Curriculum vitae

Robert James Woods, Ph.D.

Education

1985—1990	Ph.D. (Computational and Carbohydrate Chemistry) School of Graduate Studies and Research, Queen's University at Kingston, Canada
1981—1985	B.Sc. (Honors, Engineering Chemistry) Faculty of Applied Science, Queen's University at Kingston, Canada

Appointments

2020—2020	Member of the 2021 Emil Fischer Award Selection Committee
2020—Present	Adjunct Professor, Center for Molecular Modeling, University of Georgia, Athens
2019—2020	Chair, National Center for Biotechnology Information (NCBI) Glycoscience Advisory Group
2015—Present	Core Faculty, Complex Carbohydrate Research Center, Office of Research
2015—Present	Member, Center for Drug Discovery, College of Pharmacy
2014—Present	Courtesy Faculty Member, Institute of Bioinformatics
2009—2012	Courtesy Faculty, Department of Chemistry, Franklin College of Arts & Sciences - Division of Physical & Mathematical Sciences
2012—Present	Member, Faculty of Infectious Disease (UGA), Athens
2008—2014	Professor, School of Chemistry, National University of Ireland, Galway
2008—2012	Leader, 3-D Structural Glycobiology Subgroup, Consortium for Functional Glycomics (Scripps)
2007—Present	President, Glycosensors and Diagnostics, LLC.
2007—Present	Professor, Complex Carbohydrate Research Center and Department of Biochemistry and Molecular Biology, University of Georgia, Athens
2006—Present	Adjunct Professor, Department of Chemistry, National University of Ireland Galway
2002—2007	Associate Professor, Complex Carbohydrate Research Center and Department of Biochemistry and Molecular Biology, University of Georgia, Athens
1998—Present	Adjunct Professor, Department of Chemistry, University of Georgia, Athens
1998—Present	Graduate Program Faculty, Department of Biochemistry and Molecular Biology, Franklin College of Arts & Sciences - Division of Biological Sciences
1995—2002	Assistant Professor, Complex Carbohydrate Research Center and Department of Biochemistry and Molecular Biology, University of Georgia, Athens
1994—1995	Term Scientist, Institute for Biological Sciences, National Research Council of Canada, Ottawa, Canada
1991—1994	Postdoctoral Fellow, Glycobiology Institute, University of Oxford, United Kingdom
1990—1991	Postdoctoral Fellow, Laboratory for Molecular Modeling, University of North Carolina

University Governance

2014—Present	Chair, Integrated Life Science Interest Groups
2014—Present	Chair, Structural Biology Interest Group
2011—Present	Member, Center for Drug Discovery
2009—Present	Chair, Computer Lab Oversight Committee
2008—2011	Member, Life Sciences Area Committee for Appointment and Reappointment
2004—2005	Member, Integrative Life Sciences (Systems Biology) Task Force
1998—2008	Member, Molecular Biosciences Graduate Program Working Committee
1995—2005	Member, Faculty Search Committees
1995—1999	Member, Research Computing Subcommittee on Curriculum Development
1995—2005	Member, Research Computing Advisory Committee

1995—1998	Member, Campus Information Technology Forum

Peer Advising

2014—2017	External Mentor for Dr. Henry Wan, Centers of Biomedical Research Excellence (COBRE)
2012—2015	Scientific Advisory Board Member, Gates Foundation Award to Dr. Shan Lu

Memberships in Professional Organizations

2020—2024	Member, Board of Directors for the Society for Glycobiology
2019—2021	Chair-Elect, Northeast Georgia American Chemical Society Section
2009—Present	Fellow, Royal Society of Chemistry
2004—2014	Member, Consortium for Functional Glycomics
1999—Present	Member, Society for Glycobiology
1991—2009	Member, Royal Society of Chemistry
1990—Present	Member, American Chemical Society

Journal Editorial Service

2015—Present	Member, Editorial Board, *Journal of Biological Chemistry*
2011—Present	Member, Editorial Board, *Glycobiology*
2008—2012	Member, Editorial Board *International Journal of Carbohydrate Chemistry*
2003—2012	Member, Editorial Board, *Carbohydrate Research*

Services as Grant Reviewer

National Institutes of Health, National Science Foundation, Petroleum Research Fund, Research Corporation, National Research Council of Canada
Ad hoc member of NIH Review Panel for Biophysics Fellowships (2004)
Ad hoc member of the NIH Macromolecular Structure and Function B study section, responsible for reviewing glycoscience applications (2006)

Services as Journal Reviewer

Biochemistry, Bioinformatics, Biophysical Journal, Biopolymers, Canadian Journal of Chemistry, Carbohydrate Research, Chemical Physics Letters, Glycobiology, European Journal of Organic Chemistry, Folia Parasitologica, International Journal of Quantum Chemistry, Journal of Molecular Graphics and Modeling, Journal of the American Chemical Society, Journal of Biological Chemistry, Journal of Computational Chemistry, Journal of Molecular Biology, Journal of Physical Chemistry, Nucleic Acids Research, Nature Chemical Biology, Nature, Nature Scientific Reports, Proceedings of the National Academy of Sciences, Proteins

Honors

2014	UGA Faculty Entrepreneur of the Year

Instructional Activities

Teaching Philosophy:

I was trained as a theoretical chemist, but during my early teaching to biochemistry undergraduates I learned that to adopt a very different approach to what I might use with chemistry students. This was an extremely important discovery for me as it broadened my perspective on teaching approaches. I had to rethink how to present the material without, for example, the need for advanced calculus or physics, while still ensuring that the core topics were effectively presented. Subsequently, I have adopted a teaching approach wherein I present the material from multiple perspectives, which I believe has enabled me to reach students with highly diverse

backgrounds. As a concrete example, for approximately two decades, I have taught a graduate course in molecular modeling that is cross listed between the Departments of Bioinformatics, Chemistry, and Biochemistry. The course comprises lectures and hands-on computer modeling. To overcome individual background weaknesses inevitably requires considerable review material, which runs the risk of boring some students. To help keep all students engaged, we often divide into groups and treat the material like Trivia Night. Some groups do well on computing, others better on protein structure, etc. In general, this reflects my view that engaging everyone in the class is essential for maintaining their interest and promoting true comprehension. Additionally, when possible, I like to have students participate in presentations of their project results, which provides an opportunity for them to improve as presenters, a skill that is highly relevant to all future careers, but particularly science. During such class discussions, I strive to demonstrate an open mind, a critical but encouraging attitude, as well as high expectations. I hope that I can ultimately inspire and encourage such traits in the students as well.

Courses Taught

Year	Semester	Title of course
2021 — Present	Spring	CHEM/BCMB/BINF 8330 (Macromolecular Simulations)
2017 — Present	Fall	BCMB 8130 (Advanced Topics in Glycobiology)
2017 — Present	Fall	CHEM/BCMB 8390 (Special Topics in Organic Chemistry)
2015 — Present	Spring	BCMB/CBIO/GENE 8112 (Advanced Genetics, Cell, Biochemistry and Molecular Biology I)
2017 — 2019	Spring	CHEM/BCMB/BINF 8330 (Macromolecular Simulations)
2017 — 2019	Spring	CHEM/BCMB/BINF 8330 (Macromolecular Simulations)
2019	Spring	BCMB 4200/6200 (BioTechnology)
2006 — 2015	Spring	CHEM/BCMB/BINF 8330 (Molecular Modeling and Structure Computations)
2011 — 2012	Spring	BCMB 4970 (Laboratory Research in Biochemistry and Molecular Biology II)
2006 — 2010	Spring	CHEM/BCMB/BINF 8330 (Molecular Modeling and Structure Computations)
	Fall	BCMB 8210 (Computational Methods in Bioinformatics)
2003 — 2005	Spring	CHEM/BCMB/BINF 8330 (Molecular Modeling and Structure Computations) BCMB 4110 (Physical Biochemistry)
	Fall	BCMB 8210 (Computational Methods in Bioinformatics)
2002 — 2010	Spring	BCMB 4970 (Laboratory Research in Biochemistry and Molecular Biology II) CHEM 8330/BCMB 8200, BCMB 4110,
	Fall	BCMB 4970
2001	Spring	BCMB 4970
	Fall	CHEM 8200/BCMB 8200 (Molecular Modeling and Structure Computations) BCMB 4110, BCMB 4970, BCMB 8010 (Advanced Biochemistry)
2000	Spring	BCMB 4970, CHEM 8200/BCMB 8200, GENE 8910 (DNA Modeling)
	Fall	BCMB 4970, BCMB 4110
1999	Fall	BCMB 4110, BCMB 4970, CHEM 8200/BCMB 8200, BCMB 8130 (Advanced Topics in Glycobiology)
1998	Spring	BCMB 8020
	Fall	BCMB 8010, BCMB 4110, CHEM 8200/BCMB 8200
1997	Fall	BCMB 8010
1996	Winter	BCMB 8020
	Spring	BCMB 8110 (Advanced Topics in Protein Structure-Function Relationships)
	Fall	BCMB 8010
1995	Winter	CHEM 8340 (Organic Spectroscopic Analysis)
	Fall	BCMB 8010

Service in Mentoring, Supervising and Teaching

Mentoring philosophy:

I aim to provide mentees in my laboratory (from undergraduates to research fellows) with the opportunity to develop both technical and professional skills while carrying out their research projects. My broader role is to help them formulate their ideas into a coherent and productive research

experience that will lead to high quality publications, a thesis, and the training they need for their chosen career, while also integrating their interests with my goals for the entire team. Our research spans computational modeling, physical biochemistry, and organic synthesis, and mentees are encouraged to take advantage of opportunities for cross-disciplinary training. I help to promote a sense of belonging for all group members through regular weekly meetings as well as informal dialogue and group activities. I have learned that each mentee requires a tailored interaction style to help them achieve their goals and help them feel valued within the group. During their annual evaluations, as well as on an ad hoc basis, each mentee is asked to express their individual goals and we work together to define their needs. As a mentor, I strive to keep an open-mind, to recognize that each mentee has unique talents and needs, and also to challenge each mentee to develop a clear understanding of how their research fits into the broader needs of society. I attempt to accommodate the needs of each mentee in response to these discussions. I continually work towards creating a positive environment for all trainees by creating a welcoming environment that promotes diversity, equity, and inclusion.

Each mentee is encouraged to create a Professional Development Plan (PDP) that documents their goals, outlines the required skills, and any additional training required to meet these objectives. These PDPs are updated yearly, providing the mentees with a clear sense of their progress toward achieving their goals. Mentees are provided with opportunities to present their research at local, national, and international meetings, with preliminary feedback and guidance being provided through group meetings and Departmental seminars. As part of their professional development, mentees participate in discussions of scientific ethics, and the responsible conduct of research (RCR), often with examples from current literature. Whenever possible, I try to provide mentees with the opportunity to mentor their more junior colleagues, so that by the end of their time in my group, mentees will not only have attained scientific independence, but also strong communication and leadership skills.

