Kelley W. Moremen, Ph.D.

CURRICULUM VITAE

**ADDRESS:** Complex Carbohydrate Research Center
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**CURRENT** Distinguished Research Professor of Biochemistry and Molecular Biology
**EMPLOYMENT:** Member, Complex Carbohydrate Research Center
 University of Georgia
 Athens, GA 30602

**EDUCATION:** 1984 Ph.D. Department of Molecular Biology
 Vanderbilt University, Nashville, TN 37235 (advisor: Dr. Oscar Touster)

1978 B.S. Dickinson College, Cum Laude, with Honors
(Major: Chemistry/Biology)

**RESEARCH AND PROFESSIONAL EXPERIENCE:**

**Appointments**

2019-present Associate Director for Commercialization, Complex Carbohydrate Research Center, University of Georgia

2014-present Distinguished Research Professor, Department of Biochemistry & Molecular Biology and Complex Carbohydrate Research Center, University of Georgia

2003-2014 Professor, Department of Biochemistry & Molecular Biology
and Complex Carbohydrate Research Center, University of Georgia

1997-2003 Associate Professor, Department of Biochemistry & Molecular Biology
and Complex Carbohydrate Research Center, University of Georgia

1991-1997 Assistant Professor, Department of Biochemistry & Molecular Biology
and Complex Carbohydrate Research Center, University of Georgia

1989-1991 Juvenile Diabetes Foundation Postdoctoral Fellow,
Center for Cancer Research, Massachusetts Institute of Technology,
Cambridge, MA 02139 (advisor: Dr. Phillips W. Robbins)

1986-1989 National Institutes of Health Postdoctoral Fellow,
Center for Cancer Research, Massachusetts Institute of Technology,
Cambridge, MA 02139 (advisor: Dr. Phillips W. Robbins)

1984-1986 National Institutes of Health Postdoctoral Fellow,
Department of Molecular Biology, Vanderbilt University,
Nashville, TN 37235 (advisor: Dr. Oscar Touster)

**Honors and Awards**

2020 Karl Meyer Lectureship Award, Society for Glycobiology

2019-present Associate Director for Commercialization, Complex Carbohydrate Research Center, University of Georgia, Athens, GA

2014-present Distinguished Research Professorship, University of Georgia, Athens, GA

1989-1991 Juvenile Diabetes Foundation Postdoctoral Fellow, Massachusetts Institute of Technology, Cambridge, MA

1986-1989 National Institutes of Health Postdoctoral Fellow, Massachusetts Institute of Technology, Cambridge, MA

1984-1986 National Institutes of Health Postdoctoral Fellowship, Vanderbilt University,
Nashville, TN

1997-1998 Charles A. Dana Scholarship, Dickinson College, Carlisle PA

**Commercial/Advisory Board Activities:**

2018-present Founder, President, and CEO, Glyco Expression Technologies, Inc., Athens, GA

2018-present Senior Vice President – Research & Development, Third Floor Therapeutics, Athens, GA

2020-present Chair, External Advisory Committee, GlyCore NIH COBRE program, University of Mississippi, Oxford MI

2015-present Scientific Advisory Board, Gates Foundation HIV Vaccine Design Grant, Ragon

Institute, Cambridge MA

2010-2013 Scientific Advisory Board, Callidus Biopharma, Inc., Doylestown, PA,
2004-2007 Scientific Advisory Board, Glycofi, Inc., Hanover, NH,
1999-2003 Scientific Advisory Board, Novazyme Pharmaceuticals, Inc., Oklahoma City, OK,
1993-1998 Scientific Advisory Board, Glycodesign, Inc., Toronto, Ontario, Canada,
1993-1998 Consultant, Glycodesign, Inc., Toronto, Ontario, Canada,
1996-2000 Founder, Glycobiotics, Inc., Athens, GA

**Editorial Board Positions:**

2005-2010 Editorial Board, ***Journal of Biological Chemistry***
2005-presentEditorial Board, ***Glycobiology***1994-2018 Editorial Board, ***Glycoconjugate Journal***

**Society Memberships/Offices/Meeting Organization:**

**Society for Glycobiology**
2018 President
2017 President-elect
2005-2015 Secretary
1998-2003 Board of Directors
1990-present Member

**Glycobiology Gordon Conference**

2013 Chair, Ventura, CA
2011 Vice Chair, Il Ciocco, Italy
2009 Poster Chair, Oxnard, CA

**American Society for Biochemistry/Molecular Biology**

1992-present Member

**American Chemical Society**

2015-present Member

**American Society for Cell Biology**

1992-2015 Member

**INSTRUCTION:**

**Teaching Activities:**

1. **Advanced Genetics, Cell, Biochemistry and Molecular Biology I and II BCMB/CBIO/GENE8113-8114**Course Organizer and Lecturer: 2015 - Present
This course was initiated and organized by Dr. Moremen in collaboration with BCMB, CBIO and GENE faculty and is his primary teaching responsibility (13 lectures in the course). It is a unified course for graduate students in the life sciences emphasizing the analysis of primary literature, didactic lecture content, contemporary experimental approaches, presentations, and projects to provide a common set of core skills necessary for contemporary graduate studies in the Life Sciences. Dr. Moremen is responsible for organization of lecture topics and the general structure of the course.
2. **Advanced Genetics, Cell, Biochemistry and Molecular Biology III and IV BCMB/CBIO/GENE8213-8214**Course Organizer and Lecturer: 2019 – Present

This course is the second semester core course that follows BCMB/CBIO/GENE8113-8114 for biochemistry, cellular biology, genetics, as well as students in other university departments and colleges to provide a common set of core skills necessary for contemporary graduate studies in the Life Sciences. Dr. Moremen is responsible for organization of lecture topics and the general structure of the course and 2 lectures in the course.

1. ***Advanced Biochemistry and Molecular Biology***

**BCMB8010: 1991-2014**Lecturer: 1991
Co-organizer and Lecturer: 1992-1997. Course Organizer and Lecturer: 1998-2014.
This course was the main teaching responsibility for Dr. Moremen, contributing 40 lecture hours (two-thirds of the course content in this 4 semester hour course). The course emphasized protein structure, function, enzyme kinetics, mechanism, and regulation from the molecular scale to organismal control of metabolism. The course content was revised to incorporate web-based presentations, animations, and resource material for the lecture content, and web-based assignments and oral presentations for the students. The course provided hands-on experience with all aspects of protein structure and function. Dr. Moremen was responsible for lectures, help-sessions, and preparation and grading of tests.

1. ***Advanced Biochemistry and Molecular Biology***

**BCMB8020: 1992-1999, 2005.**
Co-organizer and Lecturer: 1992-1999.
This course was co-organized with Dr. Pierce and emphasized membrane structure and function, transport, membrane trafficking, carbohydrate structure and function. Dr. Moremen contributed ~15 lecture hours in this course and lectures, help-sessions, and preparation and grading of tests. In 2005 presented a 2 hr lecture on “*Overview of glycoprotein structures, biosynthesis, and function*”.

1. ***Glycobiology***

**BCMB8130, 1993, 1994, 1998, 2005, 2007, 2009, 2011, 2013, 2015, 2017, 2019**
Lecturer:
Dr. Moremen contributed 2 lectures (1.5 h each) hours on “*Glycosyltransferases and Glycoside Hydrolases*” and “*Glycans and cellular functions: glycoprotein folding, processing, quality control*”

1. ***Chemical Glycoscience***

**CHEM 8390: 2013, 2015, 2017**

Lecturer:

Dr. Moremen contributed a lecture on “Glycoprotein biosynthesis, enzymology, and function”

1. **CCRC summer course on Separation and Characterization of Glycoprotein and Glycolipid Oligosaccharides**. Lecture title: “Overview of glycoprotein structures, biosynthesis, and function”, 1998-present.
2. ***Advanced Cell Biology***

**CB840, 1994, 1996, 1998.**
Lecturer:
Dr. Moremen contributed 5 lecture hours on membrane traffic in the secretory pathway.

1. ***Intermediate Biochemistry***

**BMB402, 1994, 1995, 1996, 1997.**Lecturer:
Dr. Moremen presented a one hour lecture on oncogenes, signal transduction and cancer.

1. ***Introduction to Biochemical Research***

**BMB814, 1991-2000**
Lecturer:
Dr. Moremen contributed 2 lecture hours to incoming graduate students on research in the Moremen lab.

1. ***Elected Member of the Graduate Faculty***, University of Georgia, 1993-present.
2. ***Biochemistry, Cell, and Molecular Biology Journal Club***, 1991-1995. Participant
3. ***Students supervised in undergraduate research*** (BMB399, BMB496, and BCMB4960, 1991-present): 34
4. ***Students supervised in graduate research*** (1991-present): 15

**Directed research of the following students for doctoral degrees:**

Carlos Rivera-Marrero, 1993, “Studies on the structure and function of the α-1,3- and β1,4-galactosyltransferases within the Golgi apparatus of animal cells” (presently senior Microbiologist, centers for Disease Control and Prevention, Atlanta, GA)

Anita Lal, 1997, “Mammalian Class I mannosidases involved in glycoprotein maturation” (Director, Program Management Office, Luminex Corporation, San Francisco)

Yung-Feng Liao, 1998, “Biochemical studies on mammalian glycoprotein processing and catabolic mannosidases and characterization of the genetic defects in patients with a human lysosomal storage disease, alpha-mannosidosis” (presently Assistant Research Fellow, Institute of Zoology, Academia Sinica, Taipei, Taiwan)

Alison Vandersall-Nairn, 2001, “Cloning and characterization of the acid alpha-mannosidase from *Trypanosoma cruzi* and studies if the heterologously expressed protein in yeast and mammalian cells” (presently a Associate Research Scientist in the Moremen lab, University of Georgia and Chief Scientific Officer, Glyco Expression Technologies, Inc.)

Steven Mast, 2004, “Discovery of the EDEM subfamily in the family 47 glycosylhydrolases”, (presently Analytical Services Manager at Prozyme, San Leandro, CA)

Khanita Karaveg, 2004, “Structure and function of ER Class 1 alpha-mannosidases”, (presently an Associate Director, Glyde Bio, Inc. Cambridge, MA)

Chaeho Park, 2006, “Characterization of a Human Core-specific Lysosomal alpha1,6-Mannosidase Involved in *N*-Glycan Catabolism” (presently post-doc at Washington University at St. Louis).

Narendra Tejwani, 2008, “Heterologous expression of rat ST6GalI in Pichia pastoris for structural and functioinal studies.” (presently a pharmacy manager in South Carolina)

Harminder Singh, 2009, “Biological Role of Golgi Mannosidase IIx” (presently a postdoc at University of Georgia).

Yong Xiang, 2015, “Structure and substrate specificity of GH47 alpha-mannosidases”. (presently a postdoc in China).

**Present graduate students:**

Chin Huang

**Directed research of the following students for Masters degrees:**

Heather Harrison Stang, 1997, “Expression, Purification, Isotope enrichment, and mutagenesis of Galectin-1” (presently research technician at Emory University)

Sergio Tonon, 1993, “Functional study of protein domains of mammalian Golgi resident enzymes: their involvement in activity” (was a member of the faculty, Universidad de Misiones, Argentina, deceased in 2006)

Tim Kunkle, 1994, “Localization of the MNT1-encoded α1,2-mannosyltransferase involved in *Saccharomyces cerevisiae* O-linked glycosylation in African green monkey (COS-7) cells and Chinese hamster ovary (CHO) cells.” (presently a pharmacist in Pennsylvania)

Heather Strachan, 2009, “Expression, Purification and Characterization of a Drosophila melanogaster Mannosidase orthologous to Drosophila melanogaster Golgi Mannosidase II (was a research technician at the University of Georgia, presently working at home with 3 children)

**Post-doctoral Fellows and Visiting Scientists, (years, present activity):**

***Past:***

Dr. Yasuhiro Kagawa, (1995-96, Research Biochemist, Toray Pharmaceuticals, Japan).

