

Steven D. Townsend

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Appointments

01/2021 - Present	Professor of Chemistry Vanderbilt University
08/2021 - 12/2021	Associate Professor of Chemistry Vanderbilt University
08/2014 - 07/2021	Assistant Professor of Chemistry Vanderbilt University

Education

07/2011 - 07/2014	Memorial Sloan-Kettering Cancer Center. New York, NY. Columbia University. New York, NY. NCI Postdoctoral Research Fellow, Advisor: Prof. Samuel J. Danishefsky
06/2005 - 11/2010	Vanderbilt University. Nashville, TN. Ph.D. in Organic Chemistry, Advisor: Prof. Gary A. Sulikowski United Negro College Fund - Merck Predoctoral Research Fellow Pfizer Synthetic Organic Chemistry Predoctoral Research Fellow
09/2001 - 05/2005	Oakland University. Rochester, MI. B.S. w/ honors in Chemistry, Advisor: Prof. Amanda C. Bryant-Friedrich

Professional Activities

08/2021 - 07/2023	Topic Editor, <i>ACS Infectious Diseases</i>
04/2021 - 03/2026	Editorial Board, <i>Organic Reactions</i>
01/2021 - 12/2023	Academic Member-at-Large, ACS Division of Carbohydrate Chemistry
07/2020 - Present	Associate Director, The Vanderbilt Microbiome Innovation Center
07/2020 - Present	Editorial Advisory Board, <i>ACS Central Science</i>
06/2020 - 03/2025	External Advisory Committee, GlyCore - University of Mississippi
01/2018 - 08/2021	Editorial Advisory Board, <i>ACS Infectious Diseases</i>
08/2018 - Present	Member, The Vanderbilt Microbiome Innovation Center
08/2017 - Present	Member, Vanderbilt Institute for Infection, Immunology, and Inflammation
08/2014 - Present	Member, Vanderbilt Institute of Chemical Biology
08/2014 - Present	Member, The Vanderbilt Pre ³ Initiative

Honors and Awards

Independent

2022	Thieme Chemistry Journal Award
2021	Alfred P. Sloan Research Fellow
2021	David Gin New Investigator
2020	Camille-Dreyfus Teacher Scholar
2019	Chemistry and Engineering News Talented 12
2019	ACS Infectious Diseases Young Investigator
2019 - 2024	Maximizing Investigator's Research Award (National Institutes of Health)
2019 - 2024	CAREER Award (National Science Foundation)
2019 - 2021	Deans Faculty Fellowship
2018	Jeffrey Nordhaus Award for Excellence in Undergraduate Teaching
2018	Chancellors Award for Research
2018	Ruth A. Lawrence Investigator Award for Research in Human Milk Science
2018	American Chemical Society Academic Young Investigator

2018 Research Corporation for Science Advancement Scialog Fellow
2015 Odyssey Award, Oakland University Alumni Association

Mentored

2011 - 2014 Cancer Pharmacology Postdoctoral Fellowship (National Cancer Institute)
2008 - 2010 UNCF/Merck Pharmaceuticals Predoctoral Fellowship
2008 NIH Ruth Kirschstein Predoctoral Fellowship, declined
2007 - 2008 Pfizer Synthetic Organic Chemistry Predoctoral Fellowship
2006 Outstanding Graduate Teaching Assistant, Vanderbilt University
2005 Alfred G. Wilson Founders Medal, Oakland University
2005 ACS Outstanding Graduating Senior Award, Detroit Section
2004 ACS Outstanding Analytical Chemistry Student, Detroit Section
2003 - 2005 Outstanding Tutor and Supplemental Instructor, Oakland University
2003 Keeper of the Dream Scholarship, Oakland University
2002 - 2005 Thompson's Undergraduate Research Fellowship, Oakland University
2001 - 2005 Board of Trustees Academic Scholarship, Oakland University

