Congratulations to Professor Zhongwu Guo on Receiving the 2022 Melville L. Wolfrom Award!

Professor Zhongwu Guo, Steven M. and Rebecca J. Scott Professor of Chemical Biology in the Department of Chemistry at University of Florida, has received the 2022 Melville L. Wolfrom award for outstanding service to CARB and the field of carbohydrate chemistry. Professor Guo pursued his undergraduate and masters degrees at The Second Military Medical University in Shanghai, China, then completed his doctoral degree at the Institute of Organic Chemistry in the Polish Academy of Sciences prior to undertaking a postdoctoral fellowship at the Shanghai Institute of Organic Chemistry in the Chinese Academy of Sciences. After completing postdoctoral research, he began his independent career as an Assistant Professor at Case Western University, then moved to Wayne State University in 2005 and to University of Florida in 2016. Professor Guo’s research interests focus on the application of carbohydrate chemistry to cancer research, with a focus on developing carbohydrate-based vaccines and immunotherapies. He is currently Editor-in-Chief of the Journal of Carbohydrate Chemistry.

Congratulations to Dr. P. Dan Cook on Receiving the 2022 Derek Horton Award in Industrial Chemistry!

Dr. P. Dan Cook, retired after 52 years in drug discovery science, has received the 2022 Derek Horton Award in Industrial Chemistry for his distinguished...
achievements in and outstanding contributions to industrial carbohydrate chemistry. Dr. Cook received his Ph.D. in organic chemistry in 1972 from the University of New Mexico under the direction of R. N. Castle. He undertook a postdoctoral fellowship for one year with R. K. Robins, then joined the staff at ICN Pharmaceuticals Nucleic Acid Research Institute for three years. Dr. Cook spent his industrial career in various drug discovery fields with a focus on oligonucleotide drugs. At Parke-Davis Pharmaceutical Company, which was later acquired by Warner-Lamber Pharmaceuticals, he initiated and led the Anti-metabolite Drug Discovery Research Team for a decade. In 1986 he founded and led the first industry antisense oligonucleotides drug discovery program at Eastman Kodak. He co-founded Isis Pharmaceuticals in 1989 and directed research there, as a senior executive, until he founded NuMAX Pharmaceuticals Inc. in 2000. Dr. Cook has participated in the design, synthesis, and pre-clinical product development of a number of anti-viral and anti-cancer drugs, including Ribavirin, Vidaabine (ara-A) and its 5’-phosphate prodrugs, the anti-cancer agents deoxycoformycin (Pentostatin), tiazofurin, selenazofurin, 3-deazaguanine and its metabolites, chorodeoxyadenosine (Cladaribine) and its prodrugs, and trimetrexate (TMQ). Dr. Cook’s Chemistry Research Laboratories at Isis Pharmaceuticals were responsible for the initial syntheses of multiple novel oligonucleotide drug candidates, including the FDA approved drug Vitravene™. He has authored more than 250 publications and is an inventor/co-inventor of over 350 issued United States patents. He received the M. L. Wolfrom Award from the CARB Division for his service to the division and the field in 2004.

CONGRATULATIONS TO PROFESSOR XING CHEN ON RECEIVING THE 2022 HORACE S. ISBELL AWARD!

Professor Xing Chen, Professor and Dean of the College of Chemistry and Molecular Engineering at Peking University, has received the 2022 Horace S. Isbell Award for excellence in and promise of continued quality of contribution to research in carbohydrate chemistry. Prof. Chen received his bachelor’s degree in chemistry from Tsinghua University in 2002 before moving to University of California, Berkeley where he obtained his Ph.D. in 2007 under Prof. Carolyn Bertozzi and Prof. Alex Zettl. Following postdoctoral studies with Prof. Tim Springer at Harvard University, he began his independent career at Peking University in 2010 and was promoted directly to Full Professor in 2016. Prof. Chen’s research focuses on developing chemical tools to probe glycosylation in living organisms in a cell- and protein-specific manner. His work has been recognized by numerous awards, including OKeanos-CAPA Senior Investigator Award at the Chemical and Biology Interface (2019), CCS-RSC Young Chemist Award (2018), ACS David Y. Gin New Investigator Award (2016), IGO Young Glycoscientist Award (2015), and National Science Fund for Distinguished Young Scholars (2014).

CONGRATULATIONS TO PROFESSOR CHRISTINA WOO ON RECEIVING THE 2022 DAVID Y. GIN YOUNG INVESTIGATOR AWARD!

Professor Christina Woo, Associate Professor of Chemistry and Chemical Biology at Harvard University, has won the 2022 David Y. Gin new Investigator Award for outstanding contributions to research in carbohydrate chemistry by scientists in the first seven years of their independent career. Prof. Woo earned her BA in chemistry from Wellesley College in 2008. Subsequently she carried out her Ph.D. research at Yale University under the direction of Prof. Seth Herzon. Following postdoctoral studies with Prof. Carolyn Bertozzi at University of California, Berkeley and Stanford University, she began her independent career
American Chemical Society Division of Carbohydrate Chemistry

at Harvard University in 2016. Prof. Woo’s research combines rational design of small molecules and proteins with chemical proteomics technology to chemically control and study the O-GlcNAc proteome. Her numerous awards include the Camille and Henry Dreyfus Teacher–Scholar Award (2020), National Science Foundation CAREER Award (2020), Bayer Early Excellence in Science Award (2019), Albert P. Sloan Research Fellow in Chemistry (2019), International Chemical Biology Society Young Chemical Biologist Award (2018), NIH DP1 Avenir Award (2018), Ono Pharma Foundation Breakthrough Science Award (2018), and Burroughs Wellcome Fund Career Awards at the Scientific Interface Fellow (2015–2020).

KUDOS

NATIONAL & INTERNATIONAL AWARDS

CONGRATULATIONS TO PROFESSOR GAVIN MILLER ON RECEIVING THE 2021 DEXTRA AWARD FROM THE RSC CARBOHYDRATE GROUP

Professor Gavin Miller, Senior Lecturer at Keele University, has been awarded the 2021 Dextra Award from the Royal Society of Chemistry Carbohydrate Group. Prof. Miller earned his Masters in Chemistry from UMIST, pursued his PhD in synthetic carbohydrate chemistry at the University of Manchester, and undertook his postdoctoral research at St. Andrews University. Following an industrial position at Ferring Pharmaceuticals, he joined the Manchester Institute of Biotechnology, first as a postdoctoral researcher and then as a lecturer. He took up his current lectureship in organic chemistry at Keele in 2016 and was promoted to Senior Lecturer in 2020. He is chair of the RSC Carbohydrate Committee and a core founder of the European Glycoscience Community, has achieved Chartered Chemist and Chartered Scientist status with the RSC, and is a Fellow of the Higher Education Academy. His group's research focuses around the chemical and chemoenzymatic synthesis of carbohydrates. The award was given in recognition of his work creating new probes for chemical glycobiology and for the application of non-native carbohydrate structures in medicinal chemistry.