Dr. Roberta Merkle, (1994-1995, subsequently Technical Director, Biomedical Complex Carbohydrates, CCRC, University of Georgia, now retired)

Dr. Daniel Gonzalez, (1992-1998, Faculty, Auburn University, deceased)

Dr. Steven Mast (2004-2006, Postdoctoral fellow, Crown Research Institute, New Zealand, 2006-2008; Analytical Services Manager, Prozyme, 2008-present)

Dr. Khanita Karaveg (2006-2009, Sr. Research Biologist, Glycofi/Merck, Inc. 2008-2012, Process Analytical Scientist, Genzyme Sanofi, 2013-2016, Bioanalytical Scientist, Avitide, 2016-2018, Associate Director, Glyde Bio, 2018-present)

Dr. Bakthavatsalam Sundararaju (2006-2008, presently working in academic instruction in India)

Dr. Amgad Albohy (2015-16, Assistant Professor at the British University in Egypt)

Dr. Shuo Wang (2013-2015, presently working in a postdoc position in Harvard University)

Dr. Pradeep Prabhakar (2015-2017, postdoc fellow U. Wyoming, 2018-2019, postdoc fellow at the University of Georgia 2019-present)

Dr. Lu Meng (2002-2017, research staff, Glycosensors, Athens, GA)

Dr. Yong Xiang (2015-present, postdoctoral fellow in the Department of Biochemistry, U. Kentucky)

Dr. Jeong-Yeh Yang (2014-2020, Assistant Research Scientist, USDA, Athens GA)

***Present:***

Dr. Alison Vandersall-Nairn (2001-2002, 2003-present, Associate Research Scientist in the Moremen lab, University of Georgia)

Dr. Zhifeng Zheng (2006- present, postdoctoral fellow in the Moremen lab, University of Georgia)

Dr. Bhargavi Boruah (2015-present, postdoctoral fellow in the Moremen lab, University of Georgia)

Dr. Digantkumar Chapla (2015-present, postdoctoral fellow in the Moremen lab, University of Georgia)

**Research technicians in the Moremen lab:**

***Present:***

Annapoorani Ramiah

Zhongwei Gao

Rosemary Kim

**Thesis committee membership:**

Department of Biochemistry and Molecular Biology: 40 (6 present)
Department of Cellular Biology: 10
Department of Genetics: 4

RESEARCH

CITATIONS AND IMPACT

Google Scholar

h-index: 53

¡10-index: 133

Citations total: 9379

ResearchGate:

h-index: 48

RG score: 45.48

Citations total: 7319

Web of Science

h-index: 45

Citations total: 6735

**PUBLICATIONS:**

***Book Chapters:***

1. Nairn, A.V. and **Moremen, K. W.** (2015) Glycotranscriptomics in ***Glycoscience: Biology and Medicine***(N. Taniguchi, T. Endo, G. Hart, P. Seeberger, C.-H. Wang eds.) Springer-Verlag, Tokyo, pp. 1475-1482 [PMCID not applicable]
2. Nairn, A.V. and **Moremen, K. W.** (2014) Mannosyl-oligosaccharide glucosidase (Glucosidase I, MOGS) in ***Handbook of Glycosyltransferases and Related Genes***, 2nd edition (N. Taniguchi, K. Honke, M. Fukuda, H. Narimatsu, Y. Yamaguchi, and T. Angata, eds.) Springer-Verlag, Tokyo, pp. 1273-1282. [PMCID not applicable]
3. **Moremen, K. W.** and Nairn, A.V. (2014) Mannosidase, alpha, class 2a1 (MAN2A1, Golgi -mannosidase II) in ***Handbook of Glycosyltransferases and Related Genes***, 2nd edition (N. Taniguchi, K. Honke, M. Fukuda, H. Narimatsu, Y. Yamaguchi, and T. Angata, eds.) Springer-Verlag, Tokyo, pp. 1313-1326. [PMCID not applicable]
4. **Moremen, K. W.** and Nairn, A.V. (2014) Mannosidase, alpha, class 1 (MAN1A1 (Golgi -mannnosidase IA), Man1A2 (Golgi -mannosidase IB), MAN1B1(ER -mannosidase I), MAN1C1 (Golgi -mannosidase IC ) in ***Handbook of Glycosyltransferases and Related Genes*,** 2nd edition (N. Taniguchi, K. Honke, M. Fukuda, H. Narimatsu, Y. Yamaguchi, and T. Angata, eds.) Springer-Verlag, Tokyo, pp. 1297-1312. [PMCID not applicable]
5. Nairn, A.V. and **Moremen, K. W.** (2014) Glucosidase, alpha neutral AB; glucosidase II subunit beta (GANAB, PRKCSH, -glucosidase II) in ***Handbook of Glycosyltransferases and Related Genes***, 2nd edition (N. Taniguchi, K. Honke, M. Fukuda, H. Narimatsu, Y. Yamaguchi, and T. Angata, eds.) Springer-Verlag, Tokyo, pp. 1283-1295 [PMCID not applicable]
6. Nairn, A.V. and **Moremen, K.W.** (2009) Glycotranscriptomics. In **Handbook of Glycomics** (J.M. Pierce and R.D. Cummings eds.) Academic Press/Elsevier, pp. 81-136 [PMCID not applicable]
7. **Moremen, K. W.** (2002) -Mannosidase II in ***Handbook of Glycosyltransferases and Related Genes*,** (N. Taniguchi and M. Fukuda, eds.) Springer-Verlag, Tokyo, pp. 600-606
8. **Moremen, K. W.** (2000) -Mannosidases in Asparagine-linked Oligosaccharide Processing and Catabolism. in ***Oligosaccharides in Chemistry and Biology: A Comprehensive Handbook***, Vol. II, Part 1 (B. Ernst, G. Hart, and P. Sinay, eds.) Wiley and Sons Publishers, New York, 81-117.
9. Trimble, R. B., **Moremen, K.W.**, and Herscovics, A. (1994) Mannosidases of the Golgi Apparatus. in ***Guidebook to the Secretory Pathway*** (J. A. Rothblatt, T. Stevens, and P. Novick eds.) Sambrook and Tooze Scientific Publishers. pp. 185-188.
10. Trimble, R. B., **Moremen, K.W.**, and Herscovics, A. (1994) N-glycan processing in the endoplasmic reticulum in ***Guidebook to the Secretory Pathway*** (J. A. Rothblatt, T. Stevens, and P. Novick eds.) Sambrook and Tooze Scientific Publishers. pp. 100-104.
11. **Moremen, K. W.** and Touster, O. (1987) Mannosidases in Mammalian Glycoprotein Processing. in ***Protein Transfer and Organelle Biogenesis*** (R.C. Das and P.W. Robbins eds.) Academic Press, pp. 209-240.

***Manuscripts submitted:***

16. Wu, H., Shajahan, A., Yang, J.Y., Wands, A.M., Arthur, C.M., Stowell, S.R., **Moremen, K.W.,** Azadi, P., Kohler, J.J. (2020) A photocrosslinking GlcNAc analog enables covalent capture of N-linked glycoprotein binding partners

15. Xiao, W., Pinilla-Baquero, A., Faulkner, J., Prabhakar, P., Qiu, H., **Moremen, K.W.**, Ludwig, A., Dempsey, P.J., Wang, L. (2020) Robo4 signaling is regulated by proteolytic cleavage.

14. Hong, S., Yu, C., Shi, Y., Wang, P., Chapla, D., Rodrigues, E., **Moremen, K.W.**, Paulson, J.C., Macauley, M.S., and Wu, P. (2020) Modulate Siglec-7 Signaling via in situ Created High-affinity cis-Ligands

13. Soto, M.J., Prabahkar, P.K., Wang, H.-T., Chapla, D., Ruprecht, C., Bartetzko, M., Black, I., Pena, M.J., Pfrengle, F., **Moremen, K.W.**, Urbanowicz, B.R., and Hahn, M.G. (2020) *At*FUT4 and *At*FUT6: Biochemically Redundant Arabinogalactan Protein-Specific Fucosyltransferases

12. Chinoy, Z.S., Montembault, E., **Moremen, K.W.**, Royou, A., and Friscourt, F. (2020) Protecting mammalian cells from bacterial sialidase activity by glyco-editing the host cell-surface sialosides with chemical reporters

11. Kellman, B.P., Richelle, A., Yang, J.-Y.,Chapla, D., Chiang, A.W.T., Najera, J., Bao, B., Koga, N., Mohammad, M.A., Bruntse, A.B., Haymond, M.W., **Moremen, K.W**., Bode, L., Lewis, N.E. (2020) Elucidating HMO biosynthetic genes through network-based integration of transcriptomic and glycomic data

10. Boruah, B.M., Kadirvelraj, R., Liu, L., Ramiah, A., Li, C., Bosman, G.P., Yang, J.-Y., Wang, L.X., Boons, G.-J., Wood, Z.A., and **Moremen, K.W.** (2020) Human alpha-1,6-fucosyltransferase (FUT8) substrate recognition, catalysis and structural similarities with other related fucosyltransferases

9. Zhang, R., Yang, Q., Zong, G., Chapla, D., Yang, J.J., **Moremen, K.W.**, and Wang, L.X. (2020) Appropriate aglycone modification significantly expands the glycan substrate acceptability of 1,6-fucosyltransferase (FUT8)

8. Engle, K.A., Amos, R.A., Yang, J.-Y., Glushka, J., Atmodjo, M., Tan, L., **Moremen, K.W.**, Mohnen, D. (2020) *In vitro* expression of the Arabidopsis *GALACTURONOSYLTRANSFERASE* (*GAUT*) gene family identifies new homogalacturonan galacturonosyltransferases that synthesize unique HG glycans: implications for pectin structure and function

7. Yang, Y., Chen, M., Wu, M., Hong, S., Gao, B., Liu, Y., Yu, C., Young, T., Chapla, D., Yang, J.-Y., **Moremen, K.**, Li, J., Wu, P. (2019) Chemoenzymatic Tagging of Tn/TF/STF Antigens in Living Systems

6. Hong, S., Yu, C., Wang, P., Yujie, S., Cheng, B., Chen, M., Chapla, D.G., Ma, Y., Reigh, N., Rodrigues, E., Narimatsu, Y., Yates, J.R., Chen, X., Clausen, H., **Moremen, K.W.**, Macauley, M.S., Paulson, J.C., Wu, P. (2020) Glycoengineering of NK cells with glycan ligands of CD22 and selectins for B-cell lymphoma therapy

5. Broszeit, F., van Beek, R.J., Bestebroer, T.M., Chapla, D., Yang, J.-Y., **Moremen, K.W.**, Herfst, S., Fouchier, R.A.M., de Vries, R.P, and Boons, G.-J. (2020) Glycan remodeled erythrocytes facilitate antigenic characterization of recent A/H3N2 influenza viruses

4. Park, D.D., Chen, J., Kudelka, M.R., Jia, N., Haller, C.A., Kosaraju, R., Premji, A.M., Galizzi, M., Nairn, A.V., **Moremen, K.W.**, Cummings, R.D., Chaikof, E.L. (2019) Resident and Elicited Macrophages Differ in Expression of their Glycomes and Lectins

3. Yang, Y., Chen, M., Gao, B., Liu, Y., Young, T.S., Chapla, D.G., Yang, J.-Y., **Moremen, K.W.**, Li, J. P., and Wu, P. (2019) “Targeting after Tagging” of Tn-associated Antigens (Tn/TF/STF) through a Chemoenzymatic Strategy

2. Hays, J.M., Kieber, M.K., Li, J. Z., Han, J.I., **Moremen, K.W.**, Columbus, L., Kasson. P.K. (2019) Refinement of highly flexible protein structures using simulation-guided spectroscopy.

1. Kadirvelraj, R., Yang, J.-Y., Kim, K., Sanders, J.H., **Moremen, K.W.**, and Wood, Z.A. (2019) Human poly-*N*-acetyl-lactosamine synthase structure demonstrates a modular assembly of catalytic subsites for GT-A glycosyltransferases

***Peer-reviewed Journal Articles:***

**2020**

160. Deng, X., Yao, X., Miller, C., Hamelberg, D., Kirberger, M., **Moremen, K.W.**, Hu, J., and Yang, J.J. (2020) Structural Mechanism of Cooperative Regulation of Calcium Sensing Receptor Mediated Cellular Signaling. ***Curr. Opinion Physiol***. in press.

