>Department of Molecular and Cellular Biochemistry, University of Kentucky College of Medicine; <sup>2</sup>Department of Physiology, University of Kentucky College of Medicine; <sup>3</sup>Department of Biochemistry and Molecular Biology, Indiana University School of Medicine; <sup>4</sup>Valerion Therapeutics; <sup>5</sup>Northern Biomedical Research; <sup>6</sup>Department of Pharmaceutical Sciences, College of Pharmacy, University of Kentucky; <sup>7</sup>Lafora Epilepsy Cure Initiative, University of Kentucky College of Medicine; <sup>8</sup>University of Kentucky Epilepsy Research Center, University of Kentucky College of Medicine;





Poster #: B032 (presented @ PS2) || Abstract #: 85

**“The zebrafish tandem-repeat galectin 9 (Drgal9-L1) promotes in vitro adhesion and infection of the infectious hematopoietic necrosis virus (IHNV)”**; Kelsey Abernathy<sup>1</sup>, Justin Mancini<sup>1</sup>, Nuria Gonzalez-Montalban<sup>1</sup>, Chiguang Feng<sup>1</sup>, Sheng Wang<sup>2</sup>, Lia Schipper<sup>3</sup>, Gerardo Vasta<sup>1</sup>;

<sup>1</sup>Department of Microbiology and Immunology, University of Maryland School of Medicine, UMB, Institute of Marine and Environmental Technology, Baltimore, Maryland, USA; <sup>2</sup>School of Life Sciences, Sun Yat-Sen University, Guangzhou, PR China; <sup>3</sup>North County High School, Glen Burnie, MD;

Poster #: B033 (presented @ PS1) || Abstract #: 86

**“Blocked O-GlcNAc cycling disrupts hematopoietic stem cell homeostasis”**; Lara K. Abramowitz<sup>1</sup>, Christelle Harly<sup>2</sup>, Avinash Bhandoola<sup>2</sup>, John A. Hanover<sup>1</sup>;

<sup>1</sup>Laboratory of Cellular and Molecular Biology, National Institute of Diabetes and Digestive and Kidney Diseases, National Institute of Health, Bethesda, MD 20892, USA; <sup>2</sup>Laboratory of Genome Integrity, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD 20892, USA;

Poster #: B034 (presented @ PS2) || Abstract #: 87

**“CarbArrayART: Carbohydrate Array Analysis and Reporting Tool New software for glycan array for data processing, storage and presentation”**; Yukie Akune<sup>1</sup>, Sena Arpinar<sup>2</sup>, Lisete M. Silva<sup>1</sup>, Mark Stoll<sup>1</sup>, Angelina S. Palma<sup>3</sup>, Yan Liu<sup>1</sup>, René Ranzinger<sup>2</sup>, Ten Feizi<sup>1</sup>;

<sup>1</sup>Glycosciences Laboratory, Department of Medicine, Imperial College, London, UK; <sup>2</sup>Complex Carbohydrate Research Center, University of Georgia, Athens, GA, USA; <sup>3</sup>UCIBIO-Faculty of Science and Technology, NOVA University of Lisbon, Portugal;

Poster #: B035 (presented @ PS1) || Abstract #: 88

**“Microarray approach to detect novel biomarkers that stratify the pathogenesis of sepsis”**; Peter V. Aziz<sup>1,2,3</sup>, Benjamin S. Haslund-Gourley<sup>1,2</sup>, Douglas M. Heithoff<sup>1,3</sup>, Jamey D. Marth<sup>1,2,3</sup>;

<sup>1</sup>Center for Nanomedicine; <sup>2</sup>Sanford-Burnham-Prebys Medical Discovery Institute; <sup>3</sup>Department of Molecular, Cellular, and Developmental Biology, University of California-Santa Barbara, Santa Barbara, California 93106;

Poster #: B036 (presented @ PS2) || Abstract #: 89

**“Cell lineage impacts CD16a / Fc gamma Receptor 3a structure and antibody binding affinity through N-glycan composition”**; Adam W. Barb;

Iowa State University;

Poster #: B037 (presented @ PS1) || Abstract #: 90

**“N-glycosylation is involved in the maturation of brain-derived neurotrophic factor”**; Julius Benicky, Miloslav Sanda, Zuzana Brnakova Kennedy, Radoslav Goldman;

Lombardi Comprehensive Cancer Center, Georgetown University;

Poster #: B038 (presented @ PS2) || Abstract #: 91

**“Metabolic regulation of KLHL proteins through O-glycosylation”**; Michael Boyce;

Duke University School of Medicine;

Poster #: B039 (presented @ PS1) || Abstract #: 92

**“Evolution of Glycan Mediated Cross-linking Interactions”**; Curtis F. Brewer;

Albert Einstein College of Medicine;

Poster #: B040 (presented @ PS2) || Abstract #: 93

**“Mucin glycosylation pathways in human eye cells”**; Inka Brockhausen<sup>1</sup>, Pablo Argueso<sup>2</sup>;

<sup>1</sup>Queen's University; <sup>2</sup>Schepens Eye Research Institute of Massachusetts Eye and Ear;

Poster #: B041 (presented @ PS1) || Abstract #: 94

**“Function of Protein O-mannosyltransferases 1/2 in connectivity of sensory neurons and control of muscle contractions in Drosophila”**; Ishita Chandel, Ryan Baker, Naosuke Nakamura, Loraine Melbern, Brooke Howell, Vlad Panin;

Texas A&M University;

Poster #: B042 (presented @ PS2) || Abstract #: 95

**“Glycomic Analysis Of Host-Response To Influenza In A Model Of Young Children And Adults”**; Shuhui Chen, Daniel Heindel, Yue Zhang, Sujeethraj Koppolu, Brian Kasper, Ted Ross, Elodie Ghedin, Bin Zhang, Lara Mahal;

New York University;



Poster #: B043 (presented @ PS1) || Abstract #: 96

**Streptococcus pyogenes evades adaptive immunity through specific IgG glycan hydrolysis**; Andreas Naegeli<sup>1</sup>, Eleni Bratanis<sup>1</sup>, Christofer Karlsson<sup>1</sup>, Oonagh Shannon<sup>1</sup>, Raja Kalluru<sup>2</sup>, Adam Linder<sup>1</sup>, Johan Malmström<sup>1</sup>, Mattias Collin<sup>1</sup>;  
<sup>1</sup>*Division of Infection Medicine, Department of Clinical Sciences, Lund University, Lund, Sweden*; <sup>2</sup>*Department of Pathology, Stanford University School of Medicine, Stanford, California, USA*;

Poster #: B044 (presented @ PS2) || Abstract #: 97

**“LACK OF GLUCOSIDASE I RESULTS IN CELL TOXICITY THAT IS RELIEVED BY AVOIDING THE ACCUMULATION OF TRIGLUCOSYLATED GLYCOPROTEINS”**; Cecilia D'Alessio<sup>1,2</sup>, Ayelen Valko<sup>1</sup>, Emiliana Etchegaray<sup>1</sup>, Sofia I. Aramburu<sup>1</sup>, Armando J. Parodi<sup>1</sup>, Giovanna L. Gallo<sup>1</sup>;  
<sup>1</sup>*Fundación Instituto Leloir, IIBBA-CONICET*; <sup>2</sup>*School of Sciences, University of Buenos Aires*;

Poster #: B045 (presented @ PS1) || Abstract #: 98

**“Towards a novel cancer vaccine: Characterisation of the glycome of canine melanoma cells”**; Anne Dell;  
*Department of Life Sciences, Imperial College London*;

Poster #: B046 (presented @ PS2) || Abstract #: 99

**“Sox2 drives ST6Gal-I expression and activity to promote a CSC phenotype in ovarian cancer”**; Kaitlyn A. Dorsett, Susan L. Bellis;  
*Cell, Developmental, and Integrative Biology/University of Alabama at Birmingham*;

Poster #: B047 (presented @ PS1) || Abstract #: 100

**“Creation of activity-verified arrays of mammalian glycan-binding receptors for screening of microbial ligands”**;  
Maureen E. Taylor, Sabine A.F. Jégouzo, Kurt Drickamer;  
*Imperial College London*;

Poster #: B048 (presented @ PS2) || Abstract #: 101

**“Galectins from the eastern oyster (Crassostrea virginica) preferentially recognize the protozoan Perkinsus marinus by carbohydrate-based parasite mimicry”**; Chiguang Feng<sup>1</sup>, Anita Ghosh<sup>2</sup>, Mohammed N. Amin<sup>3</sup>, Tsvetan R. Bachvaroff<sup>4</sup>, Mario A. Bianchet<sup>2</sup>, Lai-Xi Wang<sup>3</sup>, Daniel Zheng<sup>1,6</sup>, Deandra Watson<sup>1,7</sup>, Brina Smith<sup>1,7</sup>, Iain B.H. Wilson<sup>5</sup>, Gerardo R. Vasta<sup>1</sup>;  
<sup>1</sup>*Department of Microbiology and Immunology, University of Maryland School of Medicine, UMB, Institute of Marine and Environmental Technology, Baltimore, Maryland, USA*; <sup>2</sup>*Departments of Neurology and Biophysics and Biophysical Chemistry, The Johns Hopkins University School of Medicine, Baltimore, Maryland, USA*; <sup>3</sup>*Department of Chemistry and Biochemistry, University of Maryland, College Park, Maryland, USA*; <sup>4</sup>*University of Maryland Center for Environmental Science, and Institute of Marine and Environmental Technology, Baltimore, Maryland, USA*; <sup>5</sup>*Department für Chemie, Universität für Bodenkultur, Vienna, Austria*; <sup>6</sup>*Visiting Summer Intern from Centennial High School, HCPS, Maryland*; <sup>7</sup>*Visiting Summer Intern from Coppin State University, Baltimore, Maryland*;

Poster #: B049 (presented @ PS1) || Abstract #: 102

**“Thermodynamic Analysis of Galectin-1, -3 binding to  $\beta$ -galactosides and MUC1-TF bearing Glycopeptides”**; Forrest G. FitzGerald, Maré Cudic;  
*Florida Atlantic University, Boca Raton, FL, USA*;

Poster #: B050 (presented @ PS2) || Abstract #: 103

**“Elucidation of Mannose Binding Specificities of C-type Lectins Using a Sequence-defined OligoMannose array”**; Chao Gao<sup>1</sup>, Barbara Eckmair<sup>2</sup>, Kathrin Stavenhagen<sup>1</sup>, Sucharita Dutta<sup>1</sup>, Alyssa McQuillan<sup>1</sup>, Melinda S. Hanes<sup>1</sup>, Akul Y. Mehta<sup>1</sup>, Mark B. Jones<sup>1</sup>, Richard D. Cummings<sup>1</sup>;  
<sup>1</sup>*Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA*; <sup>2</sup>*Department of Chemistry, University of Natural Resources and Life Sciences*;

Poster #: B051 (presented @ PS1) || Abstract #: 104

**“New therapeutic avenues for NGLY1 deficiency”**; Ulla I.M. Gerling-Driessen<sup>1</sup>, Carolyn R. Bertozzi<sup>1,2</sup>;  
<sup>1</sup>*Stanford University, Department of Chemistry, Stanford, CA, 94305*. ; <sup>2</sup>*Stanford University, Howard Hughes Medical Institute, Stanford, CA, 94305*. ;



Poster #: B052 (presented @ PS2) || Abstract #: 105

**“Isolation and Characterization of a Novel Lamprey VLRB Specific for Galactose-3-Sulfate on Glycoproteins and Glycolipids”**; Tanya R. McKittrick<sup>1</sup>, Steffen M. Bernard<sup>2</sup>, Alexander J. Noll<sup>1</sup>, Bernard C. Collins<sup>2</sup>, Christoffer K. Goth<sup>1</sup>, Brantley R. Herrin<sup>3</sup>, Xuezheng Song<sup>4</sup>, Max D. Cooper<sup>3</sup>, Ian A. Wilson<sup>2</sup>, Richard D. Cummings<sup>1</sup>;

<sup>1</sup>National Center for Functional Glycomics, Beth Israel Deaconess Medical Center Department of Surgery, Harvard Medical School, 330 Brookline Avenue, Boston, MA 02215, USA; <sup>2</sup>Department of Integrative Structural and Computational Biology and the Skaggs Institute for Chemical Biology, The Scripps Research Institute, La Jolla, CA 92037, USA; <sup>3</sup>Emory Vaccine Center and Department of Pathology and Laboratory Medicine, Emory University, 1462 Clifton Road North-East, Atlanta, GA 30322, USA; <sup>4</sup>Department of Biochemistry, Emory University, 1462 Clifton Road North-East, Atlanta, GA 30322, USA;

Poster #: B053 (presented @ PS1) || Abstract #: 106

**“Human Adenovirus type 5 increases host cell fucosylation and modifies LeY antigen expression”**; Kathya Gutiérrez-Huante<sup>1</sup>, Héctor M. Mora-Montes<sup>2</sup>, Roberta Salinas-Marín<sup>1</sup>, Ramón A. Gonzalez<sup>3</sup>, Iván Martínez Duncker<sup>1</sup>;

<sup>1</sup>Laboratorio de Glicobiología Humana, Centro de Investigación en Dinámica Celular, Universidad Autónoma del Estado de Morelos.; <sup>2</sup>Universidad de Guanajuato, Biología; <sup>3</sup>Laboratorio de Virología Molecular, Centro de Investigación en Dinámica Celular, Universidad Autónoma del Estado de Morelos;

Poster #: B054 (presented @ PS2) || Abstract #: 107

**“Development and Standardization of Assays to Measure Plasma and Sera Glycosidase Activities in Normal and Disease Physiology”**; Benjamin S. Haslund-Gourley<sup>1,2</sup>, Peter V. Aziz<sup>1,2,3</sup>, Jamey D. Marth<sup>1,2,3</sup>;

<sup>1</sup>Center for Nanomedicine; <sup>2</sup>Sanford-Burnham-Prebys Medical Discovery Institute; <sup>3</sup>Department of Molecular, Cellular, and Developmental Biology, University of California-Santa Barbara, Santa Barbara, California 93106.;

Poster #: B055 (presented @ PS1) || Abstract #: 108

**“Glycan Microarray and Glycomics Services through the National Center for Functional Glycomics, the Harvard Medical School Center for Glycosciences, and the BIDMC Glycomics Core”**; Jamie Heimbürg-Molinaro, Sylvain Lehoux,

Tanya McKittrick, Mark B. Jones, Sucharita Dutta, Elliot Chaikof, Lijun Sun, Richard D. Cummings;  
Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA;