Mentored Postdoctoral Research Associates

Current

Foley, B. Lachele, PhD, UGA	(2005 —)	Sood, Amika, PhD, UGA	(2022 —)
Grant, Oliver PhD, NUIG	(2014 —)	Xiao, Yao, PhD, UGA	(2023 —)
Mahmound, Sawsan, PhD, UGA	(2022 —)	Holmes, Sam, PhD, UGA	(2023 —)

Previous

Ji, Ye "Mia", PhD, UGA	(2018 — 2021)	DeMarco, Mari L., PhD, WUSL	(2006 — 2011)
Wang, Xiacong, PhD, UGA	(2015 — 2020)	Yang, Lori PhD, NUIG	(2008 — 2011)
Sood, Amika, PhD, UGA	(2017 — 2019)	Kadirvelraj, Renu PhD, IIT	(2001 — 2008)
Xue, Xingran PhD, UGA	(2015 — 2018)	Seyfried, Nick D. PhD, Oxford	(2004 — 2006)
Makeneni, Spandana PhD UGA	(2011 — 2016)	Dyekjaer, Jane PhD, DTU	(2003 — 2005)
Pathiaseril, Ahamed PhD, UGA	(1995 — 2014)	Gonzales, Jorge Ph.D., UCL UK	(2002 — 2005)
Ito, Keigo PhD, UGA	(2011 — 2014)	Kirschner, Karl PhD, UGA	(2000 — 2004)
Weisser, Nina PhD, NUIG	(2008 — 2013)	Cooney, Mike PhD, Princeton	(1999 — 2000)
Fadda, Elisa PhD, NUIG	(2008 — 2013)	Temple, Wolfram PhD, Salford	(1998 — 2000)
Renders, Marleen PhD, NUIG	(2010 — 2011)		

Mentored Post-Graduate Students

Current

Gazaway, Eliza – BCMB, PhD	(2023 —)	LaMore, Paige – BCMB, PhD	(2020 —)
Lee, Alexander Hung – BCMB, PhD	(2023 —)	Hu, Huimin – CHEM, M.S.	(2014 — 2015)
Kandel, Rajan – BINF, PhD	(2023 —)	Montgomery, David – BINF, PhD	(2018 —)
Yang, Zhe – CHEM, PhD	(2022 —)		

Previous

Xiao, Yao – BCMB, PhD	(2017 — 2023)	Oliver Grant – NUIG/CHEM Ph.D.	(2009 — 2013)
Dakhal, Sachi – BINF, M.S.	(2020 — 2022)	Martin, Joanne – NUIG/CHEM, Ph.D	(2009 — 2013)
Zhang, Jie – CHEM	(2019 — 2020)	Samli, Kausar – BCMB, Ph.D.	(2009 — 2013)
Kim, Joo L. Esther – BCMB, M.S	(2015 — 2017)	Tessier, Matthew – CHEM, Ph.D.	(2008 — 2013)
Thieker, David – BCMB, Ph.D.	(2013 — 2017)	Bunn, Haden – CHEM	(2013)
Ji, Ye – CHEM, PhD.	(2012 — 2017)	Charvatova, Olga – BCMB, M.S.	(2008 — 2010)
Rahbarinia, Delaram CSCI, M.S.	(2014 — 2016)	Ding, Liren – CS, M.S.	(2007 — 2008)
Sood, Amika – BINF, Ph.D.	(2012 — 2016)	Yongye, Austin – CHEM, Ph.D.	(2003 — 2008)
Wang, Xiaocong – CHEM, Ph.D.	(2012 — 2015)	Elking, Denny – CHEM, Ph.D.	(2003 — 2007)
Singh, Arunima – BINF, Ph.D.	(2012 — 2015)	Ford, Michael – BCMB, Ph.D.	(1998 — 2004)
Nivedha, Anita – BINF, Ph.D.	(2012 — 2015)	Tschampel, Sarah – CHEM, Ph.D.	(2001 — 2005)
Makeneni, Spandana – BINF, Ph.D.	(2012 — 2015)	Barnes, Jarrod – BCMB, M.S.	(2002 — 2005)
Hadden, Jodi – CHEM, Ph.D.	(2008 — 2014)		

Mentored Post-Graduate Research Assistants

Current

Previous

Jakkannapally, Hemanth CSCI	(2023 — 2023)	Xue, Xingran CSCI	(2013 —2015)
Talekar, Rutuja Dhananjay, CSCI	(2021 — 2022)	Akella, Venkatasriam CSCI	(2011 — 2012)
Mehta, Raj Jayesh, CSCI	(2020 — 2021)	Davis, Robert, CSCI	(2011 — 2012)
Jaiswal, Ayush, CSCI	(2017 — 2019)	Wang, Yiping CSCI, Ph.D.	(2010 — 2011)
Chalmers, Gordon, CSCI	(2013 — 2019)	Li, Qi CSCI, M.S.	(2009 — 2010)
Patel, Chatali CSCI	(2016 — 2017)	Man Chon U, CSCI, Ph.D.	(2009)
Aggeles, James Christian CSCI	(2015 — 2016)	Kawatkar, Sameer – CHEM, Ph.D.	(2006)
Khatamian, Alireza CSCI	(2013 — 2016)		

Mentored Undergraduate Students

Current

Previous

Gazaway, Eliza, BCMB	(2021 — 2022)	Shin, Aimee BCMB	(2010 — 2010)
Dutta, Priti, BCMB	(2021 — 2022)	Powers, Forrest BCMB	(2009 — 2010)
Brown, Izabelle	(2021 — 2022)	Deal, Josh BCMB	(2009 — 2010)
Chamala, Raghuveer Reddy, FINA	(2022 — 2022)	Cleveland, Curtis BCMB	(2009 — 2010)
Enriquez, Ervin	(2019 — 2020)	O'Brien, Deirdre NUIG/UREKA	(2009 — 2009)
Bare, John	(2019 — 2020)	Gallagher, Thomas NUIG/UREKA	(2009 — 2009)
Hill, Clare, CHEM	(2018 — 2020)	Duffy, Fiona NUIG/UREKA	(2009 — 2009)
Cook, Brittney, CSCI	(2018 — 2020)	Thompson, Stephen CHEM	(2008 — 2010)
Kohler, Thomas, CHEM	(2018 — 2019)	Nesbitt, Daniel BCMB	(2008 — 2009)
Rios, Alexandra, JOUR	(2018 — 2018)	O'Connell, Carol NUIG/UREKA	(2008 — 2008)
Acheampong, Afua CSCI	(2018 — 2018)	Byrne, Noel NUIG/ UREKA	(2008 — 2008)
Soleyen, Helyne, ENGR	(2017 — 2018)	Butler, Brittany BCMB	(2007 — 2008)
Murphy, Nathalie	(2017 — 2018)	Shaw, Rachana BCMB	(2007 — 2007)
Felix, Thomas, BCMB	(2017 — 2018)	Kizzard, Thomas	(2007 — 2007)
Ang, Yik Wei MIS	(2017 — 2018)	Ellis, Whitney BCMB	(2006 — 2007)
Templeton, J. Davis, CSCI	(2016 — 2019)	Gamble, John BCMB	(2005 — 2006)
Qadri, Hussain	(2016 — 2017)	Chang, Michael BCMB	(2005 — 2006)
Peddineni, Manasa	(2016 — 2017)	Sumner, Emily BCMB	(2004 — 2006)
Kalagara, Swetha	(2016 — 2017)	Blake, Nathan BCMB	(2004 — 2005)
Miller, Brett Alexander	(2015 — 2016)	Brenner, Michael BCMB	(2004 — 2004)
Santos, Matthew Alex CSCI	(2015 — 2015)	Thomas, Alicia BCMB	(2002 — 2003)
Wah, Stefan ENGR	(2014 — 2017)	Anderson, William Ray BCMB	(2002 — 2003)
Roh, Jaehyeok	(2014 — 2016)	Tran, Doannie BCMB	(2000 — 2002)
Argo, Jackson MATH	(2012 — 2014)	Sundara, Sompathana BCMB	(2000 — 2002)
Fitzgerald, Edward NUIG	(2012 — 2012)	Barnes, Jarrod BCMB	(2000 — 2002)
Parikh, Akshita BCMB	(2011 — 2012)	Cassidy, Juliana Strathclyde, U. UK	(2000 — 2000)
Blackmon, Bret CHEM	(2011 — 2011)	Yang, Abraham BCMB	(1998 — 2000)

Stringfellow, Stephen BCMB	(2010 — 2011)	Turnipseed, Wendi BCMB	(1998 — 1998)
Peng, Emily BCMB	(2010 — 2011)	Chappelle, Ryan BCMB	(1997 — 1999)
Smith, Hannah NUIG/UREKA	(2010 — 2010)	Collins, Kevin BCMB	(1996 — 1997)

Mentored Visiting Scientists

Wang, Xiaocong	Huazhong Agricultural University, Wuhan, China	JAN 2024	—	APR 2024
Alix, Marion	Åbo Akademi Univ., Turku, Finland	JAN 2022	—	APR2022
Mahmoud, Sawsan	Volunteer	MAR 2021	—	JUN 2022
Tang, Ming	Queensland Univ. of Tech., Brisbane, Australia	MAY 2017	—	MAY 2017
Hsieh, Po-Hung	Univ. North Carolina, Chapel Hill	March 2015	—	APR 2015
Amon, Ron	Tel Aviv Univ., Israel	SEP 2014	—	SEP 2014
Panagos, Charalampos	Univ. Edinburgh, Scotland	APR 2014	—	MAY 2014
Hu, Xiao	National Univ. Ireland, Galway	MAY 2013	—	AUG, 2013
Fitzgerald, Edward	National Univ. Ireland, Galway	MAY 2012	—	JUL 2012
Pikoula, Maria,	Pembroke College, UK	MAR 2011	—	MAR 2011
García, Juan Carlos Muñoz	Univ. of Seville, Spain	MAR 2011	—	MAY 2011
Kenny, Diarmuid	National Univ. Ireland, Galway	JAN 2009	—	SEP 2009
Abshiru, Nebiyu Ali	Univ. Oslo, Norway	JAN 2009	—	SEP 2009
Hand, Christine	NRC, Canada	AUG 2007	—	AUG 2007
Almond, Andrew,	Man. Univ., UK	APR 2006	—	APR 2006
Bryce, Richard,	Man. Univ., UK	MAR 2006	—	MAR 2006
Seo, Mikyung	Univ. Alberta, Canada	JUN 2006	—	JUN 2006
French, Alfred	USDA, LA	OCT 2005	—	MAY 2006
Johnson, Glenn	USDA, LA	OCT 2005	—	MAY 2006
Siriwardena, Aloysius	Univ. Picardie, FR	DEC 2005	—	MAR 2006
DeNisco, Mauro,	Univ. di Napoli, Italy	2002	—	2003

Service on Advisory, Examining, and Reading Committees

Current

Mubassir, M. H. M., PhD, PHRM
Tseng, Po-Sen, PhD, CHEM
Venkat, Aarya, PhD, BMB

Previous

Ambre, Shailesh G. PhD, CHEM
Arachchige, Sameera S. PhD, CHEM
Astronomo, Rena PhD, BMB
Bahrainwala, Tasneem PhD, CHEM
Berardinelli, Steven J., PhD, BMB
Bordas, Leslie, MS, CHEM
Calhoun, John PhD, BMB
Cameron, Delroy M.S., CS
Cato, David PhD, CHEM
Chad McKee, PhD, CHEM
Chen, YuJie, PhD, BMB
Chinoy, Zoeisha PhD, CHEM
Cowart, Darin PhD, CHEM
Crippen, Clay S., PhD, MBIO
Ding, Liren M.S., CSCI
Ehlers, Tedman J. PhD, CHEM
Embers, Brian PhD, CHEM
Park, Younghee PhD, BMB
Purvis, Leslie M.S., CHEM
Quirke, Jonathan, PhD, CHEM
Ramanathan, Chandu PhD, PHRM
Feng, Yuan, PhD, BINF
Goldstein, Jason PhD, BMB
Gu, Yi, CHEM (2013 – 2022)
Harding, Drew, PhD, CHEM
Hammond, Dorothy PhD, IOB
Horanyi, Peter PhD, BMB
Ingale, Sampat PhD, CHEM
Manatunga, Ishanka, PhD, CHEM
Kalelkar, Sandeep PhD, CHEM
Kim, John Hyunwoo, PhD, BMB
King, Daniel PhD, CHEM
King, Rollin PhD, CHEM
Li, Yanhong PhD, CHEM
Lu, Jianyun PhD, CHEM
Lycknert, Kristiina PhD, CHEM (U. of Stockholm, Sweden)
Majumdar, Debatosh, PhD, CHEM
Nagelkerke, Ruby, PhD, CHEM (Queen's U., Canada)
Tracy, Alex PhD, BMB
Wantuch, Paeton PhD, BMB
Wang, Xiao PhD, CHEM
Wodrich, Matthew PhD, CHEM

