

Hien M. Nguyen

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PERSONAL

Born: Ho Chi Minh City (Saigon), Vietnam
Citizenship: USA
DOB: 01/01/1973

RESEARCH INTERESTS

Carbohydrates, Chemical Biology, Fluorine, PET Imaging, Organic Chemistry, Transition-Metal Catalysis

EDUCATIONAL AND PROFESSIONAL HISTORY

Education

- 2003 – 2006 NIH Postdoctoral Fellow, Stanford University, Palo Alto, CA
Research: *Studies toward the Synthesis of Rameswaralide*
Advisor: Barry M. Trost
- 1998 – 2003 Ph.D. in Organic Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL
Research: *Developments of New Methods for Carbohydrate Synthesis*
Advisor: David Y. Gin
- 1992 – 1996 B.S. Chemistry, *cum laude*, Tufts University, Medford, MA
Research: *Synthesis of myo-Inositol Compounds*
Advisor: Marc d'Alarcao

Professional Appointments

- 07/2013 – present Associate Professor, Department of Chemistry, University of Iowa
- 2009 – 07/2013 Assistant Professor, Department of Chemistry, University of Iowa
- 2006 – 2009 Assistant Professor, Department of Chemistry, Montana State University

Professional Affiliations

- 1996 – present Member, American Chemical Society
- 1998 – present Member, American Chemical Society, Division of Organic Chemistry
- 2006 – present Member, American Chemical Society, Division of Carbohydrate Chemistry
- 2012 – present Member, Center for Biocatalysis and Bioprocessing, University of Iowa

Honors and Awards

2016	Mizutani Glycosciences Innovation Award
2015	Visiting Professor, Northwestern University
2014	University of Iowa Faculty Career Development Award
2013	University of Iowa Dean's Scholar
2013	<i>Chemical Communications</i> Theme Issue on "Emerging Investigators"
2013	Thieme Chemistry Journal Award
2012	International Young Carbohydrate Investigators Symposium
2011	Academic Assistant Professors Symposium, ACS Division of Organic Chemistry
2010	Glycobiology Young Investigators Symposium, ACS Division of Carbohydrates
2009	Dean Award for Excellence in Mentoring Undergraduate Students
2008	Professor of the Year Teaching Award in the Department of Chemistry
2004	NIH Postdoctoral Fellowship
2003	R. C. Fuson Organic Travel Award
2001	Roche Award for Excellence in Organic Chemistry
1996	Durkees Chemistry Award
1994	NSF-REU Summer Research
1994	Howard Hughes Summer Research Fellowship

SCHOLARSHIP

Research Grants

Active

R01GM098285

4/1/2012 – 3/31/2018

NIH/NIGMS

Total Amount Awarded: \$1,501,125

Synthesis and Chemical Biology Studies of Complex Carbohydrates

The major goals of this project are to develop a new strategy for the construction of 1,2-*cis*-2-amino sugars via nickel-catalyzed stereoselective glycosylation. This methodology will be applied toward the synthesis and biological studies of heparan sulfate neo-glypolymers as heparanase inhibitors.

Role: sole PI

R21AI117379

1/15/2016 – 12/31/2017

NIH/NIAID

Total Amount Awarded: \$415,333

Synthesis and Evaluation of Zwitterionic Carbohydrate Immunostimulants

The major goals of this project are to synthesize natural and non-natural PS A1 oligosaccharides with defined repeating units. This proposed effort will deliver defined PS A1 molecules in high purity without batch-to-batch variation and provide tools for studying their roles as adjuvants.

Role: PI – Hien Nguyen (Chemistry, 50%); Co PIs - Jon Houtman (Microbiology, 25%) and Steve Varga (Chemistry, 25%)

U01GM120293

9/01/2016 – 8/31/2020

NIH/NIGMS

Total Amount Awarded: \$2,516,585

Catalytic Methods for Stereoselective 1,2-*Cis* Glycosylation

The major goals of this project are to develop a series of predictable and selective 1,2-*cis* glycosylation reactions, via the merger of photoredox catalysis for the synthesis of biologically active oligosaccharides.

Role: sole PI

Mizutani Glycosciences Foundation

4/01/2016 – 3/31/2017

Immunological Studies of Zwitterionic Oligosaccharides

Total Amount Awarded: \$30,000

The major goal of this project is to study interactions between synthetic PS A1 oligosaccharides and MHCII molecule

Role: sole PI

Pending

R01 GM125833

NIH/NIGMS

10/01/2017 – 09/31/2021

Total Amount Requested: \$1,857,050

New Approaches to Fluorine-Containing Molecules and Radiofluorination

The past decade has seen an explosion in the use of fluorine-containing molecules for numerous applications in pharmaceuticals, agrochemicals, and medical imaging. About 20% of pharmaceutical drug targets on the market contain at least one fluorine atom. Due to low energy emission, ease of preparation from [¹⁸O]water, and a 110-minute half-life, fluorine-18 has become an ideal radionuclide used in Positron Emission Tomography (PET) for producing noninvasive three-dimensional imaging of metabolic processes in patients. Despite these benefits, techniques for the rapid radiofluorination of biologically active compounds in the desired time-scales at friendly temperatures and for the catalytic enantioselective C-F and C-CF₃ bond formation remain underdeveloped. This proposal will address this challenge through the development of a series of reactions for the synthesis of enantioenriched allylic fluorides and allylic trifluoromethylated compounds as well as a rapid method for incorporation of ¹⁸F into allylic systems of organic molecules in 5-10 min at room temperature.

