2023 ANNUAL MEETING

SOCIETY for Glycobiology

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2024 SFG ANNUAL MEETING

November 10–13, 2024
Omni Amelia Island Resort
Amelia Island, FL

SOCIETY for Glycobiology Hawaii

LETTER FROM THE PRESIDENT

Dear Glycoscientists,

A warm welcome to the 2023 Society for Glycobiology (SFG) meeting in Waikoloa Village on the Big Island of Hawaii. This year is the 50th anniversary of the SFG, so there is much to celebrate! The theme of this year's meeting is "Transformative Advances in the Biological Functions of Glycans". The meeting will highlight new discoveries related to the functional role of glycans in the biology and pathophysiology of a broad spectrum of cells and tissues. The field of glycobiology is inherently interdisciplinary, and this meeting offers an outstanding opportunity to share our science, develop new collaborations, and network with colleagues.

The meeting program includes an exciting series of 32 keynote lectures, 33 short talks, and 292 poster presentations. As part of our 50th anniversary, the meeting has a special focus on interactions between the SFG and the international glycoscience community. In particular, we celebrate the SFG's long-standing association with the Japanese Society of Carbohydrate Research (JSCR). The JSCR is sponsoring a session in this year's meeting, in keeping with our tradition of having a collaborative SFG/JSCR meeting once every 10 years in Hawaii. We also welcome new friends and colleagues in the Australian Glycoscience Society, which is also sponsoring a session. We look forward to deepening our ties with our fellow glycoscientists from around the world.

In conjunction with the formal scientific program, there are two returning Satellite Sessions, the "Glyco in Biotechnology" session organized by Parastoo Azadi, and the "Tools in Glycoscience" session organized by Christine Szymanski and sponsored by the National Center for Functional Glycomics (NCFG). Additionally, Karen Colley, Lance Wells and Michael Boyce will lead a special mentoring session for graduate and postdoctoral trainees.

As another highlight of the meeting, we will honor the individuals who have received SFG awards for their seminal contributions to the glycobiology field. Each award winner will present a lecture describing their research accomplishments. During the opening session on Nov. 5, we will hear from the Karl Meyer Lectureship Awardee, Taroh Kinoshita, as well as from the two winners of the Rosalind Kornfeld Award for Lifetime Achievement, Kelly Ten Hagen and Donald Jarvis. On Nov. 6, the President's Innovator Award will be presented to Paul DeAngelis, and Rita Sarkar will receive the Distinguished Service Award. On Nov. 7, Max Crispin will receive the Molecular and Cellular Proteomics Award, and the Glycobiology Significant Achievement Award will be shared by Matthew Macauley and Sean Stowell. We applaud these individuals for their ground-breaking scientific accomplishments and exceptional service to the glycobiology community.

Congratulations are also in order for the 33 individuals whose abstracts were selected for poster talks, and the 72 student and postdoctoral trainees who received travel awards. Additionally, the SFG offers their sincere thanks to the many Sponsors who contributed to this meeting. Please visit their booths to learn about their products and services, and express your appreciation for supporting our conference.

Finally, my deepest appreciation is extended to the many individuals who helped to plan and implement this meeting including members of the Program Committee, the SFG Board of Directors, and the MSP administrators, Lisa Hetherington and Samantha Alimi. I would also like to express a special thanks to the Society Officers, Vlad Panin, Lance Wells, Don Jarvis, and Fikri Avci, who offered unwavering support over the course of this year. Organizing the SFG meeting is truly a team effort, and I am grateful for the generous contributions of so many individuals.

I hope that all attendees are inspired by the exciting science presented at the meeting, and are also able to have some fun during their time on the Big Island. Take a hike or a side trip to a volcano; enjoy the Hawaiian cuisine and culture. I look forward to sharing this memorable meeting with all of you!

Aloha,

Susan L. Bellis
President, Society for Glycobiology

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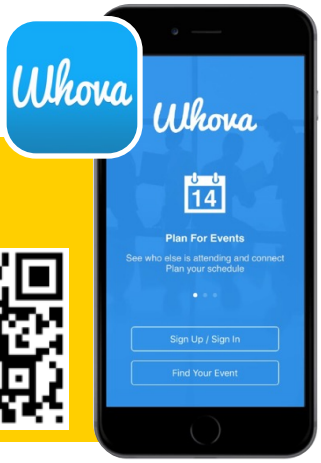

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SCHEDULE OF EVENTS

Day 1: Sunday, November 5

7:00 am–6:00 pm	**Registration**	Grand Promenade
8:00 am–Noon	**Satellite I:** Glyco in Biotechnology **Organizer:** Parastoo Azadi, CCRC, UGA	King's Ballroom 3
9:00 am–2:00 pm	**Graduate & Postdoctoral Trainee Mentoring Session** **Organizers:** Michael Boyce, Karen Colley, and Lance Wells	Queen's Ballroom 5
Noon–4:30 pm	**Satellite II:** NCFG Tools In Glycoscience **Organizer:** Christine Szymanski, Univ of Georgia	King's Ballroom 1 & 2
1:00 pm–2:30 pm	**SFG Board of Directors Meeting** *(invitation only)*	Water's Edge Boardroom
	Monarchy Ballroom:	
5:30 pm	**Conference Opening Remarks** **Susan Bellis,** Univ of Alabama at Birmingham, SfG President	
5:40 pm–6:10 pm	*Karl Meyer Lectureship Award* **Dr. Taroh Kinoshita,** Osaka University, Osaka, Japan	
6:10 pm–6:40 pm	*Rosalind Kornfeld Co-Award for Lifetime Achievement in Glycobiology* **Dr. Kelly Ten Hagen,** NIH, Bethesda, MD, USA	
6:40 pm–7:10 pm	*Rosalind Kornfeld Co-Award for Lifetime Achievement in Glycobiology* **Dr. Donald Jarvis,** University of Wyoming, Laramie, WY, USA	
7:10 pm–9:00 pm	**Opening Reception**	Lagoon Lanai

Day 2: Monday, November 6

7:00 am–5:30 pm	**Registration**	Grand Promenade
7:30 am–8:30 am	**Continental Breakfast**	Grand Promenade
	Monarchy Ballroom:	
8:30 am–10:10 am	**Session 1: Glycopathologies** **Session chair:** Kevin Campbell, Univ of Iowa	
8:30 am–8:50 am	**Ryan Weiss,** Univ of Georgia *Targeting Heparan Sulfate Assembly for Drug Discovery in Rare Disease*	
8:50 am–9:10 am	**Eva Morava,** Mayo Clinic *Therapeutic advances in congenital disorders of glycosylation*	
9:10 am–9:30 am	**Adnan Halim,** Univ of Copenhagen *Protein O-mannosylation: New biosynthetic pathways, their substrates, and links to CDGs*	
9:30 am–9:50 am	**Kevin Campbell,** Univ of Iowa *Mechanistic Insights into LARGE1 Elongation of Matriglycan on Dystroglycan: Implication for Therapies*	
	Poster Talks:	
9:50 am–9:55 am	**Florence Authier** *A missense O-GlcNAcase mutation leads to reduced protein levels and intellectual disability*	
9:55 am–10:00 am	**David Steen, Jr.** *Non-POMT1/2 O-Mannosylated Proteins Avoid POMGNT1 Extension*	

