



Your Name:

# 30<sup>th</sup> Asilomar Conference on Mass Spectrometry

## ADVANCES IN GLYCOMICS AND GLYCOPROTEOMICS: METHODS AND APPLICATIONS

Friday, October 10 - Tuesday, October 14, 2014  
Asilomar Conference Center, Pacific Grove, CA

### Organizers

**Carlito Lebrilla**  
*UC, Davis*

**Yehia Mechref**  
*Texas Tech University*

### Table of Contents

General Information .....	1
Map of Asilomar Conference Grounds .....	2
Friday Program .....	3
Saturday Program .....	4
Sunday Program .....	6
Monday Program .....	7
Participant Directory .....	9
Blank pages for notes .....	13



### ASMS Asilomar Committee

Hao Chen  
*Ohio University*

Sharon Pitteri  
*Stanford University*

Ryan Julian  
*UC Riverside*

Susan Weintraub  
*Univ. of Texas HSC*

## GENERAL INFORMATION

---

**Internet Access.** There is complimentary wi-fi access in the session room, sleeping rooms and the Social Hall (main building).

To use the wi-fi in Chapel (session room), please follow these instructions:

- Connect to the Asilomar Conference Network
- Passphrase is the word “conference” - in all lower case.
- Once connected, open your web browser.
- You should see Asilomar Conference Grounds logon page.
- Scroll to the bottom of the page and use the Username and Password below:  
Username: conf8690  
Password: conf8690

**Meals at Asilomar.** For attendees lodging at Asilomar you will receive a meal tickets for all meals beginning with dinner on Friday and ending with lunch on Tuesday. Vegetarian option is always available upon request at the meal line. *For Tuesday a box lunch has been requested for you, please use your lunch ticket to pick up your box lunch on Tuesday morning on the West Deck of the Social Hall*

For attendees staying off-site you will receive lunch tickets for Saturday, Sunday and Monday. Off-site lodgers wishing to purchase breakfast or dinner meal tickets may purchase them at the Asilomar Conference Center registration area in the Administration Building.

To-Go Lunches on Saturday, Sunday or Monday: If you wish to take your lunch to the beach or elsewhere, please go to the regular lunch window and request a “To-Go Lunch”.

**Conference Banquet and After-Dinner Talk.** An upgraded meal served in a private room off of the main dining hall served with wine. Banquet ticket is required. Please look for signs directing you to the special outdoor entrance to our private banquet room.

After dinner we will reconvene in the session room for an after-dinner presentations. Dessert will be served after these presentations along with a final opportunity to view the posters.

**Evening Mixers and Posters.** Friday, Saturday, and Sunday evenings there are social mixers, complimentary beer, wine, and light snacks are served. These evening mixers are an opportunity to continue lively discussion and visit with poster presenters. Each poster has a 3 minute highlight talk and is listed in the program schedule.

### Presenter Guidelines.

**Poster Presenters.** All posters are located in the session room, Chapel. Poster boards will be labeled. Please mount your poster on Friday starting at 4:00 pm. Please remove your poster after the Monday evening reception. See program schedule for the listing of posters.

**Speakers.** Please arrive in the Chapel 15 minutes prior to the start of the session to set up your laptop computer or load your presentation onto the conference computer (PC). If you have a Mac, please bring your own adapters.

