

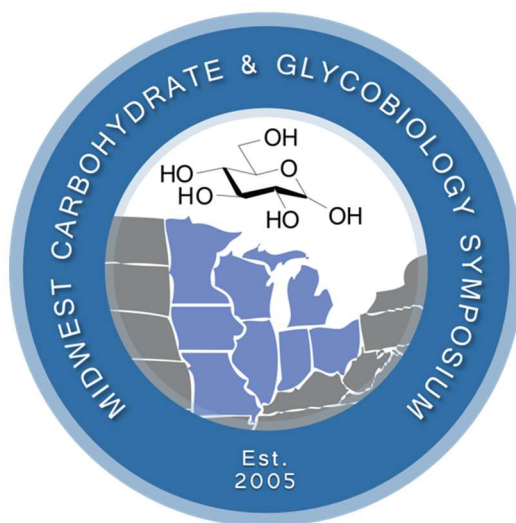
21st Annual Midwest Carbohydrate and Glycobiology Symposium

September 18th-19th, 2026

Host: Prof. Xuefei Huang

Location: BPS 1415, Michigan State University

<https://www.chemistry.msu.edu/conferences/carbohydrate/index.aspx>



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A Brief History of the MCGS

The Midwest Carbohydrate and Glycobiology Symposium (MCGS) was founded by Profs. Xuefei Huang and Steven Suheck at the University of Toledo in 2005. Since that time, the MCGS has been convened almost annually at various academic institutions throughout the Midwest.

- 2005 (1st):** University of Toledo – Xuefei Huang and Steven Suheck, Organizers
- 2006 (2nd):** Wayne State University – Zhongwu Guo and Peter Andreana, Organizers
- 2007 (3rd):** The Ohio State University – Peng George Wang, Organizer
- 2008 (4th):** Cleveland State University – Xue-Long Sun and Jun Hu, Organizers
- 2009 (5th):** University of Cincinnati – Suri Iyer, Organizer
- 2010 (6th):** University of Toledo – Steven Suheck, Organizer
- 2011 (7th):** Michigan State University – Xuefei Huang, Organizer
- 2012 (8th):** Wayne State University – Peter Andreana, David Crich and Zhongwu Guo, Organizers
- 2013 (9th):** University of Toledo – Peter Andreana, Steven Suheck and Jianglong Zhu, Organizers
- 2014 (10th):** University of Michigan – Pavel Nagorny and John Montgomery, Organizers
- 2015 (11th):** Cleveland State University – Xue-Long Sun, Organizer
- 2016 (12th):** Central Michigan University – Benjamin Swarts, Organizer
- 2017 (13th):** University of Wisconsin – Weiping Tang, Jiaoyang Jiang and Lingjun Li, Organizers
- 2018 (14th):** Michigan State University – Xuefei Huang, Organizer
- 2019 (15th):** University of Notre Dame – Anthony Serianni, Organizer
- 2020 (16th):** University of Michigan – Pavel Nagorny and John Montgomery, Organizers
- 2022 (17th):** Wayne State University – Hien Nguyen and Charlie Fehl, Organizers
- 2023 (18th):** Purdue University – Abram Axelrod, Enoch Mensah, Ming-Yu Ngai, and Nicola Pohl, Organizers
- 2024 (19th):** Washington University in St. Louis – James Janetka, and Cristina De Meo, Organizers
- 2025 (20th):** University of Toledo – Jianglong Zhu, Peter Andreana, and Steven Suheck, Organizers
- 2026 (21st):** Michigan State University – Xuefei Huang, Organizer

Friday, September 18th, 2026

5:30 pm – 6:30 pm Registration and Poster Setup (BPS Atrium)

Session 1. Chair: Professor Xuefei Huang

6:30 pm – 6:35 pm Introduction by Prof. Xuefei Huang, Michigan State Univ.