10:00 am–10:05 am	**Kimberly Alonge** *Deglycosylation of perineuronal nets in mouse models of tauopathy*	
10:05 am–10:10 am	**Andrew Edmondson** *Mouse model of PMM2-CDG demonstrates neurodevelopmental origin of brain pathology*	
10:10 am–10:30 pm	**Coffee Break**	Grand Promenade
	Monarchy Ballroom:	
10:30 am–12:10 pm	**Session 2: Glycans in Cell Biology** **Session chair:** Natasha Zachara, Johns Hopkins Univ School of Medicine	
10:30 am–10:50 am	**Natasha Zachara,** Johns Hopkins Univ School of Medicine *The intersection between O-GlcNAc, Autophagy, and Cytoprotection*	
10:50 am–11:10 am	**Matthew Shoulders,** MIT *Collagen Glycoproteostasis*	
11:10 am–11:30 am	**Ryan Flynn,** Harvard University *glycoRNA biology on the cell surface*	
11:30 am–11:50 am	**Chad Slawson,** Univ of Kansas Medical Center *Using System Biology Approaches to Understand the O-GlcNAc Rheostat*	
	Poster Talks:	
11:50 am–11:55 am	**Michael Russelle Alvarez** *A new Glycan-peptide crosslinking LC-MS method with AI-protein folding yield new interaction networks in cell membrane*	
11:55 am–Noon	**Huilin Hao** *FUT10 and FUT11 are novel protein O-fucosyltransferases that modify EMI domains*	
Noon–12:05 pm	**C. Kimberly Tsui** *Combination of CRISPR screens and lectin microarrays enables identification of novel cell surface glycosylation regulators*	
12:05 pm–12:10 pm	**Gao-Lan Zhang** *The human ganglioside interactome in live cells revealed using clickable photoaffinity ganglioside probes*	
12:10 pm–1:30 pm	**Lunch On Your Own**	
1:30 pm–4:00 pm	**Poster Session 1** *(Check Whova for poster presenters)*	Kona Ballroom
1:30 pm–4:00 pm	**Exhibits**	Grand Promenade
	Monarchy Ballroom:	
4:00 pm–5:40 pm	**Session 3: Glycans in Development & Homeostasis** **Session chair:** Vlad Panin, Texas A&M Univ	
4:00 pm–4:20 pm	**Rebekah Gundry,** Univ of Nebraska Medical Center *Scratching the Surface: CellSurfer provides novel insights into human cardiac cell physiology and disease*	
4:20 pm–4:40 pm	**Hans Wandall,** Univ of Copenhagen *Bridging Glycomics and Genomics: Uses of Functional Genetics and Mass Spectrometry to Study Glycan Functions*	

4:40 pm–5:00 pm **Stephanie Olivier-Van Stichelen,** Medical College of Wisconsin
O-GlcNAcylation and placental hormones in Gestational Diabetes

5:00 pm–5:20 pm **Vlad Panin,** Texas A&M Univ
Sialylation mediates glia-neuron communication in Drosophila

Poster Talks:

5:20 pm–5:25 pm **Robert Mealer**
O-GalNAc glycans enrich in white matter tracks of the mammalian brain

5:25 pm–5:30 pm **Francesca Boscolo Sesillo**
Role of proteoglycans in determining muscle stem cell fate during pregnancy.

5:30 pm–5:35 pm **Philip Gordts**
Unraveling the Heparan Sulfate Proteoglycan FGF1 Axis in Organismal Energy Metabolism

5:35 pm–5:40 pm **Hideyuki Takeuchi**
Quality control of NOTCH and CRB2 proteins containing epidermal growth factor-like EGF repeats by xylosyl elongation of O-glucose glycans

5:40 pm–6:10 pm *President's Innovator Award Lecture*
Dr. Paul DeAngelis, University of Oklahoma Health Sciences Center, OK, USA

6:10 pm–6:20 pm *Distinguished Service Award Presentation*
Dr. Rita Sarkar, NIH, Bethesda, MD, USA

Day 3: Tuesday, November 7

7:00 am–5:30 pm **Registration** Grand Promenade

7:30 am–8:30 am **Continental Breakfast** Grand Promenade

Monarchy Ballroom:

8:30 am–10:10 am **Session 4: Glycans in Infection and Immunity**
Session chair: Joseph Lau, Roswell Park Cancer Center

8:30 am–8:50 am **Karin Hoffmeister,** Versiti Blood Research Institute
B4GalT1 dependent glycans control the functionally distinct megakaryocyte-biased multipotent progenitor subsets

8:50 am–9:10 am **Jan Novak,** Univ of Alabama at Birmingham
Cell-dependent variable glycosylation of envelope glycoprotein (Env) impacts HIV-1 infectivity and neutralization

9:10 am–9:30 am **John Erickson,** Cincinnati Children's Hospital
IgG variable region sialic acid deacetylation enables antibody protection against intracellular infection

9:30 am–9:50 am **Joseph Lau,** Roswell Park Cancer Center
A central regulator of blood cell production and function is the s ialyltransferase ST6GAL1

Poster Talks:

9:50 am–9:55 am **Hoyang Tsia**
The α2,8-disialyl Motif Modulates B-cell Receptor Signaling

9:55 am–10:00 am **Leandre Glendenning**
FcRn Mediates IgG Sialylation in Endothelial Cells

10:00 am–10:05 am **Michael Demetriou**
N-acetylglucosamine inhibits inflammation and neurodegeneration markers in multiple sclerosis: a mechanistic trial