Poster #: B056 (presented @ PS2) || Abstract #: 109

**“Differential regulation of mammalian neuraminidases by Tlr4 in Gram-negative sepsis”**; Douglas M. Heithoff<sup>1,3</sup>, Won Ho Yang<sup>1,2</sup>, Peter V. Aziz<sup>1,2</sup>, Benjamin S. Haslund-Gourley<sup>1,2</sup>, Victor Nizet<sup>4</sup>, Jamey D. Marth<sup>1,2,3</sup>, Michael J. Mahan<sup>1,3</sup>;

<sup>1</sup>Center for Nanomedicine; <sup>2</sup>Sanford Burnham Prebys Medical Discovery Institute; <sup>3</sup>Department of Molecular, Cellular, and Developmental Biology, University of California Santa Barbara, Santa Barbara, California 93106; <sup>4</sup>Department of Pediatrics and Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California San Diego, La Jolla, California 92093;

Poster #: B057 (presented @ PS1) || Abstract #: 110

**“Genotype-Phenotype Correlations for Protein O-Linked Mannose N-Acetylglucosaminyltransferase 1 (POMGNT1) in Congenital Muscular Dystrophy”**; Jessica Z. Ho<sup>1,3</sup>, Sally R. Boyd<sup>2,3</sup>, Danish Singh<sup>2,3</sup>, Stephanie Halmo<sup>2,3</sup>, Lance Wells<sup>2,3</sup>;

<sup>1</sup>Department of Cellular Biology, University of Georgia, Athens, GA, 30602; <sup>2</sup>Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA, 30602; <sup>3</sup>Complex Carbohydrate Research Center, University of Georgia, Athens, GA, 30602;

Poster #: B058 (presented @ PS2) || Abstract #: 111

**“Galectin-4 interaction with CD14 triggers the differentiation of monocytes into macrophage-like cells via MAPK signaling pathway”**; So-Hee Hong<sup>1,2,5</sup>, Jun-Seop Shin<sup>1,2,3</sup>, Hyunwoo Chung<sup>1,4,5</sup>, Chung-Gyu Park<sup>1,2,5</sup>;

<sup>1</sup>Xenotransplantation Research Center; <sup>2</sup>Institute of Endemic Diseases; <sup>3</sup>Cancer Research Center; <sup>4</sup>Department of Biomedical Sciences; <sup>5</sup>Department of Microbiology and Immunology, Seoul National University College of Medicine;

Poster #: B059 (presented @ PS1) || Abstract #: 112

**“Role of sialyl 6-sulfo Lewis X in anti-tumor immunity against oral squamous cell carcinoma”**; Hitomi Hoshino<sup>1</sup>, Hisato Yoshida<sup>1,2</sup>, Yoshiaki Imamura<sup>3</sup>, Kazuo Sano<sup>2</sup>, Motohiro Kobayashi<sup>1</sup>;

<sup>1</sup>Department of Tumor Pathology, Faculty of Medical Sciences, University of Fukui; <sup>2</sup>Department of Dentistry and Oral Surgery, Faculty of Medical Sciences, University of Fukui; <sup>3</sup>Division of Surgical Pathology, University of Fukui Hospital;

Poster #: B060 (presented @ PS2) || Abstract #: 113

**“Role of the ST6Gal-I sialyltransferase in protecting tumor cells from hypoxia”**; Robert B Jones, Anita Hjelmeland, Susan L. Bellis;

University of Alabama at Birmingham ;



Poster #: B061 (presented @ PS1) || Abstract #: 114

**“Data in the driver's seat for exploring the glycome”**; Hiren J. Joshi, Lars Hansen, Yoshiki Narimatsu, Eric Bennett, Hans Wandall, Henrik Clausen, Katrine T. Schjoldager;  
*Copenhagen Center for Glycomics, University of Copenhagen;*

Poster #: B062 (presented @ PS2) || Abstract #: 115

**“HS S-domains that accumulate in ATTR amyloidosis patients accelerate and mediate formation and cytotoxicity of transthyretin fibrils”**; Kazuchika Nishitsuji<sup>1,2</sup>, Kenji Uchimura<sup>3</sup>, Taro Yamashita<sup>4</sup>, Hirokazu Kameyama<sup>5</sup>, Kaori Kuwabara<sup>5</sup>, Mineyuki Mizuguchi<sup>6</sup>, Shang-Cheng Hung<sup>7</sup>, Keiichiro Okuhira<sup>5</sup>, Takashi Ohgita<sup>8</sup>, Hiroyuki Saito<sup>8</sup>, Yukio Ando<sup>4</sup>;  
<sup>1</sup>*Department of Biochemistry, Wakayama Medical University;* <sup>2</sup>*Department of Pathology and Laboratory Medicine, Institute of Biomedical Sciences, Tokushima University Graduate School;* <sup>3</sup>*Unité de Glycobiologie Structurale et Fonctionnelle, UMR 8576 CNRS, Université de Lille 1;* <sup>4</sup>*Department of Neurology, Graduate School of Medical Sciences, Kumamoto University;* <sup>5</sup>*Department of Molecular Physical Pharmaceutics, Institute of Biomedical Sciences, Tokushima University Graduate School;* <sup>6</sup>*Faculty of Pharmaceutical Sciences, University of Toyama;* <sup>7</sup>*Genomics Research Center, Academia Sinica;* <sup>8</sup>*Department of Biophysical Chemistry, Kyoto Pharmaceutical University;*

Poster #: B063 (presented @ PS1) || Abstract #: 116

**“Identifying C-mannosylated Proteins in RAW264.7 Cells”**; Nicholas R. Kegley<sup>1</sup>, Megumi Takeuchi<sup>2</sup>, Atsuko Ito<sup>2</sup>, Robert S. Haltiwanger<sup>2</sup>, John Rakus<sup>1</sup>;  
<sup>1</sup>*Department of Chemistry, Marshall University, Huntington, WV;* <sup>2</sup>*Complex Carbohydrate Research Center, University of Georgia, Athens, GA;*

Poster #: B064 (presented @ PS2) || Abstract #: 117

**“A Role for O-Fucosylation in Notch folding and trafficking”**; Kenjiroo Matsumoto<sup>1</sup>, Hideyuki Takeuchi<sup>2</sup>, Robert S. Haltiwanger<sup>1</sup>;  
<sup>1</sup>*Complex Carbohydrate Research Center, University of Georgia;* <sup>2</sup>*Department of Molecular Biochemistry, Nagoya University School of Medicine;*

Poster #: B065 (presented @ PS1) || Abstract #: 118

**“Bacterial Polysaccharides in Cancer Therapy, 1866-2018”**; Roger A. Laine<sup>1,2</sup>;  
<sup>1</sup>*Louisiana State University;* <sup>2</sup>*TumorEnd, LLC;*

Poster #: B066 (presented @ PS2) || Abstract #: 119

**“IgE glycosylation patterns in human disease”**; Emma Laprise<sup>1</sup>, Kai-Ting Shade<sup>1</sup>, Robert Anthony<sup>1,2</sup>, Michelle Conroy<sup>1,2</sup>;  
<sup>1</sup>*Center for Immunology and Inflammatory Diseases, Massachusetts General Hospital;* <sup>2</sup>*Harvard Medical School;*

Poster #: B067 (presented @ PS1) || Abstract #: 120

**“Galectin 8 in Trypanosoma cruzi-induced myocarditis”**; Adriano Bertelli<sup>1</sup>, Liliana Sanmarco<sup>2</sup>, Carla Pascuale<sup>1</sup>, Miriam Postan<sup>3</sup>, Pilar Aoki<sup>2</sup>, Maria Susana Leguizamón<sup>1</sup>;  
<sup>1</sup>*Instituto de Investigaciones Biotecnológicas, UNSAM-CONICET;* <sup>2</sup>*Centro de Investigación en Bioquímica Clínica e Inmunología (CIBICI)-CONICET;* <sup>3</sup>*Instituto de Parasitología M.Fatala Chabén., Buenos Aires, Argentina;*

Poster #: B068 (presented @ PS2) || Abstract #: 121

**“Why do Fringe enzymes modify O-fucose on some Notch EGF repeats but not others?”**; Kelvin B. Luther<sup>1</sup>, Shinako Kakuda<sup>2</sup>, Atsuko Ito<sup>1</sup>, Robert S. Haltiwanger<sup>1</sup>;  
<sup>1</sup>*1. Complex Carbohydrate Research Center, University of Georgia, Athens, GA, 30602, USA;* <sup>2</sup>*2. Department of Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY, 11794, USA;*

Poster #: B069 (presented @ PS1) || Abstract #: 122

**“ST6Gal-1 deficiency is associated with development of GVHD-like autoimmune symptoms, myeloid biased hematopoietic reconstitution post whole bone marrow transplant and reduced cycling of hematopoietic stem cells”**; Himangi Marathe<sup>1,3</sup>, Patrick Punch<sup>1,3</sup>, Joseph Lau<sup>1,2,3</sup>;  
<sup>1</sup>*Department of Molecular and Cellular Biology;* <sup>2</sup>*Department of Medicine;* <sup>3</sup>*Roswell Park Comprehensive Cancer Center;*

Poster #: B070 (presented @ PS2) || Abstract #: 123

**“DANGO: An MS data annotation software for Glycolipidomics”**; Masaaki Matsubara, Mayumi Ishihara, Michael Tiemeyer, Kazuhiro Aoki, Rene Ranzinger;  
*Complex Carbohydrate Research Center, University of Georgia, Athens, Georgia, USA;*





Poster #: B071 (presented @ PS1) || Abstract #: 124

**“A Well-Characterized Human Chimeric Anti-Tn Monoclonal Antibody as a Tumor Diagnostic Biomarker”**; Yasuyuki Matsumoto<sup>1</sup>, Matthew R. Kudelka<sup>1</sup>, Melinda S. Hanes<sup>1</sup>, Sylvain Lehoux<sup>1</sup>, Jamie Heimborg-Molinaro<sup>1</sup>, Mark B. Jones<sup>1</sup>, Sucharita Dutta<sup>1</sup>, David F. Smith<sup>2</sup>, Tongzhong Ju<sup>2</sup>, Richard D. Cummings<sup>1</sup>;

<sup>1</sup>Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA; <sup>2</sup>Emory University School of Medicine, Atlanta, GA;

Poster #: B072 (presented @ PS2) || Abstract #: 125

**“A missense mutation in SLC39A8, a manganese transporter linked to schizophrenia, is associated with specific changes in plasma N-glycosylation”**; Robert G. Mealer<sup>1,2</sup>, Mark J. Daly<sup>1,2</sup>, Maurizio Fava<sup>1,2</sup>, Sylvain Lehoux<sup>3</sup>, Robert Sackstein<sup>4</sup>, Ed Scolnick<sup>2</sup>, Richard D. Cummings<sup>3</sup>, Jordan W. Smoller<sup>1,2</sup>;

<sup>1</sup>Department of Psychiatry, Massachusetts General Hospital, Harvard Medical School; <sup>2</sup>The Stanley Center for Psychiatric Research at Broad Institute; <sup>3</sup>Department of Surgery, Beth Israel Deaconess Medical Center, Harvard Medical School;

<sup>4</sup>Department of Dermatology, Brigham and Women's Hospital, Harvard Medical School;

Poster #: B073 (presented @ PS1) || Abstract #: 126

**“Soluble glycosylated protein released from glycogen by rhGAA”**; Allen K. Murray;  
*Glycan Technologies, Inc.*;

Poster #: B074 (presented @ PS2) || Abstract #: 127

**“Modeling organelle-specific O-glycosylation in driving liver tumor growth, invasion and metastasis”**; Anh Tuan Nguyen<sup>1</sup>, Joanne Chia<sup>1</sup>, Manon Ros<sup>1</sup>, Kam Man Hui<sup>1,2</sup>, Frederic Saltel<sup>3</sup>, Frederic Bard<sup>1,2</sup>;

<sup>1</sup>Institute of Molecular and Cell Biology, Singapore; <sup>2</sup>Department of Biochemistry, National University of Singapore, Singapore;

<sup>3</sup>INSERM, U1053 Bordeaux Research In Translational Oncology, BaRITOn, France;

Poster #: B075 (presented @ PS1) || Abstract #: 128

**“The Development and Characterization of EGF Centric O-Fucose Antibodies”**; Marla Popov<sup>1</sup>, Kenjiro Matsumoto<sup>2</sup>, Hideyuki Takeuchi<sup>2,3</sup>, David Baldwin<sup>1</sup>, Robert S. Haltiwanger<sup>2</sup>, Ron Orlando<sup>1,2</sup>;

<sup>1</sup>GlycoScientific; <sup>2</sup>CCRC, The University of Georgia; <sup>3</sup>Nagoya University School of Medicine;

Poster #: B076 (presented @ PS2) || Abstract #: 129

**“Plasma glycomics predict cardiovascular disease in patients with ART-controlled HIV infections”**; Douglas M. Oswald, Edward S. Sim, Courtney Baker, Obada Farhan, Sara M. Debanne, Nathan J. Morris, Benigno G. Rodriguez, Mark B. Jones, Brian A. Cobb;

*Case Western Reserve University*;

Poster #: B077 (presented @ PS1) || Abstract #: 130

**“Immunological responses against biodevices for humans”**; Anu Paul<sup>1</sup>, Shani Leviatan Ben-Arye<sup>1</sup>, Liana Govani<sup>1</sup>, Hai Yu<sup>2</sup>, Imen Fellah-Hebia<sup>3</sup>, Marta Pascual-Gilbert<sup>4</sup>, Cristina Costa<sup>5</sup>, Rafael Mañez<sup>5</sup>, Manuel Galiñanes<sup>6</sup>, Rizwan Manji<sup>7</sup>, Bottio Tomaso<sup>8</sup>, Galli Cesare<sup>9</sup>, Jean-Christian Roussel<sup>3</sup>, Thierry Le Tourneau<sup>10</sup>, Jean-Paul Soullou<sup>11</sup>, Emanuele Cozzi<sup>12</sup>, Xi Chen<sup>2</sup>, Vered Padler-Karavani<sup>1</sup>;