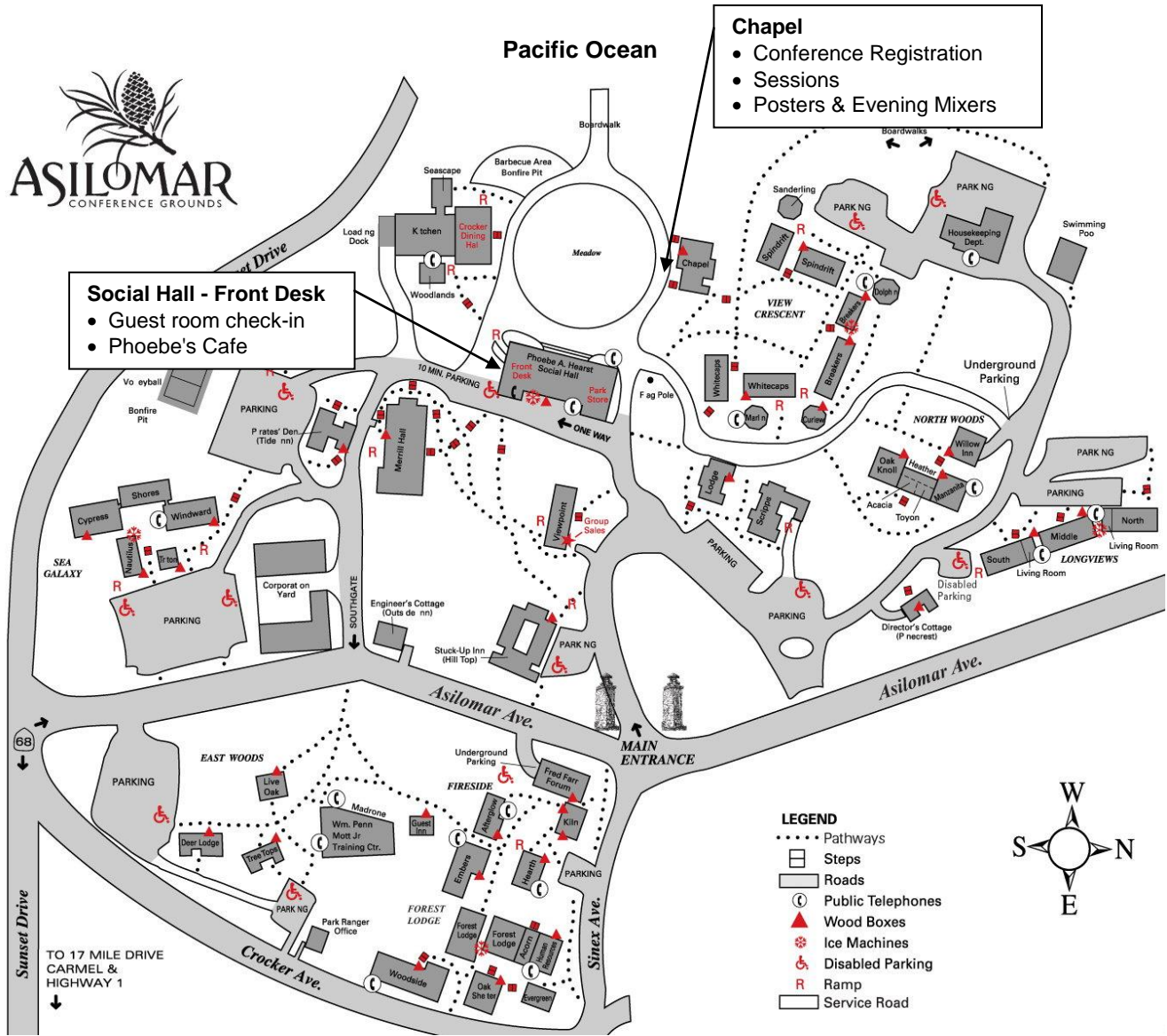
### Program Overview.

Friday	Evening Session	7:15 – 8:25 pm
	Reception	8:30 - 10:00 pm
Saturday	Morning Session	9:00 – 11:55 am
	Afternoon Session	1:15 – 5:05 pm
	Evening Session	7:15 – 8:40 pm
	Poster Session & Reception	8:40 - 10:00 pm
Sunday	Morning Session	9:00 am – 12 pm
	Free Afternoon	
	Evening Session	7:15 – 8:30 pm
	Poster Session & Reception	8:30 - 10:00 pm
Monday	Morning Session	9:00 am – 12 pm
	Afternoon Session	1:15 – 4:15 pm
	Banquet	6:00 – 7:15 pm
	After-Dinner Talks & Dessert Reception	7:15 – 9:30 pm

**Survey.** You will receive an email with a link to the online conference survey. Your feedback is appreciated.

**Sunday Afternoon.** There is a free afternoon. Conference attendees are encouraged to join others for outings (rent bikes, visit the Aquarium, go to Laguna Seca Speedway, kayak) Suggest your own activity or sign up to join others --look for sign-up sheets in the rear of Chapel. .