10:05 am–10:10 am	**Jennifer Kohler** *Fucosylated glycoproteins and fucosylated glycolipids play opposing roles in cholera intoxication*	
10:10 am–10:30 am	**Coffee Break**	Grand Promenade
	Monarchy Ballroom:	
10:30 am–12:10 pm	**Session 5: Glycobiology Down Under** *Sponsored by the Australian Glycoscience Society* **Session chairs:** Nicki Packer and Daniel Kolarich	
10:30 am–10:50 am	**Mark Larance,** University of Sydney *Ultra-sensitive platelet proteome maps the O-glycosylation landscape and identifies a new form of domain-specific O-fucosylation*	
10:50 am–11:10 am	**Morten Thaysen-Andersen,** Macquarie University *Location, location, location: Position-specific N- and O-glycosylation impacts neutrophil elastase-mediated proteolysis of corticosteroid-binding globulin*	
11:10 am–11:18 am	**Hayley Goodson** *Extensive N-glycan remodelling accompanies MHC-II immunopeptide presentation*	
11:18 am–11:26 am	**Larissa Dirr** *Novel insights into the glycan binding profile of the human metapneumovirus*	
11:26 am–11:34 am	**Xingang Li** *GlyCage: track cardiovascular risk beyond calendar age using immunoglobulin G*	
11:34 am–11:42 am	**Xiaofan Chen** *Characterizing the glycan-binding properties of gonococcal TonB-dependent transporters*	
11:42 am–11:50 am	**Nicholas DeBono** *An in-depth multi-dimensional analysis of recombinant CD52 glycopeptide*	
11:50 am–12:10 pm	**Daniel Kolarich** *Phyloglycomics: Understanding Vertebrate evolution from a glycome perspective.*	
12:10 pm–1:30pm	**Lunch On Your Own**	
1:30 pm–4:00 pm	**Poster Session II** *(Check Whova for poster presenters)*	Kona Ballroom
1:30 pm–4:00 pm	**Exhibits**	Grand Promenade
	Monarchy Ballroom:	
4:00 pm–4:45 pm	**SfG Business Meeting**	
4:45 pm–5:15 pm	*ASBMB Molecular & Cellular Proteomics (MCP) Lecture* **Dr. Max Crispin,** University of Southampton, Southampton, UK	
5:15 pm–5:45 pm	*Glycobiology Significant Achievement Co-Awardee Lecture* **Dr. Matthew Macauley,** University of Alberta, Edmonton, Alberta, Canada	
5:45 pm–6:15 pm	*Glycobiology Significant Achievement Co-Awardee Lecture* **Dr. Sean Stowell,** Harvard Medical School, Boston, MA, USA	
7:00 pm–11:00 pm	**Banquet Dinner** *(Tickets required)*	Kohala Ballroom

Day 4: Wednesday, November 8

7:00 am–2:00 pm	**Registration**	Grand Promenade
7:00 am–8:00 am	**Continental Breakfast**	Grand Promenade
	Monarchy Ballroom:	
8:00 am–9:40 am	**Session 6: Glycobiology of Cancer** **Session chair:** Anita Hjelmeland, Univ of Alabama at Birmingham	
8:00 am–8:20 am	**Anita Hjelmeland,** Univ of Alabama at Birmingham *ST6GAL1-mediated α2,6 Sialylation in Brain Tumor Initiating Cells*	
8:20 am–8:40 am	**Emma Scott,** Newcastle University *Anti-androgen therapies upregulate Siglec ligands to maintain prostate tumour immune suppression*	
8:40 am–9:00 am	**Prakash Radhakrishnan,** Univ of Nebraska Medical Center *Role of Truncated O-glycans in Pancreatic Cancer Progression and Metastasis*	
9:00 am–9:20 am	**Brian Haab,** Van Andel Institute *Cancer cells of the pancreas produce atypical combinations of glycans that enable distinction of cancer subpopulations*	
	Poster Talks:	
9:20 am–9:25 am	**Rita Nehme** *Galectin inhibitors: A new generation of single-domain antibodies to target both intracellular and extracelleular galectins for cancer treatment*	
9:25 am–9:30 am	**Karen Abbott** *Radical Fringe promotes ovarian cancer growth and drives Notch-mediated expression of proteins that control Cancer Stem Cells and immune suppression*	
9:30 am–9:35 am	**Lyndsay Young** *N-glycome profiling of progression and immune cell clusters across colorectal carcinoma using MALDI-MSI and MALDI-IHC*	
9:35 am–9:40 am	**Hauke Thiesler** *Regulation of microglia and macrophage activity by the polysialic acid-Siglec axis*	
9:40 am –10:00 am	**Coffee Break**	Grand Promenade
	Monarchy Ballroom:	
10:00 am–11:40 am	**Session 7: Emerging Concepts in Glycoscience** *Sponsored by the Japanese Society of Carbohydrate Research* **Session chairs:** Ken Kitajima & Hideharu Ishida	
10:00 am–10:16 am	**Yasuhiro Kajihara,** Osaka University *N-Glycans on proteins (homogeneous glycoproteins; synthesis and interesting functions)*	
10:16 am–10:32 am	**Siro Simizu,** Keio University *Identification of novel C-mannosylated proteins and its function*	
10:32 am–10:48 am	**Shinobu Kitazume,** Fukushima Medical Univ *Impact of O-glycosylation on Alzheimer's disease and glioma*	
10:48 am–11:04 am	**Tadashi Suzuki,** RIKEN *Toward finding a cure for NGLY1 deficiency*	

11:04 am–11:20 am	**Kiyoko Aoki-Kinoshita,** Soka University *The Human Glycome Atlas Project for cataloging the human glycoproteome*
	Poster Talks:
11:20 am–11:25 am	**Di Wu** *Demonstration of biological significance of the unique C-domain in the vertebrate CMP-sialic acid synthetase*
11:25 am–11:30 am	**Yuki Ohkawa** *Core fucose is involved in the redox system and is a potential biomarker of lung cancer*
11:30 am–11:35 am	**Shunya Kikuchi** *Glycolipid antigen complexes for analysis of antigen presentation*
11:35 am–11:40 am	**Methanee Hiranyakorn** *Chemo-enzymatic N-glycan remodeling for homogeneous asymmetric glycosylated IgG and influence of N-glycosylation on FcgRIIIa binding affinity*
11:40 am–1:00 pm	**Lunch On Your Own**
	Monarchy Ballroom:
1:00 pm–2:40 pm	**Session 8: Glycotechnology and Applied Glycobiology** **Session chair:** Sharon Pitteri, Stanford University
1:00 pm–1:20 pm	**Sharon Pitteri,** Stanford University *Developing and Applying Intact Glycoproteomics Analysis Workflows for Cancer Diagnostics*
1:20 pm–1:40 pm	**Jason Dwyer,** Univ of Rhode Island *Carbohydrate Analysis at the Single-Molecule Limit Using Nanopores*
1:40 pm–2:00 pm	**Nicola Pohl,** Indiana University *Synthetic Strategies for Glycans On Demand*
2:00 pm–2:20 pm	**Simon Wisnovsky,** Univ of British Columbia *Identifying genetic regulators of cell-surface glycosylation using CRISPR genomic screening*
	Poster Talks:
2:20 pm–2:25 pm	**Ulla Gerling-Driessen** *Next generation chemical tools for multi-modal glycome analysis*
2:25 pm–2:30 pm	**Chantelle Capicciotti** *Expanding the Selective Cell-Surface Glyco-Engineering Toolbox to Interrogate Glycan-Mediated Interactions*
2:30 pm–2:35 pm	**Derek Wong** *Developing a cell-free platform for engineering bacterial oligosaccharyltransferases*
2:35 pm–2:40 pm	**Julia Dreifus** *Identification of a novel bacterial galactose-3S preferring sulfatase using functional metagenomic screening*
2:40 pm–2:50 pm	**Poster Award Presentation**
2:50 pm–3:00 pm	**Conference Closing Remarks** **Susan Bellis,** SfG President