CONGRATULATIONS TO PROFESSOR TANIA LUPOLI ON RECEIVING A 2021 BECKMAN YOUNG INVESTIGATOR AWARD FROM THE ARNOLD AND MABEL BECKMAN FOUNDATION

Professor Tania Lupoli, Assistant Professor of Chemistry at New York University, was recently awarded a Beckman Young Investigator Award from the Arnold and Mabel Beckman Foundation. Prof. Lupoli completed her B.S. in Chemistry at New York University in 2005, then pursued doctoral studies with Prof. Dan Kahne to earn her PhD in 2011 and postdoctoral studies with Prof. Suzanne Walker at Harvard University until 2012. Following a postdoctoral fellowship in Prof. Carl Nathan’s laboratory at Weill Cornell Medical College, she joined the chemistry faculty at NYU in 2018. Her laboratory’s research focuses on glycosyltransferase-mediated assembly of bacterial polysaccharides, the role of these structures as potential anti-virulence targets, and developing probes to study and disrupt these structures. Her Beckman work seeks to create artificial bacterial cell surfaces using genetic engineering and bacterial sugar mimics to probe interactions between bacteria and their environments.
CONGRATULATIONS TO PROFESSOR BIAO YU ON RECEIVING THE 2022 ROY L. WHISTLER INTERNATIONAL AWARD IN CARBOHYDRATE CHEMISTRY

Professor Biao Yu, Professor at the Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, was recently awarded the 2022 Roy L. Whistler International Award in Carbohydrate Chemistry from the International Carbohydrate Organization. Prof. Yu completed his undergraduate studies at Peking University in 1989, then obtained his Ph.D. in organic chemistry from the Shanghai Institute of Organic Chemistry in 1995. He completed one year of postdoctoral training at New York University, then was hired as an Assistant Professor and ultimately promoted to Professor at Shanghai Institute of Organic Chemistry. His research focuses on the chemical synthesis of complex natural glycosides and glycans, the development of glycosylation methods enabling their syntheses, and studies on their biological activity and pharmaceutical utility. He received this award for his pioneering work on the development of innovative approaches and mechanistic studies for the chemical synthesis of a wide range of complex naturally occurring glycoconjugates and glycans which possess significant biological activities.

OBITUARY

JOHN C. MARTIN
1951-2021

It is with great sadness that we share the news that John C. Martin, chemist, drug hunter, and philanthropist, passed away on March 30, 2021. He was 70. Martin received his bachelor's degree in chemical engineering from Purdue University, a master's degree in marketing from Golden Gate University, and a doctorate in organic chemistry from the University of Chicago. His tenure in the pharmaceutical industry spanned at least four decades. John was a believer in nucleoside and nucleotide chemistry and supported IS3NA for many years as a sponsor. He was the chair of the XV IRT meeting of IS3NA in 2002 in San Francisco. Our society has lost one of its great industrial leaders and the nucleotide community has lost one of the great champions of the field.

In an interview last year with the Science History Institute, Martin summarized his successful career in his usual self-effacing style, “I’m a scientist trained in organic chemistry who worked the last four decades in medicinal chemistry for a variety of companies. Most prominently, I started 30 years ago when Gilead was a very small company. I’d led the development of that to be an antiviral powerhouse that has really changed medicine, in HIV, viral hepatitis, influenza, and other diseases.”

Martin joined Gilead, a biopharmaceutical company based in Foster City, in 1990 after brief stints at Syntex and Bristol-Myers Squibb. Martin was hired by Gilead to be vice president of research and development just three years after its founding. He was named CEO in 1996. At the time of his unexpected death, Martin was executive chairman of the company.
Martin had the pioneering idea that nucleotides could be used as effective drugs for HIV treatment. It was this belief that led to Gilead’s launch of tenofovir (Viread®), which was approved by the U.S. Federal Drug Administration as an anti-HIV treatment in 2001. Under Martin’s leadership, Gilead also developed efavirenz/emtricitabine/tenofovir (Atripla®), the first single-tablet regimen for treating HIV, which hit the market in 2006. Before approval of Atripla, AIDS patients on antiretroviral treatment often took up to 32 pills a day.

Martin was good at recognizing value in nucleoside drugs and reaching out for them. This began with his collaboration with Professor Antonín Holý for acyclic Holý’s methylene phosphonates while Martin was still at Bristol-Myers Squibb. He brought these compounds to Gilead, resulting in development of adefovir and later the much better tenofovir. Martin acknowledged Holý as the pioneer of the tenofovir chemistry as he knew Holý made the compound himself on the bench. Several years later, Martin founded and financed the Holý Award of International Society of Antiviral Research as well as the Holý Poster Awards given by IS3NA, out of respect for Professor Holý. Similarly, Martin brought antivirals emtricitabine from Triangle Pharmaceuticals and sofosbuvir from Pharmasset. Sofosbuvir (Sovaldi®) was approved in 2013 for treatment of hepatitis C. Under Martin's leadership, Gilead also developed the first anti-influenza pill, oseltamivir (Tamiflu®), which was licensed to Hoffmann-La Roche, and emtricitabine/tenofovir (Truvada®), which was approved by the FDA to treat HIV in 2004 and for HIV infection prevention in 2012. The discovery of remdesivir started at Gilead in 2009 and has demonstrated promising results for the treatment of COVID-19.

"As chief executive officer from 1996 through 2016, he steered the company through a period connecting biology with chemistry: John Martin (center) with Professors Antonín Holý (right) and Erik DeClarcq (left). ca. 1996"
of remarkable growth," Gilead wrote in a statement announcing Martin's death. During his time with Gilead, Martin also expanded access to HIV medication in developing countries. According to a 2015 company report, Gilead had signed agreements with 11 India-based pharmaceutical manufacturers to develop generic versions of its hepatitis C medicine for 101 developing countries, from Afghanistan to Zimbabwe.

In recognition of the need for better treatment of endemic illnesses among underserved populations around the globe, Martin established a foundation under his name. According to the Palo Alto-based non-profit’s website, the foundation has supported epidemiologic investigations to better define public health burdens and inform health policy decisions and efforts to prevent transmission of viral infections and to improve healthcare infrastructure. Martin also started the access program that allows Gilead drugs to go to economically disadvantaged countries in recognition that many more people who are affected with HIV live in Africa than there are paying customers in the United States and Europe.

For his contributions, Martin was awarded the American Chemical Society's Horace S. Isbell Award in 1990, which acknowledges significant research in carbohydrate chemistry and biochemistry; the International Society for Antiviral Research's Gertrude B. Elion Award for Scientific Excellence in 2003; a Lifetime Achievement Award for Public Service from the Institute of Human Virology at the University of Maryland School in 2014; and a Biotechnology Heritage Award from BIO in 2017.