Research

Independent Publications

2021

- 50 Rebecca E. Moore, Harrison C. Thomas, Jennifer A. Gaddy*, and Steven D. Townsend.* Galacto-oligosaccharide Supplementation Modulates Bacterial Competition in a Group B *Streptococcus* - *Streptococcus salivarius* Two Species Microbiome. **2021**. *Chembiochem*. DOI: 10.1002/cbic.202100559
- 49 Sabrina K. Spicer, Rebecca E. Moore, Jacky Lu, Miriam A. Guevara, Dana R. Marshall, Shannon D. Manning, Steven M. Damo, Steven D. Townsend*, and Jennifer A. Gaddy.* Anti-biofilm activity of human milk oligosaccharides against multi-drug resistant and susceptible isolates of *Acinetobacter baumannii*. **2021**. *ACS Infect. Dis.* DOI: 10.1021/acsinfecdis.1c00420
- 48 Steven D. Townsend*. Glycoscience in Infectious Diseases. **2021**. *ACS Infect. Dis.* DOI: 10.1021/acsinfecdis.1c00524
- 44 Johny M. Nguyen and Steven D. Townsend.* Total Synthesis of the *Photorhabdus temperata* ssp. *Cinereal* 3240 Zwitterionic Trisaccharide Repeating Unit. **2021**. *Org. Lett.* DOI: 10.1021/acs.orglett.1c02023
- 43 Lianyan Xu and Steven D. Townsend.* Synthesis as an Expanding Resource in Human Milk Science. **2021**. *J. Am. Chem. Soc.* DOI: 10.1021/jacs.1c05599
- 42 Jacky Lu, Kathryn P. Haley, Jamisha D. Francis, Miriam A. Guevara, Ryan S. Doster, Kelly M. Craft, Rebecca E. Moore, Schuyler A. Chambers, Alberto G. Delgado, Maria Blanca Piazuelo, Steven M. Damo, Steven D. Townsend*, Jennifer A. Gaddy*. The innate immune glycoprotein lactoferrin represses the *Helicobacter pylori* *cag* type IV secretion system. **2021**. *Chembiochem*. DOI: 10.1002/cbic.202100249
- 41 Eric D. Huseman, Jo Ann Byl, Scott M. Chapp, Nathan D. Schley, Neil Osheroff, and Steven D. Townsend*. Synthesis and Cytotoxicity Evaluation of Arimetamycin A and its Daunorubicin and Doxorubicin Hybrids. **2021**. *ACS Cent. Sci.* DOI: 10.1021/acscentsci.1c00040
40. Tyra Avery, RaNashia L. Boone, Jacky Lu, Sabrina Spicer, Miriam A. Guevara, Rebecca E. Moore, Schuyler A. Chambers, Shannon D. Manning, Leon Dent, Dana Marshall, Steven M. Damo, Steven D. Townsend*, Jennifer A. Gaddy*. Analysis of the antimicrobial and anti-biofilm activity of human milk lactoferrin compared to bovine lactoferrin against multi-drug resistant and susceptible *Acinetobacter baumannii* clinical isolates. *ACS. Infect. Dis.* **2021**. doi: 10.1021/acsinfecdis.1c00087
39. Kristen Noble, Jacky Lu, Miriam Guevara, Ryan Doster, Schuyler Chambers, Lisa Rogers, Rebecca Moore, Sabrina Spicer, Alison Eastman, Jamisha Francis, Shannon Manning, Lakshmi Rajagopal, David Aronoff, Steven Townsend, and Jennifer Gaddy*. Group B *Streptococcus cpsE* Is Required for Serotype V Capsule Production and Aids in Biofilm Formation and Ascending Infection of the Reproductive Tract during Pregnancy. **2021**. *ACS Infect. Dis.* DOI 10.1021/acsinfecdis.1c00182
38. C. Elizabeth Adams[‡], Alexander J. Hughes[‡], and Steven D. Townsend*. Harnessing Anomeric Anions to Synthesize α - and β -Deoxyaminoglycosides. *Trends in Chemistry*. **2021**. DOI: 10.1016/j.trechm.2021.04.008