SOCIETY FOR GLYCOBIOLOGY AWARDS – 2023

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 2023 Karl Meyer Award will be presented to **Dr. Taroh Kinoshita**, Distinguished Professor and specially appointed Professor of the Center for Infectious Disease Education and Research, Research Institute for Microbial Diseases and WPI Immunology Frontier Research Center, Osaka University.

Dr. Kinoshita pioneered genetic approaches to identify numerous enzymes and enzyme complexes involved in the biosynthesis and intracellular trafficking of glycosylphosphatidylinositol (GPI)-anchored proteins. In the 1980's, while the structures and biosynthetic pathways of GPI-anchored proteins were starting to be revealed by taking advantage of the abundance of GPI-anchored proteins in African trypanosomes and other protozoan parasites, the genetic intractability of these parasites made the identification of genes/enzymes involved in GPI biosynthesis challenging. Therefore, Taroh took advantage of genetic tools available in mammalian tissue culture cells to identify genes involved in GPI anchor biosynthesis. His identification of *PIGA* as the gene encoding a component of the GlcNAc transferase that initiates GPI biosynthesis was published in *Science* in 1993 as his first seminal contribution to the field of glycobiology. The tireless efforts of his laboratory during subsequent decades led him to discover more than 20 genes involved in the pathway. Furthermore, his detailed biochemical analysis of the protein components revealed the first step of the pathway is mediated by a large membrane protein complex consisting of PIGA and six other protein components. Similarly, the GPI transamidase, which attaches the preformed GPI anchor precursor to nascent proteins, was shown mainly by Taroh's team to be a heterocomplex of five proteins.

In addition to biochemical analyses of GPI biosynthetic genes using tissue culture cells, his team pioneered the use of whole organisms to demonstrate their physiological importance. In a 1993 publication in *Cell*, Taroh and his team showed somatic mutations of the *PIGA* gene in human patients led to a GPI-anchored protein deficiency, triggering the disease progression of paroxysmal nocturnal hemoglobinuria, an acquired genetic disease with very poor prognosis. To further illuminate the physiological significance of GPI-anchored proteins, Taroh established mouse models and demonstrated *PigA* is an essential gene in mouse and *PigA* as well as other genes in the pathway play important roles in tissue development. In addition, his laboratory was the first to show GPI biosynthesis is essential in the blood stream form of *Trypanosoma brucei*.

Taroh did not stop there. His team established an elegant reporter system to identify mutants of mammalian tissue culture cells defective in the modification and trafficking of GPI-anchored proteins. Amongst the post GPI-attachment to proteins (PGAP) genes he discovered was the ER-resident phosphodiesterase PGAP5 that removes the ethanolamine phosphate residue from the second mannose of the GPI core glycan, which is critical for the efficient trafficking of GPI anchored proteins from ER to Golgi apparatus. Taroh remains active in this endeavor, recently reporting the identification of a Golgi-resident GalNAc transferase involved in GPI side chain synthesis and the discovery of a novel scramblase involved in transferring GPI biosynthetic intermediates across the ER.

Taroh also made significant contributions to the establishment of inherited GPI deficiency as a new class of congenital disorders of glycosylation (CDG). Taroh and his collaborators clarified that inherited mutations in several GPI biosynthetic genes lead to severe congenital disorders including thrombosis, epilepsy, microcephaly, mental retardation and other developmental disorders. In one patient, a mutation was found in the promoter region of the *PIGM* gene that encodes a GPI mannosyltransferase and the mutation resulted in histone hypoacetylation at the *PIGM* promoter. Remarkably, the histone deacetylase inhibitor butyrate increased *PIGM* transcription *in vitro* and made the patient completely free of seizures!

For his excellent and pioneering scientific contributions, Taroh has received numerous awards and honors, including the 19th Osaka Science Prize (2001, Osaka Science & Technology Center), International Glycoconjugate Organization (IGO) Award (2015, IGO), Takeda Medical Prize (2017, Takeda Science Foundations) and Osamu Hayaishi Memorial Prize (2021, Ono Medical Research Foundations). Taroh also received the prestigious Medal with Purple Ribbon from the Japanese Government in 2018.

In summary, Taroh is a true pioneer and role model in the field of glycobiology and the 2023 Karl Meyer Lectureship Award recognizes Dr. Taroh Kinoshita's seminal contributions not only to our basic understanding of GPI biosynthesis and trafficking, but also to the appreciation of how defects in GPI biosynthesis translate into many human diseases.

Rosalind Kornfeld Awards for Lifetime Achievement in Glycobiology

The Rosalind Kornfeld Award for Lifetime Achievement in Glycobiology was established in 2008 to honor Dr. Rosalind Kornfeld's distinguished scientific career and service to the Society. The Society bestows this prestigious award to scientists who, throughout their professional careers, have made outstanding contributions to Glycobiology.

One 2023 recipient of this Award is **Dr. Kelly G. Ten Hagen**, Senior Investigator and Chief, Developmental Glycobiology Section, and Associate Scientific Director, National Institute of Dental and Craniofacial Research, National Institutes of Health. Dr. Ten Hagen began her scientific career as a PhD student in the laboratory of Dr. Stanley N. Cohen at Stanford where she studied aspects of DNA replication. Way ahead of her time, Dr. Ten Hagen "skipped the postdoc" and joined the University of Rochester as a research assistant professor. There she began a decades long collaboration with Dr. Larry Tabak focused on the structure and function of UDP GalNAc polypeptide:N-Acetyl-galactosaminyltransferases (GalNAc-Ts). She was among the first to rigorously prove that a subset of GalNAc-Ts require glycopeptide substrates, laying the foundation for our current understanding that densely O-glycosylated proteins are modified by the concerted activity of multiple GalNAc-Ts. In 2001 Dr. Ten Hagen joined the intramural research program at NIH and rose through the ranks ultimately achieving Senior Investigator status, and appointment as an Associate Scientific Director of the National Institute of Dental and Craniofacial Research. In one of her earliest studies at NIH, Dr. Ten Hagen demonstrated that mucin-type O-glycans were essential for life. Thus began a series of elegant studies using Drosophila to demonstrate the many biological roles played by mucin-type O-glycans including epithelial tube formation, cell adhesion, secretion of extracellular matrix, and regulation of furin cleavage *in vivo*. Dr. Ten Hagen subsequently led a team of four NIH laboratories to explore the role of O-glycosylation in modulating furin cleavage of the SARS-CoV-2 spike protein. Dr. Ten Hagen has also conducted several seminal studies with mouse models of GalNAc-T function, including the demonstration that Galnt3 specifically alters Muc10 glycosylation and the oral microbiome.