Thanks to:
https://www.sciencehistory.org/distillations/podcast/interview-with-john-c-martin

**OBITUARY**

**DR. RODRIGO (ROD) ANDRADE**
January 1, 1974 - May 24, 2021

“Organic chemistry can now make one completely mad. It seems to me like a primeval forest in a tropical country, full of the most peculiar things, an enormous thicket with no end and no way out”.

Friedrich Wöhler (1800 –1880)

This quote of the “first” organic chemist who prepared urea was a favorite of Professor Rodrigo Andrade. Rod liked this quote so much that he had a T-shirt made for all his colleagues in my laboratory at MIT during the first year in graduate school. The back of the shirt showed a monosaccharide with devil’s horns. This shirt summarizes in many ways the love of Rod for natural products, that are so plentiful in the rain forests of his native country Brazil. It points to the importance of carbohydrates for Rod’s professional life and tells of the struggles of the synthetic chemist with the targets at hand.
Rodrigo was born in Brazil in 1974 and moved to the US with his family at an early age. He was an undergraduate student in Biophysics at Johns Hopkins University and spent one summer at the National Cancer Institute for undergraduate research in the laboratory for natural products chemistry. For graduate school Rodrigo selected MIT where he joined the laboratory of Professor Satoru Masamune to work on natural product total synthesis but switched to my laboratory as NIH doctoral fellow even before I arrived at MIT due to his advisor’s health problems. Rodrigo worked at the very early stages of the discovery of automated glycan assembly and developed “Rod’s linker,” a key contribution to our early design before completing the total synthesis of several oligosaccharides. From 2001 to 2003 Rod explored industry and was the Chief Scientific Officer at Genigma Corp. and then Senior Scientist at NeoGenesis Pharmaceuticals (now Merck) developing lead compounds for drug discovery. After a two-year stint in industry, Dr. Andrade went for postdoctoral work to the laboratory of Professor Stephen Martin at the University of Texas – Austin where he stayed from 2003 until 2006.

In 2006 Rod Andrade joined the Department of Chemistry at Temple University where he was promoted to Associate Professor (tenured) in 2012 and Professor in 2019. He pursued a research program focusing on the asymmetric synthesis of complex natural products in general and the total synthesis of macrolide antibiotics and indole alkaloids in particular. In all of his programs, new chemistry gave rise to probes for biological evaluation. Erythromycin-derived telithromycin derivatives produced by total synthesis were found to exhibit activity against wild type and resistant bacterial strains.

The Andrade group successfully implemented innovative stereoselective methods to prepare the tetracyclic framework characteristic of the Strychnos family alkaloids including strychnnine, and to develop concise routes to related Aspidosperma bases. On the methodological front, they pioneered the use of chiral N-sulfinyl metaldienamines as ambient nucleophiles in complex molecule synthesis. Key steps in the first synthesis of (-)-albocyline were hydroxylation at the α-position and a vinylogous aldol reaction at the γ-position of the N-sulfinyl metaldienamine.

Rod was a scientist with extremely high standards for himself and a scholar in the true sense of the word. He was a fun-loving and broadly interested person. Rod was a beloved husband and proud father of two teenage daughters.

We will miss him as a colleague and a friend.

Peter H. Seeberger

OBITUARY

DR. HUGUES DRIGUEZ

Born in Algiers, Hugues Driguez studied at the university of Marseilles. After obtaining a doctorate in 1969 on the reactivity of alkynyl magnesium halides, he decided to complete his formation at the University of Sherbrooke, Canada, under the guidance of Professor Jean Lessard. He received a PhD in 1971 on the addition of N-haloamides to olefins, including glycals. The latter subject raised his interest for carbohydrate chemistry and he next moved to the laboratory of Professor Raymond Lemieux at the University of Alberta in Edmonton, Canada. In the laboratory of this grand master of carbohydrate chemistry and immunology, Hugues pioneered the synthesis of branched oligosaccharides and reported the first two syntheses of the
antigen trisaccharides determinants of Lewis A and B blood groups in a couple of back-to-back landmark papers published in the Journal of the American Chemical Society.

Hugues returned to France in January 1974 and after visiting the CERMAV laboratory then directed by Professor Didier Gagnaire, Hugues was recruited the same year by CNRS and joined the team of Dr. Jacques Defaye. Hugues has remained in the CERMAV laboratory until the end of his career. In 1976, Hugues received a D.Sc. degree based on his work in Edmonton together with his first results obtained on trehalose analogs. Professor Lemieux was the president of the defense jury. At the same time, Hugues started to become interested in the synthesis of thiosugars, and in particular of 1,2-cis oligosaccharides with an inter glycosidic sulfur atom.

After developing an original method for the synthesis 4-thiooligosaccharides and having shown their usefulness to study the enzymatic breakdown of polysaccharides, Hugues started to invest deeply in the biosynthesis, biodegradation and biomodification of oligo- and polysaccharides. He was a pioneer in the utilization of transglycosidases and glycoside hydrolases for the custom synthesis of selective substrates for monitoring glycosidase activities. In the 90’s, a large number of thio-oligosaccharides obtained in his laboratory have shed light on the recognition and catalytic mechanism of hydrolases of medical or biotechnological use, including amylases, cellulases and glycogen phosphorylases, a work he conducted in collaboration with biochemists and protein crystallographers. He also worked on the characterization of myrosinase, the only known enzyme to degrade a natural thio-glycoside.

At the turn of the century, Hugues conceived and synthesized non-natural oligosaccharides of increasing complexity by the utilization of glycosynthases to further refine our understanding of the interactions between proteins and carbohydrates. The culmination of Hugues’ career was probably his contribution to the elaboration of oligosaccharide-producing cell factories that opened the door to the industrial production of complex carbohydrates, in particular with the Danish biotech company Novozymes for the commercialization of molecules that favor nitrogen symbiosis in leguminous plants.

On several occasions, Hugues travelled abroad to seed novel collaborations. He thus spent a year at the Pulp and Paper Research Institute of Canada, in Pointe-Claire, Canada, with Dr. Lubo Jurasek with whom he succeeded cloning of a xylanase gene as early as 1983. Hugues also travelled several times to Australia where he entertained several collaborations, including with Professor Geoff Fincher of the University of Adelaide, who decided to spend a year in CERMAV in 2001.

Hugues has supervised many PhD students and is the author of 166 publications and 8 patents and gave multiple conferences at scientific symposia. He was nominated CNRS Director of Research in 1986 and became Head of the team “Chemical and Enzymatic Syntheses” later renamed “Chemistry and Biotechnology of Oligosaccharides” in 1989. He remained Head of the team until the end of 2007, when he became Emeritus for five years before retiring. On September 11, 2013 CERMAV organized a scientific meeting in honor of Hugues, where his past coworkers, students and friends gathered to celebrate his achievements.