<sup>1</sup>Department of Cell Research and Immunology, Tel Aviv University, Tel Aviv, Israel; <sup>2</sup>Department of Chemistry, University of California-Davis, Davis, CA, USA; <sup>3</sup>Institut du Thorax, Department of Thoracic and Cardiovascular Surgery, University Hospital, INSERM UMR1087, Nantes, France; <sup>4</sup>IUCT (Inkemia IUCT group), Mollet del Vallès, Barcelona, Spain; <sup>5</sup>Infectious Diseases and Transplantation Division, Bellvitge Biomedical Research Institute (IDIBELL), L'Hospitalet de Llobregat, Barcelona, Spain; <sup>6</sup>Department of Cardiac Surgery, Reparative Therapy of the Heart, Hospital Universitari Vall d'Hebron and Vall d'Hebron Research Institute, Barcelona, Spain; <sup>7</sup>Department of Surgery, Section of Cardiac Surgery, University of Manitoba, Winnipeg, MB, Canada; <sup>8</sup>Department of Cardiac, Thoracic and Vascular Sciences, University of Padua, Padua, Italy; <sup>9</sup>Avantea, Via Porcellasco 7 f, 26100 Cremona, Italy; <sup>10</sup>Institut du Thorax, Department of Cardiology, University Hospital, INSERM UMR1087, Nantes, France; <sup>11</sup>Institut de Transplantation-Urologie-Néphrologie, INSERM Unité Mixte de Recherche 1064, Centre Hospitalo Universitaire de Nantes, Nantes, France; <sup>12</sup>Transplant Immunology Unit, Department of Transfusion Medicine, Padua University Hospital, Padua, Italy;

Poster #: B078 (presented @ PS2) || Abstract #: 131

**“Engineered Sialylation of Pathogenic Antibodies In Vivo Attenuates Autoimmune Disease”**; Jose D. Pagan, Maya Kitaoka, Robert M. Anthony;

*Center for Immunology and Inflammatory Diseases, Division of Rheumatology, Allergy, and Immunology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA 02129*;



Poster #: B079 (presented @ PS1) || Abstract #: 132

**“Modulating Tn-Mediated Immune Suppression in Breast Cancer”**; Amy Paschall, Ahmet Ozdilek, Javid Aceil, Fikri Avci; *University of Georgia;*

Poster #: B080 (presented @ PS2) || Abstract #: 133

**“Identification of glycosyl linkages in switchgrass biomass recalcitrant to *C. thermocellum* deconstruction”**; Maria Pena<sup>1,2</sup>, Jason Backe<sup>1,2</sup>, Neal Hengge<sup>2,3</sup>, Todd Vander Wall<sup>2,3</sup>, Breeanna R. Urbanowicz<sup>1,2</sup>, Michael E. Himmel<sup>2,3</sup>, William York<sup>1,2,4</sup>, Yannick J. Bomble<sup>2,3</sup>;

<sup>1</sup>*Complex Carbohydrate Research Center, University of Georgia, Athens, GA;* <sup>2</sup>*US Department of Energy Center for Bioenergy Innovation, Oak Ridge National Laboratory, Oak Ridge, TN;* <sup>3</sup>*National Renewable Energy Laboratory, Golden, CO;* <sup>4</sup>*Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA;*

Poster #: B081 (presented @ PS1) || Abstract #: 134

**“Siglec-8-Binding Keratan Sulfate Chains that Regulate Airway Inflammation”**; Ryan N. Porell<sup>1</sup>, Anabel Gonzalez-Gil<sup>1</sup>, Steve M. Fernandes<sup>1</sup>, Hyun Sil-Lee<sup>2</sup>, Jean Kim<sup>2,3</sup>, Ronald L. Schnaar<sup>1</sup>;

<sup>1</sup>*Department of Pharmacology and Molecular Sciences, Johns Hopkins University School of Medicine, Baltimore, MD;* <sup>2</sup>*Department of Medicine: Allergy and Clinical Immunology, Johns Hopkins University School of Medicine, Baltimore, MD;* <sup>3</sup>*Department of Medicine: Otolaryngology, Head & Neck Surgery, Johns Hopkins University School of Medicine, Baltimore, MD;*

Poster #: B082 (presented @ PS2) || Abstract #: 135

**“Extracellular ST6Gal-1 inhibits MCSF-mediated monocyte maturation into macrophages”**; Patrick R. Punch<sup>1</sup>, Joseph T.Y. Lau<sup>1,2</sup>;

<sup>1</sup>*Department of Molecular & Cellular Biology, Roswell Park Cancer Institute;* <sup>2</sup>*Department of Medicine, Roswell Park Cancer Institute;*

Poster #: B083 (presented @ PS1) || Abstract #: 136

**“USING HSC70 AS A PROXY TO IDENTIFY C-MANNOSYLATED PROTEINS IN RAW264.7 CELLS EXPOSED TO LIPOPOLYSACCHARIDES”**; Nicholas R. Kegley<sup>1</sup>, Michael A. Parsons<sup>1</sup>, Atsuko Ito<sup>2</sup>, Megumi Takeuchi<sup>2</sup>, Robert S. Haltiwanger<sup>2</sup>, John F. Rakus<sup>1</sup>;

<sup>1</sup>*Department of Chemistry, Marshall University, Huntington, W. Va., USA;* <sup>2</sup>*Complex Carbohydrate Research Center, University of Georgia, Athens, Georgia, USA;*

Poster #: B084 (presented @ PS2) || Abstract #: 137

**“HIV-1 Envelope N-glycan Shield”**; Audra A. Hargett<sup>1</sup>, Qing Wei<sup>1</sup>, Barbora Knoppova<sup>1</sup>, Stacy Hall<sup>1</sup>, Zina Moldeveanu<sup>1</sup>, Reda Rawi<sup>2</sup>, Gwo-Yu Chuang<sup>2</sup>, Peter D. Kwong<sup>2</sup>, Jan Novak<sup>1</sup>, Matthew B. Renfrow<sup>1</sup>;

<sup>1</sup>*University of Alabama at Birmingham;* <sup>2</sup>*NIH / NIAID Vaccine Research Center;*

Poster #: B085 (presented @ PS1) || Abstract #: 138

**“Characterizing the terminal GalNAc O-glycoforms recognized by lectins in the context of Clustered IgA1 O-glycosylation”**; Ellenore P. Craine, Stacy Hall, Audra A. Hargett, Blake P. Moore, Bruce A. Julian, Jan Novak, Matthew B. Renfrow;

*University of Alabama at Birmingham;*

Poster #: B086 (presented @ PS2) || Abstract #: 139

**“Integrin  $\alpha$ M and the Macrophage Mannose Receptor in secreted protein turnover and disease”**; Damien Restagno<sup>1,2</sup>, Douglas M. Heithoff<sup>1,2,3</sup>, Jamey D. Marth<sup>1,2,3</sup>;

<sup>1</sup>*Center for Nanomedicine;* <sup>2</sup>*Sanford-Burnham-Prebys Medical Discovery Institute;* <sup>3</sup>*Department of Molecular, Cellular, and Developmental Biology, University of California Santa Barbara, Santa Barbara, California 93106;*

Poster #: B087 (presented @ PS1) || Abstract #: 140

**“Analysis of Released N-Glycans and Glycopeptide Profiling of Prostate Cancer Tissue”**; Sarah M. Totten<sup>1</sup>, Abel Bermudez<sup>1</sup>, Andrés Guerrero<sup>2</sup>, John Yan<sup>2</sup>, Aled Jones<sup>2</sup>, James D. Brooks<sup>3</sup>, Sharon J. Pitteri<sup>3</sup>;

<sup>1</sup>*Canary Center at Stanford for Cancer Early Detection, Department of Radiology, Stanford University School of Medicine, Palo Alto, CA;* <sup>2</sup>*ProZyme, A part of Agilent, Hayward, California;* <sup>3</sup>*Department of Urology, Stanford University School of Medicine, Stanford, CA;*



Poster #: B088 (presented @ PS2) || Abstract #: 141

**“A single Fc g receptor IIIb / CD16b amino acid distorts the structure upon binding immunoglobulin G1 and reduces affinity relative to CD16a”**; Jacob T. Roberts, Adam W. Barb;  
*Iowa State University*;

Poster #: B089 (presented @ PS1) || Abstract #: 142

**“Development of new soluble Siglec constructs to better understand regulation of immune cells by Siglecs”**; Emily Rodrigues<sup>1</sup>, Caleb Loo<sup>2</sup>, Matthew S. Macauley<sup>1,3</sup>;  
<sup>1</sup>Department of Chemistry, University of Alberta, Edmonton, AB; <sup>2</sup>Department of Biochemistry, University of Alberta, Edmonton, AB; <sup>3</sup>Department of Medical Microbiology and Immunology, University of Alberta, Edmonton, AB;

Poster #: B090 (presented @ PS2) || Abstract #: 143

**“Using a CRISPR-Cas Whole-Genome Screen to Identify Genetic Factors Linked to Expression of Cancer-Associated O-glycan”**;  
Troels B. Rømer, August Dylander, Sabrina Horn, Emil M H Pallesen, Hans H. Wandall;  
*Copenhagen Center for Glycomics, Department of Cellular and Molecular Medicine, University of Copenhagen*;

Poster #: B091 (presented @ PS1) || Abstract #: 144

**“CGE-LIF as a novel approach for the analysis of glycosphingolipid-derived glycans”**; Charlotte Rossdam<sup>1,2</sup>, Sarah A. Konze<sup>1,2</sup>, Astrid Oberbeck<sup>1,2</sup>, Erdmann Rapp<sup>3,4</sup>, Rita Gerardy-Schahn<sup>1,2</sup>, Mark von Itzstein<sup>5</sup>, Falk FR Buettner<sup>1,2</sup>;  
<sup>1</sup>Institute of Clinical Biochemistry, Hannover Medical School, Hannover, Germany; <sup>2</sup>REBIRTH Cluster of Excellence, Hannover Medical School, Hannover, Germany; <sup>3</sup>Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany; <sup>4</sup>glyXera GmbH, Magdeburg, Germany; <sup>5</sup>Institute for Glycomics, Griffith University, Gold Coast Campus, Queensland, Australia;

Poster #: B092 (presented @ PS2) || Abstract #: 145

**“Inhibition of mucin type O-glycosylation by N-thioglycolyl-D-galactosamine affects lateral mobility of CD43 and formation of immune synapse”**; Pratima Saini<sup>1</sup>, Anam Tasneem<sup>1</sup>, Monika Garg<sup>1</sup>, Nagrajan Perumal<sup>2</sup>, S-Gopalan Sampathkumar<sup>1</sup>;  
<sup>1</sup>Chemical Glycobiology Laboratory, National Institute of Immunology; <sup>2</sup>Experimental Animal Facility (EAF) National Institute of Immunology;

Poster #: B093 (presented @ PS1) || Abstract #: 146

**“Differential Sialic Acid Binding Patterns of Phylogenetically-related Bacterial Exotoxin B Subunits Elucidated by Sialoglycan Microarray Analysis”**; Aniruddha Sasmal<sup>1,2</sup>, Naazneen Khan<sup>1,2</sup>, Andrea Verhagen<sup>1,2</sup>, Zahra Khedri<sup>1,2</sup>, Hai Yu<sup>5</sup>, Anders B. Bruntse<sup>3</sup>, Sandra Diaz<sup>1,2</sup>, Nissi Varki<sup>1,2</sup>, Adrienne Paton<sup>6</sup>, James Paton<sup>6</sup>, Xi Chen<sup>5</sup>, Nathan Lewis<sup>1,3</sup>, Ajit Varki<sup>1,2,4</sup>;  
<sup>1</sup>Glycobiology Research and Training Center; <sup>2</sup>Department of Cellular & Molecular Medicine; <sup>3</sup>Department of Pediatrics; <sup>4</sup>Department of Medicine, University of California San Diego, La Jolla, CA 92093; <sup>5</sup>Department of Chemistry, University of California-Davis, Davis, CA-95616; <sup>6</sup>Research Centre for Infectious Diseases, Department of Molecular and Cellular Biology, University of Adelaide, Adelaide, SA 5005, Australia;

Poster #: B094 (presented @ PS2) || Abstract #: 147

**“Galectin-3 and N-acetylglucosamine promote myogenesis and mitigate the burden of Duchenne muscular dystrophy”**; Sachiko Sato, Ann Rancourt, Sébastien S. Dufresne, Guillaume St-Pierre, Masahiko Satoh, Jérôme Frenette;  
*Faculty of Medicine, Laval University, Quebec city, Canada*;

Poster #: B095 (presented @ PS1) || Abstract #: 148

**“Keratan sulfate chains released from human airways support Siglec-9 binding – comparison with Siglec-8 binding”**; Steve M. Fernandez<sup>1</sup>, Ryan N. Porell<sup>1</sup>, Anabel Gonzalez-Gil<sup>1</sup>, Hyun Sil-Lee<sup>2</sup>, Jean Kim<sup>2,3</sup>, Ronald L. Schnaar<sup>1</sup>;  
<sup>1</sup>Department of Pharmacology and Molecular Sciences, Johns Hopkins University School of Medicine, Baltimore, MD; <sup>2</sup>Department of Medicine: Allergy and Clinical Immunology, Johns Hopkins University School of Medicine, Baltimore, MD; <sup>3</sup>Department of Medicine: Otolaryngology, Head & Neck Surgery, Johns Hopkins University School of Medicine, Baltimore, MD;

Poster #: B096 (presented @ PS2) || Abstract #: 149

**“Breaking the Allergic Cascade by Modulating IgE Glycosylation”**; Kai-Ting Shade, Robert Anthony;  
*Center for Immunology and Inflammatory Diseases, Division of Rheumatology, Allergy, and Immunology, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA 02129*;



Poster #: B097 (presented @ PS1) || Abstract #: 150

**“Micropermethylation and subsequent LC-MS based profiling of glycoproteins by Tool for Rapid Analysis of glycopeptide by Permethylated (TRAP) method”**; Asif Shajahan, Nitin T. Supekar, Christian Heiss, Aravind Kalimurthy, Rene Ranzinger, Parastoo Azadi;  
*Complex Carbohydrate Research Center, The University of Georgia, 315 Riverbend Road, Athens, GA 30602;*

Poster #: B098 (presented @ PS2) || Abstract #: 151

**“Exploring the Role of APP Protein O-Glycosylation in Alzheimer's Disease”**; Nandini Singh<sup>1</sup>, Thomas Kent<sup>1</sup>, Deguo Du<sup>1</sup>, Dmitriy Minond<sup>2</sup>, Mare Cudic<sup>1</sup>;  
<sup>1</sup>*Florida Atlantic University, Boca Raton, FL, USA;* <sup>2</sup>*Nova Southeastern University, Fort Lauderdale, FL, USA;*

Poster #: B099 (presented @ PS1) || Abstract #: 152

**“A new way to target bacteria: Hetero-multivalent binding of glycolipids to *Pseudomonas aeruginosa*”**; Akshi Singla<sup>1</sup>, Nolan C. Worstell<sup>1</sup>, Panatda Saenkham<sup>2</sup>, Thushara Galbadage<sup>2</sup>, Preeti Sule<sup>2</sup>, Kush Shah<sup>2</sup>, Carolyn L. Cannon<sup>2</sup>, Jeffrey D. Cirillo<sup>2</sup>, Hung-Jen Wu<sup>1</sup>;  
<sup>1</sup>*Texas A&M University;* <sup>2</sup>*Texas A&M Health Science Center;*