Dr. Ten Hagen is an exceptional scientific citizen. She has served on several editorial boards (including Glycobiology) and has held leadership roles in both the SFG and the ASBMB as a Council member and founding member of the Women in Biochemistry and Molecular Biology Committee. Dr. Ten Hagen has served tirelessly as a highly effective advocate and leader for women and underrepresented groups in science. She has been instrumental in advocating for changes in the reporting, investigation, and adjudication of harassment with the NIH intramural program, approaches subsequently adopted in the extramural research community. For her substantive scientific accomplishments and exceptional service, Dr. Ten Hagen has been elected as a Fellow of the AAAS (2019) and the ASBMB (2023). She was co-recipient of the NIH 2019 Equity, Diversity, and Inclusion Award, and in 2021, Dr. Ten Hagen received an NIH Director's Award for her efforts to address structural racism in biomedical research.

Dr. Ten Hagen is an exceptional leader and role model in biomedical research and a most deserving recipient of the 2023 Rosalind Kornfeld award.

Another recipient of the 2023 Rosalind Kornfeld Award **is Dr. Donald L. Jarvis.** Don earned B.S. (1978) and M.S. (1980) degrees in Microbiology at Idaho State University and a Ph.D. (1986) in Virology at Baylor College of Medicine. Don's first exposure to glycobiology came unexpectedly while studying SV40 large T-antigen under the tutelage of Janet Butel at Baylor when they found T-antigen is glycosylated. This solidified Don's interest in using viruses to study glycoprotein biosynthesis and processing, which he pursued in the baculovirus-insect cell system after joining Max Summers' group as a postdoc at Texas A&M University in 1987. Don continued this work as an independent faculty member at Texas A&M from 1989-1997, which is when he became fully immersed in glycobiology and began a career focused on elucidating insect cell protein glycosylation pathways. Initially, Don's group performed biochemical studies on insect cell-derived *N*-glycoproteins to retrospectively characterize the *N*-glycosylation pathway and the impact of baculovirus infection on this pathway. His group then transitioned to a prospective analysis of insect cell glycosylation pathways involving isolating genes encoding endogenous glycoprotein processing machinery, including glycosylhydrolases, glycosyltransferases, and nucleotide sugar transporters, determining their sequences, and characterizing the functions of the gene products. Don had no formal training in glycobiology and was given generous and open advice and collaboration from key members of the Society for Glycobiology, including Joel and Nancy Shaper, Harry Schachter, Kelley Moremen, Annette Herscovics, John Lowe, and Pamela Stanley, among others, which solidified his admiration for the field and many of its leaders and love for the SFG, which he joined in 1995.

Studies from Don's and other's lab groups ultimately showed insect protein glycosylation pathways are simpler than those of higher eukaryotes, consisting of N-glycan transfer and trimming with limited, if any, elongation. This result was predictable from earlier studies, and, for this reason, Don's group had begun creating the first vectors and methods for insect cell transformation. As the field began to show key genetic differences limiting production of complex, human-type *N*-glycans by insect cells, Don's group began using these genetic tools to glycoengineer the baculovirus-insect cell system.

After completing some initial efforts to knock-in key mammalian glycogenes in 1998, Don moved his group to the University of Wyoming, where they extended their glycoengineering efforts to include additional knock-ins, as well as development of the first CRISPR-Cas tools for the baculovirus-insect cell system. The latter enabled them to knockout a key glycogene, fused lobes (*fdl*), which antagonizes *N*-glycan elongation in insect cells. By 2011, these efforts yielded insect cell derivatives and baculovirus vectors that could produce recombinant glycoproteins with *N*-glycans terminating in mannose, *N*-acetylglucosamine, galactose, or sialic acids. In 2011, Don started a small biotechnology company, GlycoBac, LLC to fine-tune and commercialize these new systems, as well as to extend other basic R&D efforts designed to improve the baculovirus insect cell system in other ways. One advance accomplished by GlycoBac has been the isolation of virus-free insect cell lines for the baculovirus-insect cell system. This is important as some insect cell lines used in this biomanufacturing platform were recently found to be contaminated with adventitious viruses.

His outstanding reputation as a research scientist is evidenced by numerous invited talks and lectures over the years. Don has co-authored 25 book chapters and reviews and nearly 100 peer-reviewed manuscripts, further demonstrating his expertise and authority in his field. He has received many awards from his home institution at the University of Wyoming, including two Distinguished faculty awards, and was elected as an AAAS fellow in 2023. Don's research has been exceptionally well funded by a range of agencies including the NIH (R01, STTR/SBIR), DoD, NSF, NIST, and industry.

In conjunction with the diversification of Don's career in virology to include glycobiology, he has dedicated a portion of his time to service to the field and the SFG. In addition to serving on the editorial board of Glycobiology since 2006, he has served SFG as a Director (2009-2012), a member of the FASEB (2013-2020) and SFG (2015-2017) Publications Committees, and as the SFG Secretary (2016-2023). Most notable has been his service as SfG Secretary for three terms from 2016 to 2023. During this time as Secretary, Don set a very high standard for careful and thorough documentation of Society business and was instrumental in revising and updating countless Society policies. His role as a member of the Executive Committee was felt and greatly appreciated over the last several years as the Society (and its respective Presidents) endured one challenge after the next around the annual meetings as well as several other issues including Society management. Don always brought a rational and thoughtful perspective to these discussions, sharing his vast institutional memory when needed.

Don, an avid fisherman and outdoorsman whose laughter and smile can illuminate the room, will retire from his academic position at Wyoming at the end of this academic year and we fully expect he will be cutting holes in the ice and catching the biggest fish possible this winter and beyond.