# ASILOMAR GROUNDS MAP



## MONTEREY BAY AREA ATTRACTIONS

Sunday afternoon is scheduled free time. You are encouraged to relax on your own or with your fellow attendees. Look for sign-ups in the session room for those interested in group activities. Do you have a car and wish to visit the aquarium or maybe head to Laguna Seca Speedway to watch part of the races happening this weekend? Do you want to rent bikes with others and tour around the area? How about kayaking around Monterey Bay admiring sea otters and the renowned kelp forest as you paddle? Do you want to rent some clubs and play golf? **Be an instigator and list your activity on a sign-up sheet for others to join you.**

### Some Ideas...

Accessible by foot, bus, bike or car:

- In Monterey --Monterey Bay Aquarium, Fisherman's Wharf, Cannery Row, kayaking on the bay.
- Pebble Beach attractions include the 17-Mile Drive which is accessible free-of-charge on foot or bike or enter by car for a fee.

Accessible by car:

- SCCA Nat'l Champ Runoff at Laguna Seca Speedway is this weekend!
- Carmel Valley is home to many wineries, farms, ranches and the historic Carmel Mission. Hiking in Big Sur or Point Lobos.



## American Society for Mass Spectrometry

30<sup>th</sup> Asilomar Conference on Mass Spectrometry  
**Advances in Glycomics and Glycoproteomics: Methods and Applications**

October 10 – 14, 2014  
Asilomar Conference Center • Pacific Grove, CA

### FRIDAY, OCTOBER 10, 2014

3:00 - 6:00 pm: Registration in *Chapel*  
Materials will also be available for pick-up during the sessions.

6:00 - 7:00 pm: Asilomar Dinner (onsite lodgers only), *Crocker Dining Hall*  
*If you are staying offsite, you may purchase a dinner meal ticket at the Asilomar Front Desk.*

7:15 - 8:35 pm: **Keynote Presentations on the Biological Roles of Glycoconjugates**, *Chapel*  
*There is a five-minute gap after each talk for Q&A.*

7:15 - 7:20 pm    Opening Remarks; Yehia Mechref and Carlito Lebrilla  
7:20 - 7:50 pm    **Nutrient Regulation of Signaling and Transcription by O-GlcNAcylation**; Gerald Hart,  
*Institute for Basic Biomedical Sciences, John Hopkins School of Medicine*  
7:55 - 8:25 pm    **Functional Glycomics Using Glycan Microarray and MSn Approaches**; Richard  
Cummings, *Emory University School of Medicine*

8:30 - 10:00 pm: **Informal Mixer and Posters**, *Chapel*

**SATURDAY, OCTOBER 11, 2014**

7:30 - 9:00 am: Asilomar Breakfast (onsite lodgers only), *Crocker Dining Hall*  
If you are staying offsite, you may purchase a breakfast meal ticket at the Asilomar Front Desk.

9:00 - 11:55 am: **New Methods for Structure Analysis**, Chapel  
David Muddiman, *session chair*

*There is a five-minute gap after each 25-minute talk for Q&A. Poster Highlight talks will be 3 minutes max each.*