Poster #: B100 (presented @ PS2) || Abstract #: 153

**“Co-evolution of a typhoid toxin homolog and nontyphoidal *Salmonella*”**; Sohyoung Lee<sup>1</sup>, Yi-An Yang<sup>1</sup>, Andrew J. Thompson<sup>2</sup>, James C. Paulson<sup>2</sup>, Jeongmin Song<sup>1</sup>;  
<sup>1</sup>*Department of Microbiology and Immunology, College of Veterinary Medicine, Cornell University, Ithaca, NY 14853;*  
<sup>2</sup>*Department of Molecular Medicine, The Scripps Research Institute, La Jolla, California 92121;*

Poster #: B101 (presented @ PS1) || Abstract #: 154

**“A new assay measures transport of UDP-galactose into the Golgi of cells from patients with mutation in SLC35A2, encoding the UDP-galactose transporter”**; Paulina Sosicka, Bobby G. Ng, Hudson H. Freeze;  
*Human Genetics Program, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA;*

Poster #: B102 (presented @ PS2) || Abstract #: 155

**“Defining the OGT Interactome and its Role in X-Linked Intellectual Disability”**; Hannah Stephen, Nithya Selvan, Stephan George, Brent Weatherly, Lance Wells;  
*University of Georgia;*

Poster #: B103 (presented @ PS1) || Abstract #: 156

**Deciphering the glyco(phospho)peptide code of symptomatic Alzheimer's Disease**; Sucharita Dutta, Mark B. Jones, Yasuyuki Matsumoto, Jamie Heimburg-Molinaro, Nicholas Seyfried, Richard Cummings;  
*Beth Israel Deaconess Medical Center (Harvard University);*

Poster #: B104 (presented @ PS2) || Abstract #: 157

**“NGLY1 regulates Aquaporins: Implications in NGLY1 deficiency disorder”**; Mitali A. Tambe, Bobby G. Ng, Hudson H. Freeze;  
*Sanford Burnham Prebys Medical Discovery Institute;*

Poster #: B105 (presented @ PS1) || Abstract #: 158

**“Truncated O-glycans Promote the Epithelial-Mesenchymal Transition and Stemness Properties of Pancreatic Cancer”**; Divya Thomas<sup>1</sup>, Satish Sagar<sup>1</sup>, Henrik Clausen<sup>2</sup>, Prakash Radhakrishnan<sup>1</sup>;  
<sup>1</sup>*Eppley Institute for Research in Cancer and Allied Diseases, Fred & Pamela Buffett Cancer Center, University of Nebraska Medical Center, Omaha, NE USA.;* <sup>2</sup>*Department of Cellular and Molecular Medicine, University of Copenhagen, Denmark;*

Poster #: B106 (presented @ PS2) || Abstract #: 159

**“Truncated O-glycans Promote Epithelial-Mesenchymal Transition and Stemness Properties of Pancreatic Cancer”**; Divya Thomas<sup>1</sup>, Satish Sagar<sup>1</sup>, Henrik Clausen<sup>2</sup>, Prakash Radhakrishnan<sup>1</sup>;  
<sup>1</sup>*Eppley Institute for Research in Cancer and Allied Diseases, Fred & Pamela Buffett Cancer Center, University of Nebraska Medical Center, Omaha, NE USA.;* <sup>2</sup>*Department of Cellular and Molecular Medicine, University of Copenhagen, Denmark;*

Poster #: B107 (presented @ PS1) || Abstract #: 160

**“Investigating role of IgG glycosylation in Fc  $\gamma$  receptor binding”**; Ravi Vattepu<sup>2,1</sup>, Robert M. Anthony<sup>2,1</sup>;





<sup>1</sup>Harvard Medical School; <sup>2</sup>Department Of Medicine, Center for Immunology and Inflammatory Diseases, Massachusetts General Hospital;

Poster #: B108 (presented @ PS2) || Abstract #: 161

**“The functions of circulating neuraminidases Neu1 and Neu3 in blood protein homeostasis”**; Julia S. Westman<sup>1,2</sup>, Won Ho Yang<sup>1,2,3</sup>, Jamey D. Marth<sup>1,2,3</sup>;

<sup>1</sup>Center for Nanomedicine; <sup>2</sup>Sanford Burnham Prebys Medical Discovery Institute; <sup>3</sup>Department of Molecular, Cellular, and Developmental Biology, University of California Santa Barbara, Santa Barbara, California 93106;

Poster #: B109 (presented @ PS1) || Abstract #: 162

**“The role of multivalency and surface diffusion of glycolipid in lectin-glycolipid recognition”**; Hung-Jen Wu, Joseph S. Kwon, Hyun-Kyu Choi, Akshi Singla, Dongheon Lee; Texas A&M University;

Poster #: B110 (presented @ PS2) || Abstract #: 163

**Identification of glycan-mediated interactions on cell surface by metabolic labeling using a photocrosslinking sugar analog**; Han Wu<sup>1</sup>, Amberlyn M. Wands<sup>1</sup>, Asif Shajahan<sup>2</sup>, Roberto Sonon<sup>2</sup>, Parastoo Azadi<sup>2</sup>, Jennifer J. Kohler<sup>1</sup>;

<sup>1</sup>Department of Biochemistry, UT Southwestern Medical Center, Dallas, TX; <sup>2</sup>Complex Carbohydrate Research Center, University of Georgia, Athens, GA;

Poster #: B111 (presented @ PS1) || Abstract #: 164

**“Cellular and biochemical analysis of the single, recurrent de novo mutation in COG4 causing Saul-Wilson syndrome”**; Zhi-Jie Xia<sup>1</sup>, Carlos R. Ferreira<sup>2</sup>, Bobby G. Ng<sup>1</sup>, Hudson H. Freeze<sup>1</sup>;

<sup>1</sup>Human Genetics Program, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA 92037, USA; <sup>2</sup>Medical Genetics Branch, National Human Genome Research Institute, National Institutes of Health, Bethesda, MD 20892, USA;

Poster #: B112 (presented @ PS2) || Abstract #: 165

**“Broad cytoprotective functions of plant-produced asialoerythropoietin”**; Jiahua (Jay) Xie<sup>1</sup>, Farooqahmed Kittur<sup>1</sup>, Elena Arthur<sup>1</sup>, Chiu-Yueh Hung<sup>1</sup>, P. Andy Li<sup>1</sup>, David Sane<sup>2</sup>;

<sup>1</sup>North Carolina Central University; <sup>2</sup>Carilion Clinic and Virginia Tech Carilion School of Medicine;

Poster #: B113 (presented @ PS1) || Abstract #: 166

**“GlycoNAVI: - GlycoAbun - Abundance Ratio of Glycans”**; Issaku Yamada<sup>1</sup>, Aiko T. Hiraki<sup>1</sup>, Nobuyuki Miura<sup>1</sup>, Kiyoko F. Aoki-Kinoshita<sup>2</sup>;

<sup>1</sup>The Noguchi Institute; <sup>2</sup>Faculty of Science and Engineering, Soka University;

Poster #: B114 (presented @ PS2) || Abstract #: 167

**“Next Generation Glycan Microarray Enabled by Next Generation Sequencing”**; Maomao Yan, Yi Lasanajak, David F. Smith, Xuezheng Song;

Department of Biochemistry, Emory Comprehensive Glycomics Core, Emory University School of Medicine, Atlanta, GA 30322, USA;

Poster #: B115 (presented @ PS1) || Abstract #: 168

**“Plasma Membrane-Associated Neu3 Sialidase Controls A Mechanism of Host Protection Against Chronic Intestinal Inflammation”**; Won Ho Yang<sup>1,2</sup>, Douglas M. Heithoff<sup>1,3</sup>, Peter V. Aziz<sup>1,2,3</sup>, Julia S. Westman<sup>1,2</sup>, Markus Sperandio<sup>4</sup>, Victor Nizet<sup>5</sup>, Michael J. Mahan<sup>1,3</sup>, Jamey D. Marth<sup>1,2,3</sup>;

<sup>1</sup>Center for Nanomedicine; <sup>2</sup>SBP Medical Discovery Institute; <sup>3</sup>Department of Molecular, Cellular, and Developmental Biology, University of California Santa Barbara, Santa Barbara, California 93106; <sup>4</sup>Walter Brendel Center for Experimental Medicine, Ludwig-Maximilians-University, Munich, Germany; <sup>5</sup>Department of Pediatrics and Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California San Diego, La Jolla, California 92093;

Poster #: B116 (presented @ PS2) || Abstract #: 169

**“SULF2 expression is prognostic for overall survival in Head and Neck Squamous Cell Carcinoma”**; Yang Yang<sup>1</sup>, Jaeil Ahn<sup>2</sup>, Bhaskar V. Kallakury<sup>3</sup>, Zuzana Brnakova<sup>4</sup>, Bruce J. Davidson<sup>5</sup>, Radoslav Goldman<sup>4,1</sup>;

<sup>1</sup>Department of Biochemistry and Molecular and Cellular Biology, Georgetown University Medical Center, Washington, DC, USA; <sup>2</sup>Department of Biostatistics, Bioinformatics, and Biomathematics, Georgetown University Medical Center, Washington, DC, USA; <sup>3</sup>Department of Pathology, Lombardi Comprehensive Cancer Center, Georgetown University, Washington, DC, USA; <sup>4</sup>Department of Oncology, Lombardi Comprehensive Cancer Center, Georgetown University, Washington, DC, USA; <sup>5</sup>Department of Otolaryngology-Head and Neck Surgery, Medstar Georgetown University Hospital, Washington, DC, USA;



Poster #: B117 (presented @ PS1) || Abstract #: 170

**“In vivo tropism of Salmonella Typhi toxin to cells expressing a multiantennal glycan receptor”**; Yi-An Yang<sup>1</sup>, Sohyoung Lee<sup>1</sup>, Jun Zhao<sup>2</sup>, Andrew J. Thompson<sup>3</sup>, Ryan McBride<sup>3</sup>, Buyankhishig Tsogtbaatar<sup>3</sup>, James C. Paulson<sup>3</sup>, Ruth Nussinov<sup>2</sup>, Lingquan Deng<sup>4</sup>;

<sup>1</sup>Department of Microbiology and Immunology, College of Veterinary Medicine, Cornell University; <sup>2</sup>Cancer and Inflammation Program, National Cancer Institute, Frederick, MD, USA; <sup>3</sup>Department of Molecular Medicine, The Scripps Research Institute, La Jolla, CA, USA; <sup>4</sup>Department of Pathology, School of Medicine, Johns Hopkins University, Baltimore, MD, USA;

Poster #: B118 (presented @ PS2) || Abstract #: 171

**“Endothelial heparan sulfate is anti-thrombotic in vivo”**; Jingwen Yue, Junlin Jiang, Xiang Fan, Hong Qiu, Youxi Yuan, Lianchun Wang;

University of Georgia;

Poster #: B119 (presented @ PS1) || Abstract #: 172

**“Unraveling the activity of glycosyltransferases and other PTM enzymes with bioluminescent biochemical and cell-based assays”**; Hicham Zegzouti, Laurie Engel, Brian Hwang, Juliano Alves, Said Goueli;

Promega Corporation;

Poster #: B120 (presented @ PS2) || Abstract #: 173

**“Comprehensive Analysis of N-glycans of Serum IgG from the Ferret-an Animal Model for Human Influenza Virus Infection”**; Guozhang Zou<sup>1</sup>, Martina Kosikova<sup>2</sup>, Su-Ryun Kim<sup>1</sup>, Shweta Kotain<sup>1</sup>, Wells W. Wu<sup>3</sup>, Rongfong Shen<sup>3</sup>, David N. Powers<sup>1</sup>, Cyrus Agarabi<sup>1</sup>, Hang Xie<sup>2</sup>, Tongzhong Ju<sup>1</sup>;

<sup>1</sup>Office of Biotechnology Products, Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD 20993; <sup>2</sup>Office of Vaccines Research and Review, Center for Biologics Evaluation and Research, Food and Drug Administration, Silver Spring, MD 20993; <sup>3</sup>Facility for Biotechnology Resources, Food and Drug Administration, Silver Spring, MD 20993

## Glycoengineering and glyco synthetic tools

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**“Lighting up the rumen: using fluorescent glycan conjugates to visualize diverse metabolic capabilities of rumen microbiota at the single cell level”**; Leeann K. Klassen<sup>2,1</sup>, Greta Reintjes<sup>3</sup>, Jeffrey Tingley<sup>2,1</sup>, Adam Smith<sup>1</sup>, Darryl Jones<sup>1</sup>, Carolyn Amundsen<sup>1</sup>, Long Jin<sup>1</sup>, Jan-Hendrik Hehemann<sup>3</sup>, Trevor W. Alexander<sup>1</sup>, Dmytro P. Yevtushenko<sup>2</sup>, D Wade Abbott<sup>1,2</sup>;

<sup>1</sup>Agriculture and Agri-Food Canada; <sup>2</sup>University of Lethbridge; <sup>3</sup>Max Planck-Institute for Marine Microbiology;

Poster #: B122 (presented @ PS2) || Abstract #: 31

**“Making Glycoproteomics via Mass Spectrometry More Accessible to the greater Scientific Community”**; Marc D. Driessen<sup>1</sup>, Catherine C. Going<sup>2</sup>, Christina M. Woo<sup>3</sup>, Sharon J. Pitteri<sup>2</sup>, Carolyn R. Bertozzi<sup>1,4</sup>;

<sup>1</sup>Department of Chemistry, Stanford University; <sup>2</sup>Department of Radiology, Stanford School of Medicine; <sup>3</sup>Department of Chemistry, Harvard University; <sup>4</sup>Howard Hughes Medical Institute;

Poster #: B123 (presented @ PS1) || Abstract #: 174

**“The GlyCosmos Web Portal: glycan structures, glycogenes, glycoproteins, pathways, diseases and more!”**; Masaaki Shiota<sup>1</sup>, Shinichiro Tsuchiya<sup>1</sup>, Tamiko Ono<sup>1</sup>, Thukaa Kuoka<sup>1</sup>, Nobuaki Miura<sup>2</sup>, Aiko Hiraki<sup>2</sup>, Issaku Yamada<sup>2</sup>, Daisuke Shinmachi<sup>3</sup>, Nobuyuki P. Aoki<sup>3</sup>, Jin-Dong Kim<sup>4</sup>, Yu Watanabe<sup>5</sup>, Shujiro Okuda<sup>5</sup>, Yoshinori Suzuki<sup>6</sup>, Noriaki Fujita<sup>6</sup>, Kiyohiko Angata<sup>6</sup>, Hisashi Narimatsu<sup>6</sup>, Kiyoko F. Aoki-Kinoshita<sup>1</sup>;