Glycobiology Significant Achievement Awards

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

Oxford is delighted to present a 2023 Glycobiology Significant Achievement Award to **Dr. Matthew S. Macauley,** Associate Professor, University of Alberta, Edmonton. The award will be given to Dr. Macauley during the Annual Meeting of the Society for Glycobiology, which will be held in Hawaii this fall.

Throughout his career, Dr. Macauley has combined glycan chemistry with a robust multidisciplinary approach to make important discoveries in areas related to human health. During his doctoral research (2004-2010) with Dr. David Vocadlo, (Simon Fraser University) he worked on OGlcNAcase, publishing >20 papers in highly regarded journals. There, he helped develop a class of carbohydrate-based inhibitors that have since advanced to clinical trials. During his subsequent training as a fellow with Dr. James Paulson (2010-2014) then as an Assistant Professor (2014-2017) at The Scripps Research Institute he shifted to the study of complex glycan recognition, publishing >20 highly regarded papers, most in the field of Siglecs (sialic acid-binding immunoglobulin-like lectins) in immune regulation. He contributed to development of powerful glycan-based nanoparticle immune modulators. When he joined the University of Alberta in 2017, he was already a prolific and respected contributor to the glycosciences.

Since he joined the faculty of the Department of Chemistry at the University of Alberta, Dr. Macauley has built a robust glycobiology discovery team focused on investigating the functions of Siglecs. His team developed versatile Siglec probes, designed Siglec-expressing cell lines, optimized flow cytometric Siglec detection, and generated mouse models expressing human Siglecs to make significant discoveries on their physiological and pathological impacts. Among his team's important findings are those related to human Siglec-3 (CD33) in Alzheimer's disease (AD). CD33 is expressed on microglia, the phagocytic immune cells of the brain. Population genetic studies had revealed that CD33 polymorphisms contribute to AD susceptibility. The Macauley lab used diverse Siglec tools to determine the functions of variant isoforms of CD33. They discovered that the common long form of CD33, which is associated with increased AD susceptibility, reduced phagocytosis of AD-associated misfolded proteins. In contrast, the short isoform, which is associated with decreased AD susceptibility, enhanced phagocytosis. These studies exemplify the potential of Siglecs to regulate immune responses in ways that impact disease progression and provide targets for therapeutic intervention.

In exploring broader aspects of Siglec chemistry and biology, the Macauly research team combined their expertise and customized tools to explore the nature of sulfation in Siglec binding. These studies pointed to sulfated sialylated glycans as having especially high affinity for selected Siglecs, pointing the way to enhanced Siglec engagement.

In the past three years alone Dr. Macauley has published >20 papers in our field, most in top tier journals. In that period, he co-authored papers with colleagues from at least a dozen different universities and from research institutes in Canada, the US, Germany, Brazil, Japan, The Netherlands, Taiwan, and Egypt. In addition, he helped organize the PacifiChem symposium on Chemical Glycobiology. As a contributor to and driver of international glycoscience discovery, he is well deserving of this award and Oxford is proud to honor Dr. Macauley as a 2023 Glycobiology Significant Achievement Awardee.

Oxford University Press is equally proud to present the honor of a 2023 Glycobiology Significant Achievement Award to **Dr. Sean Stowell**, who is an Associate Professor at Harvard Medical School and a member of the Joint Program in Transfusion Medicine at Brigham and Women's Hospital. He also is the Medical Director of the Apheresis Center at Brigham and Women's Hospital and the Associate Director of the Harvard Medical School Center for Glycosciences. Dr. Stowell's award also will be given during the Annual Meeting of the Society for Glycobiology, which will be held in Hawaii this fall.

Dr. Stowell has established a highly productive and innovative research group that is focused on glycobiology and transfusion medicine. His research has helped to define the underlying mechanisms responsible for the development of immunological barriers that prevent the optimal treatment of hematologic diseases. In addition to developing models to define the pathophysiology of transfusion complications (including those in patients with sickle cell disease), his group uncovered the role of glycans in shaping important aspects of immune barriers to the effective treatment of hematologic diseases in general. His work has led to fundamental new insights into innate immunity against carbohydrate molecular mimicry. He has pioneered studies into the roles of galectins in protecting individuals from microbes that utilize molecular mimicry, including defining the tolerance mechanisms that prevent blood group positive individuals from generating anti-blood group antibodies, and how blood group positive individuals protect themselves against blood group positive microbes, which was unclear in the field. Stowell's laboratory has demonstrated that galectins, which are the most ancient lectin family expressed in mammals, have the unique ability intrinsically and specifically to bind and kill microbes that express blood group and related mammalian-like carbohydrate antigens. In doing so, these findings created a new paradigm in innate immunity indicating that galectins, which are hard-wired in an individual's genome irrespective of blood group status, fill this gap in adaptive immunity by providing innate immunity against molecular mimicry.

In related studies, Stowell's group also defined the blood group binding preference of SARS-CoV-2 and discovered the receptor binding domain of SARS-CoV-2 bears significant sequence identity and overall structural homology to galectins and that it likewise possesses blood group binding activity.

Stowell's laboratory has made many other key discoveries in the field, including further defining the naturally occurring anti-blood group antibody development and the development of anti-glycan antibodies that influence anti-fVIII antibodies in patients with hemophilia A. His overall and ongoing research is providing key insights into the fundamental biology that underlies the pathophysiology of transfusion complications that had remained enigmatic for over 50 years, including platelet refractoriness, incompatible RBC transfusion biology, and antibody-mediated immunosuppression.

Molecular and Cellular Proteomics/American Society for Biochemistry and Molecular Biology Lectureship

The 2023 Molecular and Cellular Proteomics (MCP) / American Society for Biochemistry and Molecular Biology (ASBMB) Lectureship Award will be presented to **Dr. Max Crispin** during this year's Society for Glycobiology (SFG) Annual meeting in Hawaii. The MCP journal was created in 2001 to address the growing needs of the proteomics community. The MCP/ASBMB award was established in 2013 and has been bestowed upon a single scientist each year who is at the forefront of the emerging fields of glycomics and glycoproteomics.

Dr. Crispin is a Professor of Glycobiology and the Director of the Institute for Life Sciences at the University of Southampton. He also holds an adjunct Professor position at the Scripps Research Institute in California and is a Supernumerary Fellow at Oriel College, Oxford. Dr. Crispin did his undergraduate studies at the University of Oxford and completed his doctoral studies working at both The Scripps Research Institute under the direction of Ian Wilson and at the Oxford Glycobiology Institute under the direction of Raymond Dwek and Pauline Rudd. This was followed by post-doctoral work and a climb up the faculty ladder at the University of Oxford and a move to the University of Southampton in 2017. He is an elected fellow of the Royal Society of Biology (2016) and Royal Society of Chemistry (2020).