159. Rogals, M.J., Yang, J.-Y., Williams, R.V., **Moremen, K.W.**, Amster, I.J., and Prestegard, J.H. (2020) Sparse Isotope Labeling for NMR of Glycoproteins using 13C-Glucose. ***Glycobiology*** in press

158. Petry, J., Rahmöller, J., Dühring, L., Lilienthal, G.-L., Lehrian, S., Buhre, J.-S., Bartsch, Y.C. Epp, A., Hanna B. Lunding, H.B., **Moremen, K.W.**, Leliavski, A., and Ehlers M., (2019) [Enriched blood IgG sialylation attenuated IgG-mediated and IgG-controlled-IgE-mediated allergic reactions](https://pubmed.ncbi.nlm.nih.gov/32603664/) ***J. Allergy Clin. Immunol.*** In press [PMID: 32603664; PMC in process]

157. Prabhakar, P., Wang, H.-T., Smith, P.J., Yang, J.-Y., Peña, M.J., Barnes, W.J., **Moremen, K.W.**, and Urbanowicz, B.R. (2020) Methods for expression of plant glycosyltransferases for biochemistry and structural biology. ***Meth. Cell Biol.*** in press

156. Ruprecht, C., Bartetzko, M.P., Senf, D., Lakhina, A., Smith, P.J., Soto, M., Oh, H., Yang, J.-Y., Chapla, D., Varon Silva, D., Clausen, M.H., Hahn, M.G., **Moremen, K.W.**, Urbanowicz, B.R., and Pfrengle, F. (2020) [A Glycan Array-Based Assay for the Identification and Characterization of Plant Glycosyltransferases](https://pubmed.ncbi.nlm.nih.gov/32396713/) ***Angewandte Chemie*** in press. [PMID: 32396713; PMC7383710]

155. Shajahan, A., Supekar, N.T., Chapla, D., Heiss, C., **Moremen, K.W.**, Azadi, P. (2020) [Simplifying Glycan Profiling through a High-Throughput Micropermethylation Strategy](https://www.ncbi.nlm.nih.gov/pubmed/?term=32364434). ***SLAS Technol.*** in press doi: 10.1177/2472630320912929.[PMID: 32364434; PMCID in progress]

154. Lunin, V.V, Wang, H.-T., Bharadwaj, V.S., Alahuhta, M., Peña, M.J., Yang, J.-Y.,Archer-Hartmann, S.A., Azadi, P., Himmel, M.E., **Moremen, K.W.**, York, Y.S., Bomble, Y.J., and Urbanowicz, B. (2020) [Molecular mechanism of polysaccharide acetylation by the AtXOAT1 xylan O-acetyltransferase](https://www.ncbi.nlm.nih.gov/pubmed/?term=32354790). ***Plant Cell*** 32: 2367-2382. [PMID: 32354790; PMC7346548]

153. Hong, S., Grande, G., Yu, C., Chapla, D.G., Reigh, N., Yang, Y., Izumori, K., **Moremen, K.W.**, Xie, J., and Wu, P. (2019) [hFUT1-based live cell assay to profile α1-2-fucosides-enhanced influenza A virus infection](https://www.ncbi.nlm.nih.gov/pubmed/32271008) ***ACS Chem Biol.*** 15: 819-823 [PMID: 32271008; PMC in process]

152. Taujale, R., Venkat, A., Huang, L.-C., Yeung, W., Rasheed, K., Edison, A.S., Moremen, K.W., and Kannan, N. (2019) [Deep evolutionary analysis reveals the design principles of fold A glycosyltransferases](https://www.ncbi.nlm.nih.gov/pubmed/32234211) *eLife* 9: e54532. [PMID: 32234211; PMC7185993]

151. Sheikh, M.O., Venzke, D., Anderson, M.E., Yoshida-Moriguchi, T., Glushka, J.N., Nairn, A.V., Galizzi, M., **Moremen, K.W.**, Campbell, K.P., and Wells, L. (2020) [HNK-1 Sulfotransferase modulates α-dystroglycan glycosylation by 3-*O*-sulfation of glucuronic acid on matriglycan.](https://www.ncbi.nlm.nih.gov/pubmed/?term=32149355) ***Glycobiology*** DOI: 10.1093/glycob/cwaa024 in press. [PMID: 32149355; PMC in process]

150. Li, Z., Kitov, P., Kitova, E., Mozenah, F., Rodrigues, E., Chapla, D., **Moremen, K.**, Macauley, M., Klassen, J. (2019) CUPRA-ZYME: [A novel assay for measuring carbohydrate-active enzyme activities, pathways and substrate specificities](https://www.ncbi.nlm.nih.gov/pubmed/?term=31961140). ***Anal. Chem.*** 92: 3228-3236. [PMID: 31961140; PMC in process]

149. Saeui, C.T., Cho, K.-C., Dharmarha, V., Nairn, A.V., Galizzi, M., Shah, S.R., Gowda, P., Park, M., Austin, M., Clarke, A., Cai, E., Buettner, M.J., Ariss, R., **Moremen, K.W.**, Zhang, H., and Yarema, K.J. (2019) [Cell Line-, Protein-, and Sialoglycosite-Specific Control of Flux-based Sialylation in Human Breast Cells: Implications for Cancer Progression](https://www.ncbi.nlm.nih.gov/pubmed/?term=32117864). ***Front Chem*** 8:13 [PMID:32117864; PMC7013041]

**2019**

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**INVITED SEMINARS, PRESENTATIONS, AND SYMPOSIA**

Symposium presentations: (\*\*Invited presentations, partial list of poster presentations from >250)