<sup>1</sup>Faculty of Science and Engineering, Soka University; <sup>2</sup>The Noguchi Institute; <sup>3</sup>SparqLite, Ltd.; <sup>4</sup>Database Center for Life Sciences; <sup>5</sup>Graduate School of Medical and Dental Sciences, Niigata University; <sup>6</sup>Biotechnology Research Institute for Drug Discovery, Advanced Industrial Science and Technology;

Poster #: B124 (presented @ PS2) || Abstract #: 175

**“Cell based engineering for production of recombinant GAG core proteins”**; Digantkumar Chapla, Zhifeng Zheng, Alison Nairn, Annapoorani Ramiah, Rosemary Kim, Kelley W. Moremen;

Complex Carbohydrate Research Center / University of Georgia;

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**“Identification of C-mannosylated proteins in human pluripotent stem cells by secretomics”**; Karsten Cirksena<sup>1,2</sup>, Aleksandra Shcherbakova<sup>1,2</sup>, Daniel Todt<sup>3</sup>, Hans Bakker<sup>1,2</sup>, Falk F.R. Buettner<sup>1,2</sup>;  
<sup>1</sup>Institute of Clinical Biochemistry, Hannover Medical School, Hannover, Germany; <sup>2</sup>REBIRTH Cluster of Excellence, Hannover Medical School, Hannover, Germany; <sup>3</sup>Department of Molecular and Medical Virology, Ruhr-University Bochum, Bochum, Germany;

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**“Probing Biological Roles of Tumor-Associated MUC1 with Chemistry Approaches”**; Mare Cudic, Maria C. Rodriguez Benavente, YashoNandini Singh;  
*Florida Atlantic University, Boca Raton, FL, USA;*

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**“Enzymatic synthesis of teichoic acid-like capsule polymers from Gram-negative pathogens”**; Christa Litschko<sup>1</sup>, Davide Oldrini<sup>2</sup>, Insa Budde<sup>1</sup>, Monika Berger<sup>1</sup>, Jochen Meens<sup>3</sup>, Rita Gerardy-Schahn<sup>1</sup>, Francesco Berti<sup>2</sup>, Mario Schubert<sup>4</sup>, Timm Fiebig<sup>1</sup>;

<sup>1</sup>Institute of Clinical Biochemistry, Hannover Medical School, Hannover, Germany; <sup>2</sup>GSK, Via Fiorentina 1, Siena, Italy; <sup>3</sup>Institute for Microbiology, University of Veterinary Medicine Hannover, Hannover, Germany; <sup>4</sup>Department of Biosciences, University of Salzburg, Salzburg, Austria;

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**“Synthetic galectin-3 oligomers as probes for glycan binding and biological activity”**; Shaheen Farhadi, Gregory A. Hudalla;  
*University of Florida;*

Poster #: B129 (presented @ PS1) || Abstract #: 180

**“Engineering of glycosyltransferases for in-vivo glycan modification”**; Maya Kitaoka, Jose Pagan, Robert Anthony;  
*Center for Immunology and Inflammatory Diseases, Division of Rheumatology, Allergy, and Immunology, Massachusetts General Hospital, Harvard Medical School;*

Poster #: B130 (presented @ PS2) || Abstract #: 181

**“The cellular impact of glycoengineering”**; Nathan E. Lewis<sup>1</sup>, Austin WT Chiang<sup>1</sup>, Bokan Bao<sup>1</sup>, Curtis Kuo<sup>1</sup>, Benjamin Kellman<sup>1</sup>, Anne Richelle<sup>1</sup>, Albert Liang<sup>1</sup>, Johnny Arnsdorf<sup>2</sup>, Zulfiya Sukhova<sup>2</sup>, Patrice Ménard<sup>2</sup>, Anders H. Hansen<sup>2</sup>, Zhang Yang<sup>3</sup>, Hiren Joshi<sup>3</sup>, Henrik Clausen<sup>3</sup>, Bjorn G. Voldborg<sup>2</sup>;

<sup>1</sup>University of California, San Diego; <sup>2</sup>Novo Nordisk Foundation for Biosustainability, Technical University of Denmark;

<sup>3</sup>Copenhagen Center for Glycomics, University of Copenhagen;

Poster #: B131 (presented @ PS1) || Abstract #: 182

**“DEVELOPMENT OF PREPARATIVE CORA FOR AMPLIFICATION AND PREPARATION OF CELLULAR O-GLYCANS”**; zhonghua Li<sup>1</sup>, Qing Zhang<sup>2</sup>, Peng George Wang<sup>2</sup>, Xuezheng Song<sup>1</sup>, Richard D. Cummings<sup>3</sup>, Tongzhong Ju<sup>1,4</sup>, David F. Smith<sup>1</sup>;  
<sup>1</sup>Department of Biochemistry, Emory University School of Medicine, Atlanta, GA 30322; <sup>2</sup>Department of Chemistry, Georgia State University, Atlanta, GA 30303; <sup>3</sup>Department of Surgery, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA 02115; <sup>4</sup>Office of Biotechnology Products, Center for Drug Evaluation and Research, Food & Drug Administration, Silver Spring, MD 20993;

Poster #: B132 (presented @ PS2) || Abstract #: 183

**“SimGlycan: Facilitating automated evaluation of glycoengineered therapeutic glycoproteins using MS methods”**;

Ningombam Sanjib Meitei<sup>1,2</sup>, Rupanjan Goswami<sup>1</sup>;

<sup>1</sup>PREMIER Biosoft, Indore, India; <sup>2</sup>PREMIER Biosoft, Palo Alto, US;

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**“Engineering agarose utilization into non-agarolytic Bacteroides thetaiotaomicron”**; Stephanie M. Monteith<sup>1</sup>, Julie M. Grondin<sup>2</sup>, Trina C. Uwiera<sup>3</sup>, G. Douglas Inglis<sup>2</sup>, Richard R. E. Uwiera<sup>1</sup>, D. Wade Abbott<sup>2</sup>;

<sup>1</sup>Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Alberta T6G2P5; <sup>2</sup>Agriculture and Agri-Food Canada, Lethbridge, Alberta, T1J4B1; <sup>3</sup>Divisions of Pediatric Surgery, Department of Surgery, University of Alberta, Edmonton, Alberta T6G2B7;

Poster #: B134 (presented @ PS2) || Abstract #: 185



**“Synthetic glycan analog libraries for the development of selective, high affinity ligands of siglecs and galectins”;** Corwin M. Nycholat<sup>1</sup>, Shiteng Duan<sup>1</sup>, Shelby Willis<sup>1</sup>, Eike Wamoff<sup>2</sup>, Connie Arthur<sup>3</sup>, Ryan McBride<sup>1</sup>, Christoph Rademacher<sup>2</sup>, Sean Stowell<sup>3</sup>, James C. Paulson<sup>1</sup>;

<sup>1</sup>Department of Molecular Medicine, Scripps Research, La Jolla, CA 92037; <sup>2</sup>Department of Biomolecular Systems, Max Planck Institute of Colloids and Interfaces, Potsdam GE; <sup>3</sup>Pathology Department, Emory University School of Medicine, Atlanta, GA 30322;

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**“Synthesis of structurally homogeneous heparan sulfate oligosaccharides for biological studies”;** Anna M. Goulas, Andrew Lim, Amber M. Moffat, Vijayakanth Pagadala;  
*Glycan Therapeutics LLC;*

Poster #: B136 (presented @ PS2) || Abstract #: 187

**“Chemo-enzymatic Synthesis of the Functional Core M3 O-Mannose Glycan on  $\alpha$ -Dystroglycan”;** Jeremy Praissman, Stephanie Halmo, David Live, Lance Wells;  
*Complex Carbohydrate Research Center, University of Georgia;*

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**“An enrichment strategy for analysis of N- and O- glycoproteome through mass spectrometry”;** Asif Shajahan<sup>1</sup>, Nitin T. Supekar<sup>1</sup>, Han Wu<sup>2</sup>, Ganapati Bhat<sup>1</sup>, Aravind Kalimuthy<sup>1</sup>, Rene Ranzinger<sup>1</sup>, Amberlyn M. Wands<sup>2</sup>, Christian Heiss<sup>1</sup>, Jennifer J. Kohler<sup>2</sup>, Parastoo Azadi<sup>1</sup>;

<sup>1</sup>Complex Carbohydrate Research Center, The University of Georgia, 315 Riverbend Road, Athens, GA 30602; <sup>2</sup>Department of Biochemistry, University of Texas Southwestern Medical Center, Dallas, TX 75390;

Poster #: B138 (presented @ PS2) || Abstract #: 189

**“Glycan function independent of glycoprotein identity: Cell Surface Glycan Engineering reveals that matriglycan rescues Lassa Virus infection in dystroglycan-deficient cells”;** M. Osman Sheikh<sup>1</sup>, Chantelle J. Capiciotti<sup>1,6</sup>, Daniel Mead<sup>3</sup>, Geert-Jan Boons<sup>1,4,5</sup>, Lance Wells<sup>1,2</sup>;

<sup>1</sup>Complex Carbohydrate Research Center, University of Georgia, Athens, GA; <sup>2</sup>Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA; <sup>3</sup>College of Veterinary Medicine, University of Georgia, Athens, GA; <sup>4</sup>Department of Chemistry, University of Georgia, Athens, GA; <sup>5</sup>Department of Chemical Biology and Drug Discovery, Utrecht Institute for Pharmaceutical Sciences, and Bijvoet Center for Biomolecular Research, Utrecht University, Utrecht, The Netherlands; <sup>6</sup>Department of Chemistry, Queen's University, Kingston, Ontario, CA;

Poster #: B139 (presented @ PS1) || Abstract #: 190

**“A new version of GlycanBuilder that handles a wider range of glycan structures”;** Shinichiro Tsuchiya<sup>1</sup>, Nobuyuki P. Aoki<sup>2</sup>, Daisuke Shinmachi<sup>2</sup>, Masaaki Matsubara<sup>3</sup>, Issaku Yamada<sup>4</sup>, Hisashi Narimatsu<sup>5</sup>, Kiyoko F. Aoki-Kinoshita<sup>1</sup>;

<sup>1</sup>Graduate School of Engineering, Soka University, Tokyo, Japan; <sup>2</sup>SPARQLite, Ltd., Tokyo, Japan; <sup>3</sup>Complex Carbohydrate Research Center, University of Georgia, GA, USA; <sup>4</sup>The Noguchi Institute, Tokyo, Japan; <sup>5</sup>Biotechnology Research Institute for Drug Discovery, Advanced Industrial Science and Technology, Tsukuba, Japan;

Poster #: B140 (presented @ PS2) || Abstract #: 191

**“Glycoli: glycoengineering of novel pathways for protein N-glycosylation in the E. coli cytosol”;** Hanne L.P. Tytgat, Chia-wei Lin, Nora Liebscher, Timothy G. Keys, Markus Aebi;  
*ETH Zurich;*

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**“Harnessing the Power of Natural Selection to Define and Optimize Sialoglycan-Recognizing Probes (SGRPs) for Exploring the Biology, Physiology and Pathology of the Dynamic Sialoglycome”;** Andrea Verhagen<sup>1</sup>, Saurabh Srivastava<sup>1</sup>, Brian Wasik<sup>2</sup>, Hai Yu<sup>3</sup>, Aniruddha Sasmal<sup>1</sup>, Barbara Bensing<sup>4</sup>, Naazneen Khan<sup>1</sup>, Zahra Khedri<sup>1</sup>, Sandra Diaz<sup>1</sup>, Paul Sullam<sup>4</sup>, Nissi Varki<sup>1</sup>, Xi Chen<sup>3</sup>, Colin Parrish<sup>2</sup>, Ajit Varki<sup>1</sup>;

<sup>1</sup>Glycobiology Research and Training Center, University of California, San Diego; <sup>2</sup>College of Veterinary Medicine, Cornell University; <sup>3</sup>Department of Chemistry, University of California, Davis; <sup>4</sup>School of Medicine, University of California, San Francisco;

Poster #: B142 (presented @ PS2) || Abstract #: 193

**“Chemoenzymatic Tools to “See” Sugar Epitopes on Cell Surfaces”;** Peng Wang, Liuqing Wen;  
*Department of Chemistry, Georgia State University, Atlanta, Georgia, 30303, United States;*





Poster #: B143 (presented @ PS1) || Abstract #: 194

**“Lectenz® Affinity Reagents for Sialoglycoconjugate Detection and Enrichment”**; Sheng-Cheng Wu<sup>1</sup>, J. Christopher Cooper<sup>1</sup>, Mallory K. Paul<sup>1</sup>, Amanda L. Cummings<sup>1</sup>, Ziad M. Eletr<sup>1</sup>, Shani L. Ben-Arye<sup>2</sup>, Vered Padler-Karavani<sup>2</sup>, Lu Meng<sup>1</sup>, Christian Gerner-Smidt<sup>1</sup>, Kausar N. Samli<sup>1</sup>, Robert J. Woods<sup>3</sup>, Loretta Yang<sup>1</sup>;

<sup>1</sup>Lectenz Bio; <sup>2</sup>Department of Cell Research and Immunology, Tel Aviv University; <sup>3</sup>Complex Carbohydrate Research Center, University of Georgia;

Poster #: B144 (presented @ PS2) || Abstract #: 195

**“GlycoSense: A Rapid Method for Monitoring In Vitro Glycoengineering”**; Loretta Yang<sup>1</sup>, Matthew J. Saunders<sup>1</sup>, Kausar N. Samli<sup>1</sup>, Robert J. Woods<sup>2</sup>;

<sup>1</sup>Lectenz Bio; <sup>2</sup>Complex Carbohydrate Research Center, University of Georgia;

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**“Benzylhydroxylamine (BHA) as a cleavable affinity tag for isolation and purification of reducing glycan for functional glycomics”**; Ying Zhang, Xue zheng Song;

Department of Biochemistry, Emory Comprehensive Glycomics Core, Emory University School of Medicine, Atlanta, GA 30322, USA;

## Glycan synthesis and function in parasites, pathogens, and microbes

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**“An in vitro gut-immune model illuminates N-glycosylation-dependent host-pathogen interactions of Campylobacter jejuni”**; Cristina Y. Zamora<sup>1,2</sup>, Elizabeth M. Ward<sup>1</sup>, Wen Li Kelly Chen<sup>3</sup>, Jemila C. Kester<sup>3</sup>, Jason G. Velasquez<sup>3</sup>, Linda G. Griffith<sup>3,4</sup>, Barbara Imperiali<sup>1,2</sup>;