In spite of writing several of the most important pages of glycochemistry, Hugues remained an extraordinarily modest pioneer. He was an avant-garde researcher, discreet and in love with science as he was with good things. Hugues has been the mentor of several generations of chemists and biochemists who remember his patience, his humor and his always benevolent and friendly welcome at his home, alongside his wife Denise and their son Pierre-Alexandre.
As the head of the Medical Research Council (MRC) starting in 1987, the research scientist Sir Dai Rees, who has died aged 85, revolutionized the way the MRC interacted with industry. In this respect, he was a visionary: he understood the importance of a successful interface between basic research and industry, including its impact on attracting public funds. Under his leadership, centers were established with strong industrial links, with the aim of encouraging the practical application of MRC research and inventions. The work of these centers contributed to the development of the “blockbuster” Keytruda antibody for cancer treatment, and of the world’s top-selling pharmaceutical drug, the antibody Humira, which treats rheumatoid arthritis and Crohn’s disease. Dai’s pioneering approach stemmed from his own research as a polysaccharide chemist in the 60s, which had attracted the interest of the food industry. The attraction was mutual – Dai saw companies such as Unilever as repositories of fascinating observations about his field of study. When linked together, sugars create chains or polymers (termed polysaccharides) with a remarkable range of properties. As a chemistry lecturer at Edinburgh University from 1960, Dai had been encouraged by his mentor Sir Edmund Hirst to understand these properties, tackling problems such as: “Why do hot solutions of some seaweed polysaccharides form a jelly on cooling?” He discovered that in fibers of one of the polysaccharides, i-carrageenan, the chains form double helices, from which the answer became obvious: at higher temperatures the chains of the helix are separate, but on cooling, they come together and become randomly intermeshed through helical segments, creating a polysaccharide mesh with water trapped in the spaces (ie, a gel). This and similar discoveries by Dai had ramifications in food processing, and in 1970, he left academia and joined Unilever Research Laboratories at Colworth House in Bedfordshire. There he developed polysaccharides to stiffen fluids, later used in Mr Whippy ice cream and instant desserts, and published a textbook, Polysaccharide Shapes (1977).

Born in Silloth, Cumberland (now Cumbria), to James Rees, a chemist, and Elsie (nee Bolam), a librarian, Dai was educated at Hawarden grammar school, in Clwyd, and went on to study chemistry at the University College of North Wales, Bangor, Gwynedd, gaining his BSc in 1956 and PhD three years later. There he met Myfanwy Parry Owen, a teacher and later a psychoanalyst; they married in 1959. In 1980, while still at Unilever, Dai was appointed to an MRC committee to consider the future of the council’s National Institute for Medical Research (NIMR) at Mill Hill, north London. The committee recommended that NIMR develop a more strategic focus and engage with “future exploitation in medical care or in British industry”. In 1982, and to his surprise, Dai was offered the directorship of NIMR to implement the recommendations he had helped to shape. As director, Dai had a low-key approach. He was naturally reserved and listened carefully before speaking or making decisions. His motto was “be like the wise tailor – think twice before you cut the cloth once”. As a research scientist, Dai had enjoyed chatting about science over drinks in the evening, and as director, he undertook informal consultations with the staff in a similar manner. He decided to place the research programs within four new supergroups, each with an over-arching strategic theme. In addition, he brought in new blood, and set about refurbishing laboratories and upgrading the facilities, leaving staff posts vacant to...
balance the books. His actions allowed the renewal and survival of NIMR during difficult financial times. He also encouraged direct links between MRC scientists and industry, and in 1986 set up a dedicated incubator for this purpose, the MRC Collaborative Centre. Originally accommodated within NIMR, the center shifted to an adjacent and refurbished building in 1988. Within a few years it had grown to an enterprise employing more than 50 scientists. The center charged industry for the services it provided, one of which was the “humanizing” of mouse antibodies, a technology invented at the MRC Laboratory of Molecular Biology (LMB) in Cambridge. Four of the antibodies created at Mill Hill for pharmaceutical companies were later approved for marketing, including Keytruda. Indeed, the royalties from Keytruda currently fund the activities of LifeArc, a UK medical research charity spun from the MRC. In 1987, Dai was appointed head of the MRC. There, in 1990, he set up the council’s first interdisciplinary research center, the Center for Protein Engineering (CPE), in Cambridge. He also facilitated the spinning out of the biotechnology company Cambridge Antibody Technology (CAT) from further inventions at the LMB and CPE. Within a few years CAT had helped create Humira. In the mid-90s Dai was an active member of the steering group developing the government’s Technology Foresight program, which aimed to identify and fund areas of research most likely to lead to practical application. He was awarded the Colworth research medal of the Biochemical Society (1970) and elected fellow of the Royal Society (1981). In 1993 he was knighted. He retired from the MRC in 1996 and focused on his role as president of the European Science Foundation (1994-99). Much of Dai’s leisure time was spent exploring inland waterways aboard Think Tank, a vintage wooden cruiser. Boating offered good birdwatching, a lifelong interest of his, and time for reading or being with family and friends. He is survived by Myfanwy, their daughter, Olwen, two sons, Lewis and Dan, three grandsons, Lorcan, Alex and Owen, and a granddaughter, Olivia.

REPORTS FROM THE FIELD

On the Move:

Alexei Demchenko, Chair of the ACS CARB Division and currently at the University of Missouri, will be joining the Department of Chemistry at Saint Louis University (SLU) as Department Chair on September 1, 2021. Alexei Demchenko says: “I am excited by the opportunity and am confident that I have what it takes to make a dedicated contribution to the upward momentum of the Department and the University. Fundamentally, SLU’s values of excellence in research and education align with my own. SLU’s commitment to developing high quality talent, building new programs, providing opportunities for research, and creating ideas that drive economic and scientific progress are what attract me to my new role as Department Chair.”

Rapid Communications in Mass Spectrometry special issue on glycomics:

Rapid Communications in Mass Spectrometry (RCM) is a journal whose aim is the rapid publication of original research results and ideas on all aspects of the science of gas-phase ions. It covers all the associated scientific disciplines. Dr. Joseph Banoub is proposing to edit a special edition of RCM dedicated to the most recent Glycomics Advancements. This special issue will be dedicated to the most recent mass spectrometric innovations concerning the characterization of oligosaccharides (glycans) derived from glycoproteins (N-Glycan, O-glycan) and glycolipid. glycosaminoglycans, ganglioside, glycocalyx, glycoconjugate vaccines, bacterial and viral glycomics.