During his independent career, Dr. Crispin has been a pioneer in the use of mass spectrometry to study the glycobiology of viruses and the role of site-specific glycosylation in immunogen design. This has resulted in more than 150 peer-reviewed publications and over 15,000 citations of his work. His independent work has been continuously supported by multiple funding agencies including the Bill & Melinda Gates Foundation and the NIH. In addition to Dr. Crispin's work on viruses, he has made fundamental advancements in using glycosylation to fine-tune effector functions of antibodies, as well as developing novel methods to boost the activity of therapeutic antibodies. A long-term major focus area for Dr. Crispin has been in understanding the glycan shield of HIV. His laboratory pioneered quantitative site-specific analysis of the glycosylation of Env trimers, and his procedures currently serve as the standard for assessing the quality of clinical grade materials in the field. Just as importantly, his team has utilized these sophisticated site-specific analyses approaches to guide HIV immunogen design in the hunt for broadly neutralizing antibodies and an effective vaccine. Finally, he has been a leader in the area of glycobiology of emerging viruses including Lassa virus and the SARS-CoV-2. For his long-term commitment to and development of approaches for studying site-specific glycans of viruses using mass spectrometry, Dr. Max Crispin was recommended by the SFG awards committee and chosen by the editorial leadership of the MCP to receive the 2023 MCP Lectureship Award.

President's Innovator Award

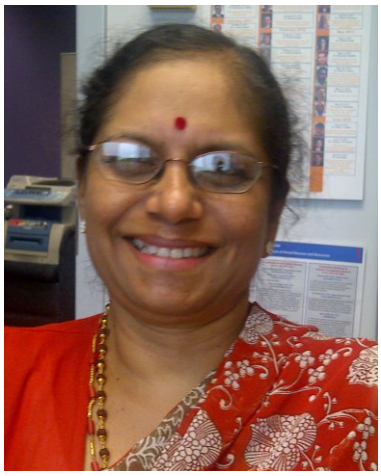
The Society for Glycobiology President's Innovator Award acknowledges the contributions of one scientist each year who has made a significant impact on society. The 2023 President's Innovator Award will be presented to **Dr. Paul L. DeAngelis**, Professor of Biochemistry and Molecular Biology at the University of Oklahoma Health Sciences Center.

Dr. DeAngelis first became interested in glycobiology during his undergraduate studies at Harvard University, where he received his B.A. in 1984. This was followed by a Ph.D. from the University of California Irvine in 1990 and postdoctoral studies under Dr. Paul Weigel at the University of Texas, Galveston. Dr. DeAngelis was recruited as an Assistant Professor in 1994 to the University of Oklahoma Health Sciences Center, where he rose through the ranks to his current position as Professor of Biochemistry and Molecular Biology (appointed in 2006). Throughout his career, Dr. DeAngelis has had an enduring commitment to the glycoscience field, particularly in the area of glycosaminoglycan (GAG) biology.

Dr. DeAngelis' research centers on characterization, biological function, and synthesis of a variety of GAG polymers. His work has yielded 94 research publications, 14 review articles or book chapters, 48 issued US patents, and >99 foreign patents. Dr. DeAngelis has developed elegant technologies for synthesizing novel GAG polysaccharides that have subsequently been used in various medical devices, biomaterials, and therapeutics. As one notable achievement, Dr. DeAngelis pioneered methods for the chemoenzymatic synthesis of heparosan (HEP, a heparin precursor), which enabled the production of HEP with a defined polymer size distribution and installation of sites for drug coupling. This advancement led, in turn, to the generation of the "HEPtune" drug delivery platform. The HEPtune™ technology has been utilized to conjugate HEP to biologics such as insulin and growth factors to extend half-life, and to produce HEP-coated liposomes for improved drug delivery. Additionally, Dr. DeAngelis developed methods useful for synthesizing the anticoagulant, heparin, in a highly controlled manner. Synthetic heparin offers a clinical alternative to biological sources of heparin, which have inherent structural variability, and can pose health hazards due to potential contaminants. His other syntheses employed artificial sugar analogs to create novel GAGs with new functionalities. Complementing his work on HEP and heparin, Dr. DeAngelis has had a long-standing interest in the biology and biosynthesis of Hyaluronic Acid (HA). The DeAngelis lab identified and cloned several HA synthases and provided seminal insights into the structure/function relationships of these enzymes. This foundational work on HA synthases was leveraged to develop technologies that have been employed in the production of defined HA-based biomaterials, drugs, and other reagents.

In recognition of his many outstanding accomplishments, Dr. DeAngelis has received numerous awards. He was elected Fellow of the National Academy of Inventors in 2013 and received the Oklahoma Bioscience Association (OkBIO) Innovation Award in 2014. He also received the Rooster Award for scientific achievement for synthetic HA from the International Society for Hyaluronan Sciences in 2007. The indelible impact of Dr. DeAngelis' work is further illustrated by the licensing of his innovative technologies to multiple pharma and biotech companies, including four biotech companies founded by Dr. DeAngelis, and for which he has served as Chief Scientist and Director. The HEPtune™ technology was developed as part of Caisson Biotech, L.L.C. and licensed to Novo Nordisk A/S. Likewise, other technology for producing recombinant HA was developed under the auspices of Hyalose, L.L.C., and licensed to Novozymes A/S (one of the largest global enzyme producers). The two other companies founded by Dr. DeAngelis are Heparinex, L.L.C., which produces recombinant heparinoid-based drugs and biomaterials, and Choncept, L.L.C., which focused on recombinant chondroitin-based materials. These entrepreneurial achievements, coupled with Dr. DeAngelis' landmark research on basic GAG biology have positioned Dr. DeAngelis as the ideal recipient of the 2023 President's Innovator Award.

SFG Distinguished Service Award



In 2021, the SFG Board of Directors established the Distinguished Service Award, which is intended for individuals with a sustained record of distinguished service to the Society for Glycobiology and/or the glycobiology community. Now, it is with great pleasure that the Board has selected **Dr. Rita Sarkar** as the recipient of the 2023 SFG Distinguished Service Award.

Dr. Sarkar was nominated for this Award by all current and past editors of *Essentials of Glycobiology* in recognition of her sustained record of distinguished service to the glycobiology community and the positive impact of her service for many Society for Glycobiology members.

Prior to her recruitment to the NHLBI Division of Blood Diseases and Resources in 2005, Dr. Sarkar had intense training in biochemical genetics and DNA diagnostics at the University of London and Oxford, UK (1980-1987), followed by a highly productive academic career at Yale (1990-1993), Johns Hopkins (1993-1994), and the University of Pennsylvania (1994-2004). In these positions, Dr. Sarkar studied developmental regulation of gene expression, characterized a hemophilia A knock-out mouse that simulated the human condition, developed cDNAs encoding mouse and canine factor VIII for gene transfer, and generated monoclonal antibodies against these targets for protein expression studies. Many of these tools became indispensable to investigators pursuing research in hemophilia gene therapy at both academic institutions and biotech companies worldwide.