6:35 pm – 7:00 pm **Oral #1:** Dr. Jeffrey Gildersleeve, National Cancer Institute, NIH
“New Strategies to Discover and Evolve Monoclonal Anti-Glycan Antibodies”

7:00 pm – 7:05 pm **Q&A**

7:05 pm – 7:30 pm **Oral #2:** Prof. Tuo Wang, Michigan State Univ.
“Exploring the Structure and Dynamics in Fungal and Plant Cell Walls Using Solid-State NMR Spectroscopy”

7:30 pm – 7:35 pm **Q&A**

7:35 pm – 7:47 pm **Short talk #1:** Morgan Pychowycz, Cleveland State Univ.
“Profiling and Modulating Sialidase Expression and Activity in Macrophages upon LPS Stimulation”

7:47 pm – 7:50 pm **Q&A**

7:50 pm – 8:02 pm **Short talk #2:** Anand Jacob, Michigan State Univ.
“Stress Responsive Remodeling of Yeast Cell Walls Probed by ¹H and ¹³C solid-state NMR”

8:02 pm – 8:05 pm **Q&A**

8:05 pm – 8:35 pm Poster overview presentations #1 – posters with odd poster numbers (Profs. Jianglong Zhu and Xuelong Sun presiding)

End of Day 1 Sessions

Saturday, September 19th, 2026

8:30 – 9:00 am Poster viewing

Session 2. Chair: Prof. Mark Taylor

9:00 am – 9:25 am **Oral #3:** Prof. Eric Huseman, Marquette Univ.
“1° Non-Anomeric Glycoboranes: Palladium Catalyzed Synthesis and Functionalization”

9:25 am – 9:30 am **Q&A**

9:30 am – 9:42 am **Short talk #3:** Mohsin Ali Nasir, Ohio Univ.
“Uncovering Heteroxylan Biosynthesis in Rice through Network-Based Gene Discovery and Protein Interaction

9:42 am – 9:45 am	Analysis” Q&A
9:45 am – 10:10 am	Oral #4: Prof. Geyou Ao, Cleveland State Univ. “Carbon Nanotube-Amplified Optical Macro-Glycoligands for Probing Specific Carbohydrate-Protein Interactions”
10:10 am – 10:15 am	Q&A
10:15 am – 10:35 am	Intermission and poster viewing
Session 3. Chair: Prof. Hao Xu	
10:35 am – 11:00 am	Oral #5: Prof. Katelyn Arnold, Univ. of North Carolina, Chapel Hill “Anti-inflammatory Heparan Sulfate Octadecasaccharide in Influenza Infection and Secondary Bacterial Pneumonia”
11:00 am – 11:05 am	Q&A
11:05 am – 11:17 am	Short talk #4: Kartikey Singh, Wayne State Univ. “Structure-Based Design and Hydrophobic Encoding of Heparan Sulfate Trisaccharides for Selective Heparanase Modulation”
11:17 am – 11:20 am	Q&A
11:20 am – 11:32 am	Short talk #5: Livia Philip, Wayne State Univ. “Decoding Heparanase-Driven Multiple Myeloma: From Molecular Targeting to Therapeutic Intervention”
11:32 am – 11:35 am	Q&A
11:35 am – 12:05 pm	Poster overview presentations #2 – posters with even poster numbers (Prof. Steve Sucheck presiding)
12:05 pm – 1:30 pm	Boxed Lunch and Poster Viewing (poster presenters with odd poster numbers should be by their posters between 12:30-1:30pm)
12:10 pm	PI meeting
Session 4 Chair: Prof. Peter Andreana	
1:30 pm – 1:55 pm	Oral #6: Prof. Mark Taylor, Univ. of Toronto “Applications of Catalysis and Data Science to Challenges in Carbohydrate Chemistry”
1:55 pm – 2:00 pm	Q&A
2:00 pm – 2:12 pm	Short talk #6: Madhav Poudel, Univ. of Toledo