Contributions (manuscripts, reviews and communications) may be theoretical or practical in nature; they may deal with methods, techniques and applications, or with the interpretation of results; they may cover
any area in science that depends directly on measurements made upon gaseous ions or that is associated with such measurements. For further information please contact joe.banoub@dfo-mpo.gc.ca

CARB POSITION OPENINGS

This coming fall, we will hold elections for five open positions on the CARB Executive Committee:

Chair Elect (2 year term)
Secretary (2 year term)
Member-at-Large (2 year term)
Member-at-Large (2 year term)
Awards Committee (3 year term)

Please send nominations for these positions to Danielle Dube (ddube@bowdoin.edu) by Sept. 15, 2021. For nominations, please send a CV and provide a nomination letter stating the qualification of the candidate. Self-nominations are allowed. The nomination documents will be forwarded to the full executive committee for approval. Part of this process is checking membership status so if you nominated someone please ask them to check their membership status since memberships sometimes laps. Approved nominees appear on the ballot. The vote will be conducted through an online email survey site starting in October. Only voting eligible members will receive a website link to the voting site.

CARB MEMBER HIGHLIGHT

Tania Lupoli, Assistant Professor of Chemistry at New York University, was recently awarded a highly competitive Beckman Young Investigator Award from the Arnold and Mabel Beckman Foundation. In addition, she has received numerous accolades, including an NYU Arts & Science Teaching Innovation Award, a Helen Hay Whitney and Simmons Foundation Fellowship for postdoctoral studies, and Harvard’s Christensen Prize for Outstanding Research Achievement. Her research focuses on glycosyltransferase-mediated assembly of bacterial polysaccharides, the role of these structures as potential anti-virulence targets, and developing probes to study and disrupt these structures. In this piece, we interviewed her to gain insight into the path that led to her successes as a young glycoscientist.

Tell us about your lab's work. What do you study and why?
We study the assembly of polysaccharides, namely O antigens, on the surface of Gram-negative bacterial cells. There are hundreds of glycosyltransferases that build the defined sugar patterns that make-up these sugar polymers and the “rules of recognition” for sugar substrates are still not well understood. Since surface-exposed sugar polymers like O antigens are important for host infection, these assembly pathways may serve as anti-virulence targets. We also design biomolecular and small molecule probes for bacterial chaperones to develop new adjuvants for antibiotics.

What was your path to your current position? What drew you to study glycoscience?
I completed my B.S. in Chemistry at NYU, where I worked in Prof. Paramjit Arora’s lab, which motivated me to pursue a Ph.D. in Chemistry. I performed my thesis work in Prof. Dan Kahne’s lab at Harvard, where I worked on a joint project with Prof. Suzanne Walker’s lab on the biochemical
characterization of penicillin-binding proteins (PBPs) that build the sugar-rich peptidoglycan layer (or cell wall). I stayed on as a postdoctoral fellow in the Walker lab to complete this work, which I really enjoyed. I was then a postdoctoral fellow in Prof. Carl Nathan’s lab at Weill Cornell Medicine, where I studied bacterial chaperones that important for infection by the pathogen *Mycobacterium tuberculosis*. Throughout my thesis work, I realized that there are many questions surrounding sugar polymer synthesis in bacteria, and I learned more about gaps in knowledge in pathogenic bacterial species during my postdoc. I am drawn to Glycoscience because sugars are important biomolecules and many sugar biosynthetic pathways are still not well understood!

**How did you know or discover that a career in academia was the right fit for you? What drew you to an R1 institution?**

Since my time as an undergraduate at NYU, I have really enjoyed performing research in a lab (on most days). When I was going through the process of writing proposals as a postdoc, I realized that there were many lingering problems in my field that I was/am excited to pursue with a group of other scientists. I really enjoy training students and watching them grow. I was drawn to an R1 institution because I thought it offered the ideal ratio of research and teaching responsibilities, and I wanted to work with graduate students and postdocs in addition to undergraduates students.

**How do you stay productively and meaningfully engaged as a glycoscientist?**

Conferences really help! And the virtual seminars by GlycoNet/ACS Carb during the pandemic introduced me to many interesting glyco-focused research talks.

**What advice do you have for burgeoning glycoscientists who are still navigating their own paths?**

I would tell them not to feel discouraged by setbacks - it is very possible to get the position that you want. I found that getting advice from scientists that were further along in their careers really helped guide my own path. Also, it is completely normal to fail and to learn from it. I know that’s trite, but it’s true.

**What has surprised you most along your path?**

I am still surprised and happy that I get to mentor a group everyday!

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**CARB RESEARCH HIGHLIGHT**

*Martina Delbianco* is Group Leader of Carbohydrate Materials at the Max Planck Institute of Colloids and Interfaces (MPIKG). She studied chemistry at the University of Milan in Italy, then moved to Durham University in the UK to pursue a PhD under the supervision of Prof. David Parker working on emissive Europium complexes for biomedical assays. For her postdoctoral work, she explored the chemistry of carbohydrates and automated synthesis in the group of Prof. Peter Seeberger at MPIKG in Germany. Since 2018, she has been the group leader of the Carbohydrate Materials at MPIKG. Her research focuses on using automated glycan assembly to generate polysaccharide probes to aid in structure-function studies. Below is a highlight of the excellent work coming from her group.

**Tell us about your lab’s work. What do you study and why?**

Polysaccharides can assemble into hierarchical architectures to generate materials, ranging from hard structural materials (e.g. cellulose) to dynamic hydrogels (e.g. glycosaminoglycans). Yet correlations
between their chemical structure, conformation, and macroscopic properties have not been established. We prepare well-defined oligo- and polysaccharides resembling natural as well as unnatural structures using automated glycan assembly (AGA). With this approach, we generate polysaccharide probes with full control over their length and modification to study their fundamental properties.\textsuperscript{1,2} We employ computational methods, NMR spectroscopy, and single molecule imaging techniques to study polysaccharides’ conformations.\textsuperscript{3-5} Based on these insights, we design oligosaccharides that self-assemble into supramolecular materials as models to understand the aggregation of natural polysaccharides.\textsuperscript{6-7} Moreover, we explore unnatural modifications that can selectively alter the shape and aggregation of natural polymers, providing a toolbox for the creation of tunable carbohydrate-based materials.\textsuperscript{2}

**What papers do you recommend for us to learn more about your work?**


**NEWS FROM THE FIELD**

*Graduate student Owen Tuck has contributed a piece about his Fulbright experience in the laboratory of Prof. Dr. Peter Seeberger during the pandemic. Tuck earned his BA from Bowdoin College in 2020, pursued a Fulbright Study/Research Award in Potsdam Germany during academic year 2020-2021, and is currently undertaking his PhD studies at University of California, Berkeley.*

**Musings on a Fulbright Study/Research Award in the Seeberger Lab**

by Owen T. Tuck, PhD Student at University of California, Berkeley

My AP Chemistry teacher Mr. Erickson encouraged an appreciation for pathbreaking experiments that cut through competing hypotheses and revealed new things about nature. For me, the idea of orchestrating these “crucial experiments” – a phrase my teacher often borrowed from Platt – inspired me to study chemistry in college. A year later, I enrolled in Bowdoin College, a ‘little ivy’ nestled in the
sleepy coastal town of Brunswick, Maine. Bowdoin helped me realize something I couldn’t express in high school – that not only could I take a course of study that makes little compromise in both the natural sciences and the arts, but also that cultivating both interests leads to mutual benefit and unexpected insights. I fell in love with the logic of organic synthesis, the metabolic pathways of the cell, and the intricacies of German grammar simultaneously. I discovered that translating texts was like deducing chemical structures, that new vocabulary words could be learned like mechanisms, and that creativity and inspiration gleaned from literature could seep over into difficult problem sets like osmosis.