- 9:00 - 9:25 am     **Insights from New Mass Spectrometry Methods that Facilitate Studies in Glycobiology**; Catherine Costello, *Boston University School of Medicine*
- 9:30 - 10:55 am     **Structural Details of Glycosylation; Exposing the How and Why's**; Vernon Reinhold, *University of New Hampshire*
- 10:00 - 10:20 am     Coffee Break
- 10:20 - 10:45 am     **Ion Mobility Mass Spectrometry and MM Conformational Search of Glycopeptides**; Michiko Tajiri, *Osaka Medical Center and Research Institute for Maternal and Child Health (Japan)*
- 10:50 - 11:30 am     **Poster Highlight Talks** – Each presentation will be 3 minutes max. Please visit posters during the evening mixers to learn more.
- Poster 01     **Methodology for Condensing Interesting Glycan Features in Complex Biospecimens into Single Analytical Signals**; Chad R. Borges, *Arizona State University*
- Poster 02     **Utilizing Sub-ambient Pressure Ionization with Nanoelectrospray (SPIN) to Enable High Sensitivity Detection and Extended Structural Coverage of N-Glycans in Human Serum**; Jonathan T. Cox, *Pacific Northwest National Laboratory*
- Poster 03     **MALDI Imaging Mass Spectrometry Approaches to Localize and Identify N-Glycan Tissue Biomarkers of Cancer**; Thomas W. Powers, *Medical University of South Carolina*
- Poster 04     **A Precise Approach in Large Scale Core-Fucosylated Glycoproteins Identification with Low- and High-Normalized Collision Energy**; Cheng Ma, *Georgia State University*
- Poster 05     **Negative Electron Transfer Dissociation for Glycopeptides from *Acinetobacter baumannii*: New Methodology for Glycopeptide Anion Analysis**; Nicholas M. Riley, *University of Wisconsin*
- Poster 06     **Surface Induced Dissociation of Glycans and Glycopeptides**; Andrew VanSchoiack, *University of Arizona*
- Poster 07     **Qualitative and Quantitative Glycosylation Profiling at the Intact Protein Level by Native Mass Spectrometry**; Yang Yang, *Utrecht University*
- Poster 08     **A Precise and Convenient Strategy for Mapping N-Glycosylation Sites Identification Using Microwave-Assisted Acid Hydrolysis and Characteristic Ions Recognition**; Jingyao Qu, *Georgia State University*
- 11:35 am -12:00 pm     **The NIH Common Fund in Glycoscience**; Karl Krueger, *NCI Program Officer, NIH*

12:00 - 1:00 pm: Asilomar Lunch (all attendees), *Crocker Dining Hall*

**SATURDAY, OCTOBER 11, 2014, continued**

1:15 – 5:05 pm: **LC and LC-MS of Oligosaccharides, Chapel**  
Hyun Joo An, *session chair*

*There is a five-minute gap after each 25-minute talk for Q&A. Poster Highlight talks will be 3 minutes max each.*

- 1:15 – 1:40 pm **Tools to Integrate Glycomics into Big Data Sets for a Better Understanding of Disease;** Pauline Rudd, *National Institute for Bioprocessing Research and Training (Ireland)*
- 1:45 - 2:10 pm **Quantitatively Controlling Chaos: The N-Linked Glycome of an Integrated Systems Biology Approach to Understanding Ovarian Cancer Initiation and Progression;** David Muddiman, *North Carolina State University*
- 2:15 - 2:40 pm **Targeting the N-linked Glycome;** Ron Orlando, *Complex Carbohydrate Research Center, University of Georgia*
- 2:45 - 3:05 pm Coffee Break
- 3:10 - 3:35 pm **Progress on Intact Glycoprotein Analysis Using HILIC-LC/MS;** Barry Boyes, *Advanced Materials Technology*
- 3:40 - 4:05 pm **Development of Glycan Libraries for the Rapid Identification of Oligosaccharides;** Carlito Lebrilla, *University of California, Davis*
- 4:10 - 4:35 pm **LC-MS and LC-MS/MS OF Permethylated Glycans;** Yehia Mechref, *Texas Tech University*
- 4:35 - 5:05 pm **Poster Highlight Talks** – Each presentation will be 3 minutes max. Please visit posters during the evening mixers to learn more.
- Poster 09 **Improved Workflow of the Individuality Normalization when Labeling with Isotopic Glycan Hydrazide Tags (INLIGHTTM) Strategy for Relative Quantification of N-Linked Glycans Derived from Complex Biological Matrices;** Elizabeth S. Hecht, *North Carolina State University*
- Poster 10 **Ion Mobility-Mass Spectrometry Separations of Carbohydrates and Fundamental Considerations of Drift Gases and Metal Adduction;** Nichole M. Lareau, *Vanderbilt University*
- Poster 11 **Capture and Analysis of Cell Surface N-Glycans by Hydrazide-Modified Magnetic beads and CE-LIF;** Sam F.Y. Li, *National University of Singapore*
- Poster 12 **Induction Based Fluidics Applied To Glycomics and Glycoproteomics for both ESI and MALDI;** Andrew D. Sauter Jr, *nanoLiter LLC*
- Poster 13 **LC-MS/MS for Automated detection and identification of N- and O-glycopeptides;** Ulrike Schweiger-Hufnagel, *Bruker Daltonik GmbH*
- Poster 14 **In-Depth Quantitative Glycoproteomic Profiling of Human Plasma using Multi-Lectin Affinity Chromatography and Mass Spectrometry;** Sarah M. Totten, *Stanford University School of Medicine*