2:12 pm – 2:15 pm	“Regioselective Ring Opening of Benzylidene with Trimethylaluminum: Synthesis of 1-Phenylethyl Ether as An Acid Labile Hydroxyl Protecting Group” Q&A
2:15 pm – 2:27 pm	Short talk #7: Dr. Yunqin Zhang, Michigan State Univ. “Towards the Total Synthesis of 2C7 Epitopes from <i>Neisseria gonorrhoeae</i> for the Development of a Carbohydrate-based Gonococcal Vaccine”
2:27 pm – 2:30 pm	Q&A
2:30 pm – 2:42 pm	Short talk #8: Dr. Deqin Cai, Univ. of Wisconsin “Efficient Preparation of Homogenous Antibody Conjugates via Glycosite-Specific Transglycosylation Enabled by Readily Available Glycosyl Donors”
2:42 pm – 2:45 pm	Q&A
2:45 pm – 2:57 pm	Short talk #9: Momota Akter, Michigan State Univ. “Chemical Synthesis of Enterobacterial Common Antigen (ECA) toward a Vaccine Against Enterobacteriaceae”
2:57 pm – 3:00 pm	Q&A
3:00 pm – 4:00 pm	Intermission and poster viewing (poster presenters with even poster numbers should be by their posters)
Session 5 Chair: Prof. Sherif Ramadan	
4:00 pm – 4:25 pm	Oral #7: Organic Reactions® Speaker: Prof. Hao Xu, Brandeis Univ. “Merging Enzymatic Catalysis with Iron Catalysis for Highly Stereoselective Heparan Sulfate Oligosaccharide Assembly”
4:25 pm – 4:30 pm	Q&A
4:30 pm – 4:55 pm	Oral #8: Dr. Fuming Zhang, Rensselaer Polytechnic Institute “Targeting Heparan Sulfate-Viral Protein Interactions for Drug Discovery using SPR biosensor”
4:55 pm – 5:00 pm	Q&A
5:00 pm – 5:40 pm	Plenary lecture: Prof. Linda Hsieh-Wilson, CalTech “Decoding and Modulating Glycosaminoglycan-Protein Interactions”
5:40 pm – 5:45 pm	Q&A