I weaved in and out of chemistry and German until they eventually aligned to my benefit. One summer, I joined Prof. Arwen Pearson’s lab at the University of Hamburg as a DAAD fellow. Then, I studied language and history in the Black Forest town of Freiburg im Breisgau. Back at Bowdoin, I enrolled in chemical biology with Prof. Danielle Dube. The marriage of chemical thinking and biology immediately captivated me. Danielle introduced me to the world of glycans and hosted me in her lab for my senior Honors thesis. We used clickable monosaccharide probes to investigate the glycoproteins of the pathogen *Helicobacter pylori* and eventually found that bacteria-specific metabolic inhibitors bearing fluorines or modified aglycons could lead to a host of glycoprotein and fitness defects. My interests in organic synthesis and chemical microbiology, combined with my German connection, ultimately led me to pursue a Fulbright Study/Research Award in Prof. Dr. Peter Seeberger’s laboratory at the Max Planck Institute of Colloids and Interfaces (MPIKG) in Potsdam/ Berlin, Germany in Fall 2020.

By the time I was awarded the grant, the world had completely changed. COVID had cut my senior spring short and nearly derailed my Fulbright. Despite the near standstill of international travel, I managed to make it to Germany in October 2020, just in time for the second major wave of coronavirus cases in Europe. Supportive colleagues and Peter’s guidance carried me through this difficult first phase of the grant and oriented me in the exciting diversity of carbohydrate chemistry happening at the MPIKG. Fascinated by the Seeberger group’s use Automated Glycan Assembly (AGA), I joined the automation group. Under the wings of postdocs Dr. Eric Sletten and Dr. José Danglad-Flores, I became interested in parameterizing the Fmoc-protected thioglycoside building blocks used in AGA. Since AGA enables precise control over reaction temperature, we reasoned that tuning the activation and coupling temperatures for specific linkages might help us reign in difficult reactions and reduce building block usage, ultimately improving access to homogeneous glycans. We developed several methods to study the chemical landscape of manifold thioglycosides and found a host of interesting features, including useful insights into temperature sensitivity. For example, refractory building blocks N-acetyl glucosamine and galactose appeared to decompose readily even at low temperatures, prompting us to modify the aglycon, thus stabilizing the thioglycosyl donor and improving efficiency in model syntheses of larger oligosaccharides. Developing mechanistic ideas from our temperature studies and devising experiments to discern them was the most rewarding part of my research in the Seeberger group.

Outside of the lab, my German knowledge helped me find a flat in Berlin with other students with whom I could hunker down over the long COVID-winter. As my Fulbright ended, I made the most of an open, sunny Berlin, spending as much time in parks, beer gardens, and döner shops as possible while I completed experiments for a manuscript. As seems to be a theme in the past two years, a premature and bittersweet departure, full of exciting uncertainty, arrived. As I make my way eight time zones to the west and begin graduate school at the University of California, Berkeley this Fall, my interests in glycochemistry and German will stay with me.
Looking for Sweet Pictures
CARB webmaster, Professor Peter Andreana, is looking for recent CARB meeting related photos to enhance the website. If you have anything appropriate, please email them to peterandreana@gmail.com

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UPCOMING ACS MEETING

FALL 2021 ACS NATIONAL MEETING

American Chemical Society
National Meeting & Exposition
Resilience of Chemistry

The CARB program Fall 2021 ACS National Meeting, which will be a hybrid event, has been published. Please support the Carbohydrate Division by attending these symposia:

Graduate Student/Postdoctoral Symposium: Frontiers in Carbohydrate Chemistry and Biology (virtual) featuring a lineup of 15 graduate students and postdoctoral scholars
Sun 8/22 (virtual) 2-4 PM, and 4:30-6:30 PM EST

CARB General Poster session (virtual)
Sun (8/22) (virtual) 7-9 PM EST

Chemistry and Biology of Heparin Sulfate Oligosaccharides and Polysaccharides (virtual)
Mon 8/23 (virtual) 7-9 PM EST featuring Vito Ferro, Linda Hsieh-Wilson, Xuefei Huang, and Jia Niu

Catalytic Approaches to Selective Glycoside Synthesis (virtual)
American Chemical Society Division of Carbohydrate Chemistry

Tues 8/23 (virtual) 10:30 AM-12:30 PM, 2-4 PM, and 4:30-6:30 PM EST featuring A. J. Minnaard, M. Galan, M. Taylor, A. Demchenko, W. Tang, P. Nagorny, M. A. Walczak, I. Sharma, and D. Takahashi

Chemistry and Biology of Heparin Sulfate Oligosaccharides and Polysaccharides (virtual)
Tue 8/24 (virtual) 10:30 AM-12:30 PM and 2-4 PM EST, featuring Israel Vlodavsky, Jinping Li, Nicolò Massironi, Gerd Bendas, Jeremy Turnbull, Geert-Jan Boons, Ding Xu, Ran Xie, Ryan Weiss, and Hien Nguyen

Awards Ceremony
Wed 8/25 (Hybrid with in person lecture)
8:00-10:00 – Gin Award Ceremony featuring Clay Bennett and Steve Townsend
10:30-12:30 – Isbell Award Ceremony featuring Gerald Hart and Matt Pratt
2:00-4:00 – Wolfrom Award Ceremony featuring Marin Egli and Eriks Rozners
4:30-6:30 – Horton Award Ceremony featuring Michael Jung and Muthiah Manoharan

*Banquet will start at 7 pm

Awards Ceremony
Thurs 8/26 (Hybrid with in person lecture)
10:30 AM-12:30 PM – Hudson Award Ceremony featuring Madhusudhan Reddy Gadi, George Wang
2:00-4:00 PM – Hudson Award Ceremony featuring James Paulson and Yukishige Ito

Each virtual symposium will be followed by half an hour Q&A.
American Chemical Society Division of Carbohydrate Chemistry