1. \*\*Plenary Symposium Presentation, GlycoT 2020, Boston MA, June 2020, “Glycosyltransferase structures as modular templates for diverse glycan synthesis”
2. Symposium Poster Presentation, American Society for Mass Spectrometry, Houston, TX, May, 2020, “Understanding Changes In Trypsin And Chymotrypsin Digestion Of Proteins Due To Amino Acid Oxidation From FPOP”, Mobley, C., Khaje, N.A., Prabhakar, P.K., Moremen, K.W., Sharp, J.
3. Symposium Poster Presentation, 61st Experimental Nuclear Magnetic Resonance Conference, Baltimore, MD, March 2020, “13C-methyl Methionines as Probes in NMR Studies of ST6Gal1” Eletsky, A., Rogals, M.J., Williams, R.V., Chalmers, G.R., Schmidt, C., Morris, L.C., Yang, J.-Y., Moremen, K.W., and Prestegard J.H.
4. Symposium Poster Presentation, 61st Experimental Nuclear Magnetic Resonance Conference, Baltimore, MD, March 2020, “Isotope Labeling and Assignment of Glycans on Glycoproteins” Rogals, M., Yang, J.Y., Moremen, K.W., and Prestegard, J.H.
5. Symposium Poster Presentation, American Society for Mass Spectrometry, Houston, TX, May, 2020, “Domain orientation of the HS-binding protein Robo1 studied by IM-MS, NMR, and SAXS”, Williams, R., Yang, J.-Y., Gao, Y., Pearson, A., Moremen, K.W., Prestegard, J.H., Amster, I.J.
6. \*\* Invited Symposium Presentation, American Chemical Society National Meeting, Philadelphia, PA, March 2020, “Glycosyltransferase structures as modular templates for diverse glycan synthesis”
7. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Phoenix, AZ, , November, 2019, “Understanding the sequence-structure-function relationships through a comprehensive evolutionary analysis of GT-A fold glycosyltransferase” Taujale, R., Huang, L.C., Venkat, A., Yeung, W., Arthur S. Edison, A.S., Moremen, K.W., Kannan, N.
8. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Phoenix, AZ, , November, 2019, “Glycan Engineering reveals that matriglycan alone recapitulates dystroglycan functions ranging from Laminin binding to Lassa Virus infection” Sheikh, M.O., Capicciotti, C.J., Liu, L., Praissman, J.L., Mead, D.G., Brindley, M.A., Campbell, C.P., Moremen, K.W., Wells, L., and Boons, G.-J.
9. \*\* Invited Symposium Presentation, 2019 NIH & FDA Glycoscience Research Day, NIH Natcher Conference Center, Bethesda, MD, July 2019, “Glycosyltransferase structures as modular templates for diverse glycan synthesis”
10. Symposium Poster Presentation, American Society for Mass Spectrometry 2019, Atlanta, GA, June 2019,"Integrated Structural Biology Study of Roundabout1 Interaction with Fondaparinux” Williams, R., Yang, J.-Y., Gao, Y., Pearson, A., Moremen, K.W., Prestegard, P.H., Amster, I.J.
11. Symposium Poster Presentation, American Society for Mass Spectrometry 2019, Atlanta, GA, June 2019," Oxidation Effects on Chymotrypsin Digested HRPF Samples and Observation of Highly Basic Regions” Mobley, C., Khaje, N.A., Prabhakar, P., Moremen, K.W., Sharp, J.S.
12. Symposium Poster Presentation, 60th Experimental Nuclear Magnetic Resonance Conference, Asilomar Conference Center, Pacific Grove, CA, April 2019,"Measurement of Methyl C-H RDCs using Carbon Observation" Williams, R., Yang, J.Y., Moremen, K., Prestegard, J.H.
13. \*\* Invited Symposium Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2018, “Origin of acceptor specificity in GT-A fold GlcNAc transferases” Wood, Z.A., Kadirvelraj, R., Yang, J.Y., Sanders, J.H., Liu, L., Ramiah, A., Parbhakar, P., Boons, J.-G., and Moremen, K.W.
14. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, , November, 2018, “Structure and substrate specificity of human β 1,3-N-acetylglucosaminyltransferase 2 (B3GNT2)” Yang, J.-Y., Kadirvelraj, R., Kim, H., Sanders, J.H., Boruah, B.M., Chapla, D., Ramiah, A., Kim, R., Wood, Z.A., and Moremen, K.W.
15. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, , November, 2018, “Structural Characterization of Glycosylated Proteins by NMR” Williams, R.V., Rogals, M.J., Eletsky, A., Chalmers, G.R., Morris, L.C., Yang, J.-Y., Chapla, D., Moremen, K.W., and Prestegard, J.H.
16. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, , November, 2018, “Paired Data Analysis of Glyco-gene Transcripts and Glycan Structural Data Derived from Differentiated Human Stem Cell Lineages” Nairn, A.V., Grace, H., Rosenbalm, K., Galizzi, M., dela Rosa, M., Mindy Porterfield, M., Kulik, M., Pierce, J.M., Dalton, S., Tiemeyer, M., and Moremen, K.W.
17. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, , November, 2018, “Structural and biochemical insights into the mechanism of plant polysaccharide acetylation” Lunin, V., Wang, H.-T., Alahuhta, P.M., Bharadwaj, V.S., M.J., Yang, J.-Y., Himmel, M.E., Moremen, K.W., York, W.S., Bomble, Y.J., and Urbanowicz. B.R.
18. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, , November, 2018, “Cell based engineering for production of recombinant GAG core proteins” Chapla, D., Zheng, Z., Nairn, A.V., Ramiah, A., Kim, R., and Moremen, K.W.
19. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, , November, 2018, “Structural and enzymatic studies of Human N-acetylglucosaminyltransferase II (MGAT2)” Yang, J.-Y., Kadirvelraj, R., Sanders, J.H., Ramiah, A., Prabhakar, P.K., Liu, L., Boons, G.J., Wood, Z.A., and Moremen. K.W.
20. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, , November, 2018, “GAUTs synthesize diverse pectic HG glycans in structurally and functionally distinct plant cell wall polymer” Mohnen, D., Amos, R.A., Biswal, A.K., Engle, K.A., Pattathil, S., Yang,J.-Y., Urbanowicz, B.R., Hahn, M.G., Moremen, K.W., and Atmodjo, M.A.
21. \*\* Invited Symposium Presentation, Benzon Symposium: Glycotherapeutics – emerging roles of glycan in medicine, Copenhagen, Denmark, August 2018, “Structural basis for mammalian glycoenzyme substrate specificity”.
22. \*\* Invited Symposium Presentation, American Chemical Society National Meeting, Boston, MA, August 2018, “Structural basis for mammalian glycoenzyme substrate specificity”.
23. Symposium Poster Presentation, American Society for Mass Spectrometry, San Diego, CA, June 2018, “Optimization of HRFP for Observation of Highly Basic Regions” Mobley, C., Prabhakar, P., Moremen K.W., Sharp. J.
24. Symposium Poster Presentation, American Society for Mass Spectrometry, San Diego, CA, June 2018, “Comparison of Gas-Phase and Solution Conformations of Roundabout 1 – Effect of Heparan Binding” Williams, R., Zhao, Y., Eletsky, A., Yang, J.Y., Prabhakar, P., Moremen, K.W., Prestegard, J.H., Amster, I.J.
25. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Portland, OR, November, 2017, “Metabolic pathway analysis that combines glyco-gene transcript analysis with glycan structural data derived from differentiated human stem cell lineages” Nairn, A.V., Grace, H., Galizzi, M., dela Rosa, M., Porterfield, M., Kulik, M., Pierce, M., Dalton, S., Tiemeyer, M., Moremen, K.W.
26. Symposium Poster Presentation, Experimental Nuclear Magnetic Resonance Conference, Orlando FL, April 2018 “Paramagnetic Tags for Glycoproteins – Structural Restraints for Heparan Sulfate Binding to Robo1” Eletsky, A., Moure, M., Gao, Q., Zhuo, Y., Morris, L., Yang, J.Y., Chapla, D., Zhao, Y., Boons, G.J., Moremen, K.W., Prestegard, J.
27. Symposium Poster Presentation, Experimental Nuclear Magnetic Resonance Conference, Orlando FL, April 2018 “Resonance Assignment, Interdomain Orientation and Dynamics from Paramagnetic Effects in Robo1-Ig1-2” Williams, R., Eletski, A., Zhao, Y.,Yang, J.Y., Prabhakar, P., Moremen, K.W., Jonathan Amster, I.J., Prestegard, J.
28. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Portland, OR, November, 2017, “Biochemical Characterization of Functional Domains of the Chaperone Cosmc” Hanes, M.S., Moremen, K.W., Cummings, R.D.
29. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Portland, OR, November, 2017, “Using Glycan Microarrays and Molecular Dynamics to Understand the Carbohydrate Specificities of the Human Intelectins.” Viola, J., Lee, J.-K., McBride, R., Heimburg-Molinaro, J., Paulson, J., Moremen, K.W., Sood, A., Woods, R., Pierce, J.M.
30. \*\* Invited Symposium Presentation, Glycobiology Gordon Conference, Ventura CA, March 2017, “Structural Basis of GlcNAc Transferase Substrate Specificity”.
31. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Maturation of Asn-linked glycans in the mam mammalian secretory pathway: structural basis of substrate recognition by GH47 alpha mannosidases.” Yong Xiang, Khanita Karaveg, Kelley W. Moremen
32. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “The glycan receptors of Helicobacter pylori: decoding the pathways underlying gastric glycophenotype modulation.” Ana Magalhaes, Ricardo Marcos-Pinto, Joana Gomes, Alison V. Nairn, Yannick Rossez, Catherine Robbe-Masselot, Emmanuel Maes, Jeanna Bugaytsova, Céu Figueiredo, Thomas Borén, Kelley W. Moremen, Celso A. Reis
33. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Human fucosyltransferase FUT5: Crystal structure and Acceptor specificity.” Digantkumar Chapla, Shuo Wang, Annapoorani Ramiah, Farhad Forouhar, Liang Tong, Kelley W. Moremen
34. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “COG Deficiency Drastically Alters Mucin-Type Glycosylation on Alpha-Dystroglycan Increasing its Proteolytic Susceptibility.” Seok-Ho Yu, Peng Zhao, Tiantian Sun, Pradeep Chopra, Aaron Beedle, Kelley W. Moremen, Geert-Jan Boons, Lance Wells, Richard Steet
35. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Analysis of Changes in Glycosylation as Pluripotent Human Stem Cells Differentiate into Separate Germ Cell Lineages.” Alison V. Nairn, Harrison Grace, Katelyn Rosenbalm, Melina Galizzi, Mitche dela Rosa, Mindy Porterfield, Michael Kulik, J. Michael Pierce, Stephen Dalton, Michael Tiemeyer, Kelley W. Moremen
36. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Genotype-Phenotype Correlations for POMGNTs in Congenital Muscular Dystrophy.” Danish Singh, Stephanie M. Halmo, Sneha Patel, Melanie Edlin, Geert-Jan Boons, Kelley Moremen, David Live, Lance Wells
37. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Biochemical characterization of Cosmc, a client specific endoplasmic reticulum chaperone.” Melinda S. Hanes, Kelley Moremen, Richard D. Cummings
38. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Impaired lysosomal targeting leads to sustained activation of the Met receptor via ROS-dependent oxidative inactivation of receptor protein-tyrosine phosphatases.” Megan C. Aarnio, Peng Zhao, Seokho Yu, Tiantian Sun, Zhongwei Gao, Kelley Moremen, Geert-Jan Boons, Lance Wells, Richard Steet
39. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Characterization and regulation of the functional O-mannose glycan on a-dystroglycan.” M. Osman Sheikh, Jeremy L. Praissman, Tobias Willer, Takako Yoshida-Moriguchi, David Venzke, Mary E. Anderson, Shuo Wang, Pradeep Prabhakar, Annapoorani Ramiah, John N. Glushka, Kelley W. Moremen, Kevin P. Campbell, Lance Wells
40. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Characterizing Glycosylated Proteins and Their Interactions Using Sparse-Labeling NMR.” James H. Prestegard, Kelley W. Moremen, Qi Gao, Gordon R. Chalmers
41. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Human Intelectin-1, a member of the X-type lectin family, binds specific microbial glycans.” Jonathan Viola, Jin Kyu Lee, Ryan McBride, David Smith, Richard Cummings, James Paulson, Kelley Moremen, Michael Pierce
42. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, New Orleans, LA, November, 2016, “Biochemical Characterization of Family GT47 Glycosyl Transferases Involved in Xylan Biosynthesis.” Peter Smith, Abigail Agyeman, Maria Peña, Malcolm O’Neill, Jeong Yeh Yang, Breeanna Urbanowicz, Kelley Moremen, and William York
43. \*\*Session chair and discussion leader, International Carbohydrate Symposium, New Orleans, LA, July 2016
44. \*\* Invited Symposium Presentation, 10th International Symposium on Glycosyltransferases, Toronto, ON, June 2016, “Structural and functional studies on human alpha1,3/4-fucosyltransferases”
45. \*\*Discussion leader, Harnessing glycoscience to understand and optimize HIV Env immunogenicity, Bill and Menlinda Bates Foundation, Seattle, WA, June 2016
46. \*\* Invited Symposium Presentation, American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, CA , April 2016, “Insights into the enzymology and structural biology of mammalian glytcosylation enzymes coming from large-scale eukaryotic expression platforms” FASEB J. 30, S 251.1
47. Symposium Poster Presentation, American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, CA , April 2016, “Crystal structure and mutagenesis studies of mammalian fucosyltransferase-9 (FUT9) reveals the catalytic core and substrate specificity” Bhargavi M Boruah, Renu Kadirvalraj, Shuo Wang, Annapoorani Ramiah, Zachary A Wood and Kelley W Moremen FASEB J., 30, b119
48. Symposium Poster Presentation, 7th Southeast Enzyme Conference, Atlanta, GA, April 2016, “The Crystal Structures and Acceptor Specificities of Human Fucosyltransferases FUT5 and FUT9.” Renuka Kadirvelraj, Shuo Wang, Bhargavi Boruah, Digantkumar Chapla, Kelley Moremen, and Zachary Woood
49. \*\*Invited Symposium Presentation, P41 Director’s Meeting, Bethesda, MD, March 2016, “Resource for Integrated Glycotechnology”
50. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “Intelectin-1 is induced by IL-13 via MAPK pathway and selectively binds to IL-13 stimulated LS174 T cells” Jin Kyu Lee, Jonathan Viola, Alison Nairn, Kelley Moremen, Michael Pierce
51. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “Building the Cell Wall: Insights into the Mechanism of Xylan Synthesis and O-Acetylation”; Breeanna Urbanowicz, Maria Peña, Heather Moniz, Shuo Wang, Kelley Moremen, William York
52. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, Deciphering Determinants of Functional Glycosylation on Alpha-Dystroglycan”; Stephanie Halmo, Melanie Edlin, Sneha Patel, Danish Singh, Shuo Wang, Jeong Yeh Yang, Geert-Jan Boons, Kelley Moremen, David Live, Lance Wells
53. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “Insights into mammalian glycosylation enzymes coming from large-scale eukaryotic expression platforms”; L. Meng, S. Wang, R. Kadirvelraj, F. Forouhar, A. Ramiah, Z. Gao, J. Seetharaman, S. Milaninia, G. Gahlay, M. Stuart, J. Steel, J. LaBaer, D. Jarvis, L. Tong, Z. Wood, K. W. Moremen
54. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “Labeling Cell Surface Glycoproteins by Selective Exo-Enzymatic Labeling (SEEL) and Metabolic Labeling”; Peng Zhao, Seok-Ho Yu, Cheng Yu Chen, Kelley W. Moremen, Geert-Jan Boons, Richard Steet, Lance Wells
55. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “One-Step SEEL With ST6Gal1 Results in High Efficiency Labeling and Detection of Cell Surface Sialoglycoproteins”; Seok-Ho Yu, Tiantian Su, Peng Zhao, Lu Meng, Kelley W. Moremen, Lance Wells, Geert-Jan Boons, Richard Steet
56. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “An Cell Platform for Endothelial Heparan Sulfate Function Study”; Hong Qiu, Jingwen Yue, Alison V Nairn, Guoyun Li, Fuming Zhang, Stephanie A Archer-Hartmann, Mitche Dela Rosa, Parastoo Azadi, Toin H. van Kuppevelt, Wellington V. Cardoso, Koji Kimata, Robert J Linhardt, Jeffrey Esko, Kelley W Moremen, Lianchun Wang
57. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “Identifying disease-specific differences in human muscle glycosylation that affect muscle function”; Brian J. McMorran, Francis E. McCarthy, Alison V. Nairn, Zhongyin Liu, Lara K. Mahal, Kelley W. Moremen, Carrie M. Miceli, Rachelle H. Crosbie-Watson, Linda G. Baum
58. Symposium Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “Hemicellulose biosynthesis is becoming crystal clear” William S. York, Breeanna Urbanowicz, Kelley Moremen, Maria J. Peña, Peter J. Smith, Sami Tuomivaara, Shuo Wang, Vladimir Linin, Petri Alahuhta, Michael Crowley, Michael Himmel
59. Symposium Presentation, Society for Glycobiology Annual Meeting, San Francisco, CA, December, 2015, “The Official Release of the International Glycan Structure Repository”; Nobuyuki P. Aoki, Kiyoko Aoki-Kinoshita, Sanjay Agravat, Sena Arpinar, Richard D. Cummings, Akihiro Fujita, Noriaki Fujita, Gerald M Hart, Stuart Haslam, Toshisuke Kawasaki, Masaaki Matsubara, Kelley W. Moremen, Hisashi Narimatsu, Shujiro Okuda, J. Michael Pierce, René Ranzinger, Toshihide Shikanai, Daisuke Shinmachi, Elena Solovieva, Yoshinori Suzuki, Shinichiro Tsuchiya, Issaku Yamada, William S. York, Joseph Zaia
60. \*\* Invited Symposium Presentation, International Conference on Protein Engineering in Chicago, IL , October 2015, “Strategies for Recombinant Production of Human Glycosylation Enzymes: Comparison of Mammalian and Insect Cell Expression Systems”
61. \*\* Invited Symposium Presentation, GLYCO23, Split, Croatia, September, 2015. “Insights into the enzymology and structural biology of mammalian glycosylation enzymes coming from large-scale eukaryotic expression platforms”
62. \*\* Invited Symposium Presentation, Glycobiology Gordon Research Conference, Il Ciocco, Barga, Italy, March 2015, "Structural Basis for Substrate Specificity Among N-Glycan (GH47) Processing Alpha-Mannosidases"
63. \*\*Invited Symposium Presentation, P41 Director’s Meeting, Bethesda, MD, March 2015, “Resource for Integrated Glycotechnology”
64. Symposium Presentation, Society for Glycobiology Annual Meeting, Honolulu, HI, November, 2014, “Development of an international glycan structure repository” Kiyoko Aoki-Kinoshita, Sanjay Agravat, Nobuyuki P. Aoki, Sena Arpinar, Richard D. Cummings, Akihiro Fujita, Noriaki Fujita, Gerald M Hart, Stuart Haslam, Toshisuke Kawasaki, Masaaki Matsubara, Kelley W. Moremen, Hisashi Narimatsu, Shujiro Okuda, J. Michael Pierce, René Ranzinger, Toshihide Shikanai, Daisuke Shinmachi, Elena Solovieva, Yoshinori Suzuki, Shinichiro Tsuchiya, Issaku Yamada, William S. York, Joseph Zaia
65. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Honolulu, HI, November, 2014, “Homogeneous heparin sulfate oligomers for NMR studies of VACV B18 GAG binding” Pederson, K., Wang, S., Moremen, K.W., and Prestegard, J.H.
66. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Honolulu, HI, November, 2014, “Whole transcriptome andlysis of human embryonic stem cells and differentiated cell populations” Nairn, A.V., dela Rosa, M., Kulik, M., Dalton, S., Pierce, J.M., and Moremen, K.W.
67. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Honolulu, HI, November, 2014, “Hemicellulose synthesis and function in land plants” York, W., Urbanowicz, B., Pena, M., Moremen, K., O’Niell, M., Moniz, H., Kulkarni,A., and Wang, S.
68. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Honolulu, HI, November, 2014, “Mitigation of non-typeable hemophilus influenza induced acute airway inflammation by manipulating circulatory ST6Gal-1 levels” Naseirikenari, M., Lugade, A., Dougher, C., Neelamegham, S., Thanavala, Y., Moremen, K.W., Lau, J.
69. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, Honolulu, HI, November, 2014, “B4GAT1 is the priming enzyme for the LARGE-dependent functional glycosylation of a-dystroglycan” Praissman, J., Live, D., Wang, S., Ramiah, A., Moremen, K.W., Wells, L.
70. \*\*Invited Symposium Presentation, Global Technology Community 2nd Protein Expression, Purification & Characterization Conference in Boston, MA, October 2014, “Strategies for Recombinant Production of Human Glycosylation Enzymes: Comparison of Mammalian and Insect Cell Expression Systems”
71. \*\*Invited Symposium Presentation, GlycoT 2014, Porto, Portugal, June 2014, “Enzymatic basis for N-glycan sialylation: structure of rat ST6GAL1 reveals conserved and unique features for glycan sialylation”
72. \*\*Invited Symposium Presentation, Consortium for Functional Glycomics Workshop, Bethesda MD, May 2014, “Resource of Mammalian Glycosylation Enzymes for Glycan Synthesis”
73. \*\*Invited Symposium Presentation, P41 Director’s Meeting, Bethesda, MD, March 2014, “Resource for Integrated Glycotechnology”
74. \*\*Invited Symposium Presentation, Society for Glycobiology Annual Meeting, St. Petersburg, FL, November, 2013, “Enzymatic basis for N-glycan sialylation: structure of rat ST6GAL1 reveals conserved and unique features for N-glycan sialylation”
75. Symposium Presentation, Society for Glycobiology Annual Meeting, St. Petersburg, FL, November, 2013, “Heparan sulfate is required for prostate cancer initiation and progression” Li, X., Nairn, A., Nagy, T., Wang, F., Yamaguchi, Y., Moremen, K., Wang, L.
76. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, St. Petersburg, FL, November, 2013, “Repository of recombinant expression constructs for mammalian glycosylation enzymes: production of glycosyltransferases and glycoside hydrolases in mammalian cells” Moremen, K.W., Moniz, H., Ramiah, A., Meng, L., Gao, Z., Nairn, A.V., Xiang, Y., delaRosa, M., Jarvis, D., Steel, J., LaBaer, J.
77. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, St. Petersburg, FL, November, 2013, “Repository of recombinant expression constructs for mammalian glycosylation enzymes: baculovirus vectors for glycosyltransferase and glycoside hydrolase production in insect cells” Gahlay, G., Stuart, M., Geisler, C., Moremen, K.W., Steel, J., LaBaer, J., Jarvis, D.L.
78. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, St. Petersburg, FL, November, 2013, “Enzymatic basis for N-glycan sialylation: structure of rat ST6GAL1 reveals conserved and unique features for N-glycan sialylation” L. Meng, F. Forouhar, Z. Gao, A. Ramiah, H. Moniz, D. Thieker, J. Seetharaman, S. Milaninia, M. Su, L. Veillon, R. Bridger, P. Azadi, G. Kornhaber, L. Wells, R. Woods, G. Montelione, L. Tong, K. W. Moremen
79. Symposium Poster Presentation, Society for Glycobiology Annual Meeting, St. Petersburg, FL, November, 2013, “Pentavalent siglecs: high avidity tools for detection of siglec counter-receptors” Wei, Y., Fernandez, S.M., Yu, H., Gonzalez-Gil, A., Moniz, H., Moremen, K.W., and Schnaar, R.L.
80. \*\*Invited Symposium Presentation, Carbohydrates Gordon Research Conference, Mt. Snow, Vermont, June, 2013, “Production and use of mammalian glycosylation enzymes for enzymatic and structural studies”
81. \*\*Invited Symposium Presentation, EMBO Workshop, Glycoproteins from structure to disease, April 2013, Mallorca, Spain, “Leveraging glycosylation enzyme expression platforms: new structural insights on mammalian glycosyltransferase and glycosidase specificity”
82. \*\*Invited Symposium Presentation, Northeast Structural Genomics Consortium Annual Meeting, New Brunswick, NJ, April 2013, “Structural biology of mammalian glycosylation enzymes: insights from complex expression systems”
83. \*\*Chair, 2013 Glycobiology Gordon Research Conference, Ventura, CA
84. \*\*Invited Symposium Presentation, Society for Glycobiology Annual Meeting, San Diego, CA, November, 2012, “Regulation and Recombinant Production of Mammalian Glycosylation Enzymes”
85. \*\*Invited Symposium Presentation, 1st Conference on Diagnostics and Therapeutics (CDT), March, 2012, GA State University, Atlanta, GA, “High-Throughput Production of Mammalian Glycosylation Enzymes for Structural and Functional Studies”
86. Symposium Poster Presentation, Glycobiology-2012 Conference, San Diego, CA, 2012, “Repository of recombinant expression constructs for mammalian glycosylation enzymes: production of glycosyltransferases and glycoside hydrolases in mammalian cells” Moremen, K.W., Strachan, H., Ramiah, A., Johnson, R., Meng, L., Gao, Z., Nairn, A.V., Xiang, Y., delaRosa, M., Jarvis, D., Steel, J., LaBaer, J
87. Symposium Poster Presentation, Glycobiology-2012 Conference, San Diego, CA, 2012, “Repository of recombinant expression constructs for mammalian glycosylation enzymes: baculovirus vectors for glycosyltransferase and glycoside hydrolase production in insect cells” Gahlay, G., Moremen, K.W., Steel, J., LaBaer, J., Jarvis, D.L.
88. Symposium Poster Presentation, Glycobiology-2012 Conference, San Diego, CA, 2012, “Changes in glycan-related gene transcripts following human embryonic stem cell differentiation into cell types derived from ctoderm, mesoderm, or endoderm lineages” Nairn, A.V., dela Rosa, M., Memendez, L., Kulik, M., Dalton, S., Pierce, J.M., and Moremen, K.W.
89. \*\*Invited Symposium Presentation, Satellite Meeting: Glycans in Cell Communication, Seattle, WA, November, 2011, “Repository for Glycan-Related Enzymes High-throughput production of mammalian glycosylation enzymes for structural and functional studies “
90. \*\*Invited Symposium Presentation, 31st Naito Conference on Glycan expression and regulation, Sapporo, Japan, Sept 2011, “Regulation of mammalian glycosylation enzyme expression during human stem cell differentiation”
91. \*\*Vice Chair, 2011 Glycobiology Gordon Research Conference, Il Ciocco, Barga, Italy
92. Symposium Presentation, Glycobiology-2011 Conference, Seattle WA, 2011, “Repository of Recombinant Expression constructs for mammalian glycosylation enzymes: baculovirus vectors for glycosyltransferase and glycoside hydrolase production in insect cells” Gahlay, G., Geisler, C., Aumiller, J., Moremen, K.W., Steel, J., LaBaer, J., Jarvis, D.L.
93. Symposium Poster Presentation, Glycobiology-2011 Conference, Seattle WA, 2011, “Repository of recombinant expression constructs for mammalian glycosylation enzymes: production of glycosyltransferases and glycoside hydrolases in mammalian cells” Moremen, K.W., Meng, L., Strachan, H., Ramiah, A., Gao, Z., Johnson, R.,, Nairn, A.V., Xiang, Y., delaRosa, M., Wu, S.-C., Gilbert, H.J., Jarvis, D., Steel, J., LaBaer, J.
94. Symposium Poster Presentation, Glycobiology-2011 Conference, Seattle WA, 2011, “Slit3 C-terminal binds heparin and neutralizes heparin’s anticoagulant activity” Condac, E., Strachan, H., Heiss, C., Johnson, D., Azadi, P., Orlando, R., Harenberg, J., Moremen, K.W., Wang, L.
95. Symposium Poster Presentation, Glycobiology-2011 Conference, Seattle WA, 2011, “Enzyme-substrate complexes of human ER mannosidase I and Golgi mannosidase IA demonstrate the structural basis ofor differences in substrate specificity”
96. Symposium Poster Presentation, Glycobiology-2011 Conference, Seattle WA, 2011, “Investigation of glycan catabolism and biosynthesis in human embryonic stem cells” Nairn, A.V., dela Rosa, M., Aoki, K., Porterfield, M., Kulik, M., Dalton, S., Pierce, J.M.,Tiemeyer, M., and Moremen, K.W.
97. Symposium Poster Presentation, Glycobiology-2011 Conference, Seattle WA, 2011, “Enzyme-substrate complexes of human ER mannosidase I and Golgi mannosidase IA demonstrate the structural basis for differences in substrate specificity” Xiang, Y., Karaveg, K., Chen, L., Wang, B.C., and Moremen, K.W.
98. Symposium Poster Presentation, Glycobiology-2011 Conference, Seattle WA, 2011, “Identification of glycosyltranferases involved in the synthesis of functional O-Man glycans” Stalnaker, S.H., Live, D., Boons, G.J., Moremen, K.W., Wells, L., Stuart, R.
99. \*\*Invited Symposium Presentation, Universidad de Guanajuato, Mexico, March 2011, “Challenges in the studies of the biochemistry and regulation of mammalian glycosylation enzymes”
100. \*\*Invited Symposium Presentation, Glycobiology-2010 Conference, St. Pete Beach, FL, November 2010, “Repository of recombinant expression constructs for mammalian glycosylation enzymes: production of glycosyltransferases and glycoside hydrolases in mammalian cells”
101. \*\*Invited Symposium Presentation, 25th International Carbohydrate Symposium (ICS 2010), Tokyo, Japan “Glycan biosynthesis and regulation: development of technology platforms for analyzing the expression and recombinant production of mammalian glycosylation enzymes”
102. \*\*Invited meeting presentation: Joint Japan/CCRC Symposium, CCRC, March 2010 “Transcript Analysis of Glycan-related Genes”
103. \*\*Invited Symposium Presentation, HUPO 2009, Toronto, Ontario, CA, Title: Glycomic Analysis of Differentiated Animal Stem Cells for Biomarker Identification
104. Symposium Presentation, Glyco XX Conference, San Juan, Puerto Rico, 2009, Transcript Analysis of Glycan-related Genes in Human Embryonic Stem Cells.
105. \*\*Invited Symposium Presentation, Glycobiology-2009 Conference, San Diego, CA, 2009, Linking glycan expression to pathway dynamics during stem cell differentiation.
106. Symposium Presentation, Glycobiology-2009 Conference, San Diego, CA, 2009, Transcript Analysis of Glycan-related Genes in Pluripotent and Differentiated Human Embryonic Stem Cells.
107. Poster Chair, Glycobiology Gordon Conference, Oxnard, CA, 2009.
108. Symposium Presentation, 2009 Gordon Research Conference on Glycobiology, Ventura, CA, Alterations in Extracellular Matrix Homeostasis are associated with Cartilage Defects in Mucolipidosis-II Zebrafish.
109. \*\*Invited Symposium Presentation, Glycobiology-2008 Conference, Ft. Worth, TX, 2008, Glycome Analysis during Differentiation of Embryonic Stem Cells.
110. Symposium Presentation, Glycobiology-2008 Conference, Ft. Worth, TX, 2008, Transcript Analysis of Glycan Biosynthesis in Human Embryonic Stem Cells
111. Symposium Presentation, Glycobiology-2008 Conference, Ft. Worth, TX, 2008, The Mammalian Endoplasmic Reticulum Stress Response Selectively Increases *Asparagine-Linked Glycosylation (Alg)* Transcripts.
112. Workshop Facilitator, 2nd Charles Warren Workshop on Glycoconjugate Analysis 2008, University of New Hampshire, Durham, NH
113. \*\*Invited Symposium Presentation, Glyco T 2008, 6th International Confrerence, Emory University, Atlanta GA, Alterations in glycan-related transcripts and glycan structural changes during differentiation of murine embryonic stem cells
114. Symposium Presentation, Glyco T 2008, 6th International Confrerence, Emory University, Atlanta GA, Alterations in Glycan-related Transcripts and Glycan Structural Changes During Differentiation of Murine Embryonic Stem Cells.
115. \*\*Invited Symposium Presentation, National Mucopolysaccharidosis Society Family Conference, Rockville, MD, 2007, Lysosomal storage diseases; an overview.
116. \*\*Symposium Presentation, Glycobiology Gordon Conference, Oxnard, CA, 2007, Glycome analysis during differentiation of murine embryonic stem cells.
117. Symposium Presentation, Glycobiology-2006 Conference, Los Angeles, CA, 2006, Heterologous Expression of Rat ST6Gal1 in *Pichia pastoris* for Structural and Functional Studies.