37. Johny M. Nguyen, Rebecca E. Moore, Sabrina K. Spicer, Jennifer A. Gaddy*, and Steven D. Townsend.* Synthetic Phosphoethanolamine Cellobiose Promotes Escherichia coli Biofilm Formation and Congo Red Binding. *Chembiochem* **2021**. DOI: 10.1002/cbic.202000869
36. Eric D. Huseman and Steven D. Townsend. Synthesis of a Lemonose Thioglycoside Donor from D-Threonine. *Tet. Lett.* **2021**, 153097. DOI: 10.1016/j.tetlet.2021.153097
35. Jacky Lu, Jamisha Francis, Miriam Guevara, Rebecca Moore, Schuyler Chambers, Ryan Doster, Alison Eastman, Lisa Rogers, Kristen Noble, Shannon Manning, Steven Damo, David M. Aronoff, Steven Townsend*, and Jennifer Gaddy*. Antibacterial and anti-biofilm activity of the human breast milk glycoprotein lactoferrin against Group B Streptococcus. *Chembiochem* **2021**. DOI: 10.1002/cbic.202100016
34. Alison Eastman, Rebecca E. Moore, Steven D. Townsend, Jennifer A. Gaddy, and David M. Aronoff. The influence of obesity and associated fatty acids on placental inflammation. *Clin. Ther.* **2021**, 43, 2, 265-278. DOI: 10.1016/j.clinthera.2020.12.018
33. Rebecca E. Moore, Lianyan L. Xu, and Steven D. Townsend*. Prospecting Human Milk Oligosaccharides as a Defense Against Viral Infections. *ACS Infect. Dis.* **2021**, 7, 2, 254-263. DOI: 10.1021/acsinfecdis.0c00807
32. Ranashia L. Boone; Briana Whitehead; Tyra M. Avery; Jacky Lu; Jamisha D. Francis; Miriam Guevara; Rebecca E. Moore; Schuyler Chambers; Ryan Doster; Shannon D. Manning; Steven D. Townsend; Leon Dent; Dana Marshall; Jennifer Gaddy; Steven M. Damo. Analysis of virulence phenotypes and antibiotic resistance in clinical strains of *Acinetobacter baumannii* isolated in Nashville, Tennessee. *BMC Microbiology*. **2021**. DOI: 10.1186/s12866-020-02082-1
- 2020**
31. Miriam A. Guevara, Jacky Lu, Rebecca E. Moore, Schuyler A. Chambers, Alison J. Eastman, Jamisha D. Francis, Kristen N. Noble, Ryan S. Doster, Kevin G. Osteen, Steven M. Damo, Shannon D. Manning, David M. Aronoff, Natasha B. Halasa, Steven D. Townsend*, and Jennifer A. Gaddy*. Vitamin D and Streptococci: The Interface of Nutrition, Host Immune Response, and Antimicrobial Activity in Response to Infection. *ACS Infect. Dis.* **2020**, 6, 12, 3131-3140. DOI: 10.1021/acsinfecdis.0c00666
30. Rebecca E. Moore†, Kelly M. Craft†, Lianyan L. Xu†, Schuyler A. Chambers, Johny M. Nguyen, Keevan C. Marion, Jennifer A. Gaddy*, and Steven D. Townsend*. Leveraging Stereoelectronic Effects in Biofilm Eradication: Synthetic b-Amino Human Milk Oligosaccharides Impede Microbial Adhesion as Observed by Scanning Electron Microscopy. *J. Org. Chem.* **2020**. DOI: 10.1021/acs.joc.0c01958
29. Schuyler A. Chambers and Steven D. Townsend*. Two-step conversion of unprotected oligosaccharides to generate bioorthogonal oligosaccharide tool compounds. *MethodsX*. **2020**, 100996. DOI: 10.1016/j.mex.2020.100996
28. Olugbeminiyi O. Fadeyi*, Marie C. Hefern*, Shanina Sanders Johnson*, and Steven D. Townsend*. What Comes Next? Simple Practices to Improve Diversity in Science. *ACS Cent. Sci.* **2020**, 6, 8, 1231-1240. DOI: 10.2021/acscentsci.0c00905
27. Schuyler A. Chambers and Steven D. Townsend*. Like Mother, Like Microbe: Human Milk Oligosaccharide Mediated Microbiome Symbiosis. *Biochem. Soc. Trans.* **2020**, 48, 3, 1139-1151. DOI:10.1042/BST20191144
26. Jacky Lu, Jamisha Francis, Kathryn P. Haley, Kelly M. Craft, Rebecca E. Moore, Schuyler A. Chambers, David M. Aronoff, Kevin Osteen, Steven M. Damo, Shannon Manning, Steven D. Townsend*, and Jennifer A. Gaddy*. Lactoferrin: a critical mediator of both host immune response and antimicrobial activity in response to streptococcal infections. *ACS. Infect. Dis.* **2020**, 6, 7, 1615-1623. DOI: 10.1021/acsinfecdis.0c00050
25. Steven D. Townsend*. Strategies and Tactics for Achieving Work-Life Integration as a Junior Faculty Member. *Chem. Eur. J.* **2020**, 26, 3, 3658-3660. DOI: 10.1002/chem.202000967
24. Schuyler A. Chambers, Jennifer A. Gaddy*, and Steven D. Townsend*. Synthetic Ellagic Acid Glycosides Inhibit Early-Stage Adhesion of *Streptococcus agalactiae* Biofilms as Observed by Scanning Electron Microscopy. *Chem. Eur. J.* **2020**, 26, 44, 9923-9928. DOI: 10.1002/chem.202000354
23. Alexandre Carvalho, Jacky Lu, Jamisha D. Francis, Rebecca E. Moore, Kathryn P. Haley, Ryan S. Doster, Steven D. Townsend, Jeremiah G. Johnson, Steven M. Damo, and Jennifer A. Gaddy*. S100A12 in Digestive Diseases and Health: A Scoping Review. *Gastroent. Res. Pract.* **2020**, 2868373. DOI: 10.1155/2020/2868373