Renfrew, Matthew PhD, BMB
Roy, Debjani PhD, CHEM
Roychowdhury, Abhijit PhD, CHEM
Santhanam, Balaji PhD, CHEM
Sharma, Amrita, PhD, CELL
Simon, Paul PhD, BMB
Wu, Judy PhD, CHEM
Xie, Boer, PhD, CHEM
Yeung, Wayland, PhD, BINF
Zheng, Ruan, PhD, BCMB
Zhou, Yan, PhD, CHEM

Patents

U.S. Patent Publication No.:	PCT Application US 2021/0009975 A1
WIPO International Publication No.:	WO2018/200478 A2
Title:	Sialic Acid Binding Polypeptide
Status:	Published: January 14, 2021
Role:	Co-Inventor
U.S. Provisional Application Serial No.:	PCT /US2015/02637 4
WIPO International Publication No.:	WO2015/161201
Title:	Carbohydrate-binding Protein
Status:	Published July 23, 2019
Role:	Co-Inventor
Israeli Patent Application No.:	212806
WIPO International Publication No.:	2010/068817
Title:	Catalytically Inactive Carbohydrate Processing Enzyme, Methods and Uses Thereof
Status:	Published June 28, 2018
Role:	Co-Inventor
U.S. Patent Publication No.:	PCT Application PCT/US2O13/031238
WIPO International Publication No.:	WO2013/138563
Title:	Glycomimetics to Inhibit Pathogen-host Interactions
Status:	Published March 28, 2017
Role:	Co-Inventor
International Application No.:	PCT/US2012/0272 11
WIPO International Publication No.:	WO2012/118928 A2
Title:	Glycoprofiling with Multiplexed Suspension Arrays
Status:	Published September 7, 2012
Role:	Co-Inventor
International Application No.:	PCT/US2009/067582
WIPO International Publication No.:	WO/2010/068817
Title:	Glycan-Specific Analytical Tools
Status:	Published June 17, 2010
Role:	Co-Inventor

Currently Funded Research Projects (Total ~ $6M Direct)

R01AI155975	6/9/2021 – 5/31/2026
Agency (Amount):	NIH ($1,051,155)
Title:	Selecting HA Glycosylation for Improved Vaccine Responses
Role on Project:	Co-PI (w/ Joseph Zaia)
DMR-1933525	08/01/2020—01/31/2025
Agency (Amount):	NSF ($3,187,356)
Title:	MIP: GlycoMIP – Automating the Synthesis Rationally Designed Glycomaterials

Role on Project: Co-PI (w/ Maren Roman)

R01GM140201 12/1/2021– 7/31/2024
Agency (Amount): NIH ($385,616)
Title: Novel Carbohydrate-binding Antibodies to Human Glycans Using the Lamprey System
Role on Project: Co-PI (w/ Richard Cummings)

R01GM135473 9/1/2020 – 5/31/2025 (No-Cost Extension)
Agency (Amount): NIH ($1,556,705)
Title: Computational Tools to Aid the Design of Glycomimetic Agents
Role on Project: PI

R24GM136984 05/01/2020—04/30/2024
Agency (Amount): NIH ($1,434,500)
Title: Transitioning GLYCAM-Web to a Self-sustaining Carbohydrate Modeling Service
Role on Project: PI

Significant Former Support (Total ~ $19M Direct):

R01GM134335 07/01/2019—4/30/2023
Agency (Amount): NIH ($329,164)
Title: Sparse NMR Labeling Approach to Glycoprotein Structure and Function
Role on Project: Co-I (w/James Prestegard)

CHE-2002625 08/15/2020—07/31/2023
Agency (Amount): NSF ($72,000)
Title: Collaborative Research: Conformational Equilibria of Biologically Important Saccharides and Related Biomolecules
Role on Project: Co-PI (w/ Anthony Serianni)

R56AG06808901 9/15/2020 – 8/31/2022 (No-Cost Extension)
Agency (Amount): NIH ($271,400)
Title: Regulation of microglia in Alzheimer's disease by Siglecs and Siglec
Role on Project: Co-PI (w/ Ronald Schnaar)

DMR-2034567 08/10/2020—06/30/2022 (No-Cost Extension)
Agency (Amount): NSF ($67,444)
Title: RAPID: Rational Design of Biomimetic, Virus-Trapping Polymers
Role on Project: Co-PI (w/ Maren Roman & Michael Schulz)

U01GM125267 09/01/2017—6/30/2022
Agency (Amount): NIH ($337,047)
Title: Computational and Informatics Resources and Tools for Glycoscience Research
Role on Project: Co-I (w/ Michael Tiemeyer)

U01CA221216 08/01/2019—07/31/2021
Agency (Amount): NIH ($658,026)
Title: GlyProbity: Tools to Curate Glycan Structure Pre and Post Deposition in the PDB

Role on Project: PI

P41GM103390 02/01/12—01/31/21
Agency (Amount): NIH ($1,277,028)
Title: Research Resource for Integrated Glycotechnology
Role on Project: SI

P41RR005351 02/01/97—01/31/11
Agency (Amount): NIH ($3,872,714)
Title: Resource Center for Biomedical Complex Carbohydrates
Role on Project: SI

U01CA207824 09/01/2016—08/31/2019
Agency (Amount): NIH ($1,724,695)
Title: Tools to Enable Non-specialists to Model Glycoconjugates and Glycan-Protein Interactions
Role on Project: Co-PI (w/ Bethany L. Foley)

R56AG062342 09/30/18 – 08/31/19
Agency (Amount): NIH ($96,150)
Title: Defining the role of keratan sulfate recognition in Alzheimer's Disease progression
Role: PI

R01GM127267 06/01/2018—2/29/2020
Agency (Amount): NIH ($76,496)
Title: Molecular Structure Determination by Mass Spectrometry and Computational Modeling
Role on Project: SI (w/ James Prestegard)

R01HL128237 06/01/2015—05/31/2018
Agency (Amount): NIH ($120,000)
Title: A PSGL-1 Glycopeptide Mimetic for Treatment of Venous Thromboembolism
Role on Project: Co-PI (w/ Elliot Chaikof)

R01DK107405 03/01/2015—02/28/2018
Agency (Amount): NIH ($50,400)
Title: A PSGL-1 Glycopeptide Mimetic for Treatment of Metabolic Syndrome
Role on Project: Co-PI (w/ Elliot Chaikof)

CHE-1402744 08/01/2015—07/31/2017
Agency (Amount): NSF ($136,824)
Title: Conformational Equilibria of Biologically Relevant Oligosaccharides
Role on Project: Co-Pl (w/ Anthony Serianni)

R41GM113351 01/15/2015—12/31/2016
Agency (Amount): NIH ($159,598)
Title: High-specificity Affinity Reagents for the Detection of Glycan Sialylation
Role on Project: Co-PI (w/ Loretta Yang)

R01GM096049 12/01/2011 – 11/30/2016
Agency (Amount): NIH ($131,860)
Title: Improved Hydroxyl Radical Footprinting for Modeling Protein

	Structure
Role on Project:	Co-PI (w/ Joshua Sharp)
R42GM086991	09/01/2015—08/31/2016
Agency (Amount):	NIH ($377,080)
Title:	High-Specificity Affinity Reagents for N-Glycosylation Site Mapping and Glycomics
Role on Project:	Co-PI (w/ Loretta Yang)
R01GM100058	05/01/12—02/29/16
Agency (Amount):	NIH ($266,877)
Title:	Continued Development and Maintenance of Glycam-Web
Role on Project:	Co-PI (w/ Bethany L. Foley)
R01GM094919	09/01/10—08/31/14
Agency (Amount):	NIH ($1,525,125)
Title:	UREKA: Integrating Experiment & Theory to Characterize Diagnostic Antibody Specificity
Role on Project:	PI
08/IN.1/B2070	09/01/09—08/31/14
Agency (Amount):	SFI (€1,171,425)
Title:	Virtual Glycan Array Development and Carbohydrate Receptor Engineering
Role on Project:	PI
RCS1103	07/01/11—06/30/13
Agency (Amount):	SFI (€79,280)
Title:	Development of Anti-Adhesion Based Influenza Blockers
Role on Project:	PI
RCS1075	10/01/10—09/30/12
Agency (Amount):	SFI (€77,280)
Title:	Quantifying the Influence of Point Mutations on Receptor Binding in Influenza Hemagglutinin: Toward the A Priori Prediction of Species Specificity
Role on Project:	PI
RCS932	09/01/09—09/01/12
Agency (Amount):	SFI (€72,009)
Title:	Molecular Recognition of Glycans in Human Disease
Role on Project:	PI
RSF0877	01/01/09—01/01/12
Agency (Amount):	SFI (€206,250)
Title:	Undergraduate Research Experience & Knowledge Award (UREKA) Site in Molecular Recognition
Role on Project:	PI
R01GM055230	03/01/97—08/31/11
Agency (Amount):	NIH ($1,612,811)
Title:	Computational Analysis of Carbohydrate Antigenicity
Role on Project:	PI
07/RP1/B1321	04/01/08—04/01/10
Agency (Amount):	SFI (€999,120)
Title:	Characterizing Molecular Interactions in Glycoscience

Role on Project: PI

R41GM086991 09/01/09—08/31/11
Agency (Amount): NIH ($166,691)
Title: High-specificity Affinity Reagents for N-glycosylation Site Mapping and Glycomics
Role on Project: PI

GRA.VAC08.E 09/30/2007—06/30/2009
Agency (Amount): GRA ($200,000)
Title: Defining the Structural Basis of Lipid A Variants as Vaccine Adjuvants
Role on Project: Co-PI (w/ D. Stephens)

RO1DE13982 09/29/00—07/31/05
Agency (Amount): NIH ($997,064)
Title: Oral Candidiasis: Antigen Structure and Vaccine Design
Role on Project: PI

Publication Activity

Published Peer-Reviewed Journal Articles (153 to date):