118. Symposium Presentation, Glycobiology-2006 Conference, Los Angeles, CA, 2006, Expression and Isotope Labeling of ST6Gal1—Enabling NMR Characterization of Glycosylated Proteins.
119. Symposium Presentation, Glycobiology-2006 Conference, Los Angeles, CA, 2006,) Mechanism of substrate binding and catalysis for Class I (GH 47) 1,2-mannosidases: the effect Ca2+ coordination on catalysis.
120. Symposium Presentation, Glycobiology-2006 Conference, Los Angeles, CA, 2006, Glycotranscriptome analysis during differentiation of murine embryonic stem cells assayed by high-throughput real-time RT-PCR.
121. Symposium Presentation, XXIIIrd International Carbohydrate Symposium, Whistler, BC, Canada, 2006 Meeting, Whistler Canada, Characterization of a human core-specific lysosomal -1,6-mannosidase involved in glycan catabolism.
122. \*\*Invited Symposium Presentation, Charles Warren Workshop on Structural Glycomics, University of New Hampshire, 2006, High-throughput transcript analysis of glycan-related genes.
123. \*\*Invited Symposium Presentation, Second Annual Glycoscience Symposium, University of Georgia, Athens, GA, 2006, Regulation of glycan structures in animal tissues: transcriptome analysis of glycan-related genes.
124. \*\*Invited Symposium Presentation, Glycobiology-2005 Conference, Boston, MA, 2005, Characterization of a human core-specific lysosomal 1,6-mannosidase involved in glycan catabolism.
125. Symposium Presentation, Glycobiology-2005 Conference, Boston, MA, 2005, Development of a high-throughput transcript analysis of glycan-related genes and a cross-platform comparison with microarray expression analysis and correlation with relative quanitation of glycan mass spectral analysis.
126. Symposium Presentation, Glycobiology Gordon Conference, Oxnard, CA, 2005, Development of a quantitative real-time PCR method for analyzing transcript abundance of glycan-related genes in mouse tissues and embryonic stem cells.
127. Symposium Presentation, Joint meeting of the Society for Glycobiology and the Japanese Society of Carbohydrate Research, Honolulu, HI, 2004, Glycomic analysis of mouse embryonic stem cell differentiation.
128. Symposium Presentation, Joint meeting of the Society for Glycobiology and the Japanese Society of Carbohydrate Research, Honolulu, HI, 2004, Characterization of a novel human core-specific lysosomal 1,6-mannosidase involved in glycan catabolism. *Glycobiology,* 14, 1030.
129. Symposium Presentation, Joint meeting of the Society for Glycobiology and the Japanese Society of Carbohydrate Research, Honolulu, HI, 2004, Mechanism of substrate binding and catalysis for Class 1 (glycosylhydrolase family 47) -mannosidases. *Glycobiology,* 14, 1030.
130. Symposium Presentation, Joint meeting of the Society for Glycobiology and the Japanese Society of Carbohydrate Research, Honolulu, HI, 2004, Substrate specificity of Golgi a-mannosidase IIx indicates a functional redundancy with Golgi a-mannosidase II in animal tissues. *Glycobiology,* 14, 1030.
131. Symposium Presentation, Joint meeting of the Society for Glycobiology and the Japanese Society of Carbohydrate Research, Honolulu, HI, 2004, Human EDEM2, a novel homolog of family 47 glycosidases, is involved in the ER-associated degradation of glycoproteins. *Glycobiology,* 14, 1037.
132. Symposium Presentation, Joint meeting of the Society for Glycobiology and the Japanese Society of Carbohydrate Research, Honolulu, HI, 2004, Enzymatic activity of a-mannosidase IIx in N-glycan biosynthesis.
133. Symposium Presentation, Joint meeting of the Society for Glycobiology and the Japanese Society of Carbohydrate Research, Honolulu, HI, 2004, Development of a quantitative real-time PCR method for analyzing transcript abundance of glycan-related genes in mouse tissues and embryonic stem cells.
134. \*\*Invited Symposium Presentation, Keystone Symposium on “Golgi Apparatus and Secretory pathway of eukaryotic cells”, Breckinridge, CO, 2004, Title: Class 1 -1,2-mannosidase structure and function in N-glycan biosynthesis and quality control.
135. \*\*Invited Symposium Presentation, 1st International Conference on Glycoprotein & Related Storage Diseases, Rockville, MD, 2004, Title: Lysosomal storage diseases; an overview.
136. Symposium Presentation, Glycobiology-2002 Conference, Boston, MA, 2002, Development of selective inhibitors of processing and catabolic Class 2 (family 38 glycosyl hydrolase) -mannosidases: synthesis and evaluation of mannostatin derivatives.
137. Symposium Presentation, Glycobiology-2002 Conference, Boston, MA, 2002, Design and synthesis of sulfonium salts and azasugar analogs of swainsonins as selective inhibitors of processing and catabolic Class 2 (family 38 glycosyl hydrolase) -mannosidases.
138. Symposium Presentation, Glycobiology-2002 Conference, Boston, MA, 2002, Structure of mouse Golgi mannosidase IA reveals the molecular basis for substrate specificity among Class I (family 47 glycosyl hydrolase) -1,2-mannosidases.
139. \*\*Invited Symposium Presentation, “Protein Science Symposium” Nagoya, Japan 2002, Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation.
140. \*\*Invited Symposium Presentation, “Molecular Target Drug Discovery for Cancer” Annapolis, MD, 2002, Title: Selective Mannosidase Inhibitors as Cancer Therapeutics
141. \*\*Invited Symposium Presentation, "Molecular Recognition Based on the Carbohydrates" Nagoya, Japan 2001, Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation. (cancelled due to 9/11 terrorist attack)
142. Symposium Presentation, Glycobiology-2001 Conference, San Francisco, CA, 2001, Studies on the biosynthesis and targeting of the acid -mannosidase from *Trypanosoma cruzi* in mammalian cells.
143. Symposium Presentation, Glycobiology-2001 Conference, San Francisco, CA, 2001, Characterization of the Xenopus oocyte cortical granule lectin and its human homologs.
144. Symposium Presentation, Glycobiology-2001 Conference, San Francisco, CA, 2001, Role of selected domains and conserved residues in the function of HTM1p/Mnl1p in ER associated degradation of glycoproteins in yeast.
145. \*\*Invited Symposium Presentation, Glycobiology Boston-2000 Conference, Boston, MA, 2000, Title: Class 1 mannosidases in glycoprotein biosynthesis and quality control
146. Symposium Presentation, Glycobiology-2000 Conference, Boston, MA, 2000, Human and mouse homologs of the Xenopus oocyte cortical granule lectin XL-35.
147. Symposium Presentation, Glycobiology-2000 Conference, Boston, MA, 2000, Structure and function of Class 1 -mannosidases in glycoprotein maturation and quality control.
148. Symposium Presentation, Glycobiology-2000 Conference, Boston, MA, 2000, Structure and function of Class I 1,2-mannosidase involved in N-glycan processing and ER quality control.
149. Symposium Presentation, GLYCO XV, Tokyo, Japan, 1999, Characterization and in vivo role of a-mannosidase Iix, an enzyme encoded by a gene similar to the Golgi mannosidase II.
150. Symposium Presentation, GLYCO XV, Tokyo, Japan, 1999, Identification, expression, and characterization of a cDNA encoding human ER mannosidase I, the enzyme that catalyzes the first mannose trimming step in mammalian Asn-linked oligosaccharide biosynthesis.
151. Symposium Presentation, Glycobiology-97 Conference, San Francisco, CA 1999, Identification, expression, and characterization of a cDNA encoding human ER mannosidase I, the enzyme that catalyzes the first mannose trimming step in mammalian Asn-linked oligosaccharide biosynthesis.
152. Symposium Presentation, GLYCO XIV, Zurich Switzerland, 1997, Substrates specificity of recombinant alpha1,2-mannosidase IA and IB.
153. Symposium Presentation, GLYCO XIV, Zurich Switzerland, 1997, Characterization of genetic defects in human alpha-mannosidosis patients.
154. Symposium Presentation, GLYCO XIV, Zurich Switzerland, 1997, Characterization of human alpha-mannosidase IIx and its potential involvement in an alternative pathway for complex N-glycan biosynthesis.
155. Symposium Presentation, GLYCO XIV, Zurich Switzerland, 1997, Discovery of a new superfamily of animal lectins.
156. Symposium Presentation, Glycobiology-97 Conference, Long Beach, CA (1997) Purification and post-translational processing of recombinant acid -mannosidase of *Trypanosoma cruzi*.
157. Symposium Presentation, Glycobiology-97 Conference, Long Beach, CA (1997) Expression, purification, and characterization of the murine lysosomal -mannosidase.
158. \*\*Invited Symposium Presentation, Glycobiology Boston-96 Conference, Boston, MA, 1996, Title: Expression and Characterization of the Human Lysosomal α-Mannosidase cDNA and Characterization of the Defect in Human α-Mannosidosis Patients.
159. \*\*Invited Symposium Presentation, Glycobiology Boston-96 Conference, Boston, MA, 1996, Title: Biochemical Characterization and Substrate Specificity of Murine Class I Mannosidases
160. Symposium Presentation, Glycobiology Boston-96 Conference, Boston, MA, 1996, Title: Genomic Organization and Chromosomal Mapping of the Human and Mouse Lysosomal -Mannosidases.
161. Symposium Presentation, Glycobiology Boston-96 Conference, Boston, MA, 1996, Title: Cloning and Expression of the Acid -Mannosidase of *Trypanosoma cruzi*.
162. \*\*Invited Symposium Presentation, International Symposium on Molecular and Cell Biology of Glycoconjugate Expression, Rigi Kaltbad, Switzerland, 1996, Title: Isolation and Characterization of Mammalian Processing and Catabolic α-Mannosidases
163. \*\*Invited Symposium Presentation, International Symposium on Molecular and Cell Biology of Glycoconjugate Expression, Rigi Kaltbad, Switzerland, 1996, Title: Defect of the Golgi α-Mannosidase II in HEMPAS disease.
164. \*\*Invited Symposium Presentation, International Symposium on Molecular and Cell Biology of Glycoconjugate Expression, Rigi Kaltbad, Switzerland, 1996, Title: Analyses of Mice Lacking α-Mannosidase II Gene function: a Model of HEMPAS/CDA type II Disease.
165. Symposium Presentation, International Symposium on Molecular and Cell Biology of Glycoconjugate Expression, Rigi Kaltbad, Switzerland, 1996, Title: Discovery of a new family of C-type vertebrate lectins
166. Symposium Presentation, Annual Meeting of the American Society of Biological Chemists, New Orleans, LA 1996 Title: Discovery of a new family of C-type vertebrate lectins.
167. \*\*Invited Symposium Presentation, Gordon Research Conference on Glycobiology, Oxnard, CA, 1995, Title: Mannosidase multi-gene families in glycoprotein biosynthesis and catabolism
168. Symposium Presentation, Fourteenth Annual Meeting of the American Society for Virology, Austin, TX 1995 Title: Using Molecular Genetics to Study the N-Glycosylation Pathway in Lepidopteran insect cells.
169. \*\*Invited Symposium Presentation, 23rd Annual Meeting of the Society for Glycobiology, University of Notre, South Bend, IN, 1994, Title: Mannosidase multi-gene families in glycoprotein biosynthesis and catabolism.
170. Symposium Presentation, 23rd Annual Meeting of the Society for Glycobiology, University of Notre, South Bend, IN, 1994, Title: The -mannosidase of *Trypanosoma* *cruzi*: Structure and function.
171. Symposium Presentation, 23rd Annual Meeting of the Society for Glycobiology, University of Notre, South Bend, IN, 1994, Title: cDNA cloning of a murine lysosomal -mannosidase.
172. Symposium Presentation, 23rd Annual Meeting of the Society for Glycobiology, University of Notre, South Bend, IN, 1994, Title: Isolation of human -mannosidase II cDNA and characterization of the HEMPAS defect in -mannosidase II.
173. Symposium Presentation, 23rd Annual Meeting of the Society for Glycobiology, University of Notre, South Bend, IN, 1994, Title: Isolation, expression and characterization of a murine α1, 2-mannosidase.
174. Symposium Presentation, 23rd Annual Meeting of the Society for Glycobiology, University of Notre, South Bend, IN, 1994, Title: Cloning and characterization of an insect (Sf9) homolog of the mammalian processing enzyme, -mannosidase II.
175. \*\*Invited Symposium Presentation, Keystone Symposia, Frisco, CO, 1994, Title: Molecular Biology of Mammalian Processing Mannosidases.
176. Symposium Presentation, Keystone Symposia, CO, 1994, Title: Studies on the structure and function of the stem domain of the murine α1,3-Galactosyltransferase.
177. Symposium Presentation, 12th International Symposium on Glycoconjugates, Krakow, Poland 1993 Cloning of a murine homolog of the *Dictyostelium discoideum* lysosomal -mannosidase.
178. Symposium Presentation, 12th International Symposium on Glycoconjugates, Krakow, Poland 1993 Isolation of a mouse cDNA encoding a processing mannosidase.
179. \*\*Invited Symposium Presentation, Retirement Symposium for Dr. Oscar Touster, Department of Molecular Biology, Vanderbilt University, Nashville, TN, 1992, Title: Molecular biology of processing mannosidases.
180. Symposium Presentation, American Society for Cell Biology, Boston, MA 1991 Title: Variable immunolocalization of -mannosidases IA and II in the Golgi complex of different cell types.
181. Symposium Presentation, American Society for Cell Biology, Boston, MA 1991 Title: A temperature sensitive mutant of Chinese Hamster Ovary cells expresses key phenotypic changes associated with Brefeldin A treatment.
182. Symposium Presentation, 11th International Symposium on Glycoconjugates, Toronto, Ontario, Canada 1991 Title: Temperature-sensitive mutant of Chinese hamster ovary cells with a reversible block in protein secretion, Golgi apparatus disassembly and redistribution of the Golgi apparatus components into the Endoplasmic reticulum.
183. Symposium Presentation, 11th International Symposium on Glycoconjugates, Toronto, Ontario, Canada 1991 Title: Demonstration of a novel -mannosidase gene in mammalian cells.
184. Symposium Presentation, 11th International Symposium on Glycoconjugates, Toronto, Ontario, Canada 1991 Title: HEMPAS disease: Mutation in -mannosidase II gene.
185. \*\*Invited Symposium Presentation, Society for Complex Carbohydrates Annual Meeting, La Jolla, CA, 1990, Title: Molecular biology of processing mannosidases.
186. Symposium Presentation, American Society for Biochemistry and Molecular Biology, New Orleans, LA, 1990 Title: Defective N-glycan synthesis of erythrocyte membrane glycoproteins caused by low expression of -mannosidase II in a HEMPAS patient.
187. Symposium Presentation, Annual Meeting of the American Society for Cell Biology, Houston, TX 1989 Cloning and characterization of murine Golgi mannosidase II.
188. \*\*Invited Symposium Presentation, Society for Complex Carbohydrates Annual Meeting, San Antonio, TX, 1988, Title: Molecular approaches for glycoprotein cloning.
189. Symposium Presentation, Annual Meeting of the American Society of Biological Chemists, Washington, DC 1986 Title: A Novel Purification of the Catalytic Domain of Golgi Mannosidase II : Comparison with the Intact Enzyme.
190. Symposium Presentation, Annual Meeting of the Federation of American Societies for Experimental Biology, Anaheim, CA 1985 Title: Topology of Mannosidase II in Rat Liver Golgi Membranes and Release by Selective Proteolysis.
191. Symposium Presentation, Annual Meeting of the American Society of Biological Chemists, St. Louis, MO, 1984 Title: Biosynthesis of Golgi Mannosidase II in 3T3 and HeLa Cells.