22. Schuyler A. Chambers[#], Rebecca E. Moore[#], Kelly M. Craft, Harrison C. Thomas, Rishub Das, Simona G. Codreanu, Stacy D. Sherrod, David M. Aronoff, John A. McLean, Jennifer A. Gaddy*, and Steven D. Townsend*. A Solution to Antifolate Resistance in Group B *Streptococcus*: Untargeted Metabolomics Identifies Human Milk Oligosaccharide-Induced Perturbations that Result in Potentiation of Trimethoprim. *mBio*. **2020**, 11:e00076-20. DOI: 10.1128/mBio.00076-20
21. Lianyan L. Xu[#], Lawrence J. Berg[#], D. Jamin Keith, and Steven D. Townsend*. An Effective Reagent to Functionalize Alcohols with Phosphocholine. *Org. Biomol. Chem.* **2020**, 18, 767-770. DOI: 10.1039/C9OB02582K
20. Schuyler A. Chambers and Steven D. Townsend*. Bioorthogonal Human Milk Oligosaccharide Probes for Antimicrobial Target Identification within *Streptococcus agalactiae*. *Carbohydr. Res.* **2020**, 488, 107895. DOI: 10.1016/j.carres.2019.107895
- 2019**
19. Rebecca E. Moore and Steven D. Townsend*. Temporal Development of the Gut Microbiome. *Open Biology*. **2019**, DOI: 10.1098/rsob.190128
18. D. Jamin Keith and Steven D. Townsend*. Total Synthesis of the Bisphosphorylated *Morganella morganii* Zwitterionic Trisaccharide Repeating Unit. *J. Am. Chem. Soc.* **2019**, 141, 32, 12939-12945. DOI: 10.1021/jacs.9b06830
17. Kelly M. Craft and Steven D. Townsend*. Mother Knows Best: Deciphering the Antibacterial Properties of Human Milk Oligosaccharides. *Acc. Chem. Res.* **2019**, 52, 3, 760-768. DOI: 10.1021/acs.accounts.8b00630
16. Steven D. Townsend*. Human Milk Oligosaccharides: Defense Against Pathogens. *Breastfeed. Med.* **2019**, 14, S1, S5-S6. DOI: 10.1089/bfm.2019.0039
15. Kelly M. Craft, Johnny M. Nguyen, Lawrence J. Berg[#], and Steven D. Townsend*. Methicillin-Resistant *Staphylococcus aureus* (MRSA): Antibiotic-Resistance and the Biofilm Phenotype. *Med. Chem. Comm.* **2019**, 10, 1231-1241. DOI: 10.1039/C9MD00044E
14. Kelly M. Craft and Steven D. Townsend*. 1-Amino-2'-fucosyllactose inhibits biofilm formation by *Streptococcus agalactiae*. *J. Antibiot.* **2019**, 72, 507-512. DOI: 10.1038/s41429-019-0151-6
13. Kelly M. Craft, Harrison C. Thomas[#], and Steven D. Townsend*. Interrogation of Human Milk Oligosaccharide Fucosylation Patterns for Structural Antimicrobial and Antibiofilm Trends in Group B *Streptococcus*. *ACS. Infect. Dis.* **2019**, 4, 12, 1755-1765. DOI: 10.1021/acsinfectdis.8b00234
12. Kelly M. Craft, Harrison C. Thomas[#], and Steven D. Townsend*. Sialylated Variants of Lacto-N-Tetraose Exhibit Antimicrobial Activity Against Group B *Streptococcus*. *Org. Biomol. Chem.* **2019**, 1893-1900.
- 2018**
11. Eleni Beli, Yuanqing Yan, Leni Moldovan, Cristiano P. Vieira, Ruli Gao, Yaqian Duan, Ram Prasad, Ashay Bhatwadekar, Fletcher A. White, Steven D. Townsend, Luisa Chan, Caitlin N. Ryan, Daniel Morton, Emil G. Moldovan, Fang-I Chu, Gavin Y. Oudit, Hartmut Derendorf, Luciano Adorini, Xiaoxin X. Wang, Carmella Evans-Molina, Raghavendra G. Mirmira, Michael E. Boulton, Mervin C. Yoder, Qihong Li, Moshe Levi, Julia V. Busik, and Maria B. Grant. Restructuring of the Gut Microbiome by Intermittent Fasting Prevents Retinopathy and Prolongs Survival in db/db Mice. *Diabetes*. **2018**, 67, 1867-1879. DOI: 10.2337/db18-0158.
10. Kelly M. Craft, Jennifer A. Gaddy, and Steven D. Townsend*. Human Milk Oligosaccharides (HMOs) Sensitize Group B *Streptococcus* to Clindamycin, Erythromycin, Gentamicin, and Minocycline on a Strain Specific Basis. *ACS Chem. Bio.* **2018**, 13, 2020-2026. DOI: 10.1021/acscchembio.8b00661
9. Schuyler A. Chambers, Jenna M. DeSousa, Eric D. Huseman, and Steven D. Townsend*. The DARK Side of Total Synthesis: Strategies and Tactics in Psychoactive Drug Production. *ACS Chem. Neurosci.* **2018**, 9, 10, 2307-2330. DOI: 10.1021/acscchemneuro.7b00528
8. D. Jamin Keith, Stefan A. Maraslinger, Alexander W. Sasse, and Steven D. Townsend*. One-pot Microwave-assisted Conversion of Anomeric Nitrate-esters to Trichloroacetimidates. *J. Vis. Exp.* **2018**, 131, e56610, 1-7. DOI: 10.3791/56610
7. Dorothy L. Ackerman[#], Kelly M. Craft[#], Ryan S. Doster, Jörn-Hendrik Weitkamp, David M. Aronoff, Jennifer A. Gaddy, and Steven D. Townsend*. Antimicrobial and Antibiofilm Activity of Human Milk Oligosaccharides Against *Streptococcus*