2024

155. Cisar, J.O., Wang, X., Woods, R.J., Cain, K.D., Wiens, G.D. (2024). Structural and Genetic Basis for the Binding of a Mouse Monoclonal Antibody to *Flavobacterium psychrophilum* Lipopolysaccharide. *J. Fish Dis.* Jun 4:e13958. doi: 10.1111/jfd.13958. Epub ahead of print. PMID: 38837770.
154. Zhang, W., Meredith, R.J., Wang, X., Woods, R.J., Carmichael, I., Serianni, A.S. (2024). Does Inter-Residue Hydrogen Bonding in β-(1→4)-Linked Disaccharides Influence Linkage Conformation in Aqueous Solution? *J. Phys. Chem. B.* 128 (10), 2317–2325. PMID: 38482666, https://doi.org/10.1021/acs.jpcb.3c07448
153. Chernykh, A., Abrahams, J.L., Grant, O.C., Kambanis, L., Sumer-Bayraktar, Z., Ugonotti, J., Kawahara, R., Corcilius, L., Payne, R.J., **Woods, R.J.**, Thaysen-Andersen, M. (2024). Position-specific N- and O-glycosylation of the reactive center loop impacts neutrophil elastase–mediated proteolysis of corticosteroid-binding globulin. *J. of Biol. Chem.*, 300(1), 105519. PMCID: PMC10784704

2023

152. de Haan, N., Song, M., Grant, O., Ye, Z., Khoder, A., Fawzi; Aasted, M. K. M., **Woods, R.J.**, Vakhrushev, S., Wandall, H. (2023). Sensitive and Specific Global Cell Surface N-Glycoproteomics Shows Profound Differences Between Glycosylation Sites and Subcellular Components. *Anal. Chem. Accepted.* PMCID: PMC10688226
151. Tang M., Suraweera A., Nie X., Li Z., Lai P., Wells J.W., O'Byrne K.J., **Woods R.J.**, Bolderson E., Richard D.J. (2023). Mono-phosphorylation at Ser4 of barrier-to-autointegration factor (Banf1) significantly reduces its DNA binding capability by inducing critical changes in its local conformation and DNA binding surface. *Phys Chem Chem Phys.* Sep 20;**25** (36), 24657-24677. PMID: 37665626
150. Meredith, R.J., Carmichael, I., **Woods, R.J.**, Serianni, A.S. (2023). MA'AT Analysis: Probability Distributions of Molecular Torsion Angles in Solution from NMR Spectroscopy. *Acc. Chem. Res.*, **56** (17), 2313-2328. PMID: 37566472
149. Xiao, Y. & **Woods, R.J.** (2023). Protein–Ligand CH−π Interactions: Structural Informatics, Energy Function Development, and Docking Implementation. *J. Chem. Theory Comput.* PMCID: PMC10448718
148. Saunders, M.J., **Woods, R.J.**, Yang, L. (2023). Simplifying the detection and monitoring of protein glycosylation during in vitro glycoengineering. *Sci. Rep.* **13** 567. DOI: PMCID: PMC9834283.
147. Lewis, A.P., Toukach,P., Bolton, E., Chen, X., Frank, M., Lütteke, T., Knirel, Y., Schoenhofen, I., Varki, A., Vinogradov, E. **Woods, R.J.**, Zachara, N., Zhang, J., Kamerling, J.P., Neelamegham, S. the SNFG Discussion Group (2023). Cataloging natural sialic acids and other nonulosonic acids (NulOs), and their

representation using the Symbol Nomenclature for Glycans. *Glycobiology,* cwac072. PMCID: PMC9990982

2022

146. Wang, X., Hanes, M.S., Cummings, R.D., **Woods, R.J.** (2022). Computationally-guided Conversion of the Specificity of E-Selectin to Mimic that of Siglec-8. *PNAS,* 119 (4) e2117743119. PMCID: PMC9564326
145. Berardinelli, S.J., Eletsky, A., Valero-González, J., Ito, A., Manjunath, R., Hurtado-Guerrero, R., Prestegard, J.H., **Woods, R.J.**, Haltiwanger, R.S. (2022). O-fucosylation stabilizes the TSR3 motif in thrombospondin-1 by interacting with nearby amino acids and protecting a disulfide bond. *J. Biol. Chem*., 298 (6): 102047. PMCID: PMC9198472

2021

144. Smith, C.C., Olsen, K.S., Gentry, K.M., Sambade, M., Beck, W., Garness, J., Entwistle, S., Willis, C., Vensko, S., Woods, A., Fini, M., Carpenter, B., Routh, E., Kodysh, J., O'Donnell, T., Haber, C., Heiss, K., Stadler, V., Garrison, E., Sandor, A.M., Ting, J.P.Y., Weiss, J., Krajewski, K., Grant, O.C., **Woods, R.J.**, Heise, M., Vincent, B.G., Rubinsteyn, A. (2021). Landscape and selection of vaccine epitopes in SARS-CoV-2. *Genome Med.*, **13** (1):101. PMCID: PMC8201469.
143. Tjondro, H. C., Ugonotti, J., Kawahara, R., Chatterjee, S., Loke, I., Chen, S., Soltermann, F., Hinneburg, J., Parker, B. L., Venatakrishnan, V., Dieckmann, R., Grant, O. C., Bylund, J., Rodger, A., **Woods, R. J.**, Karlsson-Bengtsson, A., Struwe, W. B., Thaysen-Andersen, M. (2021). Hyper-truncated Asn355- and Asn391-glycans modulate the activity of neutrophil granule myeloperoxidase. *J. Biol. Chem*., **296**, 100144. PMCID: PMC7857493
142. Shanthamurthy, C. D., Ben-Ayre, S. L., Kumar, N. V., Yehuda, S., Amon, R., **Woods, R. J.**, Padler-Karavani, V., Kikkeri, R. (2021). Heparan sulfate mimetics differentially affect homologous chemokines and attenuate cancer development. *J. Med. Chem.* **64**(6), 3367-3380. PMID: 33683903
141. French, A. D., Montgomery, D. W., Prevost, N. T., Edwards, J. V., **Woods, R. J.** (2021). Comparison of cellooligosaccharide conformations in complexes with proteins with energy maps for cellobiose. *Carbohydr. Polym.* 264, 118004-118004. PMCID: PMC8607818
140. Jain, P., Shathamurthy, C. D., Ben-Arye, S. L., **Woods, R. J.**, Kikkeri, R., Padler-Karavani, V. (2021). Discovery of rare sulfated N-unsubstituted glucosamine based heparan sulfate analogs selectively activating chemokines. *Chem. Sci.*, **12**, 3674-3681. PMCID: PMC8025211
139. Benicky, J., Sanda, M., Brnakova Kennedy, Z., Grant, O. C., **Woods, R. J.**, Zwart, A., & Goldman, R. (2021). PD-L1 Glycosylation and Its Impact on Binding to Clinical Antibodies. *J. Proteome Res.*, 20(1), 485-497. PMID: 33073996

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138. Meredith, R. J., **Woods, R. J.**, Carmichael, I., & Serianni, A. S. (2020). Reconciling MA′AT and molecular dynamics models of linkage conformation in oligosaccharides. *Phys. Chem. Chem. Phys.*, **22** (26), 14454-14457. PMID: 32597425
137. Overeem, N. J., Hamming, P. H. E., Grant, O. C., Di Iorio, D., Tieke, M., Bertolino, M. C., Li, Z., Vos, G., de Vries, R. P., **Woods, R. J.**, Tito, N. B., Boons, G.-J. P. H., van der Vries, E. Huskens, J. (2020). Hierarchical Multivalent Effects Control Influenza Host Specificity. *ACS Cent. Sci.*, **6** (12), 2311-2318. PMCID: PMC7760459
136. Smith, C. C., Entwistle, S., Willis, C., Vensko, S., Beck, W., Garness, J., Sambade, M., Routh, E., Olsen, K., Kodysh, J., O'Donnell, T., Haber, C., Heiss, K., Stadler, V., Garrison, E., Grant, O.C., **Woods, R. J.**, Heise, M., Vincent, B.G., & Rubinsteyn, A. (2020). Landscape and Selection of Vaccine Epitopes in SARS-CoV-2. bioRxiv, 2020.06.04.135004. PMCID: PMC7302209
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134. Zhao, P., Praissman, J. L., Grant, O. C., Cai, Y., Xiao, T., Rosenbalm, K. E., Aoki, K., Kellman, B. P., Bridger, R., Barouch, D. H., Brindley, M. A., Lewis, N. E., Tiemeyer, M., Chen, B., **Woods, R. J.**, Wells,

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133. Kim, S. Y., Jin, W., Sood, A., Montgomery, D. W., Grant, O. C., Fuster, M. M., Fu, L., Dordick, J. S., **Woods, R. J.**, Zhang, F., Linhardt, R. J. (2020). Characterization of heparin and severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2) spike glycoprotein binding interactions. *Antiviral Res.*, **181**, 104873. PMCID: PMC7347485
132. York, W. S., Mazumder, R., Ranzinger, R., Edwards, N., Kahsay, R., Aoki-Kinoshita, K. F., ... & Zhang, W. (2020). GlyGen: Computational and informatics resources for glycoscience. *Glycobiology*, **30** (2), 72-73. PMCID: PMC7335483
131. Tang, M., Wang, X., Gandhi, N. S., Foley, B. L., Burrage, K., Woods, R. J., & Gu, Y. (2020). Effect of Hydroxylysine-O-glycosylation on the structure of type I collagen molecule: A computational study. Glycobiology. PMCID: PMC7526737
130. Mandalasi, M., Kim, H. W., Thieker, D., Sheikh, M. O., Gas-Pascual, E., Rahman, K., ... & West, C. M. (2020). A terminal α3-galactose modification regulates an E3 ubiquitin ligase subunit in Toxoplasma gondii. Journal of Biological Chemistry, JBC-RA120. PMCID: PMC7335778
129. Flowers, S. A., Grant, O. C., **Woods, R. J.**, & Rebeck, G. W. (2020). O-glycosylation on cerebrospinal fluid and plasma apolipoprotein E differs in the lipid-binding domain. Glycobiology, **30**(2), 74-85. PMCID: PMC7335482
128. Amon, R., Rosenfeld, R., Perlmutter, S., Grant, O.C., Yehuda, S., Borenstein-Katz, A., Alcalay, R., Marshanski, T., Yu, H., Diskin, R., **Woods, R. J.**, Chen, X., Padler-Karavani, V. (2020). "Directed Evolution of Therapeutic Antibodies Targeting Glycosylation in Cancer", *Cancers*, **12**, 2824 PMCID: PMC7601599
127. Grant, O.C., Montgomery, D., Ito, K., **Woods, R.J.** (2020). "Analysis of the SARS-CoV-2 spike protein glycan shield reveals implications for immune recognition", *Sci. Rep.* **10**, 14991 PMCID: PMC7217288

2019

126. Neelamegham S., Aoki-Kinoshita, K., Bolton, E., Frank, M., Lisacek, F., Lütteke, T., O'Boyle, N., Packer, N.H., Stanley, P., Toukach, P., Varki, A., **Woods, R.J.**; SNFG Discussion Group. **(2019)** Updates to the Symbol Nomenclature for Glycans guidelines. Glycobiology. **29** (9): 620-624. PMCID: PMC7335484
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124. Chalmers, G.R., Eletsky, A., Morris, L.C., Yang, J.-Y., Fang, T., **Woods, R.J.**, Moremen, K.W., Prestegard, J.H. **(2019)** "NMR Resonance Assignment Methodology: Characterizing Large Sparsely Labeled Glycoproteins" *J. Mol. Biol.*, **431** (12): 2369-2382. PMCID: PMC6554063
123. Singh, A., Montgomery, D., Xingran, X., Foley, B.L., **Woods**, **R.J. (2019)** "GAG Builder: A Web-tool for Modeling 3D Structures of Glycosaminoglycans", Glycobiology, **29** (7): 515-518. PMCID: PMC6583769
122. Zhang, W., Meredith, R., Yoon, M.-K., Wang, X., **Woods, R.J.**, Carmichael, I., Serianni, A.S. **(2019)** "Synthesis and *O*-Glycosidic Linkage Conformational Analysis of ^{13}C-Labeled Oligosaccharide Fragments of an Antifreeze Glycolipid", *J. Org. Chem.,* **84** (4): 1706-1724 PMCID: PMC8224223