**Invited seminars: Academic and Industry**

1. Invited speaker, Amicus Therapeutics, Philadelphia, PA, July 2020 “Glycosyltransferases as modular templates for diverse glycan synthesis”
2. Invited Speaker, Department of Biochemistry, University of Georgia, March 2019 “Glycosyltransferases as modular templates for diverse glycan synthesis”
3. Invited Speaker, Johns Hopkins University School of Medicine, Techniques in Glycobiology Lecture Series, July 2015 “Glycosyltransferases and glycogenes: classification, structure, function, and roles in glycoconjugates synthesis”
4. Invited Speaker, Michigan State University, March 2014 “Insights into the structural basis and regulation of mammalian protein glycosylation: *challenges and advances in technologies for studies on mammalian glycosylation*”
5. Invited Speaker, Scientific Advisory Committee Meeting, Callidus Pharmaceuticals, Inc. Princeton, NJ, March 2013 “Production and use of mammalian glycosylation enzymes for enzymatic and structural studies”
6. Invited Speaker, Center for Drug Discovery, University of Georgia, Athens, GA, March 2011, “Challenges of structural and inhibitor studies on mammalian glycosylation enzymes”.
7. Invited Speaker, RIKEN Advanced Science Institute, Wako, JAPAN, Aug, 2010, “Function, structure, and regulation of mammalian glycosylation enzymes*”*
8. Invited Speaker, Glycofi/Merck, Hanover NH, Feb, 2010, Title “Biochemistry of mammalian glycosylation: what do we want to know and how do we get there?”
9. Invited Speaker, Department of Cellular Biology, University of Georgia, Athens, GA (2007) Seminar Title: Quality control in the Endoplasmic Reticulum: Carbs are Important
10. Invited Speaker, Genzyme Corporation, Framingham MA (2006) Seminar Title: Mannose trimming in animal cells: alpha-mannosidases in glycan biosynthesis, catabolism and quality control
11. Invited speaker, Amicus Therapeutics, Cranbury, NJ (2005) Seminar Title: Early steps in glycoprotein biosynthesis: protein folding versus quality control glycoprotein degradation.
12. Invited Speaker, Department of Plant Biology, University of Georgia, Athens, GA (2005) Seminar Title: Glycoprotein Biosynthesis and Quality Control: Diversity of Pathways and Functions throughout Evolution
13. Invited Speaker, Department of Biochemistry and Molecular Biology, University of Illinois at Chicago, College of Medicine, Chicago, IL. (2005) Seminar Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation.
14. Invited Speaker, Glycofi. Inc. (2004) Seminar Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation.
15. Invited Speaker, Second Department of Medicine, Nagoya City University Medical School, Nagoya, Japan, 2002, Seminar Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation.
16. Invited Speaker, Department of Biosignal Research, Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan, 2002, Seminar Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation.
17. Invited Speaker, Department of Molecular Biology, University of Wyoming, Laramie, WY, 2002, Seminar Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation.
18. Invited Speaker, Department of Biosignal Research, Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan, 2001 Seminar Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation. (cancelled due to 9/11 terrorist attack)
19. Invited Speaker, Department of Cell Biology and Anatomy, Miami University School of Medicine, Miami, FL 2001, Seminar Title: Early steps in glycoprotein biosynthesis: involvement in protein folding versus quality control glycoprotein degradation
20. Invited Speaker, Glycodesign, Inc. Toronto, Ontario, Canada, 1999, Seminar title: Recombinant expression of glycoprotein processing enzymes
21. Invited speaker, School of Veternary Medicine, University of Georgia, Athens, GA, 1999, Seminar Title Biochemical and genetic studies on the lysosomal mannosidase: characterization of the molecular basis of -mannosidosis
22. Invited Speaker, Department of Biology, Dickinson College, Carlisle, PA, 1998, Seminar Title: Glycoprotein processing and catabolism: lessons from studies on human genetic disease.
23. Invited Speaker, Department of Biological Chemistry, University of Michigan Medical Center, 1998, Seminar title: Biochemical and genetic studies on the lysosomal mannosidase: characterization of the molecular basis of -mannosidosis
24. Invited Speaker, Department of Medical Genetics, University of Toronto, Toronto, ON, 1997, Seminar Title: Molecular biology of mammalian processing mannosidases.
25. Invited Speaker, Department of Biochemistry annd Molecular Biology, University of South Alabama, 1997, Seminar title: Biochemical and genetic studies on the lysosomal alpha-mannosidase: characterization of the molecular basis of -mannosidosis
26. Invited Speaker, Department of Cellular Biology, University of Georgia, 1997, Seminar title: Too much sugar can be bad for your health: Lysosomal storage diseases and lysosomal alpha-mannosidosis
27. Invited Speaker, Glycodesign, Inc. Toronto, Ontario, Canada, 1996, Seminar title: Recombinant expression of glycoprotein processing enzymes
28. Invited Speaker, Department of Reproductive Biology, Vanderbilt University School of Medicine, Nashville, TN, 1996, Title: Isolation and characterization of mammalian processing and catabolic α-mannosidases
29. Invited Speaker, Glycodesign, Inc. Toronto, Ontario, Canada, 1996, Seminar title: Recombinant expression of glycoprotein processing enzymes
30. Invited Speaker, Amgen, Inc. Boulder CO, 1995, Seminar title: Identification of Lipid A antagonists in bacteria
31. Invited Speaker, Glycodesign, Inc. Toronto, Ontario, Canada, 1995, Seminar title: Recombinant expression of glycoprotein processing enzymes
32. Invited Speaker, Department of Medical Genetics, University of Toronto, Toronto, ON, 1993, Seminar Title: Molecular biology of mammalian processing mannosidases.
33. Invited Speaker, Faculty of Cell Biology, University of Georgia, Athens, GA, 1993, Seminar title: Structure and function of mammalian Golgi enzymes.
34. Invited Speaker, Department of Biochemistry, Texas A & M, College Station, TX, 1993, Seminar Title: Molecular biology of processing alpha-mannosidases.
35. Invited Speaker, Ross Labs, Cleveland, OH, 1993, Seminar title: Preparation of transgenic constructs for glycosyltransferase expression.
36. Invited Speaker, Department of Molecular Biology, Vanderbilt University, Nashville, TN, 1992, Title: Molecular biology of processing mannosidases.
37. Invited Speaker, Department of Biochemistry and Cell Biology, SUNY at Stony Brook, Stony Brook, NY, 1991, Seminar title: Molecular biology of processing mannosidases.
38. Invited Speaker, La Jolla Cancer Research Foundation, La Jolla, CA, 1991, Seminar title: Molecular biology of processing mannosidases.
39. Invited Speaker, Complex Carbohydrate Research Center, University of Georgia, Athens, GA, 1991, Seminar title: Molecular biology of processing mannosidases.
40. Invited Speaker, Protein Purification and Characterization course, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1990, Title: Protein Glycosylation.
41. Invited Speaker, Glycomed, Alameda, CA 1989 Title: Molecular biology of glycosylation.
42. Invited Speaker, Department of Biochemistry, UCLA Medical Center, Los Angeles, CA, 1988, Seminar title: Molecular biology of processing mannosidases.

**RESEARCH GRANTS: Total direct cost funding for the Moremen lab since 1991: $20,193,621,**

**Total direct cost funding for 2019: $1,183,642)**

1. *Resource for Integrated Glycotechnology.* (P.I. Moremen, Kelley W. Moremen, Senior Investigator) National Institutes of Health (NIH-NIGMS GM103390-28, formerly NIH-NCRR P41 RR05351) 1/31/15 – 1/31/20 (no cost extension), (Moremen portion: $134,353 per year direct costs), $2,149,648 total direct costs for Moremen lab since 2004.
2. *National Center for Biomedical Glycomics*. (P.I. Pierce, Kelley W. Moremen, Senior Investigator) National Institutes of Health (NIH-NCRR P41 2P41GM103490-11, formerly NIH-NCRR 2P41 RR018502) 9/01/03 – 6/30/18 (bridge funding, no cost extension), (Moremen portion: $210,832 per year direct costs), $3,162,480 total direct costs for Moremen lab since 2003.
3. *NMR Investigations of Cell Surface Oligosaccharides*. (P.I. Prestegard, Kelley Moremen, Co-Investigator) (NIH/NIGMS 4R37GM033225-32) 07/01/18 – 04/30/23, (Moremen portion, $83,333 per year direct costs), $416,665 total direct costs for Moremen lab.
4. *Sparse NMR Labeling Approach to Glycoprotein Structure and Function* ((P.I. Prestegard, Moremen and Woods, Co-Investigators) (NIH/NIGMS R01 GM062619) 07/01/19 – 06/30/23, (Moremen portion, $60,000 per year direct costs), $240,000 total direct costs for Moremen lab.
5. *Streamlining the chemoenzymatic synthesis of asymmetrical glycans of biological importance* (P.I. Boons, G-J, Kelley Moremen, Co-Investigator) (NIH/NIGMS 1U01GM120408-3) 09/01/16 – 07/31/20 (Moremen portion $100,010), $400,040 total direct costs for Moremen lab.
6. *ST6Gal-1 Sialyltransferase in Inflammation* (PI, Joseph Lau, Kelley Moremen, Co-Investigator) (NIAID R01AI140736-01) 9/1/18 - 06/30/22 (Moremen portion $37,500), $150,000 total direct costs for Moremen lab.
7. *Defining the role of keratan sulfate recognition in Alzheimer's Disease progression* (MPI grant: Woods, Corresponding PI, Moremen, PI) (NIA 11R56AG062342-01) 09/01/18 – 08/13/19, $139,500 total direct costs for Moremen lab.
8. *Elucidating the role of Receptor Like Kinases in Willow* (PIs: Kelley Moremen and Breeanna Urbanowicz) (DOE subcontract from ORNL) 12/20/18 – 12/19/19, $50,000 total direct costs for Moremen lab.
9. *Origin of N-Glycan Site-Specific Heterogeneity* (Corresponding P.I. Moremen; M.P.I. grant with Wells, Kannan, Wood, Boons) (NIH/NIGMS R01GM130915-01) 09/01/18 – 08/31/23 (Moremen portion $186,750), $933,750 total direct costs for Moremen lab.
10. *Production and commercialization of human glycosylation enzymes for chemistry and biology* (MPI grant with Nairn (corresponding) and Moremen) (NIH/NIGMS R43GM134794-01) 09/01/19-08/31/20 (Moremen portion $186,750) (Moremen portion $55,656 direct (academic) and $215,959 to *Glyco Expression Technologies, Inc*.), $300,000 total direct costs for Moremen lab.