agalactiae, *Staphylococcus aureus*, and *Acinetobacter baumannii*. *ACS Infect. Dis.* **2018**, 4, 315-324. DOI: 10.1021/acsinfecdis.7b00183

6. Kelly M. Craft and Steven D. Townsend*. Human Milk Oligosaccharides as a Defense Against Infectious Diseases: Rationale, Current Challenges, and Opportunities. *ACS Infect. Dis.* **2018**, 4, 77-83. DOI: 10.1021/acsinfecdis.7b00209
- 2017
5. Yong Guan and Steven D. Townsend*. Metal-Free Synthesis of Unsymmetrical Organoselenides and Selenoglycosides. *Org. Lett.* **2017**, 19, 5252-5255. DOI: 10.1021/acs.orglett.7b02526
4. Dorothy L. Ackerman, Ryan S. Doster, Jörn-Hendrik Weitkamp, David M. Aronoff, Jennifer A. Gaddy, and Steven D. Townsend*. Human Milk Oligosaccharides Exhibit Antimicrobial and Anti-Biofilm Properties Against Group B *Streptococcus*. *ACS Infect. Dis.* **2017**, 3, 595-605. DOI: 10.1021/acsinfecdis.7b00064
3. D. Jamin Keith and Steven D. Townsend*. Direct, Microwave-Assisted Substitution of Anomeric Nitrate-Esters. *Carbohydr. Res.* **2017**, 442, 20-24. DOI: 10.1016/j.carres.2017.02.005
2. Kelly M. Craft and Steven D. Townsend*. Synthesis of Lacto-*N*-Tetraose. *Carbohydr. Res.* **2017**, 440-441, 43-50. DOI: 10.1016/j.carres.2017.02.001
1. Dorothy L. Ackerman, Kelly M. Craft, and Steven D. Townsend*. Infant food applications of complex carbohydrates: Structure, synthesis, and function. *Carbohydr. Res.* **2017**, 437, 16-27. DOI: 10.1016/j.carres.2017.11.007