6:00 - 7:00 pm: Asilomar Dinner (onsite lodgers only), *Crocker Dining Hall*  
*If you are staying offsite, you may purchase a dinner meal ticket at the Asilomar Front Desk.*

7:15 - 8: 40 pm: **Glycans/Glycopeptides as Disease Biomarkers, Chapel**  
Stephen Jacobson, *session chair*

*There is a gap after each five-minute talk for Q&A.*

- 7:15 - 7:40 pm **Quantitative Glycoproteomic Approaches for Cancer Diagnostics;** Sharon Pitteri, *Stanford University School of Medicine*
- 7:45 - 8:10 pm **Glycosylation Changes in Cancer and Autoimmune Diseases;** Manfred Wuhrer, *VU University Amsterdam (The Netherlands)*
- 8:15 - 8:40 pm **LC-MS Based Analysis of Serum N-Glycans to Identify Biomarkers for Hepatocellular Carcinoma;** Habtom Ressom, *School of Medicine, Georgetown University*

8:40 - 10:00 pm: **Informal Mixer and Posters, Chapel**

**SUNDAY, OCTOBER 12, 2014**

7:30 - 9:00 am: Asilomar Breakfast (onsite lodgers only), *Crocker Dining Hall*

9:00 am - 12:00 pm: **Glycans in Biosimilars/Pharmaceuticals**, *Chapel*  
Heather Desaire, *session chair*

*There is a five-minute gap after each 25-minute talk for Q&A. Poster Highlight talks will be 3 minutes max each.*

- 9:00 - 9:25 am **Microchip Electrophoresis of Serum N-Glycans for Cancer Profiling**; Stephen Jacobson, *Indiana University*
- 9:30 - 9:55 am **Glycoproteomics and Glycomics of Sputum Uncover New Molecular and Functional Aspects of Neutrophil-based Protection Against Pathogen Infection**; Morten Thaysen-Andersen, *Macquarie University (Australia)*
- 10:00 - 10:25 am **Enhanced Analytical Workflow for Glycomic Characterization of Biotherapeutic Glycoproteins**; Hyun Joo An, *Chungnam National University (Korea)*
- 10:30 - 10:50 am Coffee Break
- 10:50 - 11:15 am **Building the NIST Glycan MS/MS Reference Library**; M. Lorna De Leoz, *National Institute of Standards and Technology*
- 11:20 am - 12:00 pm **Poster Highlight Talks** – Each presentation will be 3 minutes max. Please visit posters during the evening mixers to learn more.
- Poster 15 **Combined Enrichment Strategies for the PTM Characterization of Serum Proteins**; Eva Klement, *Biological Research Centre of the Hungarian Academy of Sciences*
- Poster 16 **N-linked Glycan Profiling and Comparability Assessment of an Innovator and a Candidate Biosimilar Infliximab**; Ying Qing Yu, *Waters Corporation*
- Poster 17 **Comparison of HILIC and PGC Column for Glycan Separation Derived from Monoclonal Antibodies**; Nari Seo, *Chungnam National University*
- Poster 18 **Isomer-Specific Glycan Characterization of Biotherapeutic Glycoproteins by LC/MS/MS**; Youngsuk Seo, *Chungnam National University*
- Poster 19 **Variability in the Glycosylation Patterns of gp120 Proteins from Different Human Immunodeficiency Virus Type 1 Isolates Expressed in the Different Host Cells**; Ehwang Song, *Texas Tech University*