2021 Fall ACS Meeting in Atlanta

August 22 – 26, 2021 – Virtual Symposium

Chemistry and Biology of Heparan Sulfate Oligosaccharides and Polysaccharides

Chair: Hien Nguyen; Professor of Chemistry; Wayne State University; email: hmnguyen@wayne.edu

Speakers | Seminar Titles | Institutions
--- | --- | ---
**Session I: TUESDAY, 08/24 – VIRTUAL 2:00 PM EST**
Geert-Jan Boons | Synthetic HS oligosaccharides to dissect the importance of 3-O-Sulfation to Modulates Protein Binding and Lyase Degradation | University of Georgia
Ding Xu | Heparan sulfate inhibits the collagenase activity of cathepsin K by inducing its oligomerization | SUNY at Buffalo
Ran Xie | New-to-nature Chemical Tools for Studying Lipopolysaccharide Transport | Nanjing University
Ryan Weiss | Genome-wide regulation of heparan sulfate Assembly | University of Georgia
Hien Nguyen | Discovery of Glycopolymers as Potent Inhibitors of Heparanase for Cancer Therapeutics | Wayne State University

**Session II: TUESDAY, 08/24 – VIRTUAL 10:30 AM EST**
Israel Vlodavsky | Heparanase 2 attenuates pancreatic tumor growth and metastasis | Technion
Jin-ping Li | Heparanase overexpression impedes perivascular clearance of amyloid-β from murine brain – relevance to Alzheimer’s disease | Uppsala Universitet
Nicolò Massironi | Design and preparation of heparin-superparamagnetic iron oxide nanonarticles aimed at biomedical applications | Politecnico di Milano
Gerd Bendas | Use of Synthetic Heparin Mimetics as a Promising Approach to Inhibit Tumor – Host Cell Interactions in terms of Metastasis | University of Bonn
Jeremy Turnbull | Next Generation Heparins and Mimetics: | University of Liverpool
### Session III: MONDAY, 08/23 VIRTUAL 7:00 PM EST

<table>
<thead>
<tr>
<th>Name</th>
<th>Research Title</th>
<th>Institution</th>
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</thead>
<tbody>
<tr>
<td>Vito Ferro</td>
<td>Synthetic Heparan Sulfate Mimetic Pixatimod (PG545) Potently Inhibits SARS-CoV-2 By Disrupting The Spike-ACE2 Interaction</td>
<td>University of Queensland</td>
</tr>
<tr>
<td>Linda Hsieh-Wilson</td>
<td>Synthesis of heparan sulfate glycosaminoglycan libraries for unlocking the sulfation code and understanding GAG biology</td>
<td>Caltech</td>
</tr>
<tr>
<td>Xuefei Huang</td>
<td>Expedient synthesis of heparan sulfate oligosaccharide libraries and mimetics</td>
<td>Michigan State</td>
</tr>
<tr>
<td>Jia Niu</td>
<td>Sequence-Defined Heparan Sulfate-Mimetic Oligomers for Probing the Functional Roles of the Sulfation Pattern</td>
<td>Boston College</td>
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</tbody>
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There are two upcoming symposia being held by the NIH Common Fund Glycoscience Program that may be of interest! Note: NIA, NIDA, and NCI Program Directors will be co-chairing and all three have interest in carbohydrates/glycoscience.

**The Neurosciences: Degenerative Disorders, Neuroplasticity, & Intersection with Glycoscience**
September 8 & 9, 2021 (virtual) 10:00 a.m. to 4:30 p.m. EDT
Co-Chairs: Dr. Catherine Leimkuhler Grimes, University of Delaware; Dr. Ronald Schnaar, Johns Hopkins School of Medicine; Dr. Austin Yang, NIA; Dr. Kiran Vemuri, NIDA.

[Agenda](#)
[Register](#)

and

**The Glycobiology of Cancer**
September 16 & 17, 2021 (virtual) 1:00 p.m. to 5:00 p.m. EDT
[Meeting website](#) (expected to go live shortly)
 NIH Common Fund Symposium

The Glycobiology of Cancer

September 16 & 17, 2021 (virtual)
1:00 p.m. to 5:00 p.m. EDT

Co-Chairs: Dr. Karl Krueger, Program Director, NCI; Dr. Neeraja Sathyamoorthy, Program Director, NCI & Dr. Pamela Marino, Working Group Coordinator, Common Fund Glycoscience Program

Register

Glycans (glycoproteins, glycolipids, glycosaminoglycans) are expressed on the cell surface and play key roles in mediating cell-cell and cell-matrix interactions, protein-receptor signaling, and appropriate protein folding and maturation during translation. Malignant transformation and tumor progression correlate with aberrant changes in cellular glycosylation. Cells presenting with an altered glycocalyx are recognized by immune cells, leading to induction of inhibitory immune processes which subsequently drive tumor growth and metastasis. A focus on the glycobiology of cancer thus offers the possibility of revealing both new diagnostic biomarkers, and therapeutic targets (glycosyltransferases, cancer-associated glycans). This symposium will cover recent work on the roles glycans play in cancer (signaling, tumor progression, metastasis), their potential as diagnostics as well as therapeutic targets, and it will highlight several new tools developed in the Common Fund Glycoscience Program for the study of cancer biology.

Confirmed Speakers

Cancer Progression & Metastasis
Dr. Gerard C. Blobe, Duke University Medical School
Dr. Kevin Yarema, Johns Hopkins Medical School
Dr. Prakash Radhakrishnan, University of Nebraska Medical Center
Dr. Charles Dimitroff, Florida International University

Diagnostics & Therapeutics
Dr. Joseph Contessa, Yale University Medical School
Dr. Steven Banik, Stanford University
Dr. Mia L. Huang, Scripps Department of Molecular Medicine
Dr. Dannielle Engle, Salk Institute for Biological Studies
Dr. Edgar Engleman, Stanford University School of Medicine.

Cell Signaling
Dr. Mauricio Reginato, Drexel University
Dr. Virginia Shapiro, Mayo Rochester
Dr. Anita Hjelmeland, University of Alabama Birmingham
Dr. Thomas Clausen, University of California San Diego

Glycoproteomics & Informatics
Dr. Richard Drake, Medical University of South Carolina
Dr. Stacy Malakar, Yale University
Dr. Hui Zhang, Johns Hopkins School of Medicine
Dr. Raja Mazumder, Georgetown University
Dr. Lingjun Li, University of Wisconsin
28th Symposium on Glycosaminoglycans

September 27th – 29th, 2021

PRELIMINARY PROGRAM

Organizers:

Giangiacomo Torri, Annamaria Naggi
"G. Ronzoni" Institute for Chemical and Biochemical Research,
Milan, Italy

Job Harenberg, Roland Krämer
University of Heidelberg, Germany
Welcome to San Servolo Island 2021!