Mentored Publications

9. **Steven D. Townsend**, Audrey G. Ross, Kai Liu, and Samuel J. Danishefsky*. Stereospecific *Cis* and *Trans* Ring Fusions Arising from Common Intermediates. *Proc. Natl. Acad. Sci. U.S.A.* **2014**, 111, 22, 7931-7935. DOI: 10.1073/pnas.1407613111
8. **Steven D. Townsend** and Gary A. Sulikowski*. Progress toward the Total Synthesis of Bielschowskysin. *Org. Lett.* **2013**, 15, 19, 5096-5098. DOI: 10.1021/ol402379m
7. Audrey G. Ross, **Steven D. Townsend**, and Samuel J. Danishefsky*. Halocycloalkenones as Diels-Alder Dienophiles. Applications to Generating Useful Structural Patterns. *J. Org. Chem.* **2013**, 78, 1, 204-210. DOI: 10.1021/jo302230m
6. Jianfeng Li, Suwei Dong, **Steven D. Townsend**, Thomas Dean, Thomas J. Gardella, and Samuel J. Danishefsky*. Chemistry as an Expanding Resource in Protein Science. Fully Synthetic and Fully Active Human Parathyroid Hormone-Related Protein (1-141). *Angew. Chem. Int. Ed.* **2012**, 51, 49, 12263-12267. DOI: 10.1002/anie.201207603
5. Ping Wang, Suwei Dong, John A. Brailsford, Karthik Iyer, **Steven D. Townsend**, Qiang Zhang, Ronald Henderickson, JaeHung Shieh, Malcolm A. S. Moore, and Samuel J. Danishefsky*. At Last: Erythropoietin as a Single Glycoform. *Angew. Chem. Int. Ed.* **2012**, 51, 46, 11576-11584. DOI: 10.1002/anie.201206090
4. **Steven D. Townsend**, Xiangyang Wu, and Samuel J. Danishefsky*. Enhancing the Scope of the Diels-Alder Reaction through Isonitrile Chemistry: Emergence of a New Class of Acyl Activated Dienophiles. *J. Am. Chem. Soc.* **2012**, 134, 25, 10659-10663. DOI: 10.1021/ja303876e
3. **Steven D. Townsend**, Zhongping Tan, Suwei Dong, Shiyang Shang, John A. Brailsford, and Samuel J. Danishefsky*. Advances in Proline Ligation. *J. Am. Chem. Soc.* **2012**, 134, 8, 3912-3916. DOI: 10.1021/ja212182q
2. Haibo Yu, Meng Wu, **Steven D. Townsend**, Beiyan Zou, Shunyou Long, J. Scott Daniels, Owen B. McManus, Min Li, Craig W. Lindsley, and Corey R. Hopkins*. Discovery, Synthesis, and Structure-Activity Relationship of a Series of *N*-Aryl-bicyclo[2.2.1]heptane-2-carboxamides: Characterization of ML213 as a Novel KCNQ2 and KCNQ4 Potassium Channel Opener. *ACS Chem. Neurosci.* **2011**, 2, 10, 572-577. DOI: 10.1021/cn200065b
1. Alexis S. Hammond, Alice L. Rodriguez, **Steven D. Townsend**, Colleen M. Niswender, Karen J. Gregory, Craig W. Lindsley, and P. Jeffrey Conn*. Discovery of a Novel Chemical Class of mGlu5 Allosteric Ligands with Distinct Modes of Pharmacology. *ACS Chem. Neurosci.* **2010**, 1, 10, 702-716. DOI: 10.1021/cn100051m

Invited Seminars 101 (University = 65)

101	10/2022	University of Notre Dame.
100	07/2022	36th Protein Society Symposium. Lactoferrin: A Critical Modulator of the Host Immune Response

99 05/2022 University of Tennessee - Knoxville. *Prospecting Human Milk for Non-Infant Uses*

98 03/2022 Northeastern University. *Prospecting Human Milk for Non-Infant Uses*

97 03/2022 Brandeis University. *Prospecting Human Milk for Non-Infant Uses*

96 03/2022 Texas A&M University. *Prospecting Human Milk for Non-Infant Uses*

95 02/2022 Emory University. *Padwa Lecture. Novel Strategies in Anthracycline Synthesis*

94 01/2022 Indiana University. *Prospecting Human Milk for Non-Infant Uses*

93 01/2022 University of Minnesota. Morris. *Prospecting Human Milk for Non-Infant*

92 12/2021 Albany State University. *Prospecting Human Milk for Non-Infant Uses*

91 12/2021 ISSAD. Virtual. *Prospecting Human Milk for Non-Infant Uses*

90 12/2021 Johns Hopkins University. *Prospecting Human Milk for Non-Infant Uses*

89 11/2021 ABRCMS 2021. Virtual. *Prospecting Human Milk for Non-Infant Uses*

88 11/2021 University of California - Berkeley. *AbbVie Lecture. Translational Glycoscience*

87 10/2021 ACS Rocky Mountain Regional Meeting. Tucson, AZ. *Prospecting Human Milk for Non-Infant Uses*