<sup>1</sup>Department of Biology, Massachusetts Institute of Technology; <sup>2</sup>Department of Chemistry, Massachusetts Institute of Technology; <sup>3</sup>Department of Biological Engineering, Massachusetts Institute of Technology; <sup>4</sup>Department of Mechanical Engineering, Massachusetts Institute of Technology;

Poster #: B147 (presented @ PS1) || Abstract #: 34

**“Immunological characterization of protein glycosylation in Streptococcus pneumoniae”**; Dustin R. Middleton<sup>1</sup>, Javid Aceil<sup>1</sup>, Lina Sun<sup>1</sup>, Jeremy A. Duke<sup>1</sup>, Fikri Y. Avci<sup>1,2</sup>;

<sup>1</sup>Department of Biochemistry and Molecular Biology, University of Georgia; <sup>2</sup>Center for Molecular Medicine, University of Georgia;

Poster #: B148 (presented @ PS2) || Abstract #: 36

**“The use of glycoengineered cell lines for investigating influenza A interactions with modified sialic acids”**; Karen Barnard, Brian Wasik, Brynn Lawrence, Colin Parrish;

Baker Institute for Animal Health, Cornell University, Ithaca NY, USA;

Poster #: B149 (presented @ PS1) || Abstract #: 37

**“Targeting STT3A-Oligosaccharyltransferase Causes Herpes Simplex Virus 1 Dysfunction”**; Mark A. Lehrman<sup>1</sup>, Hua Lu<sup>1</sup>, Natalia A. Cherepanova<sup>2</sup>, Reid Gilmore<sup>2</sup>, Joseph N. Contessa<sup>3</sup>;

<sup>1</sup>Department of Pharmacology, UT Southwestern Medical Center, Dallas, TX; <sup>2</sup>Department of Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA; <sup>3</sup>Departments of Therapeutic Radiology and Pharmacology, Yale School of Medicine, New Haven, CT;

Poster #: B150 (presented @ PS2) || Abstract #: 197

**“Tick Bites and Hamburgers: N-Glycosylation analysis of saliva and salivary glands from the ticks responsible for Alpha-Gal Syndrome”**; Stephanie A. Archer-Hartmann<sup>1</sup>, Gary Crispell<sup>2</sup>, Shahid Karim<sup>2</sup>, Guha Dharmarajan<sup>3</sup>, Parastoo Azadi<sup>1</sup>;

<sup>1</sup>Complex Carbohydrate Research Center (CCRC), UGA, Athens, GA; <sup>2</sup>The University of Southern Mississippi, Hattiesburg, MS; <sup>3</sup>Savannah River Ecology Lab, UGA, Aiken, SC;

Poster #: B151 (presented @ PS1) || Abstract #: 198



**“UDP-Glycosyl or Glucuronosyl transferases in *Caenorhabditis elegans*: Insights into Roles in Xenobiotics Detoxification”**; Olatomiwa O. Bifarin<sup>1,2</sup>, Charalampos Panagos<sup>1</sup>, Rahil Taujale<sup>1,3</sup>, Arthur S. Edison<sup>1,2,3</sup>;

<sup>1</sup>Complex Carbohydrate Research Center, University of Georgia, Athens, GA, 30602; <sup>2</sup>Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA, 30602; <sup>3</sup>Institute of Bioinformatics, University of Georgia, Athens, GA, 30602;

Poster #: B152 (presented @ PS2) || Abstract #: 199

**“SYNTHESIS OF P1-(11-PHENOXYUNDECYL)-P2-(2-ACETAMIDO-3-O-β-D-GALACTOPYRANOSYL-2-DEOXY-α-D-GALACTOPYRANOSYL) DIPHOSPHATE AS AN ACCEPTOR SUBSTRATE FOR BACTERIAL GLYCOSYLTRANSFERASES”**; Vladimir Torgov<sup>1</sup>, Leonid Danilov<sup>1</sup>, Natalia Utkina<sup>1</sup>, Vladimir Veselovsky<sup>1</sup>, Alex Kocev<sup>1</sup>, Inka Brockhausen<sup>2</sup>;

<sup>1</sup>N.D. Zelinsky Institute of Organic Chemistry, Moscow, Russia and Department of Biomedical and Molecular Sciences; <sup>2</sup>Queen's University;

Poster #: B153 (presented @ PS1) || Abstract #: 200

**“Enabling tools for *Toxoplasma* glycobiology”**; Elisabet Gas-Pascual<sup>1,2</sup>, H. Travis Ichikawa<sup>1</sup>, M. Osman Sheikh<sup>3</sup>, M. Isabella Serji<sup>1</sup>, Bowen Deng<sup>1,2</sup>, Msano Mandalasi<sup>1,2</sup>, Giulia Bandini<sup>4</sup>, John Samuelson<sup>4</sup>, Lance Wells<sup>1,2</sup>, Christopher M. West<sup>1,2</sup>; <sup>1</sup>Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA; <sup>2</sup>Center for Tropical and Emerging Global Diseases, University of Georgia, Athens, GA; <sup>3</sup>Complex Carbohydrate Research Center, University of Georgia, Athens, GA; <sup>4</sup>Department of Molecular and Cell Biology, Henry M. Goldman School of Dental Medicine, Boston University, Boston, MA;

Poster #: B154 (presented @ PS2) || Abstract #: 201

**“Probing Specific Cell-Surface Heparan Sulfate-Protein Interactions”**; Shang-Cheng Hung;  
Genomics Research Center/Academia Sinica;

Poster #: B155 (presented @ PS1) || Abstract #: 202

**“Preparation of an O-glycan Library from Porcine Stomach Mucin by Oxidative Release of Natural Glycans (ORNG)”**; Shu Zhang<sup>1,2</sup>, Yi Lasanajak<sup>1,2</sup>, Yuyang Zhu<sup>1</sup>, Xueyun Liu<sup>1,2</sup>, Thomas J. Bowen<sup>2</sup>, David F. Smith<sup>1,2</sup>, Xuezheng Song<sup>1,2</sup>;  
<sup>1</sup>Department of Biochemistry, Emory University School of Medicine; <sup>2</sup>Emory Comprehensive Glycomics Core, Emory University School of Medicine;

Poster #: B156 (presented @ PS2) || Abstract #: 203

**“Enzymatic Synthesis of Homogeneous Chondroitin Sulfate E Oligosaccharides”**; Jine Li<sup>1</sup>, Guowei Su<sup>1</sup>, Erica Sparkenbaugh<sup>2</sup>, Rafal Pawlinski<sup>2</sup>, Jian Liu<sup>1</sup>;

<sup>1</sup>1. Division of Chemical Biology and Medicinal Chemistry Eshelman School of Pharmacy, University of North Carolina Chapel Hill, NC, USA; <sup>2</sup>2. Division of Hematology/Oncology, Department of Medicine, University of North Carolina, Chapel Hill, NC, USA;

Poster #: B157 (presented @ PS1) || Abstract #: 204

**“*Helicobacter pylori* induces intracellular galectin-8 aggregation within gastric epithelial cells in both host O-glycan- and autophagy-dependent manners”**; Fang-Yen Li<sup>1</sup>, Huan-Yuan Chen<sup>2</sup>, Fu-Tong Liu<sup>2,3</sup>;

<sup>1</sup>Graduate Institute of Immunology, College of Medicine, National Taiwan University, Taipei, Taiwan; <sup>2</sup>Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan; <sup>3</sup>Department of Dermatology, University of California Davis, Sacramento, California, United States of America;

Poster #: B158 (presented @ PS2) || Abstract #: 205

**“Accelerated aging and clearance of anti-inflammatory enzymes in the pathogenesis of Gram-negative sepsis and its therapeutic reversal”**; Won Ho Yang<sup>1,2</sup>, Douglas M. Heithoff<sup>1,3</sup>, Peter V. Aziz<sup>1,2,3</sup>, Benjamin Haslund-Gourley<sup>1,2,3</sup>, Julia S. Westman<sup>1,2</sup>, Sonoko Narisawa<sup>2</sup>, Anthony B. Pinkerton<sup>2</sup>, José Luis Millán<sup>2</sup>, Victor Nizet<sup>4,5</sup>, Michael J. Mahan<sup>1,3</sup>, Jamey D. Marth<sup>1,2,3</sup>;

<sup>1</sup>Center for Nanomedicine; <sup>2</sup>Sanford Burnham Prebys Medical Discovery Institute; <sup>3</sup>Department of Molecular, Cellular, and Developmental Biology, University of California Santa Barbara, Santa Barbara, California 93106; <sup>4</sup>Department of Pediatrics, University of California San Diego, La Jolla, CA 92093; <sup>5</sup>Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California San Diego, La Jolla, CA 92093;

Poster #: B159 (presented @ PS1) || Abstract #: 206



**“Controlled expression of the periplasmic protein LmeA regulates the abundance of lipomannan and lipoarabinomannan in *Mycobacterium smegmatis*”**; Yasu S. Morita, Sarah H. Osman, Kathryn C. Rahlwes;  
*University of Massachusetts Amherst*;

Poster #: B160 (presented @ PS2) || Abstract #: 207

**“African trypanosomes evade immune clearance by O-glycosylation of the VSG surface coat”**; Nina Papavasiliou;  
*German Cancer Research Center (DKFZ)*;

Poster #: B161 (presented @ PS1) || Abstract #: 208

**“An essential mitochondrial fucosyltransferase in *Leishmania* parasites”**; Gloria Polanco<sup>1</sup>, Hongjie Guo<sup>1</sup>, Stefanie Menzies<sup>1</sup>, Nichollas E. Scott<sup>4</sup>, Sebastian Damerow<sup>2</sup>, Hicham Zegzouti<sup>3</sup>, Michael A.J. Ferguson<sup>2</sup>, Stephen M. Beverley<sup>1</sup>;  
<sup>1</sup>*Dept. of Molecular Microbiology, Washington University School of Medicine, St. Louis, MO 63110 USA*,<sup>2</sup>*Division of Biological Chemistry & Drug Discovery, Wellcome Trust Biocentre, College of Life Science, University of Dundee, Dundee DD1 5EH, Scotland, UK*,<sup>3</sup>*Promega Corporation, R&D Department, Madison, WI, USA*; <sup>4</sup>*Dept. of Microbiology and Immunology, University of Melbourne at the Peter Doherty Institute, Melbourne, Australia* ;

Poster #: B162 (presented @ PS2) || Abstract #: 209

**“Post-CFG Glycan Microarrays and Their Applications”**; Peng G. Wang, Lei Li;  
*Georgia State University*;

Poster #: B163 (presented @ PS1) || Abstract #: 210

**“Conservation of oxygen-dependent glycosylation in a plant pathogen, and implications for its dedication to the SCF ubiquitin ligase subunit Skp1”**; Hanke van der Wel, Hyun Woo Kim, Nitin Daniel, Msano Mandalasi, Zachary Wood, Christopher M. West;  
*Department of Biochemistry & Molecular Biology, University of Georgia, Athens, GA 30602*;

Poster #: B164 (presented @ PS2) || Abstract #: 211

**“Analysis and recognition of anionic and zwitterionic glycans from invertebrates”**; Iain B. Wilson, Alba Hykollari, Barbara Eckmair, Shi Yan, Jorick Vanbeselaere, Katharina Paschinger;  
*Universität für Bodenkultur Wien*;

Poster #: B165 (presented @ PS1) || Abstract #: 212

**“Synergistic action of galectin-3 and human  $\alpha$ -L-fucosidase 2 in the bactericidal effects of *Helicobacter pylori* infection”**; Shang-Chuen Wu<sup>1,4</sup>, Danny Yao<sup>1</sup>, Hau-Ming Jan<sup>1</sup>, Cheng-Te Hsiao<sup>1</sup>, Bhaswati Ghosh<sup>1</sup>, Peng-Yuan Chen<sup>1</sup>, Sasikala Muthusamy<sup>1</sup>, Chuen-Jiuan Huang<sup>1</sup>, Zhijay Tu<sup>1</sup>, Hsien-Ya Lin<sup>1</sup>, Ya-Jen Chang<sup>6</sup>, Mou-Chieh Kao<sup>5</sup>, Kay-Hooi Khoo<sup>1,4</sup>, Takashi Angata<sup>1,4</sup>, Chun-Hung Lin<sup>1,2,4</sup>;  
<sup>1</sup>*Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan.*; <sup>2</sup>*The Genomics Research Center, Academia Sinica, Taipei, Taiwan.*; <sup>3</sup>*Department of Chemistry, National Taiwan University, Taipei, Taiwan.*; <sup>4</sup>*Institute of Biochemical Sciences, National Taiwan University, Taipei, Taiwan.*; <sup>5</sup>*Institute of Molecular Medicine and Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan.*; <sup>6</sup>*Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan.*;

Poster #: B166 (presented @ PS2) || Abstract #: 213

**“Large Scale N-glycan Preparation from Soy Proteins by Oxidative Release of Natural Glycans (ORNG)”**; Yuyang Zhu, Yi Lasanajak, David F. Smith, Xuezheng Song;  
*Department of Biochemistry, Emory Comprehensive Glycomics Core, Emory University School of Medicine, Atlanta, GA 30322, USA*;

Poster #: B167 (presented @ PS1) || Abstract #: 214

**“Anthranilic Acid as a Versatile Fluorescent Tag and Linker for Glycan Bioconjugation and Microarray Preparation”**; Yuyang Zhu, Xueyun Liu, Ying Zhang, Yi Lasanajak, David F. Smith, Xuezheng Song;  
*Department of Biochemistry, Emory Comprehensive Glycomics Core, Emory University School of Medicine, Atlanta, GA 30322, USA*;

## Developmental and model systems

Poster #: B168 (presented @ PS2) || Abstract #: 48



**“Roles of EGF repeat xylosylation in mammalian development and Notch signaling”**; Nima Niknejad, Mario Lopez, Hamed Jafar-Nejad;  
*Department of molecular and human genetics, Baylor College of Medicine;*

Poster #: B169 (presented @ PS1) || Abstract #: 49

**“Neonatal ST6Gal-1 Expression Alters Microbiome Composition and Mucosal Immunity”**; Eric E. Irons, Eduardo Cortes Gomez, Fatima Alhammad, Joseph T.Y. Lau;  
*Roswell Park Comprehensive Cancer Center;*

Poster #: B170 (presented @ PS1) || Abstract #: 215

**“Microbial Exposure Influences the Generation of Anti-Blood Group Antibodies”**; Connie M. Arthur<sup>1</sup>, Xiaoxi Zhou<sup>1</sup>, Nourine A. Kamili<sup>1</sup>, Marcelo D. Baruffi<sup>4</sup>, Steve Henry<sup>3</sup>, Richard D. Cummings<sup>2</sup>, Sean R. Stowell<sup>1</sup>;  
<sup>1</sup>*Emory University School of Medicine, Atlanta, GA;* <sup>2</sup>*Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA;* <sup>3</sup>*Auckland University of Technology, School of Engineering, Computer and Mathematical Sciences, Auckland, New Zealand;* <sup>4</sup>*University of Sao Paulo, Ribeirao Preto, Brazil;*