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120. De Leoz, M.L., Simon-Manso, Y., **Woods, R.J.**, Stein, S.E. **(2018)** "Cross-Ring Fragmentation Patterns in the Tandem Mass Spectra of Underivatized Sialylated Oligosaccharides and Their Special Suitability for Spectrum Library Searching", J. Am. Soc. Mass Spectrom. 30 (3): 426-438 PMCID: PMC6416239
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genetically modified glycosylation reveals galectin-glycan specificities in a natural context", *J. Biol. Chem.,* PMCID: PMC6311502

117. Sood, A., Gerlits, O., Ji, Y, Bovin, N., Coates, L., **Woods, R.J. (2018)** "Defining the specificity of carbohydrate-protein interactions by quantifying functional group contributions", J. Chem. Inf. Model., 58 (9): 1889-1901. PMCID: PMC6442460
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Book Chapters (13 to date):

Cummings, R.D., Etzler, M., Hahn, M.G., Darvill, A., Godula, K., **Woods, R.J.**, Mahal, L. **(2022)** Glycan-Recognizing Probes as Tools. In: Varki A, Cummings RD, Esko JD, et al. (eds.). *Essentials of Glycobiology*. 4th ed. Cold Spring Harbor (NY): Cold Spring Harbor Laboratory Press; Chapter 48. DOI: 10.1101/glycobiology.4e.48

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Hadad, M.J., Zhang, W., Turney, T., Sernau, L., Wang, X., **Woods, R.J.**, Incandela, A., Surjancev, I., Wang, A., Yoon, M.-K., Coscia, A., Euell, C., Meredith, R., Carmichael, I. and Serianni, A.S. **(2017)** NMR Spin-

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Weimar, T. and **Woods, R.J. (2002)** Combining NMR and Simulation Methods in Oligosaccharide Conformational Analysis. In: *NMR of Glycoconjugates* (Jiménez-Barbero, J., ed.), Chapter 6. Wiley-VCH, Weinheim.

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Woods, R.J. (1996) The application of molecular modeling techniques to the determination of oligosaccharide solution conformations. In: *Reviews in Computational Chemistry*, Vol. 9 (K. Lipkowitz and D.B. Boyd, eds.), pp. 129-165. VCH Publishers, New York.

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Presentations at Scientific Meetings (91 since 2002)

Woods, R.J., **(Invited)** "Computational Approaches to Studying the Structures and Properties of Glycoproteins", 2023 GlycoNMR Summit, *Virtual*, December 5, 2023.

Woods, R.J., **(Keynote)** "Automating the Rational Design of Glycomimetic Drugs", XXIX Symposium on Bioinformatics and Computer-Aided Drug Discovery (BCADD-2023), *Virtual*, September 20, 2023

Woods, R.J., Montgomery, D. W., Grant, O.C. "GlyFinder: An Online Tool for Finding Glycans and Glycoproteins in the PDB", Beilstein Glyco-Bioinformatics Symposium, Limburg, Germany, June 20, 2023.

Woods, R.J., "Predicting the morphologies of known and hypothetical glycomaterials", ACS Spring Meeting, Indianapolis, Indiana, March 26, 2023.

Woods, R.J., Montgomery, D. W., Grant, O.C. **(Invited)** "Glyfinder and glycoprotein builder: online tools for finding and modelling glycoproteins in the PDB", GlycoBioTec2023, Berlin, Germany, January 19, 2023.

Woods, R.J., Grant, O.C., Foley, B.L., Montgomery, D. "Tools for Finding Glycans in the PDB & Modeling 3D Structures of Glycans", Glygen All-Hands Meeting, *Virtual*, April 19, 2022.

Woods, R.J., Moremen, K.W., Wells, L., Montgomery, D., Ito, K., Grant, O.C. **(Invited)** "The Role of Spike Protein Glycosylation in Modulating SARS-CoV-2 Antigenicity and Adhesion", NIH & FDA Glycoscience Research Day, Bethesda, MD, June 13, 2022.

Woods, R.J., "GlyProbity: tools to curate glycan structure pre and post deposition in the PDB", NIH Common Fund Glycoscience Common Fund Program 2022 All Hands Meeting, Bethesda, MD, May 3, 2022.

Woods, R.J., "Tools to enable non-specialists to model glycoconjugates and glycan-protein interactions", NIH Common Fund Glycoscience Common Fund Program 2022 All Hands Meeting, Bethesda, MD, May 3, 2022.

Montgomery, D.W., Grant, O.C., **Woods, R.J.** (Oral) "Glyfinder And Glyprobity: Online Tools For Finding And Curating Oligosaccharides In The PDB", 15th Bratislava Symposium on Saccharides, Smolenice, Slovakia, June 23, 2022.

Woods, R.J. (Keynote) "GLYCAM21: Using Hamiltonian Replica Exchange MD to Validate Pyranose Ring Populations", Molecular Modelling 2021 Conference, Brisbane, Australia, December 8, 2021.

Woods, R.J., Moremen, K.W., Wells, L., Montgomery, D., Ito, K., Grant, O.C. (Poster) "The Role of Spike Protein Glycosylation in Modulating SARS-CoV-2 Antigenicity and Adhesion", Society for Functional Glycobiology Annual Meeting, San Diego, California, November 8, 2021.

Ye, J., Grant, O.C., Peng, W., McBride, R., Paulson, J.C., **Woods, R.J.** "Why humans Don't Routinely Get Bird Flu: The Importance of Bidentate Glycan Binding", ACS Fall 2019 National Meeting, San Diego, California, August 25, 2019.

Woods, R.J. "Generation & Visualization of Glycoprotein 3D Structure", GlyGen All Hands Meeting, Washington, D.C., August 23, 2019.

Woods, R.J "Modeling Glycoproteins and Glycan Processing", NIH & FDA Gylcoscience Research Day 2019, Bethesda, Maryland, July 8, 2019.

Xiao, Y., **Woods, R.J.** "Computational Tools to Aid the Design of Glycomimetic Agents", EUROCARB XX, Leiden, Netherlands, July 2, 2019.

Woods, R.J. "GlyFinder and GlyProbity: New Online Tools for Locating and Curating Carbohydrate Structures in wwPDB", Beilstein Glyco-Bioinformatics Symposium 2019, Limburg, Germany, June 27, 2019.

Woods, R.J., Young, J.Y. "GlyProbity: Tools to Curate Glycan Structure Pre and Post Deposition in the PDB", NIH Common Fund Glycoscience Program, Bethesda, Maryland, May 29, 2019.

Foley, B.L., **Woods, R.J.** "Tools to Enable Non-specialists to Model Glycoconjugates and Glycan-protein Interactions", NIH Common Fund Glycoscience Program, Bethesda, Maryland, May 29, 2019.

Woods, R.J. (Invited) "Engineering High-specificity Carbohydrate-binding Reagents from Glycosidases", 3rd Argentinian Symposium on Glycobiology, San Martin, Buenos Aires, Argentina, May 8, 2019.

Woods, R.J., Wu, S., Meng, L., Gerner-Smidt, C., Sanders, M., Ben-Ayre, S., Padler-Karavani, V., Yang, L. (Poster) "Engineered High-Specificity Affinity Reagents for the Detection of Glycan Sialylation", Journal of Biological Chemistry Editorial Board Meeting, Orlando, Florida, April 9, 2019.

Woods, R.J., Saunders, M., Young, L. (Poster) "GlycoSenseTM: A Simple Alternative to Existing Methods for Glycosylation Detection and Monitoring", Journal of Biological Chemistry Editorial Board Meeting, Orlando, Florida, April 9, 2019.

Ji, Y., Hendel, J., Glushka, J., Wu, N., Wilson, I., Tompkins, S.M., Murphy, P.V., **Woods, R.J.** "Novel Rigid Glycomimetics to Inhibit Influenza Infection", Journal of Biological Chemistry Editorial Board Meeting, Orlando, Florida, April 8, 2019.

Sood, A., Gerlits, O.O., Ji, Y., Bovin, N.V., Coates, L., **Woods, R.J.** "Defining the Specificity of Carbohydrate–Protein Interactions by Quantifying Functional Group Contributions", ACS National Meeting & Exposition, Orlando, Florida, April 2, 2019.

Kirschner, K.N., Yongye, A.B., Tschampel, S.M., González-Outeiriño, J., Daniels, C.R., Foley, B.L., **Woods, R.J.** "GLYCAM06: a generalizable biomolecular force field. Carbohydrates." Amber Developers Meeting, March 28, 2019.

Woods, R.J., Saunders, M.J., Wu, S., Meng, L., Gerner-Smidt, C., Ben-Arye, S.L., Padler-Karavani, V., Yang, L. "GlycoSense: A Rapid and Simple Method for Glycosylation Detection and Monitoring", 2019 GlycoBioTec Symposium, Berlin, Germany, January 30, 2019.

Woods, R.J. (Invited) "Defining the 3D-Structure and Antigenicity of Pathogenic Polysaccharides" 8th Baltic Meeting on Microbial Carbohydrates, Dublin, Ireland, September 12, 2018.

Woods, R.J. (Invited) "Modeling Glycan-protein Interactions: The Importance of Entropy in Defining Specificity" 43rd FEBS Congress, Prague, Czech Republic, July 8, 2018.

Grant, O.C., Makeneni, S., **Woods, R.J.** "The Effect of Substrate Presentation and Michaelis Complex Stability on Neuraminidase 2 (NEU2) Specificity" FASEB Conference on "Microbial Glycobiology", Scottsdale, Arizona, June 19, 2018.

Yang, L., Wu, S., Cooper, J.C., Paul, M.K., Cummings, A.L., Eletr, Z.M., Ben-Arye, S.L., Padler-

Karavani, V., Samli, K.N., **Woods, R.J**. "Engineering High-Specificity Affinity Reagents for the Detection of Glycan Sialylation" 2018 Sialoglyco Symposium, Banff, Alberta, Canada, May 13, 2018.

Hendel, J., Ji, Y., Smith, H., Glushka, J., Wu, N., Wilson, I.A., Tompkins, M., Murphy, P., **Woods, R.J. (Invited)** "Glycomimetics to Inhibit Influenza Infection?" 3rd Conference on Mitigation Strategies for Infectious Diseases, Cali, Columbia, October 25, 2017.

Woods, R.J. (Invited) "How Proteins Recognize Flexible Carbohydrates: The Roles of Affinity, Avidity, and Entropy" MSSMBS, St. Petersburg, Russia, September 8, 2017**.**

Woods, R.J. "Defining carbohydrate antigenicity: How are flexible molecules recognized by the immune system?" 254th ACS National Meeting & Exposition, Washington, D.C., August 22, 2017.

Woods, R.J. "Computational and Biophysical Insight into Glycan Specificity: The Role of Entropy and Avidity" Gordon Research Conference, West Dover, VT, June 25, 2017.

Woods, R.J. "Insight into influenza specificity" Virocarb Symposium, Hamburg, Germany, February 25, 2017.

Grant, O.C., Makeneni, S., Foley, B.L., **Woods, R.J.** "The Effect of Substrate Presentation and Activation on Neuraminidase NEU2 Specificity" Sialoglyco 2016, Santa Barbara, CA, November 15, 2016.