86 10/2021 Northern Kentucky University. *Prospecting Human Milk for Non-Infant Uses*

85 10/2021 St. Thomas University. *Prospecting Human Milk for Non-Infant Uses*

84 10/2021 University of Michigan - Ann Arbor. *AbbVie Symposium. Synthesis and Biology of Anthracyclines*

83 10/2021 University of Washington. *Preventing Adverse Pregnancy Outcomes with Human Milk*

82 10/2021 SAPPA Annual Conference. *Synthesis of Arimetamycin A*

81 10/2021 Wayne State University. *The Role of Chemistry in a Pandemic*

80 09/2021 PREDICT Symposium. ACS Indiana Local Section. *Prospecting Human Milk for Non-Infant Uses*

79 09/2021 University of Wisconsin - Madison. *Chemistry Driven Glycoscience*

78 09/2021 University of Maryland - College Park. *Preventing Premature Birth with Human Milk*

77 08/2021 262nd ACS National Meeting. *Synthesis of Arimetamycin A*

76 08/2021 262nd ACS National Meeting. *Synthesis and Biology of Polyphenols*

75 08/2021 Merck Kenilworth. *Synthetic Carbohydrates in Disease Prevention*

74 08/2021 Beckman Symposium. *Writing the Abstract*

73 07/2021 University of Mississippi. *Prospecting Human Milk for Non-Infant Uses*

72 04/2021 American Chemical Society - Nashville, TN. *Prospecting Human Milk for Non-Infant Uses*

71 04/2021 European Glycoscience Community Webinar Series. *Prospecting Human Milk for Non-Infant Uses*

70 04/2021 Boston Glycobiology Group. Boston, MA. *Prospecting Human Milk for Non-Infant Uses*

69 04/2021 California State University - Stanislaus. *Prospecting Human Milk for Non-Infant Uses*

68 04/2021 Oakland University. *Prospecting Human Milk for Non-Infant Uses*

67 04/2021 261st ACS National Meeting - *Carbohydrates & Infectious Disease symposium - Chemistry Driven Glycoscience*

66 04/2021 261st ACS National Meeting - *Chemical Biology Lectureship symposium – HMO Modulation of Inflammation*

65 03/2021 Stony Brook University. *Chemistry Driven Glycoscience*

64 03/2021 Columbia University. *Prospecting Human Milk for Non-Infant Uses*

63 03/2021 Purdue University. *Chemistry Driven Glycoscience*

62 02/2021 Washington University in St. Louis. *Chemistry Driven Glycoscience*

61 02/2021 Boston College. *Chemistry Driven Glycoscience*

60 02/2021 2021 R. Bryan Miller Symposium. UC Davis. Davis, CA. *Chemistry Driven Glycoscience*

59 02/2021 Duke University. Pediatrics. *Prospecting Human Milk for Non-Infant Uses*

58 02/2021 Int. Society for Research in Human Milk and Lactation. *Human Milk Oligosaccharides as Therapeutics*

57 02/2021 Central Michigan University. *Prospecting Human Milk for Non-Infant Uses*

56 01/2021 Boston University. *Chemistry Driven Glycoscience*

55 01/2021 Cornell University. *Chemistry Driven Glycoscience*

54 01/2021 Massachusetts Institute of Technology. *Chemistry Driven Glycoscience*

53 01/2021 Keystone: The Microbiome: From Mother to Child. *HMOs: Defense Against Pathogens*

52 01/2021 NIH & FDA Glycoscience Research Day. *Synthesis of Polyphenolic Glycosides*

51 12/2020 University of Illinois Urbana-Champaign. *St. Elmo Brady Lecturer - Chemistry Driven Glycoscience*

50 12/2020 University of Colorado - Denver. *Enabling Technologies for Chemistry Focused Glycoscience*

49 11/2020 Harvard University. *Enabling Technologies for Chemistry Focused Glycoscience*

48 11/2020 California Institute of Technology. *Enabling Technologies for Chemistry Focused Glycoscience*

47 10/2020 Vanderbilt University. *Enabling Technologies for Chemistry Focused Glycoscience*

46 10/2020 Stanford University. *Enabling Technologies for Chemistry Focused Glycoscience*

45 10/2020 Merck San Francisco. *Enabling Technologies for Chemistry Focused Glycoscience*

44 10/2020 University of Utah. *Enabling Technologies for Chemistry Focused Glycoscience*