5:45 pm

Award Ceremony and Concluding Remarks

6:00 pm

Dinner, Gallery at Snyder Phillips

362 Bogue St, Room 110, East Lansing, MI 48825

List of Posters

Poster	Presenter	Institution/Group	Poster Title
1	Michael Hotor	Wayne State University/ Nguyen	Hydrophobic Engineering of Aminoglycoside-Derived Heparan Sulfate Mimetics Enables Potent and Selective Heparanase Inhibition
2	Solomon Effah	Wayne State University/Walker, Nguyen	van der Waals Interactions Determine Heparanase-over-Platelet Factor 4 Selectivity in Tobramycin-Based Heparan Sulfate Mimetics
3	Ankur Ankur	Michigan State University/ Wang	α -Glucans as Structural Scaffolds in <i>Cryptococcus</i> Cell Walls: Insights from ^{13}C and ^1H Solid-State NMR
4	Priya Sahu	Michigan State University/ Wang	Precursor-Resolved Solid-State NMR Reveals Distinct Carbon Routing into Grass Cell Wall Aromatics
5	Kalpana Singh	Michigan State University/ Wang	α -1,3-Glucan-Driven Remodeling of the Conidial Cell Wall in an <i>Aspergillus fumigatus</i> Vaccine Strain Alters Innate Immune Recognition
6	Tharuka Beragama Vithanage	Wayne State University / Nguyen	Evaluation of an Aminoglycoside-Based Heparanase Inhibitor in Combination with Cisplatin for Metastatic Prostate Cancer
7	Debkumar Debnath	Michigan State University/ Wang	Solid-State NMR Reveals Boron-Deficient Remodeling of the <i>Rosa</i> Cell Wall
8	Samim Sahaji	Central Michigan University/ Swarts	A Liquid-Phase Iterative Strategy for the Stereospecific, Chromatography-Free Synthesis of Complex Oligosaccharides
9	Aidyn Johnson	Cleveland State University/ Sun	Synthesis of Selective Sialidase Inhibitors
10	Corbin Wiley	Cleveland State University/ Sun	Enzymatic Synthesis and Characterization of Chondroitin Sulfate Isoforms and their Effects on APC Generation via Thrombomodulin
11	Urvish Patel	Cleveland State University/ Sun	Synthesis of Cellular Location-specific Sialidase Inhibitors
12	Reza Sahebjam-Atabaki	Cleveland State University/ Sun	Evaluation of Sialidase Inhibition Effect on TLR4-Mediated NF- κ B Signaling in Macrophages
13	Junzhe Wang	Wayne State University/ Nguyen	Targeting Heparanase for the Dual Treatment of Pancreatic Cancer and Diabetes
14	Withdrawn		
15	Zhiyuan Chen	Michigan State University/ Huang	Convergent Synthesis of the Reducing-End Pentasaccharide Fragment of the <i>Bordetella pertussis</i> Lipooligosaccharide
16	Yifan Xu	Michigan State University/ Wang	Stage-Dependent Cell Wall Remodeling in <i>Aspergillus fumigatus</i> Revealed by Solid-State NMR Using a Protoplast Regeneration Platform
17	Yohara	Michigan State	Distinguishing Polymer Turnover from De Novo