Grant, O.C., **Woods, R.J.** "Predicting N-glycan processing based on enzyme glycan accessibility", Warren Workshop VI 2016, Sapporo, Hokkaido, August 25, 2016.

Grant, O.C., Hadden, J.A., Ye, J., Smith, H.M.K., Peng, W., De Vries, R., **Woods, R.J.** (Keynote Lecture) "A Role for Underlying Glycan Structure in Influenza Binding: Extending the Species Specificity Paradigm", 18th European Carbohydrate Symposium, Moscow, Russia, August 3, 2015.

Grant, O.C., Hadden, J.A., Ye, J., Smith, H.M.K., Peng, W., De Vries, R., McBride, R., Paulson, J.C., **Woods, R.J.** "A Role for Underlying Glycan Structure in Influenza Binding: Extending the Species Specificity Paradigm", International Glyco-Symposium, University of Oslo, Oslo, Norway, May 18, 2015.

Woods, R.J. "Computationally-guided design of reagents for Glycoscience", GlycoCom 2015, Banff, Alberta, Canada, May 4, 2015.

Singh, A., Kett, W.C., Severin, I.C., Agyekum, I., Duan, J., Amster, J., Proudfoot, A.E.I., Coombe, D.R., **Woods, R.J.** "The Interaction of Heparin Tetrasaccharides with Chemokine CCL5 is Modulated by Sulfation Pattern and pH", 1st Southeast Glycoscience Symposium, Georgia State University, Atlanta, GA, April 18, 2015.

Grant, O.C., Hadden, J.A., Smith, H.M.K., Peng, W., De Vires, R., McBride, R., Paulson, J.C., **Woods, R.J.** (Plenary Lecture) "A Role for Underlying Glycan Structure in Modulating Influenza Binding: Extending the Species Specificity Paradigm", Sialoglyco2014, Griffith University, Gold Coast, Australia, September 10, 2014.

Grant, O.C., **Woods, R.J. "**Combining Computational Carbohydrate Grafting with Glycan Array Data to Define the 3D Epitopes of Carbohydrate Binding Antibodies", 248th ACS National meeting – Glycoconjugate Symposium, San Francisco, CA, August 11, 2014.

Thieker, D., Liu, J., **Woods, R.J.** "Computer modeling and crystallography illuminate the origin of substrate specificity in the Heparan Sulfate modifying enzyme 2-OST", 9th International Symposium on Glycosyltransferases (GLYCO-T), Porto, Portugal, June 20, 2014.

Grant, O.C., Hadden, J.A., Ye, J., Smith, H.M.K., Peng, W., DeVries, R., McBride, R., Paulson, J.C., **Woods, R.J.** "A Role for Underlying Glycan Structure in Influenza Binding: Extending the Species Specificity Paradigm", International GlycoSymposium, Oslo, Norway, May 18, 2015.

Grant, O.C., Firsova, D., **Woods, R.J.** "Combining Computational Carbohydrate Grafting with Glycan Array Data to Define the 3D Epitope of Carbohydrate Binding Proteins", 17th European Carbohydrate Symposium, Tel Aviv, Israel, July 9, 2013.

Woods, R.J. "Computational screening of virtual glycan arrays: a new tool for specificity prediction and validation", Gordon Research Conference on Carbohydrates, West Dover, VT, June 19th, 2013.

Grant, O.C., Firsova, D., **Woods, R.J.** "Combining Computational Carbohydrate Grafting with Glycan Array Data to Define the 3D Epitope of Carbohydrate Binding Proteins", 3rd Beilstein Symposium on Glycoinformatics, Potsdam, Germany, June 12, 2013.

Sing, A., Coombe, D., **Woods, R.J.** (Keynote Lecture) "Computational analysis of glycosaminoglycan binding to chemokine CCL5", 5th Baltic Meeting on Microbial Carbohydrates, Suzdal, Russia, September 5, 2012.

Grant, O.C., Tessier, M.B., Davis, R.T., Foley, B.L., **Woods, R.J.** (Plenary Lecture) "Tuning docking algorithms for carbohydrates: VIVA-CARB and MD simulations", 23rd Biochemical Congress, Masaryk University, Brno, Czech Republic, August 26, 2012.

Grant, O.C., Tessier, M.B., Davis, R.T., Foley, B.L., **Woods, R.J.** (Plenary Lecture) "Tuning docking algorithms for carbohydrates: VIVA-CARB and MD simulations", International Carbohydrate Symposium, Madrid, Spain, July 26, 2012.

Tessier, M.B., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olson, K., **Woods, R.J.** "Computational Carbohydrate Grafting Leads to the Discovery of Novel Glycan-Binding Specificities for

an Anti-tumor Antibody", 71st Okazaki Conference on New Perspectives on Molecular Science of Glycoconjugates, Okazaki, Japan, October 13, 2011.

Singh, A., Coombe, D.R., **Woods, R.J.** "Computational assessment of glycosaminoglycan binding to chemokine CCL5", 7th International Conference on Proteoglycans, Sydney, Australia, October 19, 2011.

Tessier, M.B., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olson, K., **Woods, R.J.** "Leveraging Glycan Array Data with Computational Carbohydrate Grafting to Define the 3D Structure of an Anti-Tumor Antibody in Complex with Carbohydrate Antigen", Frontiers in Glycostructure and Membrane Biology, Borstel, Germany, September 15, 2011.

Tessier, M.B., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olson, K., **Woods, R.J.** (Plenary Lecture) "Leveraging Glycan Array Data with Computational Carbohydrate Grafting to Define the 3D Structure of an Anti-Tumor Antibody in Complex with Carbohydrate Antigen", Euroglycoscience Forum Crystallography & Modeling Workshop, Vienna, Austria, August 24, 2011.

Tessier, M.B., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olson, K., **Woods, R.J.** "Computational Carbohydrate Screening Indentifies Novel Ligand Binding Specificities for a Diagnostic Protein", 16th European Carbohydrate Symposium, Sorrento, Italy, July 5, 2011.

Tessier, M.B., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olson, K., **Woods, R.J.** "Leveraging Glycan Array Data with Computational Carbohydrate Grafting to Define the 3D Structure of an Anti-Tumor Antibody in Complex with Carbohydrate Antigen", 2nd Beilstein Symposium on Glyco-Bioinformatics, Potsdam, Germany, June 30, 2011.

Tessier, M.B., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olson, K., **Woods, R.J.** "Combining Computational Carbohydrate Threading with Glycan Array Data to Define the 3D Epitope of an Antitumor Antibody", 241st ACS Spring Meeting, Anaheim, CA, March 30, 2011.

Woods, R.J. "Combining Computational Methods with Glycan Array Data to Define the 3D Epitope of an Anti-tumor Antibody", Gordon Research Conference (Glycobiology), Lucca, Italy, May 12, 2011.

Tessier, M.B., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olson, K., **Woods, R.J.** "Computational Carbohydrate Threading Identifies Novel Ligand Binding Specificities for a Diagnostic Protein"**,** 5th Glycan Forum, Berlin, Germany, March 10, 2011.

Woods, R.J. "Characterizing Antibody Specificity: Leveraging Glycan Array Data and Computational Simulations**",** 3rd Annual Meeting of Glycoscience Ireland, Galway, Ireland, September 1, 2010.

Woods, R.J. "Predicting Influenza Species Specificity: A Case for Computational Glycoscience", ICI Annual Conference: High Performance Computing at the Chemistry/Biochemistry Interface, National University of Ireland, Galway, Ireland., May 20, 2010.

Woods, R.J. "Computational Prediction of Influenza Receptor Specificity", AICCS 6th National Carbohydrate Symposium, Banff, Alberta, May 7, 2010.

Woods, R.J. "Defining Influenza Species Specificity: A Case for Computational Glycoscience", Biophysical Society 54th Annual Meeting. San Francisco, CA, February 20, 2010.

Woods, R.J. "Computational Prediction of Influenza Receptor Specificity", 20th International Symposium on Glycoconjugates. San Juan, Puerto Rico, November 30, 2009.

Woods, R.J. "Leveraging Glycan Array Data with Computational Carbohydrate Threading to Define 3D Glycan Binding Epitopes", Beilstein Symposium on Glyco-Bioinformatics. Potsdam, Germany, October 7, 2009.

Woods, R.J. "Leveraging Glycan Array Data with Computational Carbohydrate Threading to Define 3D Glycan Binding Epitopes", EUROCarbDB. Dublin, Ireland, September 23, 2009.

Woods, R.J. "Combining Mass Spectrometry and Molecular Dynamics Simulation to Characterize Biomolecular Interactions", Gordon Research Conference on Biological Molecules in the Gas Phase. Tilton, NH, July 9, 2009.

Woods, R.J. "Computationally-Guided Glycoscience: Toward the Rational Development of Carbohydrate-Based Anti-Viral Therapeutics", Carbohydrates as Organic Raw Materials V. Lisbon, Portugal, January 23, 2009.

Woods, R.J. "Computational Prediction of Influenza Receptor Specificity", Virtual Discovery Europe, Amsterdam, Netherlands, June 20, 2008.

Woods, R.J. (Plenary) "Characterizing Carbohydrate-Protein Interactions from the Protein Perspective", AICCS 4th National Carbohydrate Symposium, Banff, Alberta, May 1-3, 2008.

Woods, R.J. "GLYCAM06, a Generalizable Biomolecular Force Field: Carbohydrates, Lipids, Lipid Bilayers and Glycolipids", 235th ACS Spring Meeting, New Orleans, LA, April 6-11, 2008.

Woods, R.J. "Computational Simulations in Glycoscience: Predicting Affinities and Carbohydrate-Protein Structures", Computational Biophysics with Chemical Accuracy, Antigua, January 14-17 2008.

Woods, R.J. "Computational Simulations in Glycoscience: Predicting Carbohydrate Affinites and Carbohydrate-Protein Structures", Annual Glycobiology Society Meeting, Boston, November 11-14, 2007.

Woods, R.J. "Computational Docking and Free Energy Calculations applied to Carbohydrate-Protein Interactions", Frontiers in Macromolecular Simulation, Atlanta, Georgia, November 8-9, 2007.

Woods, R.J. "Computational Docking and Free Energy Calculations applied to Carbohydrate-Protein Interactions", Frontiers in Macromolecular Simulation, Tilton, New Hampshire, June 17-22, 2007.

Woods, R.J. "Computational Simulations in Glycoscience: Predicting Carbohydrate Affinity and Antigenicity", Emerson Center Lectureship Award Symposium, Emory University, April 6, 2007.

Woods, R.J. "Computational Glycoscience: Probing Structure-Function Relationships", 10th Annual San Diego Glycobiology Symposium, San Diego, CA, January 19-20, 2007

Woods, R.J. "Understanding Carbohydrate Antigenicity: Group B *Streptococcus* type III versus *S. pneumoniae* type 14", IBC's 17th Annual International Conference Antibody Engineering, San Diego, CA, December 10-14, 2006.

Woods, R.J. "Evolution of a Polarizable TIP5P-Consistent Force Field", International Conference of Computational Methods in Sciences and Engineering, Chania, Crete, October 27-November 1, 2006.

Woods, R.J. "Evolution of a Polarizable TIP5P-Consistent Force Field", Gordon Research Conference (Carbohydrates), Les Diablarets, Switzerland, October 8-13, 2006.

Woods, R.J. "Structure and Dynamics of Polysaccharides and Polysaccharide-Protein Complexes", FASEB Meeting on Microbial Polysaccharides of Medical, Agricultural and Industrial Importance, June 17-22, 2006, Tucson, Arizona.