**Past Support:**

1. *Chemoenzymatic methods for the detection of cell -surface glycans* (PI, Peng Wu, Kelley Moremen, Co-Investigator) (NIGMS 1U01GM113046-03) 01/01/16-07/31/19 (Moremen portion: $20,740), $82,960 total direct costs for Moremen lab.
2. *Streamlining the chemoenzymatic synthesis of asymmetrical glycans of biological importance (Administrative Supplement)* (P.I. Boons, G-J, Kelley Moremen, Co-Investigator) (NIH/NIGMS 1U01GM120408-S) 09/01/18-07/31/19, $200,000 total direct costs for Moremen lab.
3. *Mammalian Glycosyltransferases for Use in Chemistry and Biology* (P.I. Boons, Kelley W. Moremen, Co-PI) National Institutes of Health (NIH/NIGMS 1P01GM107012-01) 07/01/13 – 06/30/18 (Moremen Portion: $390,762 per year direct costs), $1,953,801 total direct costs for Moremen lab.
4. *The Tumor Antigens Tn and Sialyl Tn in Human Colorectal Carcinoma* (P.I. Cummings (Emory), Kelley Moremen Subaward Investigator) National Institutes of Health (1U01CA168930) 07/01/12-06/30/17, (Moremen portion: $11,560 per year direct costs)*,* $57,800 total direct costs for Moremen lab.
5. *Targeted Glycomics and Affinity Reagents for Cancer Biomarker Development* (P.I Haab, Kelley Moremen Subaward Investigator) National Institutes of Health (1U01CA168896-01) 07/01/12-06/30/17, (Moremen portion: $6,909 per year direct costs), $34,545 total direct costs for Moremen lab.
6. *The Human Skeletal Muscle Cell Glycol-Structures and Function* (P.I. Baum, Kelley Moremen Subaward Investigator) Muscular Dystrophy Association (MDA 254647) 02/01/13-01/31/14, $50,000 total direct costs for Moremen lab.
7. *Tumor Glycomics Laboratory for Discovery of Pancreatic Cancer Markers* (P.I. Pierce, Kelley W. Moremen, Senior Investigator) National Institutes of Health (NIH-NCI 1U01CA128454-01) 07/25/07-06/30/14, receives no direct funding
8. *Development of a Repository for Glycan-related Enzymes* (P.I. Kelley W. Moremen) (NIH-NCRR P41 RR05351-20S1, Admin Supplement to P41RR05351) 8/01/11-1/31/15, (Moremen portion, $237,907 per year direct costs), $915,628 total direct costs for Moremen lab.
9. *NMR Investigations of Cell Surface Oligosaccharides* ((P.I. Prestegard, Kelley W. Moremen, Co-PI) National Institutes of Health (NIH GM033225-22), 07/01/84-04/30/14, $125,000 (Moremen portion), $500,000 total direct costs for Moremen lab.
10. *Mannosidase inhibitors as therapeutics for glycoprotein misfolding diseases*, National Institutes of Health (NIA/NIDDK RO1-DK075322-01); 7/1/06-6/30/11, no cost extension for 2011-2012, $1,589,435 total direct costs for Moremen lab.
11. *Mannosidases in glycoprotein biosynthesis and catabolism*, National Institutes of Health (NIGMS RO1-GM47533-18); 5/1/92-4/30/11; $215,000 direct costs for 2009-2010; $4,085,000, total direct costs for Moremen lab.
12. *Selective mannosidase inhibitors as cancer therapeutics*, National Institutes of Health (NCI UO1-CA91295-01); 5/1/01-4/31/05; $270,430 direct costs for 2003-2004; $1,101,010, total direct costs for Moremen lab.
13. Research Agreement, Amicus Therapeutics, 8/15/06 – 8/14/08
14. *Structure and function of a new family of endothelial lectins*, (Co-P.I. with Michael Pierce) National Institutes of Health (NIGMS RO1 GM58679), 1/1/99-12/31/03; $176,014, direct costs first year; $742,224, total direct costs for Moremen lab.
15. *Design and expression of carbohydrate recognition domains*, component of NIH Biomedical Complex Carbohydrate Resource Center (P41 RR05351), 7/1/99-6/30/04; $300,000 total direct costs for Moremen lab.
16. *Human heart lectin: characterization and tests of function*. (with Michael Pierce) American Heart Association; 7/96-6/99; $120,000, total direct costs for Moremen lab.
17. *Characterization of the carbohydrates bound by tumor necrosis factor-alpha*, (with Michael Pierce), University of Georgia Research Foundation Biotechnology Grant, 6/1/95-5/31/97; $60,000, total direct costs for Moremen lab.
18. *Isolation and purification of mammalian α-mannosidases for rational-based inhibitor desig*n. Supported by Glycodesign, Inc., 07/95-7/96, $104,360 (direct costs), renewed 7/96-12/99; $51,975, direct costs each year; $260,285 total direct costs for Moremen lab.
19. *Elaboration of genetic constructs of transferases*, Supported by Abbott Labs, 8/1/92- 5/30/94; $100,000, direct costs per year; Renewed, 6/10/94-5/30/95; $275,000, total direct costs for Moremen lab.
20. *Cloning of a Golgi enzyme: mannosidase II*; Postdoctoral fellowship supported by the Juvenile Diabetes Foundation, 7/88-6/90; $56,000, total direct costs.
21. *Cloning and expression of a Golgi enzyme: mannosidase II*, , National Institutes of Health, (NIGMS postdoctoral fellowship) 12/85-11/87; $39,000, total direct costs.
22. *Biosynthesis of Golgi mannosidase II and lysosomal mannosidase in cultured cells*, National Institutes of Health, (NRSA postdoctoral fellowship), 5/84-4/85; $14,040, direct costs.
23. National Research Service Award predoctoral traineeship, National Institutes of Health, 1/79-12/81, $13,410, total direct costs.
24. Special Dissertation Research Award, Vanderbilt University, 1983; $1200.

**PATENTS:**

1. U.S. Patent No.: 5.700.671: *Methods of making transgenic animals producing oligosaccharides and glycoproteins*, by Prieto, P., Smith, D., Cummings, R., Kopchick, J, Mukerji, P., **Moremen, K.,** Pierce, J. M., issued Dec 23, 1997
2. U.S.Patent No.: 5,714,376: *Heparinase gene from flavobacterium heparanum*, by Sasisekharan, R., **Moremen, K.,** Cooney, C., Zimmermann, J., Langer, R., issued Feb 3, 1998
3. U.S. Patent No.: 5,750,176: *Transgenic non-human mammal milk comprising 2'-fucosyl-lactose*, by Prieto, P., Smith, D., Cummings, R., Kopchick, J, Mukerji, P., **Moremen, K.,** Pierce; J. M.,issued May 12, 1998.
4. U.S. Patent No.:5,830,726: *Method for obtaining a modified heparinase gene*, by Sasisekharan, R., **Moremen, K.,** Cooney, C., Zimmermann, J., Langer, R., issued Nov 3, 1998
5. U.S. Patent No.: 5,891,698: *Oligosaccharides and glycoproteins produced in milk of transgenic non-human mammals*, by Prieto, P., Smith, D., Cummings, R., Kopchick, J, Mukerji, P., **Moremen, K.,** Pierce; J. M., issued April 6, 1999.
6. U.S. Patent No.: 5,892,070: *Transgenic non-human mammals producing oligosaccharides and glycoconjugates*, by Prieto, P., Smith, D., Cummings, R., Kopchick, J, Mukerji, P., **Moremen, K.,** Pierce; J. M., issued April 6, 1999.
7. U.S. Patent No.: 6,146,849: *Lectins and Coding Sequences*, by Pierce, J. M., **Moremen, K.,** Lee, J.K., issued November 14, 2000
8. U.S. Patent No.: 6,204,431: *Transgenic non-human mammals expressing heterologous glycosyltransferase DNA sequences produce oligosaccharides and glycoproteins in their milk*, by Prieto, P., Smith, D., Cummings, R., Kopchick, J, Mukerji, P., **Moremen, K.,** Pierce, J. M., issued March 20, 2001
9. U.S. Patent No.: 9,329,169: *In vivo isotopic labeling method for quantitative glycomics* R.L. Wells, R. C. Orlando, S. Dalton, **K. W. Moremen,** J M. Pierce, J.A. Atwood, M. Tiemeyer, W. S. York. May 3, 2016
10. U.S. Patent No.: 10,639,299: Calcium sensing receptors, ligands, compositions, and methods of use. Yang, J.J., Hu, J., Brown, E., **Moremen, K.**, Issued May 5, 2020.
11. U.S. Patent applied for: *Xylosyltransferases, O-acetyltransferases, and methods of use*, by Urbanowicz, B.R., Pena, M.J., Moniz, H., **Moremen, K.W.**, and York, W.S., submitted July 11, 2014

**ADDITIONAL PROFESSIONAL ACTIVITIES:**

**Ad hoc reviewer for scholarly journals**

*Nature Chemical Biology
Medicinal Chemistry
Molecules
Scientific Reports
Chemistry
EMBO Journal
Archives of Biochemistry and Biophysics
Proceedings of the National Academy of the Sciences
Biochemica et Biophysica Acta
Experimental Cell Research
Biochemistry
European Journal of Biochemistry
European Journal of Cell Biology
Journal of Bacteriology
Protein Engineering, Design, and Selection
Cell and Tissue Research
Biotechnology Progress
FEBS Journal
PLOS One
Protein Science
Nature Translation Psychiatry
Nature Communications
Biochemical Journal
Gene
Angewandte Chemie
Protein Expression and Purification
Nature Scientific Reports
eLife
Nature Reviews
Journal of Proteome Research
Chemistry
FASEB J
Scientific Reports
Process Biochemistry
Journal of the American Chemical Society
Frontiers
Acta Crystallographica
Carbohydrate Research
Molecular & Cellular Proteomics
Nature
Protein Expression and Purification
Process Biochemistry
ACS Chemical Biology
Glycoconjugate journal
Structure*

**Reviewer for grant funding agencies:**

National Institutes of Health

MSFB Study Section Member: 2009 – 2012
PC Study Section, ad hoc member 1999, 2001
MSFB Study Section, ad hoc member 2007, 2008

Special Emphasis Panels

ZRG1, NIH, 2005

CHHD-C, NIH, 2006

BCMB-K, 2013

ZRG-1 BCMB-P41, 2016

ZTR1 RD-8 (U54), 2019

ad hoc phone reviews (2002, 2003)

ETH Grants research proposals
Fonds zur Forderung der wissenschaftlichen Forschung (Austria)
American Cancer Society
National Science Foundation (Cellular Organization Study Section)
U.S. Army Research Office (2007)

UNIVERSITY GOVERNANCE:

***University and Community:***

University Distinguished Professor Review Committee, 2017-19 (chair in 2019)

University Promotion and Tenure Review Committee – Life Sciences 2015 - 2018

Program Review Committee, Bioenergy Systems Research Institute, 2015

University of Georgia Research Foundation Faculty Research Grants Committee: 2007-2010

Franklin College Promotion and Tenure Committee, 2006-2008

Franklin College Program Review Committee, Department of Cellular Biology, 2006

Faculty Advisory Committee for the UGA Center for Ultrastructural Research, 2006-2010

Conflicts of Interest Committee, University of Georgia, 1996-2001

Franklin College Computer Committee, University of Georgia, 2001-2003

Faculty Senate Representative, Franklin College, University of Georgia, 1994-1997.

Faculty Senate Professional Concerns Committee Representative, University of Georgia, 1994-1996.

Faculty Senate Academic Affairs Committee Representative, University of Georgia, 1994-1996.

Judge, State Science Fairs: 1994-1998.

Steering committee, Faculty of Cell Biology, University of Georgia, 1992-1994.

Steering Committee, Biological Sciences Computing Resources, University of Georgia, 1993-2000.

***Departmental:***

Chair, Faculty Recruitment Committee for Biomedical Glycoscientist, CCRC and Department of Biochemistry & Molecular Biology 2020

Faculty Recruitment Committee for Plant Cell Wall Glycochemist, CCRC and Department of Biochemistry & Molecular Biology 2019

Chair, UGA X-ray Diffraction Core Facility (XRDC) Advisory Committee, 2016-present

Department of Biochemistry & Molecular Biology Graduate Affairs Committee, 2010-2015.

Faculty Recruitment Committee for Bioinformaticist, CCRC and Department of Biochemistry & Molecular Biology 2008

Faculty Recruitment Committee for Biomedical Glycobiologist, CCRC and Department of Biochemistry & Molecular Biology 2006

Faculty Recruitment Committee for Biomedical Glycobiologist, CCRC and Department of Biochemistry & Molecular Biology 2005

Chair, Faculty Recruitment Committee for Biomedical Glycobiologist, CCRC and Department of Biochemistry & Molecular Biology 2003

Co-chair, Faculty Recruitment Committee for Protein Crystallographer, Department of Biochemistry & Molecular Biology 2001

Department of Biochemistry & Molecular Biology Research Direction Committee, 1997-2002.

Department of Biochemistry & Molecular Biology Long-range Planning Committee, 1998-2002.

Department of Biochemistry & Molecular Biology Computer Committee (Chairman), 1998-2002.

Department of Biochemistry & Molecular Biology Graduate Curriculum Committee, 1997-2003.

Faculty Recruitment Search Committee, Department of Biochemistry & Molecular Biology, 1995.

Co-organizer, CCRC Seminar Series, University of Georgia, 1991-1998.