43 09/2020 Elizabethtown College. *Contagion*

42 09/2020 University of North Carolina - Chapel Hill. *Chemistry Driven Glycoscience*

41 05/2020 GlycoDay - National Institutes of Health. *Application of the membrane permeabilizing ability of HMOs*

40 03/2020 New York Academy of Sciences. *HMOs and Temporal Development of the Microbiome*

39 02/2020 Memorial Sloan-Kettering Cancer Center. New York, NY. *Playing Defense with Human Milk Oligosaccharides*

38 01/2020 Yale University. *Playing Defense with Carbohydrates*

37 12/2019 New York University. *Enabling Technologies to Study the Biological Roles of Carbohydrates*

36 12/2019 University of North Carolina - Chapel Hill. *Chemistry Driven Glycoscience*

35 11/2019 Clemson University. *Playing Defense with Human Milk*

34 10/2019 New York University. *Playing Defense with Human Milk*

33 09/2019 Northeastern University. *HMOs: Defense Against Pathogens*

32 08/2019 258th ACS National Meeting. San Diego, CA. *ACS Infectious Diseases Award Symposium*

31 08/2019 258th ACS National Meeting & Exposition. San Diego, CA. *C&E News Talented 12 Award Symposium*

30 08/2019 258th ACS National Meeting & Exposition. San Diego, CA. *First Generation Academic Faculty Symposium*

29 06/2019 Gordon Research Conference: Carbohydrates. Hong Kong, China. *HMOs: Defense Against Pathogens*

28 05/2019 The Pennsylvania State University - State College. *HMOs: Defense Against Pathogens*

27 05/2019 University of Texas-Southwestern Medical School. *HMOs: Defense Against Pathogens*

26 04/2019 Tufts University. *Something Old, Something New: Playing Defense against Bacterial Pathogens*

25 04/2019 University of Minnesota. *HMOs as Narrow-Spectrum Antimicrobial Agents against Group B Strep*

24 03/2019 257th ACS National Meeting. Orlando, FL. *Opportunities and Challenges in Carbohydrate Chemistry Symposium*

23 03/2019 Wesleyan University. *Human Milk: Defense Against Pathogens*

22 02/2019 University of Alberta. *Human Milk: Defense Against Pathogens*

21 02/2019 University of California-Davis. *Human Milk: Defense Against Pathogens*

20 01/2019 Vanderbilt Microbiome Initiative. *Human Milk: Defense Against Pathogens*

19 01/2019 Wayne State University. *Human Milk: Defense Against Pathogens*

18 12/2018 University of Georgia - Athens. *Human Milk: Defense Against Pathogens*

17 12/2018 The University of Pennsylvania. Chemistry. *Human Milk: Defense Against Pathogens*

16 11/2018 Advances and Controversies in Neonatal Medicine. Nashville, TN. *Human Milk: Defense Against Pathogens*

15 11/2018 Brown University. *Human Milk: Defense Against Pathogens*

14 10/2018 Vanderbilt University. Pediatrics. *Human Milk: Defense Against Pathogens*

13 08/2018 256th ACS National Meeting. Boston, MA. *Academic Young Investigator Symposium*

12 08/2018 NYU/Nature Chemical Biology Symposium. New York, NY. *Human Milk: Defense Against Pathogens*

11 08/2018 Int. Conference on Human Milk Science & Innovation. Pasadena, CA. *Human Milk: Defense Against Pathogens*

10 08/2018 ACS Webinar on Infectious Diseases. Nature's Elixir: *Antimicrobial Properties of Human Milk.*

9 04/2018 Greater Atlanta Chemical-Biology Symposium. Atlanta, GA. *Human Milk: Defense Against Pathogens*

8 04/2018 Gold Lactation Virtual Conference. *Human Milk: Defense Against Pathogens*

7 03/2018 National Institutes of Health. Bethesda, MD. *Human Milk: Defense Against Pathogens*

6 03/2018 255th ACS National Meeting. New Orleans, LA. *Wolfrom Award Symposium honoring Nicola Pohl*

5 03/2018 255th ACS National Meeting. New Orleans, LA. *Emerging Young Investigator Symposium*

4 11/2017 Vanderbilt University. Pathology, Microbiology, Immunology. *Human Milk: Defense Against Pathogens*

3 10/2017 Tennessee State University. *An Academic Career in Chemical Biology*

2 06/2017 Gordon Research Conference: Carbohydrates. Mount Snow, VT.

1 03/2015 North Carolina Central University. *Glycopharmacology: Harnessing the Power of Human Milk*