Poster #: B171 (presented @ PS2) || Abstract #: 216

**“Development of a novel yeast cell-based system for studying Core 1-βGalactosyltransferase and its Molecular Chaperone Cosmc”**; Tatiana A. Chernova<sup>1</sup>, Qian Wang<sup>1</sup>, David F. Smith<sup>1</sup>, Tongzhong Ju<sup>1,2</sup>;  
<sup>1</sup>*Department of Biochemistry, Emory University School of Medicine, Atlanta, GA 30322;* <sup>2</sup>*Office of Biotechnology Products, Food & Drug Administration, Silver Spring, MD 20993 ;*

Poster #: B172 (presented @ PS1) || Abstract #: 217

**“Pro-survival EGFR signaling and cell surface proteomic analysis of iPS-derived neural crest cells in a human ganglioside deficiency”**; Michelle T. Dookwah<sup>1</sup>, Kazuhiro Aoki<sup>1</sup>, Michael Kulik<sup>2</sup>, Stephen Dalton<sup>2</sup>, Richard Steet<sup>1</sup>, Michael Tiemeyer<sup>1</sup>;  
<sup>1</sup>*Complex Carbohydrate Research Center;* <sup>2</sup>*Center for Molecular Medicine, University of Georgia, Athens, Georgia;*

Poster #: B173 (presented @ PS2) || Abstract #: 218

**“A potential link between Drosophila Pngl and AMPK signaling”**; Seung Yeop Han<sup>1</sup>, Antonio Galeone<sup>1,2</sup>, Hamed Jafar-Nejad<sup>1</sup>;  
<sup>1</sup>*Baylor College of Medicine, Houston, TX;* <sup>2</sup>*University of Milan, Milan, Italy (current address);*

Poster #: B174 (presented @ PS1) || Abstract #: 219

**“Identification of glycoprotein and glycan cell surface markers for ventricular-, atrial- and nodal-like cardiomyocytes”**; Sarah A. Konze<sup>1,2</sup>, Karsten Cirksena<sup>1,2</sup>, Falk F. R. Buettner<sup>1,2</sup>;  
<sup>1</sup>*Institute of Clinical Biochemistry, Hannover Medical School, Hannover, Germany;* <sup>2</sup>*REBIRTH Cluster of Excellence, Hannover Medical School, Hannover, Germany;*

Poster #: B175 (presented @ PS2) || Abstract #: 220

**“Defining the impact of O-GlcNAc on fertility of C. elegans males”**; Dan Konzman, Michelle Bond, Tetsu Fukushige, Mike Krause, John Hanover;  
*NIH / NIDDK;*

Poster #: B176 (presented @ PS1) || Abstract #: 221

**“Improved and semi-automated reductive β-elimination workflow for higher throughput protein O-glycosylation analysis”**; Maximilianos Kotsias<sup>1,2</sup>, Radoslaw P. Kozak<sup>1</sup>, Richard A. Gardner<sup>1</sup>, Manfred Wuhrer<sup>2</sup>, Daniel I. Spencer<sup>1</sup>;  
<sup>1</sup>*Ludger Ltd;* <sup>2</sup>*Leiden University Medical Centre;*

Poster #: B177 (presented @ PS2) || Abstract #: 222

**“Development of Anti-Glycan VLRB Libraries from Immunized Lampreys”**; Tanya R. McKittrick<sup>1</sup>, Charles Rosenberg<sup>2</sup>, Jamie Heimburg-Molinaro<sup>1</sup>, Nick Rivers<sup>1</sup>, Dave Smith<sup>3</sup>, Max Cooper<sup>2</sup>, Brant Herrin<sup>2</sup>, Richard D. Cummings<sup>1</sup>;  
<sup>1</sup>*Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA;* <sup>2</sup>*Emory University School of Medicine, Atlanta, GA;* <sup>3</sup>*Emory University, Department of Biochemistry;*

Poster #: B178 (presented @ PS1) || Abstract #: 223

**“O-GlcNAc regulates intestinal stem cell proliferation and gut regeneration in Drosophila”**; Hyun-jin Na, Ilhan Akan, Lara Kimberly Abramowiz, Michelle Bond, John Allan Hanover;





Laboratory of Cellular and Molecular Biology, National Institute of Diabetes and Digestive and Kidney Diseases, National Institute of Health ;

Poster #: B179 (presented @ PS2) || Abstract #: 224

**“Paired Data Analysis of Glyco-gene Transcripts and Glycan Structural Data Derived from Differentiated Human Stem Cell Lineages”**; Alison V. Nairn<sup>1</sup>, Harrison Grace<sup>1</sup>, Katelyn Rosenbalm<sup>1</sup>, Melina Galizzi<sup>1</sup>, Mitche dela Rosa<sup>1</sup>, Mindy Porterfield<sup>1</sup>, Michael Kulik<sup>3</sup>, J. Michael Pierce<sup>1,2</sup>, Stephen Dalton<sup>3</sup>, Michael Tiemeyer<sup>1,2</sup>, Kelley W. Moremen<sup>1,2</sup>;

<sup>1</sup>Complex Carbohydrate Research Center / University of Georgia; <sup>2</sup>Department of Biochemistry and Molecular Biology, University of Georgia; <sup>3</sup>Center for Molecular Medicine, University of Georgia;

Poster #: B180 (presented @ PS1) || Abstract #: 225

**“The Development and Characterization of Antibodies to Site-specific O-GlcNAc modified Histones for Epigenetic Research”**; Marla Popov<sup>1</sup>, David Baldwin<sup>1</sup>, Ron Orlando<sup>1,2</sup>;

<sup>1</sup>GlycoScientific; <sup>2</sup>CCRC, The University of Georgia;

Poster #: B181 (presented @ PS2) || Abstract #: 226

**“A MOLECULAR SWITCH ORCHESTRATES ENZYME SPECIFICITY AND SECRETORY GRANULE MORPHOLOGY”**;

Kelly G. Ten Hagen, Suena Ji, Nadine Samara, Leslie Revoredo, Liping Zhang, Duy T. Tran, Kayla Muirhead, Lawrence A. Tabak;

NIDCR/National Institutes of Health;

## Plant glycan and cell wall biosynthesis

Poster #: B182 (presented @ PS1) || Abstract #: 55

**“A Unique Hydroxyproline-rich Glycoprotein from the green microalga *Botryococcus braunii*”**; Mehmet Tatli<sup>1</sup>, Mayumi Ishihara<sup>2</sup>, Christian Heiss<sup>2</sup>, Daniel R. Browne<sup>1</sup>, Lawrence J. Dangott<sup>3,1</sup>, Stanislav Vitha<sup>4</sup>, Parastoo Azadi<sup>2</sup>, Timothy P. Devarenne<sup>1</sup>;

<sup>1</sup>Department of Biochemistry and Biophysics, Texas A&M University; <sup>2</sup>Complex Carbohydrate Research Center, University of Georgia; <sup>3</sup>Protein Chemistry Lab, Texas A&M University; <sup>4</sup>Microscopy and Imaging Center, Texas A&M University;

Poster #: B183 (presented @ PS2) || Abstract #: 56

**“GAUTs synthesize diverse pectic HG glycans in structurally and functionally distinct plant cell wall polymers”**; Debra Mohnen, Robert A. Amos, Ajaya K. Biswal, Kristen A. Engle, Sivakumar Pattathil, Jeong-Yeh Yang, Breeanna R. Urbanowicz, Michael G. Hahn, Kelley W. Moremen, Melani A. Atmodjo;

Complex Carbohydrate Research Center, University of Georgia;

Poster #: B184 (presented @ PS1) || Abstract #: 227

**“Altered starch in corn results in masa not suitable for tamales”**; Allen K. Murray;

Glycan Technologies, Inc.;

Poster #: B185 (presented @ PS2) || Abstract #: 228

**“The Identification and Analysis of Two Arabidopsis Proteins Responsible for the Methylation of Glucuronosyl Side Chains of Arabinogalactan Polymers”**; Peter J. Smith<sup>1</sup>, Maria J. Pena<sup>1</sup>, Malcolm O’Neil<sup>1</sup>, Jason Backe<sup>1</sup>, Jin Zhang<sup>2</sup>, Jay Chen<sup>2</sup>, Wellington Muchero<sup>2</sup>, William S. York<sup>1</sup>, Breeanna R. Urbanowicz<sup>1</sup>;

<sup>1</sup>The Complex Carbohydrate Research Center, University of Georgia; <sup>2</sup>Oak Ridge National Laboratory;

Poster #: B186 (presented @ PS1) || Abstract #: 229

**“Molecular recognition and catalysis of a health-promoting beta-glucan by prominent human gut Bacteroidetes”**;

Kazune Tamura<sup>1</sup>, Matthew H. Foley<sup>2</sup>, Bernd R. Gardill<sup>1</sup>, Guillaume Dejean<sup>1</sup>, Matthew Schnizlein<sup>2</sup>, Constance M. E. Bahr<sup>2</sup>, Filip van Petegem<sup>1</sup>, Nicole M. Koropatkin<sup>2</sup>, Harry Brumer<sup>1</sup>;

<sup>1</sup>University of British Columbia; <sup>2</sup>University of Michigan;



# ATTENDEE LIST

Wade Abbott, *Government of Canada*  
Kelsey Abernathy, *University of Maryland Baltimore*  
Lara Abramowitz, *NIDDK*  
Javid Aceil, *University of Georgia*  
Markus Aebi, *ETH Zurich*  
Yukie Akune, *Imperial College London*  
Waseem Anani, *BloodCenter of Wisconsin*  
Robert Anthony, *Massachusetts General Hospital, Harvard Medical School*  
Kiyoko Aoki-Kinoshita, *Soka University*  
Steven Arbitman, *Johns Hopkins School of Medicine*  
Stephanie Archer-Hartmann, *University of Georgia*  
Connie Arthur, *Emory University*  
Fikri Avci, *University of Georgia*  
Parastoo Azadi, *University of Georgia*  
Peter Aziz, *SBP at UCSB*  
Giulia Bandini, *Boston University*  
Adam Barb, *Iowa State University*  
Frederic Bard, *A-STAR*  
Karen Barnard, *Cornell University*  
DONELLA BECKWITH, *FLORIDA ATLANTIC UNIVERSITY*  
Susan Bellis, *University of Alabama at Birmingham*  
Julius Benicky, *Georgetown University*  
Olatomiwa Bifarin, *The University of Georgia*  
Michelle Bond, *NATIONAL INSTITUTES OF HEALTH*  
Michael Boyce, *Duke University School of Medicine*  
Federica Brandizzi, *Michigan State University*  
Curtis Brewer, *Albert Einstein College of Medicine*  
Zuzana Brnakova Kennedy, *Georgetown University*  
Inka Brockhausen, *Queen's University*  
Harry Brumer, *University of British Columbia*  
Edward Campbell, *Loyola University Chicago*  
Matthew Campbell, *Griffith University*  
Oscar Campetella, *Universidad Nacional de San Martin*  
Daniela Carroll, *UT Southwestern Medical Center at Dallas*  
Asmi Chakraborty, *University of Alabama at Birmingham*  
Ishita Chandel, *Texas A&M University*  
DIGANTKUMAR CHAPLA, *UNIVERSITY OF GEORGIA*  
Shuhui Chen, *NEW YORK UNIVERSITY*  
Tatiana Chernova, *Emory University*  
Karsten Cirksena, *Hannover Medical School*  
Henrik Clausen, *Copenhagen Center for Glycomics*  
Thomas Clausen, *University of Copenhagen*  
Brian Cobb, *Case Western Reserve University School of Medicine*  
Karen Colley, *University of Illinois at Chicago*  
Mattias Collin, *Lund University*  
Michelle Conroy, *Massachusetts General Hospital*  
Joseph Contessa, *Yale*  
Brett Crawford, *BioMarin Pharmaceuticals*  
Mare Cudic, *Florida Atlantic University*  
Michael Curtin, *Promega Corporation*  
NANCY DAHMS, *Medical College of Wisconsin*  
Cecilia D'Alessio, *Fundacion Instituto Leloir, IIBBA-CONICET*  
Giovanni D'Angelo, *EPFL*  
Matthew DeLisa, *Cornell University*  
Anne Dell, *Imperial College*  
Alexei V. Demchenko, *University of Missouri – St. Louis*  
Jan Deneke, *Prozyme*  
Lingquan DENG, *GlycoMimetics, Inc.*  
Chelsea Desbiens, *University of Georgia*  
Robert Desnick, *Icahn School of Medicine at Mount Sinai*  
TIMOTHY DEVARENNE, *Texas A&M University*  
Tamara Doering, *Washington University Medical School*  
Michelle Dookwah-Smith, *University of Georgia*  
Kaitlyn Dorsett, *University of Alabama at Birmingham*  
Richard Drake, *Medical University of South Carolina*  
Kurt Drickamer, *Imperial College London*  
Marc Driessen, *Stanford University / Bertozzi Lab*  
Jeremy Duke, *University of Georgia*  
Sucharita Dutta, *Beth Israel Deaconess Medical School-Harvard*  
Katherine Engel, *FUJIFILM Wako Diagnostics U.S.A. Corporation*  
Sonya Entova, *Massachusetts Institute of Technology*  
Ten Feizi, *Imperial College*  
Chiguang Feng, *University of Maryland Baltimore*  
Steve Fernandes, *Johns Hopkins University School of Medicine*  
Tarsis Ferreira, *Optimvia*  
Timm Fiebig, *Hannover Medical School*  
Forrest FitzGerald, *Florida Atlantic University*  
Sabine Flitsch, *The University of Manchester*  
Darón Freedberg, *CBER/FDA*  
Hudson Freeze, *Sanford Burnham Prebys Medical Discovery Institute*  
Chao Gao, *Beth Israel Deaconess Medical Center*  
Elisabet Gas-Pascual, *University of Georgia*  
Matthew Gentry, *University of Kentucky*  
Thomas Gerken, *Case Western Reserve Univ*  
Ulla Gerling-Driessen, *Stanford University*  
Christian Gerner-Smidt, *Lectenz Bio*  
Atossa Ghorashi, *UT Southwestern Medical Center*  
Giovanni Giovanni, *National Research Council of Italy*  
Anastasia Gkeka, *Deutsches Krebsforschungszentrum - DKFZ*  
Christoffer Goth, *Harvard Medical School*  
Minhui Guan, *Mississippi State University*  
Kathya Gutiérrez-Huante, *Universidad Autónoma del Estado de Morelos*  
Robert Haltiwanger, *University of Georgia*  
Seung Yeop Han, *Baylor College of Medicine*  
John Hanover, *NIDDK/NIH*  
Benjamin Haslund-Gourley, *SBP at UCSB*  
Amalie Dahl Haue, *Copenhagen Center for Glycomics*  
Jamie Heimbürg-Molinari, *Beth Israel Deaconess Medical Center*  
Douglas Heithoff, *University of California at Santa Barbara*  
Jessica Ho, *University of Georgia*  
Karin Hoffmeister, *BloodCenter of Wisconsin, Blood Research Institute*  
So-Hee Hong, *Seoul National University*  
Hitomi Hoshino, *University of Fukui*  
Gregory Hudalla, *University of Florida*  
Shang-Cheng Hung, *Academia Sinica*  
Ramon Hurtado Guerrero, *University of Zaragoza*  
Justin Hyche, *ProZyme, Inc.*  
Eric Irons, *Roswell Park Comprehensive Cancer Center*  
Jun Iwaki, *TCI America*  
Hamed Jafar-Nejad, *Baylor College of Medicine*  
Mark Jones, *BIDMC / Harvard Medical School*  
Robert Jones, *UAB*  
Hiren Joshi, *Copenhagen University*  
Brian Kanagy, *VECTOR LABORATORIES INC*  
Nishitsuji Kazuchika, *Wakayama Medical University*  
Nick Kegley, *Marshall University*  
Jessica Kelly, *Z Biotech, LLC*  
Tim Keys, *ETH Zurich*  
Kay-Hooi Khoo, *Academia Sinica*  
Hyun Woo Kim, *University of Georgia*  
Maya Kitaoka, *Massachusetts General Hospital*  
Yasuhiko Kizuka, *Gifu University*  
Leeann Klassen, *University of Lethbridge*  
Motohiro Kobayashi, *University of Fukui*  
Paul Kodama, *Juno Therapeutics*  
Jennifer Kohler, *UT Southwestern Medical Center*  
Yuji Kondo, *Oklahoma Medical Research Foundation*  
Sarah Konze, *Hannover Medical School*  
Daniel Konzman, *NIH*  
Stuart Kornfeld, *Washington University in St. Louis*