Following the interruption last year due to the pandemic, the series of annual Symposia resumes with the 28th edition, which will take place on San Servolo Island, in Venice Lagoon. Eminent specialists from all over the world are invited to discuss both current and emerging topics of interest in the fields of chemistry, biochemistry, biology, pharmacology, and in the clinical applications of heparin and other glycosaminoglycans. In particular, sessions devoted to COVID-19 and Glycosaminoglycan Research, as well as others covering both basic and applied research aspects have been considered. The subjects of interest cover biosynthesis, structural characterization and protein interactions, biological functions, pharmaceutical and clinical aspects including anti-inflammatory and anti-tumor activity.

The symposium will have a hybrid character, allowing both in-presence and virtual participation. However, as per tradition, participation is only by invitation.

Keynote speakers will outline state-of-the art, research and advances in each field and present novel results and future perspectives. A sufficient time will be allotted for in-depth discussion. The informal, workshop-like character of the symposia and the pleasant surroundings of San Servolo will stimulate the traditional after-session interactions among participants as in the past twenty-seven editions.

Job Harenberg

Giangiacomo Torri

Scientific board
Giangiacomo Torri, Roland Krämer, Ram Sasisekharan, Annamaria Naggi, Marco Guerrini, Gerd Bendas, Martin Götte.

Scientific Secretary
Antonella Bisio
Pacifichem 2021 Honolulu December 16-21, 2021

Topic Area: Chemical, Biological and Biomedical Eng. Dec 17-20, 2021
Title: Advances in Glycan Engineering and Glycans from the Microbial World (#385)

Organizers: Steven Sucheck, Xuewei Liu, Katsunori Tanaka, Linda Hsieh-Wilson, Suvarn Kulkarni, and Xuefei Huang

Confirmed Speakers:
Prof. Peter Seeberger, Max Planck Institute Potsdam, Germany
Prof. Jeroen Codee, Leiden University, Netherlands
Prof. Danielle Dube, Bowdoin College, USA
Prof. Koichi Fukase, Osaka University, Japan
Prof. Yukari Fujimoto, Keio University, Japan
Prof. Shahriar Mobashery, University of Notre Dame, USA
Prof. Hongzhi Cao, Shandong University, China
Prof. Yuxin Pei, Northwest A&F University, China
Prof. Kamil Godula, University of California-San Diego, USA
Prof. Jessica Kramer, University of Utah, USA
Prof. Steven Sucheck, University of Toledo, USA
Prof. Matthew DeLisa, Cornell University, USA
Prof. Xing Chen, Peking University, China
Prof. Zhongwu Guo, University of Florida, USA
Prof. Hiromune Ando, Gifu University, Japan
Prof. Katsunori Tanaka, RIKEN, Japan
Prof. Suvarn Kulkarni, Indian Institute of Technology, Bombay
Prof. Peter Andreanna, University of Toledo, USA
Prof. Hien Nguyen, Wayne State University, USA
Prof. Peng Wu, Scripps Research, USA
Prof. Chun-Cheng Lin, National Tsing Hua University, Taiwan
Dr. Michael Jones, Pfizer, USA
Prof. Timor Baasov, Technion, Isreal

Friday 12/17/2021 6:00 PM-10:00 PM Oral - Virtual
Saturday 12/18/2021 8:00 AM-12:00 PM Oral - In-person Kahili I & II (Hilton Hawaiian Village Waikiki)
Saturday 12/18/2021 1:00 PM-5:00 PM Oral - In-person Kahili I & II (Hilton Hawaiian Village Waikiki)
Saturday 12/18/2021 6:00 PM-10:00 PM Oral - Virtual
Monday 12/20/2021 7:00 PM-9:00 PM Poster - Virtual
Confirmed speakers (In-person, Virtual):

Clay Bennett (Tufts University)
Xi Chen (University of California Davis)
David Crich (University of Georgia)
Ben Davis (University of Oxford)
Ratmir Derda (University of Alberta)
Carmen Galan (University of Bristol), Ethan Goddard-Borger (The Walter and Eliza Hall Institute of Medical Research)
Cathrine Grimes (University of Delaware)
Mia Huang (Scripps Research, Florida)
Shang-Cheng Hung (Acadeia Sinica)
Xuefei Huang (Michigan State University)
Linda Hsieh-Wilson (California Institute of Technology)
Yukishige Ito (RIKEN)
Jesús Jiménez-Barbero (CIC bioGUNE)
Jiaoyang Jiang (University of Wisconsin-Madison)
Laura Kiessling (MIT)
Xuewei Liu (Nanyang Technological University)
Xuechen Li (The University of Hong Kong)
Todd Lowary (Acadeia Sinica, University of Alberta)
Pumtiwitt McCarthy (Morgan State University)
George O'Doherty (Northeastern University)
Jim Paulson (Scripps Research, California)
Matthew Pratt (University of Southern California)
Keith Stubbs (University of Western Australia)
Bridget Stocker (Victoria University of Wellington)
Tadashi Suzuki (Riken)
Steve Townsend (Vanderbilt University)
David Vocadlo (Simon Fraser University)
Maciej Walczak (University of Colorado)
Qian Wan (Huazhong University of Science and Technology)
Spencer Williams (University of Melbourne), Peng Wu (Scripps Research, California)
Xin-Shan Ye (Peking University)
Asian Carbohydrate Chemistry and Glycobiology Webinar

15:00 - 15:40
Xing Chen
Integration of Cryo-EM and Mass Spectrometry to Study Highly Glycosylated Coronavirus Spike Proteins
College of Chemistry and Molecular Engineering
xingchen@pku.edu.cn

15:40 - 16:00
Shang-Te Hsu
Mini-Cyclodextrin Synthesis Using Bridged Glucose Derivative
Academia Sinica, Institute of Biological Chemistry
sthsu@gate.sinica.edu.tw

16:00 - 16:20
Shinnosuke Wakamori
Siglec-7 Ligands Protect B-CLL Cells from Natural Killer Cells
Faculty of Life Sciences, Tokyo University of Agriculture
sw207675@nodai.ac.jp

16:20 - 17:00
Takashi Angata
From Glycoside to Glycoconjugate: Development of Stereoselective Glycosylation and Homogenous Antibody-Drug Conjugates
Academia Sinica, Institute of Biological Chemistry
angata@gate.sinica.edu.tw

17:00 - 17:40
Shino Manabe
Labeling, Imagining and Proteomics of Brain Glycans
Faculty of Pharmaceutical Sciences, Tohoku University
s-manabe@hoshi.ac.jp

Meeting ID: 824 3813 5944, Passcode: 628061
https://us02web.zoom.us/j/82438135944?pwd=Nk9nWm9oRnZINWZ1Z1RQakRzU1ZTZZ09