12:00 - 1:00 pm: Asilomar Lunch (all attendees), *Crocker Dining Hall*

1:00 - 6:00 pm: Free Afternoon

6:00 - 7:00 pm: Asilomar Dinner (onsite lodgers only), *Crocker Dining Hall*  
*If you are staying offsite, you may purchase a dinner meal ticket at the Asilomar Front Desk.*

7:15 - 8:30 pm: **New methods for the Analysis of Glycoproteins/Glycopeptides**, *Chapel*  
M. Lorna De Leoz, *session chair*

*There is a five-minute gap after each talk for Q&A.*

- 7:15 - 7:50 pm **Glycopeptides: Software Tools, Quantitative Analysis, Applications**; Heather Desaire, *The University of Kansas*
- 7:55 - 8:30 pm **Hidden Gems in a Large Intact Glycopeptide Dataset**; Katalin F. Medzihradzky, *University of California, San Francisco*

8:30 - 10:00 pm: **Informal Mixer and Posters**, *Chapel*

**MONDAY, OCTOBER 13, 2014**

7:30 - 9:00 am: Asilomar Breakfast (onsite lodgers only), *Crocker Dining Hall*

9:00 am – 12:00 pm: **Glycosaminoglycans and Related Compounds**, *Chapel*  
Haixu Tang, *session chair*

*There is a five-minute gap after each talk for Q&A. Poster Highlight talks will be 3 minutes max each.*

- 9:00 - 9:25 am **Glycosaminoglycans in Rheumatoid Arthritis**; Julie Leary, *University of California, Davis*
- 9:30 - 9:55 am **FTICR Mass Spectrometry Strategies for the Structural Characterization of Glycosaminoglycans**; Jon Amster, *University of Georgia*
- 10:00 - 10:25 am **Combining Data Silos: Integrated omics of Tissue Proteoglycans**; Joe Zaia, *Boston University School of Medicine*
- 10:30 - 10:50 am Coffee Break
- 10:50 am - 12:00 pm **Poster Highlight Talks** – Each presentation will be 3 minutes max. Please visit posters during the evening mixers to learn more.
- Poster 20 **Enabling Negative Electron Transfer Dissociation for Heparin Hexasaccharide and Related Glycosaminoglycans for Chromatographic Timescales**; Matthew J. P. Rush, *Genome Center of Wisconsin, University of Wisconsin*
- Poster 21 **Investigating Changes in the Gas-Phase Conformation of Antithrombin III upon Binding of Arixtra Using Traveling Wave Ion Mobility Spectrometry (TWIMS)**; Yuejie Zhao, *University of Georgia*
- Poster 22 **Computer Assisted Design of a Microfabricated Nebulizer CE-ESI-MS Interface for Glycomics Applications**; Gabor Jarvas, *CEITEC – Central European Institute of Technology (Czech Republic)*
- Poster 23 **Analysis of Oligosaccharide Enzymatic Digestion and Bacterial Consumption Products**; Jasmine Davis, *University of California*
- Poster 24 **Analysis of Hydrophobic Derivatized N-Glycans Using Individuality Normalization when Labeling with Isotopic Glycan Hydrazide Tags (INLIGHT™) by CE-MS**; James P McCord, *North Carolina State University*
- Poster 25 **Combination of HIAX HPLC with MALDI TOF/TOF in Analysis of Derivatized Mammalian N-Glycans**; Zuzana Pakanová, *Universität für Bodenkultur (Austria)*
- Poster 26 **Rapid Identification and Quantification of Glycosphingolipid Chiral Stereoisomers using Radical Directed Dissociation Mass Spectrometry**; Huong T. Pham, *University of California, Riverside*
- Poster 27 **Study of O-GlcNAc Protein Site Assignments using Tandem Mass Spectrometry**; Kelin Wang, *Louisiana State University*
- Poster 28 **The Use of QABIT-ESI-HPLC-MS/MS for Quantitation of Tissue Sialylation in a Mouse Model of GNE Myopathy**; Shuang Yang, Department of Pathology, *Johns Hopkins University*
- Poster 29 **HILIC and ERLIC Enrichment of Glycopeptides Derived from Complex Biological Samples**; Lauren Zacharias, *Texas Tech University*
- Poster 30 **nanoHILIC-ESI-MS and CE-ESI-MS for Quantitative Glycan Analysis using Multiplexed Carbonyl-Reactive Tandem Mass Tags**, Xuefei Zhong, *University of Wisconsin*