Woods, R.J. "Probing 3D Structure-Function Relationships in Glycobiology", Interdisciplinary Translational Glycobiology, Biodesign Center, Arizona State University, Tucson, Arizona, May 11-12, 2006.

Woods, R.J. "Molecular Dynamics Simulations of the Endopolygalacturonase II – Octagalacturonate Complex", ACS Spring Meeting, Atlanta, Georgia, March 26-30, 2006.

Woods, R.J. "Computational Simulations in Glycobiology: Linking Structure and Function", ACS Spring Meeting, Atlanta, Georgia, March 26-30, 2006.

Woods, R.J. "Integrating Computation and Experiment in Determining Carbohydrate Structure-Function Relationships", National University of Ireland, Galway, Ireland, November 30-December 4, 2005.

Woods, R.J. "Computational Tools for Understanding Carbohydrate Antigenicity: Streptococcus agalactiae (Group B Streptococcus) versus S. pneumoniae", Annual Society for Glycobiology Meeting, Boston, MA, November 9-12, 2005.

Woods, R.J. "A Structural Model for the Antigenicity of Group B Streptococcus Type III: The Influence of Sialylation on Antigen Conformation and Affinity", 13th European Carbohydrate Symposium, Bratislava, Slovakia, August 21-26, 2005.

Woods, R.J. "A Structural Model for the Antigenicity of Type III Group B Streptococcus", Gordon Research Conference (Carbohydrates), Tilton, NH, June 19-25, 2005.

Woods, R.J. "Computational Carbohydrate Chemistry: The Interface Between Theory and Experiment", ACS Spring Meeting, Anaheim, California March 28-April 1, 2004.

Woods, R.J. "Computational Carbohydrate Chemistry: Water, Water, Everywhere.", Gordon Research Conference (Carbohydrates), Tilton, New Hampshire, June 22-26, 2003.

Woods, R.J., K. N. Kirschner and Jorge Gonzales-Outeriño, "Computational Carbohydrate Chemistry: Water, Water, Everywhere.", 43rd Sanibel Symposium, St. Augustine, Florida, February 22 – March 1, 2003.

Woods, R.J.,"Computational Carbohydrate Chemistry: Strengths, Weaknesses and Future Prospects", 223rd American Chemical Society National Meeting, Orlando, Florida, April 7-11, 2002.

Invited Presentations at Seminars and Workshops (87 since 2002)

Woods, R.J., Moremen, K.W., Wells, L., Montgomery, D., Ito, K., Grant, O.C. **(Invited)** "The Role of Spike Protein Glycosylation in Modulating SARS-CoV-2 Antigenicity and Adhesion", Jaroslav Koča Memorial Colloquium on Computational and Structural Biology, Brno, Czech Republic, November 30, 2021.

Woods, R.J. (Invited) "Glycomimetics to Inhibit Influenza Infection", PBS Seminar Series, University of Georgia, Athens, GA, November 17, 2021.

Woods, R.J. (Invited) "Carbohydrate Modeling" GlycoBootcamp 2021, University of California, San Diego, San Diego, CA, July 30, 2021.

Woods, R.J., Grant, O.C., Foley, B.L., Montgomery, D., "Tools for Finding Glycans in the PDB & Modeling 3D Structures of Glycans", Common Fund Glycoscience Program: All-Hands Meeting, Held Virtually, July 6, 2021.

Woods, R.J. (Invited) "Computational Methods for Glycomaterials" GlycoMIP Summer School, Virtual, June 10, 2021.

Woods, R.J. (Invited) "Carbohydrate–Protein Binding Assays" GlycoMIP Summer School, Virtual, June 9, 2021.

Woods, R.J., Grant. O.C., Peng, W., McBride, R., Paulson, J. C., Hendel, J., Smith, H., Murphy, P. V., Tompkins, S. M., Xiao, T., Ji, Y. **(Invited)** "Glycomimetics to Inhibit Influenza Infection", University of Guelph, Ontario, Canada, March 24, 2021.

Woods, R.J., Grant. O.C., Peng, W., McBride, R., Paulson, J. C., Hendel, J., Smith, H., Murphy, P. V., Tompkins, S. M., Xiao, T., Ji, Y. **(Invited)** "Glycomimetics to Inhibit Influenza Infection", Johns Hopkins University, Baltimore, MD, February 24, 2021.

Woods, R.J. (Invited) "Modeling Glycoproteins and Carbohydrate-protein Binding", University of Buenos Aires, Buenos Aires, Argentina, May 6, 2019.

Hendel, J., Ji, Y., Smith, H., Glushka, J., Wu, N., Wilson, I.A., Tompkins, S.M., Murphy, P., **Woods, R.J. (Invited)** "Glycomimetics to Inhibit Influenza Infection", University of Delaware, Newark, DE, November 27, 2018.

Woods, R.J., **(Invited)** "Factors Affecting Carbohydrate-Protein Binding: Understanding Influenza A Specificity" University of Maryland, College Park, MD, November 1, 2018.

Woods, R.J., Schnaar, R., Moremen, K., Westerlind, U. **(Invited)** "Defining the Role of Keratan Sulfate Recognition in Alzheimer's Disease Progression". Understanding the Role of Glycosylation in Alzheimer's Disease (NIA Workshop), Bethesda, MD, September 19, 2018.

Woods, R.J., **(Invited)** "Computational and Biophysical Data provide New Insights into Carbohydrate Recognition" 7th Charles Warren Workshop, Boston, MA, August 17, 2018.

Grant, O.C., Chalmers, G.R., **Woods, R.J.** "Rapid Methods for Generating 3D Structures of Glycoproteins" **(Invited)** Master Class in Glyco-Informatics, Lisbon, Portugal, July 15, 2018.

Grant, O.C., **Woods, R.J.** "Predicting N-glycan Processing Based on Enzyme – Glycan Accessibility", **(Invited)** 12th Georgia Glycoscience Symposium, Atlanta, GA, April 23, 2018.

Wu, S., Cooper, J.C., Paul, M.K., Cummings, A.L., Eletr, Z.M., Ben-Arye, S.L., Padler-Karavan, V., Samli, K.N., **Woods, R.J.,** Yang, L. "Novel Sialoglycan Lectenz® Reagents" Glycoprotein Technologies Satellite Meeting, Portland, OR, November 5, 2017.

Woods, R.J. "Introducing the Computational Glycosciences Portal: A Question-Driven Interface for Glyco-modeling" Glyco-Bioinformatics Satellite Meeting, Portland, OR, November 5, 2017.

Woods, R.J. "3D modeling and glycomics" Basel Bioinformatics Workshop, Basel, Switzerland, September 12, 2017.

Young, J.Y., **Woods, R.J. "**GlyProbity: tools to curate glycan structure pre and post deposition in the PDB" NIH Common Fund Glycoscience Program: Participating Investigators Meeting, Bethesda, MD, August 31, 2017.

Foley, B.L., **Woods, R.J.** "Tools to Enable Non-specialists to Model Glycoconjugates and Glycan-protein Interactions" NIH Common Fund Glycoscience Program: Participating Investigators Meeting, Bethesda, MD, August 30, 2017.

Grant, O.C., **Woods, R.J.** "Predicting N-glycan processing based on enzyme-glycan accessibility" IBBR, Baltimore, MD, March 27, 2017.

Grant, O.C., Xue, X., Ra, D., Khatamian, A., Foley, B.L., **Woods, R.J.** "Gly-Spec: Glycan 3D Structure and Specificity Prediction", SFG, New Orleans, LA Nov 19, 2016.

Grant, O.C., Hadden, J.A., Ye, J., **Woods, R.J.** "A Role for Underlying Glycan Structure in Influenza Binding: Extending the Species Specificity Paradigm", International Carbohydrate Symposium, New Orleans, LA Jul 18, 2016.

Grant, O.C., Hadden, J.A., Ye, J., **Woods, R.J.** "A Role for Underlying Glycan Structure in Influenza Binding: Extending the Species Specificity Paradigm", 99th Canadian Chemistry Conference, Halifax, Nova Scotia, Jun 8, 2016.

Grant, O.C., Hadden, J.A., Ye, J., **Woods, R.J.** "A Role for Underlying Glycan Structure in Influenza Binding: Extending the Species Specificity Paradigm", EB 2016 /2016 ASBMB, San Diego Convention Center, San Diego, CA, Apr 3, 2016.

Grant, O.C., **Woods, R.J.** "Latest Advances in 3D GlycoStructure Prediction Tools: Glycam-Web", Transformational Informatics for Glycoscience Meeting, San Francisco, CA, December 1, 2015.

Woods, R.J. "Predicting N-glycan processing based on enzyme-glycan accessibility", Society for Glycobiology Annual Meeting, Foggy Bottom, Washington, D.C. October 6-9, 2015

Grant, O.C., **Woods, R.J.** "Combining 3D Structure with Glycan Array Data Provides Insight into the Origin of Glycan Specificity", Univeristy of Notre Dame, Notre Dame, IN, October 1, 2015.

Woods, R.J. "Understanding Bacterial Polysaccharide Antigenicity: Shape versus Dynamics", National Institutes of Health, Bethesda, MD, August 26, 2015.

Grant, O.C., Hadden, J.A., Ye, J., Smith, H.M.K., Peng, W., DeVries, R., McBride, R., Paulson, J.C., **Woods, R.J.** "A Role for Underlying Glycan Structure in Influenza Binding: Extending the Species Specificity Paradigm", Eurocarb18, Moscow, Russia, Aug 3, 2015.

Grant, O.C., Hadden, J.A., Ye, J., Smith, H.M.K., Peng, W., DeVries, R., McBride, R., Paulson, J.C., **Woods, R.J.** "A Role for Underlying Glycan Structure in Influenza Binding: Extending the Species Specificity Paradigm", NIH & FDA Glycoscience Research Day, National Institutes of Health, Bethesda, MD, May 28, 2015.

Woods, R.J. "Computational Analysis of Polysaccharide Antigenicity", Pfizer Pearl River 2015, Pearl River, NY, Jun 24, 2015.

Woods, R.J. "Computationally-Guided Design of Reagents for Glycoscience", GlycoCon 2015, Banff, Alberta, May 5, 2015.

Singh, A., Warren, C.K., Severin, I.C., Agyekum, I., Duan, J., Amster, J., Proudfoot, A.E.I., Coombe, D.R., **Woods, R.J.** "The Interaction of Haparin Tetrasaccharides with Chemokine CCL5 is modulated by Sulfation Pattern and pH", 1st Southeast Glycoscience Symposium, Atlanta, GA, April 18, 2015.

Woods, R.J. "Computational Analysis of Polysaccharide Antigenicity", Pfizer Internal Speaker Series, St. Louis, MO, Apr 8, 2015.

Woods, R.J. "Advancing the Structural Paradigm of Influenza Host Recognition", Michigan State University, East Lansing, MI, Feb 19, 2015.

Woods, R.J. "Computational Analysis of Polysaccharide Antigenicity", Pfizer, WRD – Bio-Therapeutics Pharmaceutical Sciences, St. Louis, MO, April 8, 2015.

Woods, R.J. "Advancing the Structural Paradigm of Influenza Host Recognition", Michigan State University, East Lansing, MI, February 19, 2015.

Singh, A., Coombe, D., **Woods, R.J.** "Computational Simulations Applied to Chemokine – Glycosaminoglycan Interactions", University of Potsdam, Potsdam, Germany, December 12, 2013.