	Ranasinghe	University/ Wang	Biosynthesis Reveals Dynamic Cell Wall Remodeling During <i>Aspergillus fumigatus</i> Conidial Germination
18	Rajendra K.C., Madhav Poudel	University of Toledo/ Zhu	Cyclopropylmethylidene and 1-cyclopropylethylidene as 1,2-cis diol protecting groups in carbohydrate chemistry
19	Fei Fan	Michigan State University/ Huang	Combinatorial Synthesis of a Hyaluronan Based Polysaccharide Library via Ugi Reactions Unlocks Divergent Receptor Selectivity between CD44 and HARE
20	Lei Gao	Michigan State University/ Huang	Chemoenzymatic Synthesis of 9NHAc-GD2 Antigen for Anticancer Conjugate Vaccine Development
21	Abhijit Manna, Boddu S. Ramakrishna, Jayanta Ghorai	Wayne State University/ Nguyen	Self-Promoted Stereo- and Chemoselective Glycosylation: A Tool for Enhancing Potency of Bioactive Peptides and Small Molecules
22	Abigail Ayodele	Wayne State University/ Fehl	CRISPR Gene Editing for Functional Studies of O-GlcNAcylation on Proteins in Live Cells
23	Yuvarani Murali, Po-Sen Tseng	Michigan State University/ Huang	Development of mQ β -PNAG Conjugate Vaccines and Monoclonal Antibodies against <i>Staphylococcus aureus</i>
24	Pratim Kumar Das, Chun-Yi Lin	Michigan State University/ Huang	Synthesis of a library of heparan sulfate-like oligosaccharides for structure and activity relationship studies
25	Rama Banjara	University of Toledo/ Zhu	Synthesis of a Trisaccharide Antigen of <i>Klebsiella pneumoniae</i> K43 CPS via Cs ₂ CO ₃ -catalyzed Stereoselective Anomeric O-alkylation
26	Mahsa Doosti	Michigan State University/ Wang	Molecular Architecture of Cell-Wall Carbohydrates and Melanin in <i>Lichtheimia corymbifera</i> , Revealed by Solid-State NMR
27	Kourosh Hoshiyareshghi	Michigan State University/ Huang	Chemical Synthesis of the α -chain LOS Antigen from <i>Neisseria gonorrhoeae</i>
28	Baraa Hijazi	Michigan State University/ Huang	Assessing the Uptake of Magnetic Glyco-nanoparticles by CD44 Expressing Tumor Cells
29	Assia Chebieb	Wayne State University/ Nguyen	Design and Synthesis of Soyasaponin-based Vaccine Adjuvant Analogues
30	Clinton Kabutey	Central Michigan University/ Swarts	Synthesis and evaluation of trehalose mycolate analogues as inhibitors of glycolipid metabolism in mycobacteria
31	Brandon Heppe	Cleveland State University/ Ao	Carbon Nanotube-Amplified Optical Macro-Glycoligands: A Versatile Platform for Glycan-Protein Recognition
32	Thilini Senarathne	Wayne State University/ Fehl	Antisense Oligonucleotides (ASOs) to regulate O-GlcNAc Transferase (OGT) expression levels
33	Vi To	Central Michigan University/ Swarts	Chemoenzymatic synthesis of 2,2-difluorotrehalose, a novel trehalose analogue and possible inhibitor of <i>Mycobacterium tuberculosis</i>
34	Shahnaz Akhtar Nishat, Fei Fan	Michigan State University/ Huang	Semi-synthesis of Homogeneous Glycoproteins and Mimetics by Remodeling Proteoglycans
35	Samia Nawaz	Ohio University / Falk	Elucidating the Role of TaVER2 and Rice Orthologs in Heteroxylan Biosynthesis
36	Zeina Khalil	Wayne State University/ Nguyen	Structure-Guided Design, Synthesis, and Evaluation of Hpa2-Derived Peptides as HPSE1 Inhibitors
37	Steven Balboa	Wayne State University/ Fehl	Designing sugar probes to study time-based effects of metabolic flux in cells
38	Caleb Aboagye	Wayne State University/ Fehl	Substrate-specific inhibition of O-GlcNAcylation Case study: Targeting the OGT-TET1 protein-protein interaction in TNBC
39	Caleb Mensah	Central Michigan University/ Swarts	Synthesis of labeled phosphatidylinositolmannoside (PIM) fragments to probe translocation of PIMs across plasma membrane of mycobacteria cells
40	Lillie Purcell	Michigan State University/ Huang	Monoclonal Antibody for Broad Neutralization of Fentanyl and Other Opioids of Abuse
41	Bhagya	Wayne State University/	The cross-talk between O-GlcNAcylation and skeletal

	Appuarachchige	Fehl	muscle insulin signaling in models of T2D
42	Oseni Kadiri	Wayne State University/ Fehl	GlycoID2: An Optimized Proximity Labelling Platform for Cell Compartment Proteome Mapping
43	Nima Ramezani	Michigan State University/ Huang	Synthetic Partially N-Acetylated Oligoglucosamines to Produce Conjugate Vaccines against Staphylococcus aureus
44	Sebastian Casimiro-Nuñez	Michigan State University/ Huang	Comparison of the Synthesis of D-Galactose Building Block Between Flow and Batch Approaches
45	Soham Maity	Iaso Therapeutics, Inc.	A Novel Bacteriophage Mutant-Based Broad-Spectrum Conjugate Vaccine Against Salmonella Enterica
46	Lakmini Kosgahakumbura	Wayne State University/ Nguyen	Structure-Based Optimization of Lablaboside F Derivatives for Enhanced Solubility and Vaccine Adjuvant Activity
47	Jennifer Szilagyi, Kiran Mairneni	University of Toledo/ Andreana	Unveiling the Neuroprotective Potential of L-Rhamnose and Its Derivatives in Alzheimer's Disease Pathogenesis
48	Euclides Neto	University of Toledo/ Andreana	Entirely Carbohydrate-Based Conjugate Vaccines Targeting Cancer-Associated Antigens
49	Morgan Pychowycz	Cleveland State University/ Sun	Profiling and Modulating Sialidase Expression and Activity in Macrophages upon LPS Stimulation