The nomination for the SFG Distinguished Service Award focused on Dr. Sarkar's time at NIH from 2005 up to her recent retirement in 2022. Upon joining NHLBI, Dr. Sarkar played a pivotal role in identifying and implementing cutting edge initiatives in Glycobiology within and across the Institute's programs, showing exceptional skills in leadership, organization, planning, coordinating, negotiating, and writing. Dr. Sarkar has also been an inspiring mentor to many new investigators across the country who sought her guidance, expertise, and counsel, all of whom have greatly benefited from her conscientious and dedicated attention as they grow in their careers.

The NIH has honored Dr. Sarkar with multiple awards, including:

- NHLBI Outstanding Award for initiating "Blood and Vascular Systems Response to Sepsis" 2015.
- NHLBI Recognition of Exceptional Service to "Programs to Increase Diversity Among Individuals Engaged in Health-Related Research" Program 2013.
- NHLBI Merit Award for Exceptional Team Work & Leadership for Management & Leadership of "Programs of Excellence in Glycosciences" 2012.
- National Institute of Health Award of Merit for Exceptional Leadership to create "Gene Therapy Resource Program" 2010.
- National Institute of Health Award of Merit for Outstanding Initiative to Create "Programs of Excellence in Glycosciences" 2010.
- NHLBI Star Award for Excellence in Training and Mentoring Programs, 2010.
- NHLBI Star Award for Excellence in Extramural Research, 2010.
- NHLBI Award for Leadership, Establishment & Management of "Gene Therapy Resource Program", 2010.
- NHLBI Award for Outstanding Initiative to create "Program of Excellence in Glycosciences", 2010.
- NHLBI Star Award for Excellence in Mentoring, 2009.
- NHLBI Special Recognition Award for Pathway to Independence, 2006.

At the national level, Dr. Sarkar organized or facilitated prominent working group and expert reports (e.g., Varki et al. 2008; Agre et al. 2016). These and other efforts resulted in many national program projects and multi-center grants, including the Programs of Excellence in Glycosciences (2012–2019) and the Program for Career Development in Glycosciences (K12) (2019-2024). A much less known impact of Dr.Sarkar's contributions has been critical long-term support of the Essentials of Glycobiology textbook. The Consortium of Glycobiology Editors has never had any independent funding to produce the four editions of Essentials; instead, this effort was piggybacked onto NHBLI funding for a UCSD program project, then the National Administrative units of the PEG and K12 Programs of Excellence in Glycosciences (PEG), and finally on the Program for Career Development in Glycosciences (K12). All NHLBI support for these programs (and hence for the book) was spearheaded by Dr. Sarkar, without whose dedication and relentless support none of this would have happened. Dr. Sarkar also co-authored the Foreword to the 4th Edition. Last, but not least, Dr.Sarkar has never sought attention for all these achievements, a form of humility which is now vanishingly rare.

TRAVEL AWARD WINNERS

The Society for Glycobiology's Student Travel Awards are given to help students and post-doctoral fellows 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.

Mahmoud Abdelbary - Oregon Health & Science University
Hoda Ahmed - University of Mississippi
Débora Andrade Silva - UT Southwestern
Aaron Angerstein - Medical University of SC
Tala Azzam - Emory University
Jonathan Babulic - Queens University
Collin Ballard - Case Western Reserve University
Amrita Basu - University of Georgia
Eric Beaulaurier - Eastern Washington University
Sydney Bedillion - University of Georgia
Andrew Boucher - University of Gothenburg
Rohit Budhraja - Mayo Clinic
Ashley Carter - University of Georgia
Sayantani Chatterjee - Boston University
Adely De la Pena - University San Sebastian
Nicholas DeBono - Macquarie University
Vivien (Uyen) Doan - University of North Carolina
Xiaolin Dong - University of Georgia
James Dressman - Medical University of South Carolina
Marwa Farrag, Sr. - University of Mississippi
Julianna Follmar - University of California San Diego
Brett Garabedian - The Scripps Research Institute
Kishore Garapati - Mayo Clinic
Gracen Gerbig - Johns Hopkins University
Leandre Glendenning - Case Western Reserve University
Hayley Goodson - Macquarie University
Huilin Hao - University of Georgia
Tara Hawkinson - University of Florida
Chia-Wei Huang - University of Georgia
Sophia Hulbert - Cornell University
Jing Kai - King Abdullah University of Science & Technology
Emily Kukan - Case Western Reserve University
Stephanie Leal - University of California San Diego
Taryn Lucas - Yale University
Karina Martinez - George Washington University
Johnathan Mayfield - University of Georgia
Rebecca Mellema - University of Utah
Cristiana Meuret - University of Washington
Pedro Monagas-Valentin - Texas A&M University
Dominique Morais - Harvard Medical School
Takahiro Nakagawa - Nagoya University
Rita Nehmé - INRS Canada
Maxence Noel - Harvard Medical School
Hayato Ota - Soka University
Chelsea Painter - University of California San Diego
Shubham Parashar - University of California San Diego
Elisa Perez-Moreno - University San Sebastian
Katelyn Rosenbalm - Versiti Blood Research Institute
Joelle Saad - University of Alabama at Birmingham
Priyanka Samanta - University of Mississippi
John Sanford - University of Alabama at Birmingham
Rameen Shah - Mayo Clinic
Austin Silva - University of Alabama at Birmingham
Jose Souchak, III - Florida International University
Tamara Štambuk - Genos Glycoscience Research Lab
David Steen. Jr. - University of Georgia
Yang Su - University of Georgia
Suttipong Suttapitugsakul - Harvard Medical School
Mehrnoush Taherzadeh Ghahfarrokhi - University of Georgia
Gabrielle Tender - Stanford University
Hauke Thiesler - Hannover Medical School
Yohei Tsukamoto - Nagoya University
Aarya Venkat - University of Georgia
Shang-Chuen Wu - Harvard Medical School
Eugenia Wulff-Fuentes - Medical College of Wisconsin
Yixuan Axe Xie - Washington University St. Louis
Rashmi Yadav - Children's Hospital Philadelphia
Xu Yang - University of Georgia
Hyojung Yoon - Nationwide Children's Hospital
Lyndsay Young - Medical University of South Carolina
Zimin Zheng - University of California, Davis
Xisheng Zhou - University of Washington

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