Grant, O.C., Firsova, D., **Woods, R.J. "**Combining Computational Carbohydrate Grafting with Glycan Array Data to Define the 3D Epitope of Carbohydrate Binding Proteins", University of Tel Aviv, Tel Aviv, Israel, July 6, 2013.

Woods, R.J. "The structural basis of binding, non-binding, and false-negative binding in glycan array data", National Institutes of Health, Bethesda, MD, April 25, 2013.

Tessier, M.B., Grant, O.C., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Glushka, J., Rittenhouse-Olsen, K., **Woods, R.J.** "Computational Carbohydrate Grafting Leads to the Discovery of Novel Glycan-Binding Specificities for an Anti-tumor Antibody", Oak Ridge National Laboratory, Oak Ridge, TN, February 22, 2013.

Woods, R.J. "Computational Analysis of Glycosaminoglycan Binding to Chemokine CCL5", Department of Chemistry, University of Alberta, Edmonton, Alberta, September 21, 2012.

Woods, R.J. (Plenary) "Computational Screening of the Human Glycome: Predicting Carbohydrate Binding Specificity", Computational Chemical Biology—Probing Biology with In Silico Tools, Manchester, United Kingdom, September 13, 2012.

Grant, O.C., Tessier, M.B., Davis, R.T., Foley, B.L**., Woods, R.J.** "Virtual Glycan Array Screening for Specificity Prediction: Application to Glycosidases and Glycosyltransferases", 4th Warren Workshop, Athens, GA, August 10, 2012.

Woods, R.J. "The Importance of Including Conformational Properties of Carbohydrates in Automated Docking", NCRR Principal Investigators Meeting, Bethesda, MD, March 29, 2012.

Tessier, M.B., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olsen, K., **Woods, R.J.** "Computational Carbohydrate Grafting Leads to the Discovery of Novel Glycan-Binding Specificities for an Anti-tumor Antibody", Soka University, Hachioji, Japan, October 11, 2011.

Tessier, M.B., Grant, O.C., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Glushka, J., Rittenhouse-Olsen, K., **Woods, R.J.** "Leveraging Glycan Array Data with Computational Carbohydrate Grafting to Define the 3D Structure of an Anti-tumor Antibody in Complex with Carbohydrate Antigen", Consortium for Functional Glycomics Participating Investigators Meeting, The Natcher Conference Center, Bethesda, MD, July 29, 2011.

Woods, R.J. (Plenary) "Combining Computational Carbohydrate Screening with Glycan Array Data to Define the 3D Epitope of an Anti-tumor Antibody", Conformational Analysis of Carbohydrates & Protein/Carbohydrate Interactions (CAC-PCI), Partenope Conference Centre, Naples, Italy, July 2, 2011.

Woods, R.J. "Employing Computational Simulations to Guide Experiment", Albanova University Center, Stockholm University, Stockholm, Sweden, May 30, 2011.

Woods, R.J., "Glycam and Glycam-Web Development", AMBER Developers Meeting, Athens, GA, March 3-5, 2011.

Tessier, M.B., Makeneni, S., Heimburg-Molinaro, J., Jadey, S., Gulick, A., Rittenhouse-Olsen, K., **Woods, R.J.** "Combining Computational Carbohydrate Threading with Glycan Array Data to Define the 3D Epitope of an Anti-tumor Antibody", Center for Non Linear Studies, Los Alamos, NM, February 8, 2011.

Woods, R.J. "Computational Methods Applied to the Design of Glycodiagnostics and Therapeutics", School of Chemistry, Trinity College, Dublin, Ireland, October 2, 2010.

Woods, R.J. "Combining Computational Carbohydrate Threading with Glycan Array Data to Define the 3D Epitope of an Anti-tumor Antibody", Royal Society of Chemistry, University of Dundee, Dundee, United Kingdom, August 30, 2010.

Woods, R.J. "Combining Computational Carbohydrate Threading with Glycan Array Data to Define the 3D Epitope of an Anti-tumor Antibody", Charles Warren III Workshop, Hindais, Sweden, August 29, 2010.

Woods, R.J. "Computationally-Guided Glycoscience: the Conversion of Glycosidases into Carbohydrate-Affinity Reagents", Green Seminar Series, BIOTEC Center, Dresden, Germany, June 18, 2010.

Woods, R.J. "Computationally-Guided Glycoscience", University of Oslo, Oslo, Norway, June 7, 2010.

Woods, R.J. "Computational Glycoscience: Using Simulation to Guide Experimental Design", Molecular Cell Biology Colloquium, University of Luebeck, Luebeck, Germany, May 26, 2010.

Woods, R.J. "The Role of Computing in Protein Design: The Conversion of Glycosidases into Carbohydrate-affinity Reagents", Society for General Microbiology, Galway, Ireland, April 15, 2010.

Woods, R.J., "Carbohydrate Threading Applied to 3D Motif Detection in Glycan Array Data", NIH Workshop on Leveraging Glycan Array Screens with Biological, Computational and Structural Data*,* Bethesda, Maryland, October 23, 2009.

Woods, R.J., "Understanding Bacterial Polysaccharide Antigenicity: All Epitopes are Conformational"**,** University of Georgia, Athens, GA, October 15, 2009.

Woods, R.J. "Understanding Carbohydrate Antigenicity: All Epitopes are Conformational", Scripps Research Institute, La Jolla, CA, April 2, 2009.

Woods, R.J. "Computationally-Guided Protein Engineering: How to Make a Better Receptor", An Cumann Ceimice, NUI Galway, Ireland, March 12, 2009.

Woods, R.J., "Interpreting Glycan Array Data in Terms of 3D Interactions", CFG-Sponsored Meeting on Glycan Arrays, La Jolla, CA, March 15, 2009.

Woods, R.J., "Virtual High-throughput Screening and Carbohydrates: Application to the Design of Anti-bacterial and Anti-viral Agents", Center for Drug Discovery, Athens, Georgia, February 2, 2009.

Woods, R.J., "Issues in Modeling Carbohydrate-protein Interactions: Toward Virtual High-throughput Glycan Array Screening", NIH Workshop, *"Glycan Array Data: What does it tell us and how do we interpret it?"*, Bethesda, Maryland, December 8, 2008.

Woods, R.J., "Creation and Implementation of Virtual 3D Glycan Arrays" Consortium for Functional Glycomics Advisory Committee Meeting, Ft. Worth, TX, November 11, 2008.

Woods, R.J., "Computationally-guided Glycoscience: Predicting the Structures and Energies of Carbohydrate-Protein Interactions", Workshop & Ph.D. course: Biomolecular Interactions by Computational Chemistry Tools, National Centre for Biomolecular Research. Brno, Czech Republic. November 6, 2008.

Woods, R.J., "Understanding Carbohydrate Antigenicity: All Epitopes are Conformational", Case Western Reserve University School of Medicine, Cleveland, Ohio, February 19, 2008.

Woods, R.J., "Computational Docking and Free Energy Calculations applied to Carbohydrate-Protein Interactions", Center for Theoretical and Biological Physics, San Diego, California, November 30, 2007.

Woods, R.J., "Computational Simulations in Glycoscience: Predicting Carbohydrate Affinites and Carbohydrate-Protein Structures", I2CAM Exploratory Workshop Glycome: Structure to Disease, Paris, France, September 14-18, 2007.

Yongye, A., **Woods, R.J.**, "Computational tools employed in carbohydrate vaccine design", NIH Workshop on carbohydrate moieties as vaccine antigens, Bethesda, MD, September 10-11, 2007.

Woods, R.J., "Combining X-ray and Computational Data to Model Prokaryotic N-Glycoproteins", National Research Council of Canada, Ottawa, Canada, July 2, 2007.

Woods, R.J., "Understanding Bacterial Polysaccharide Antigenicity- What Makes Sugar Stick?", Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, March 18-25, 2007.

Woods, R.J., "Quantum-Derived Force Fields for Classical Dynamics Simulations of Biomolecules", Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, March 18-25, 2007.

Woods, R.J., "Computational Simulation: Applied to Structure-Affinity Predictions", La Jolla Biotechnology Institute, San Diego, CA, February 14-18, 2007.

Woods, R.J., "3D Structure Prediction Tools for Glycoscience: From Monosaccharides to Glycoproteins", Frontiers in Glycomics, NIH, Bethesda, MD, September 11-15, 2006.

Woods, R.J., "Glycam Web Development and Glycoprotein Force Field", AMBER Developers Meeting, Salt Lake City, UT, October 26-29, 2005.

Woods, R.J., "Understanding Antigenicity: *Streptococcus agalactiae* (Group B *Streptococcus*) versus *S. pneumoniae*", Wyeth Pharmaceuticals, Pearl River, NJ., July 26-27, 2005.

Woods, R.J., "Understanding Antigenicity: *Streptococcus agalactiae* (Group B *Streptococcus*) versus *S. pneumoniae*", NIH, Bethesda, MD, June 8-9, 2005.

Woods, R.J., "A Structural Model for the Antigenicity of Type III Group B Streptococcus", University of Toronto, Toronto, Canada, May 4-6, 2005.

Woods, R.J., "Linux in the Life Sciences", Linux World Convention, Boston, MA, February 14-15, 2005

Woods, R.J., **"**Glycam Web Development and Glycoprotein Force Field", AMBER Developers Meeting, Port Jefferson, NY, October 21-22, 2004.

Woods, R.J., "A structural Model for the Antigenicity of Group B *Streptococcus* Type III", Carbohydrate Moieties as Vaccine Candidates Meeting, NIH, Bethesda, MD, October 6-7, 2004.

Woods, R.J., "Enhancing Computational Modeling and Simulation with Itanium Technology" HP Itanium Webcast, Los Angeles, California, March 31, 2004.

Woods, R.J. "Modeling Carbohydrates with the GLYCAM Force Field." AMBER/CHARMM Developers Meeting, San Diego, California, Fall 2003.

Woods, R.J., "Computational Carbohydrate Chemistry: Water, Water, Everywhere." University of Alberta, Department of Chemistry, June 2-4, 2003.

Symposia and Conferences Chaired or Organized

Co-Organizer (with Darón Freedberg): "Advances in Glycan Structure and Dynamics", 254th ACS Spring Meeting, Washington D.C., August 22-23, 2017.

Co-Organizer (with Pauline Rudd): 5th Charles Warren Workshop, Galway, Ireland, August 6-9, 2014.

Chair: Session on "Computational Glycoscience", 5th Charles Warren Workshop, Galway, Ireland, August 7, 2014.

Co-Chair (with David Clemmer): 2013 Gordon Research Conference "Molecules in the Gas-Phase and in Solution", Andover, NH, July 31-August 5.

Chair: 2012 Biophysical Society: Molecular Biophysics Subgroup, San Diego, CA, February 26, 2012.

Co-chair (with Nicola Pohl): Gordon Research Conference "Carbohydrates", Waterville, ME, June 19-24, 2011.

Organizer: Annual "AMBER Developers Meeting", Athens, GA, March 3-5, 2011.

Co-chair (with Dr. A. French): "Bioenergy and Carbohydrate Structure: Modeling and Experiment", 235th ACS Spring Meeting, New Orleans, LA, April 6-11 2008.

Co-chair (with Dr. A. Laederach): "Modeling of Plant Biopolymers", 231st ACS Spring Meeting, Atlanta, GA, March 26-30 2006.

Chair: "Computational Chemistry of Carbohydrates Symposium", 227th ACS National Meeting, Anaheim, CA, March 28 – Apr 1, 2004.