**MONDAY, OCTOBER 13, 2014, continued**

12:00 - 1:00 pm: Asilomar Lunch (all attendees), *Crocker Dining Hall*

1:15 – 4:15 pm: **Bioinformatic and Analysis of Glycoconjugates**, *Chapel*  
Joseph Zaia, *session chair*

*There is a five-minute gap after each 25-minute talk for Q&A. Poster Highlight talks will be 3 minutes max each.*

- 1:15 - 1:40 pm **A Computational Framework for Discovery of Glycoproteomic Biomarkers**; Haixu Tang, *School of Informatics and Computing, Indiana University*
- 1:45 - 2:10 pm **Glycopeptide Identification with Byonic Software**; Marshall Bern, *Protein Metrics Inc.*
- 2:15 - 2:35 pm Coffee Break
- 2:35 - 3:00 pm **Development of Bioinformatic Tools for Qualitative and Quantitative Glycoproteomics**; Julian Saba, *Thermo Fisher Scientific*
- 3:05 - 3:30 pm **Glycomic and Lipidomic Insights into Human Mesenchymal Stem Cell Homing to Glioma Xenografts**; Carol Nilsson, *University of Texas Medical Branch*
- 3:35 - 4:15 pm **Poster Highlight Talks** – Each presentation will be 3 minutes max. Please visit posters during the evening mixers to learn more.
- Poster 31 **MultiGlycan: A Software Package for Glycan Annotation and Quantitation Using LC-ESI-MS**; Chuan-Yih Yu, *Indiana University*
- Poster 32 **Global Glycoproteomic Analysis using Protein Prospector**; Robert J. Chalkley, *University of California, San Francisco*
- Poster 33 **Different Sample Preparation Protocols for the Selective Isolation of Human Serum O-Glycopeptides**; Zsuzsanna Darula, *Biological Research Centre of the Hungarian Academy of Sciences*
- Poster 34 **Characterization of N-Glycan Changes on the Host Cell Surface During Bacterial Infection**; Dayoung Park, *University of California, Davis*
- Poster 35 **Mammalian Serum N-Glycome Structure Library by Mass Spectrometry**; Donghee Shin, *Chungnam National University (Korea)*
- Poster 36 **Proteomics/Glycoproteomics of Breast Cancer Cells with Different Clinicopathological Features**; Rui Zhu, *Texas Tech University*
- Poster 37 **Quantitative Glycomics of Biological Samples by AminoxyTMT and LC-MS/MS**; Shiyue Zhou, *Texas Tech University*
- Poster 38 **Mass Spectrometric Screening of Congenital Disorders of Glycosylation in Japan**; Yoshinao Wada, *Osaka Medical Center and Research Institute for Maternal and Child Health (Japan)*

**6:00 - 7:15 pm: Banquet Dinner**

*Look for signs guiding you to special private room entrance at Crocker Dining Hall.  
Bring your ASMS banquet ticket! If you need a ticket, please see Brent in rear of Chapel.*

7:15 – 7:40 pm: **After-Dinner Talk** *Chapel*

7:15 – 7:40 pm **Pauline Rudd**, *National Institute for Bioprocessing Research and Training, Dublin, Ireland*

7:40 - 9:30 pm: **Dessert and Posters**, *Chapel*

**TUESDAY, OCTOBER 14, 2014**

7:30 - 9:00 am: Asilomar Breakfast, *Crocker Dining Hall*  
and Box Lunch Pick-up (onsite lodgers only), *West Deck of Social Hall*