Maximilianos Kotsias, *Ludger Ltd*  
Roger Laine, *Louisiana State University*  
Yinzhi Lang, *Mississippi State University*  
Emma Laprise, *Massachusetts General Hospital*  
Yi Lasanajak, *Emory University*  
Joseph Lau, *Roswell Park Comprehensive Cancer Center*  
Heinz Laubli, *University of Basel*  
Sohyoung Lee, *Cornell*  
Maria Susana Leguizamon, *Universidad de San martin*  
Sylvain Lehoux, *Beth Israel Deaconess Medical Center*  
Mark Lehrman, *UT Southwestern*  
Nathan Lewis, *University of California, San Diego*  
Fang-Yen Li, *Academia Sinica*  
Huilin Li, *Van Andel Research Institute*  
Jine Li, *UNC Chapel Hill*  
Tingjiao Li, *Johns Hopkins University*  
Zhonghua Li, *Emory University*  
Fu-Tong Liu, *Academia Sinica*  
Huilin Liu, *ThermoFisher Scientific*  
David Live, *University of Georgia*  
Kaspar Locher, *ETH Zurich*  
Maria Longas, *Purdue University Northwest*  
Marie-Estelle Losfeld, *ETH ZURICH*  
Vladimir Lupashin, *University of Arkansas for Medical Sciences*  
Kelvin Luther, *University of Georgia*  
Matthew Macauley, *University of Alberta*  
John Magnani, *GlycoMimetics, Inc.*  
Himangi Marathe, *Roswell Park Comprehensive Cancer Center*  
Aaron Marcella, *FDA*  
Pamela Marino, *National Institutes of Health*  
Jamey Marth, *Center for Nanomedicine*  
Iván Martínez Duncker, *Universidad Autónoma del Estado de Morelos*  
Masaaki Matsubara, *University of Georgia*  
Kenjiroo Matsumoto, *UNIVERSITY OF GEORGIA*  
Yasuyuki Matsumoto, *Beth Israel Deaconess Medical Center*  
Tanya McKittrick, *Beth Israel Deaconess*  
Robert Mealer, *Massachusetts General Hospital*  
Nickita Mehta, *Ragon Institute of MGH, Harvard and MIT*  
Ningombam Sanjib Meitei, *PREMIER Biosoft*  
Dustin Middleton, *University of Georgia*  
Debra Mohnen, *University of Georgia*  
Stephanie Monteith, *University of Alberta*  
Kelley Moremen, *University of Georgia*  
Yasu Morita, *University of Massachusetts Amherst*  
Allen Murray, *Glycan Technologies, Inc.*  
Hyunjin Na, *NIH*  
Alison Nairn, *University of Georgia*  
Kazuki Nakajima, *Fujita health university*  
Hiroshi Nakato, *University of Minnesota*  
Yoshiki Narimatsu, *Copenhagen University*  
Sriram Neelamegham, *State University of New York - Buffalo*  
Bobby Ng, *Sanford-Burnham Medical Research Institute*  
ANH TUAN NGUYEN, *Institute of Molecular and Cell Biology*  
Nima Niknejad, *Baylor College of Medicine*  
Corwin Nycholat, *Scripps Research*  
Tom Oeltmann, *Vanderbilt Medical School*  
Shujiro Okuda, *Niigata University*  
Ron Orlando, *UGA*  
Wupu Osimanjiang, *university of wyoming*  
Douglas Oswald, *Case Western Reserve University*  
E James P Daniel, *Case Western Reserve University*  
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Nina Papavasiliou, *DKFZ/Heidelberg*  
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Amy Paschall, *University of Georgia*  
Maria J. Pena, *University of Georgia*  
Michael Pierce, *University of Georgia*

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James Prestegard, *University of Georgia*  
Patrick Punch, *Roswell Park Cancer Institute*  
Sandra R Manrique Hernandez, *Universidad Nacional Autónoma de México*  
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Ana Ramirez, *ETH - Zurich*  
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VERNON REINHOLD, *University of New Hampshire*  
Vernon Reinhold, *University of New Hampshire*  
Matthew Renfrow, *University of Alabama at Birmingham*  
Damien Restagno, *SBP at UCSB*  
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EMily Rodrigues, *University of Alberta*  
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Charlotte Rossdam, *Hannover Medical School*  
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Kai-Ting Shade, *Massachusetts General Hospital*  
Asif Shajahan, *The University of Georgia*  
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Agata Steenackers, *NIH*  
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Colleen Stoyas, *Genomics Institute of the Novartis Research Foundation (GNF)*  
Tadashi Suzuki, *RIKEN*  
Hideyuki Takeuchi, *Nagoya University Graduate School of Medicine*  
Mitali Tambe, *Sanford-Burnham Medical Research Institute*  
Kazune Tamura, *The University of British Columbia*  
Chengmei Tan, *Omicron Biochemicals, Inc.*  
Maureen Taylor, *Imperial College London*  
Kelly Ten Hagen, *National Institutes of Health*  
Hanne Tytgat, *ETH Zurich*  
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PENG WANG, *Georgia State University*  
Lance Wells, *University of Georgia*  
Christopher West, *University of Georgia*



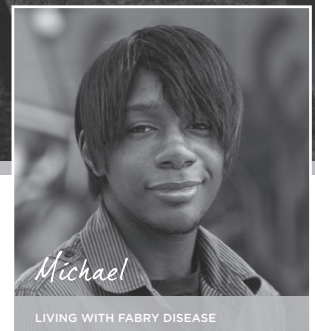
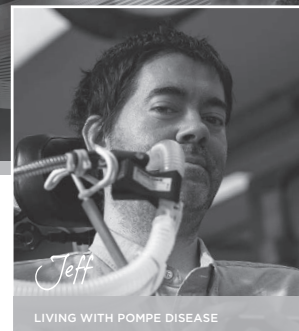


Julia Westman, *SBP at UCSB*  
Emma Wetter Slack, *ETH Zurich*  
Chris Whitfield, *University of Guelph*  
Iain Wilson, *Universität für Bodenkultur*  
Zachary Wood, *university of georgia*  
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Han Wu, *UT Southwestern Medical Center*  
Hung-Jen Wu, *Texas A&M University*  
Peng Wu, *The Scripps Research Institute*  
Sean Wu, *Lectenz Bio*  
Lijun Xia, *Oklahoma Medical Research Foundation*  
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Jay (Jiahua) Xie, *North Carolina Central University*  
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JEONG-YEH YANG, *UGA*

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Jian Zhang, *Z Biotech, LLC*  
Liping Zhang, *NIH/NIDCR*  
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# Our passion for making a difference unites us.

Amicus is committed to improving the lives of patients and families affected by rare and orphan diseases.



 **Amicus**  
Therapeutics®

At the Forefront of Therapies for  
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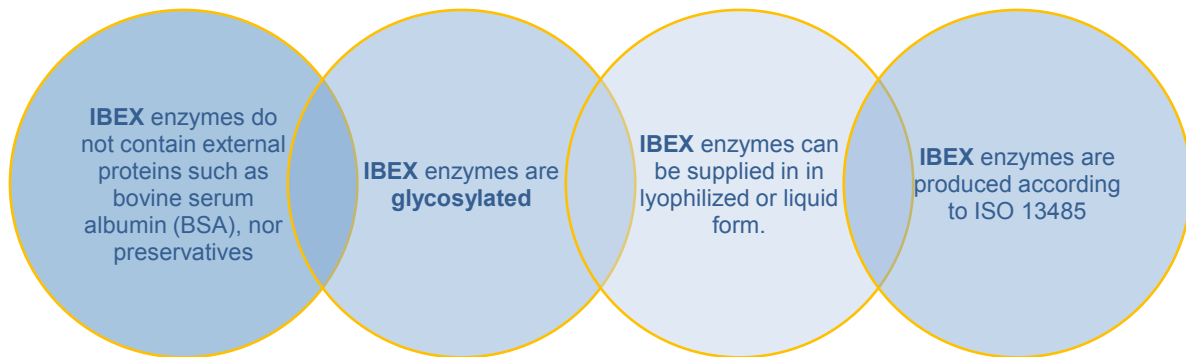
# NOTES



# NOTES

## High Purity Recombinant Enzymes for Glycobiology Research, Diagnostic Devices or Production of Low Molecular Weight Heparin

Using pure enzymes will improve the quality of your results



### GAG enzymes available from IBEX

Product	Substrate	Purity *
Heparinase I	Heparin & Heparan Sulfate	≥ 95%
Heparinase II	Heparan Sulfate & Heparin	≥ 90%
Heparinase III	Heparan sulfate Does not cleave unfractionated heparin or low MW heparins	≥ 95%
Chondroitinase AC	Chondroitin Sulfates A and C	≥ 90%
Chondroitinase B	Dermatan Sulfate	Not determined

\* By reversed phase HPLC analysis.

Please note that **IBEX** uses International Units (IU) as a definition of units while some suppliers have a definition of a "Unit" which reports the digestion capacity in hours which translates to being several hundred times less than an International Unit. This is important when comparing prices and specific activity. **IBEX** has standardized its enzymatic activity measurement over two minutes and reports the result in activity per mL obtained in one minute.

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# SCHEDULE AT A GLANCE

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## DAY 1 Monday, Nov 5, 2018

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8:00AM – 6:00PM

Registration

The District Registration Counters

9:00AM – 4:00PM

**Satellite 1: Bioinformatics  
Workshop**

Jackson Room

9:00AM – 4:00PM

**Satellite 2: Tools for Glycoscience**  
Magazine Room

1:00PM – 4:00PM

**Board of Directors Meeting**  
(by invitation only)

Royal Room

5:30PM – 7:15PM

**Session 1: Meyer and Kornfeld  
Awards Lectures**

St. James Ballroom

7:30PM – 9:30PM

**Welcome Reception & Exhibits**  
The District/St. Charles Ballroom

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## DAY 2 Tuesday, Nov 6, 2018

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7:30AM – 2:00PM

Registration

The District Registration Counters

7:30AM – 8:30AM

Continental Breakfast  
The District

8:30AM – 9:50AM

**Session 2: Glycan biosynthesis,  
transport and quality control**

St. James Ballroom

9:50AM – 10:10AM

Coffee Break  
The District

10:10AM – 12:30PM

**Session 3: Structural basis  
for glycan biosynthesis**

St. James Ballroom

12:30PM – 1:30PM

Lunch on your own

12:30PM – 1:30PM

**Glycobiology Editorial Board  
Meeting** (by invitation only)

Fulton Room

1:30PM – 4:00PM

**Poster Session I and Exhibits**  
(Coffee break provided)

The District/St. Charles Ballroom

4:00PM – 5:25PM

**Session 4: Glycan function and  
disease I**

St. James Ballroom

5:25PM – 6:30PM

**Session 5: Innovator Award  
Lecture**

St. James Ballroom

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## DAY 3 Wednesday, Nov 7, 2018

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7:30AM – 2:00PM

Registration

The District Registration Counters

7:30AM – 8:30AM

Continental Breakfast  
The District

8:30AM – 10:15AM

**Session 6: Glycoengineering  
and glyco-synthetic tools**

St. James Ballroom

10:15AM – 10:30AM

Coffee Break  
The District

10:30AM – 12:30PM

**Session 7: Glycan synthesis and  
function in parasites, pathogens,  
and microbes**

St. James Ballroom

12:30PM – 1:30PM

Lunch on your own

1:30PM – 4:00PM

**Poster Session II and Exhibits**  
(Coffee break provided)

The District/St. Charles Ballroom

4:00PM – 4:45PM

**Society Business Meeting**  
St. James Ballroom

4:45PM – 6:15PM

**Session 8: MCP and  
Glycobiology Significant  
Achievement Award Lectures**  
St. James Ballroom

6:15PM – 7:00PM

Break

7:00PM – 11:00PM

**Banquet** (ticketed event)  
St. Charles Ballroom

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## DAY 4 Thursday, Nov 8, 2018

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7:30AM – 12:00PM

Registration

The District Registration Counters

7:30AM – 8:30AM

Continental Breakfast

8:30AM – 10:05AM

**Session 9: Developmental  
and model systems**

St. James Ballroom

10:05AM – 10:30AM

Coffee Break  
The District

10:30AM – 12:00PM

**Session 10: Plant glycan and  
cell wall biology**

St. James Ballroom

12:00PM – 1:30PM

Lunch on your own

1:30PM – 3:15PM

**Session 11: Glycan function  
and disease II**

St. James Ballroom

3:15 PM – 3:20PM

**Closing Remarks**