Role: PI – Hien Nguyen (Chemistry, 90%) and Co-PI – David Dick (PET Imaging Center, 10%)

Complete

CHEM0809200

8/01/2008 – 7/31/2011

National Science Foundation

Exploring Palladium Chemistry in Carbohydrate Synthesis

Role: PI

CHEM1106082

8/01/2011 – 7/31/2014

National Science Foundation

Exploring Transition Metals in Carbohydrate Synthesis

Role: PI

Patents:

1) Silverman, R. B.; Mukherjee, M.; Nguyen, H. M. “2-Imidazolyl-pyrimidine scaffolds as potent and selective inhibitors of neuronal nitric oxide synthase and their preparation.” PCT Int. Appl. **2016**, WO 2016007966 A2 20160114.

2) Nguyen, H. M.; Loka, R. S.; Sletten, E. T.; Yu, F. “ Design, Synthesis, and Evaluation of Heparanase Inhibitors.” Provisional Patent, **2017**.

Publications:

Independent Career: (Peer Reviewed Articles)

Contribution: * Corresponding Author, ** Equal, *** Undergraduate Students

38) Yu, F.;;** Dickson, J.;;** Nguyen, H. M.* “Photoinduced Copper-Catalyzed Diastereoselective Coupling of C(sp³) Anomeric Bromide with Aliphatic Alcohols – Formation of 1,2-*Cis* Glycosides.” (Manuscript in preparation)

37) Mixdorf, J. C; Dick, D.;;* Nguyen, H. M.* “Regio- and Enantioselective Allylic Radiofluorination.” *J. Am. Chem. Soc.* (Manuscript submitted)

36) Sletten, E. T.;;** Loka, R. S.;;** Yu, F.;; Nguyen, H. M.* “Glycosidase Inhibitors from Multivalent Presentation of Heparan Sulfate Saccharides on Brush Polymer.” *Biomacromolecules* (Manuscript submitted).

- 35) Loka, R. S.;** Yu, F.;** Sletten, E. T.;** Nguyen, H. M.* "Design, Synthesis, and Evaluation of Heparan Sulfate Mimicking Glycopolymers for Inhibiting Heparanase Activity." *Chem. Commun.* **2017** (under revision).
- 34) Mixdorf, J. C.;** Sorlin, A.;** Zhang, Q.; Nguyen, H. M.* "Enantioselective Synthesis of Allylic Fluorides via Iridium-Catalyzed Dynamic Kinetic Asymmetric Transformations of Racemic Allylic Trichloroacetimidates with Et₃N·3HF." *J. Am. Chem. Soc.* (Manuscript submitted).
- 33) Mwenda, E.; Nguyen, H. M.* "Enantioselective Synthesis of 1,2-Diamines via Rhodium-Catalyzed Enantioselective DYKAT of Racemic Allylic Trichloroacetimidates." *Org. Lett.* (Manuscript submitted).
- 32) Sletten, E. T.; Loka, R. S.; Fairweather, A. E. R.; Nguyen, H. M.* "Nickel-Catalyzed Stereoselective Formation of 1,2-*cis*-2-Aminoglycosides" in *Selective Glycosylations: Synthetic Methods and Catalysts*, Edited By Clay S. Bennett, Wiley-VCH, **2017**, pp. 173-207.
- 31) Sletten, E. T.; Ramadugu, S. K.; Nguyen, H. M.* "Utilization of Bench-Stable and Readily Available Nickel(II) Triflate for Access to 1,2-*Cis*-2-Aminoglycosides." *Carbohydr. Res.* **2016**, *435*, 197-207.
- 30) Park, N. H.; Sletten, E. T.; McKay, M. J.; Nguyen, H. M.* "Palladium- and Nickel-Catalyzed Stereoselective Synthesis of Glycosyl Trichloroacetamides and Their Conversion to Alpha- and Beta-Urea Glycosides." in *Domino and Intramolecular Rearrangement Reactions as Advanced Synthetic Methods in Glycoscience*, Edited By Zbigniew J. Witczak and Roman Bielski, Wiley & Sons, **2016**, pp. 297-324.
- 29) Zhang, Q.; Stockdale, D. P.; Mixdorf, J. C.; Topczewski, J. J.; Nguyen, H. M.* "Iridium-Catalyzed Enantioselective Fluorination of Racemic Secondary Trichloroacetimidates." *J. Am. Chem. Soc.* **2015**, *137*, 11912 – 11915.
- 28) Zhang, Q.;** Mixdorf, J. C.;** Reynders III, G. J.; Nguyen, H. M.* "Rh-Catalyzed Benzylic Fluorination of Trichloroacetimidates with Triethylamine Trihydrofluoride." *Tetrahedron.* **2015**, *71*, 5932 – 5938. (Special Issue for Professor Trost 's 2014 Tetrahedron Award).
- 27) Loka, R.;** McConnell, M. S.;** Nguyen, H. M.* "Studies of Highly-Ordered Heterodiantennary Mannose/Glucose-Functionalized Polymers and Concanavalin A Protein Interactions Using Isothermal Titration Calorimetry." *Biomacromolecules* **2015**, *16*, 4013 – 4021.
- 26) Yu, F.;** McConnell, M. S.;** Nguyen, H. M.* "Scalable Synthesis of Fmoc-Protected GalNAc-Threonine Amino Acid and T_N Antigen via Nickel Catalysis." *Org. Lett.* **2015**, *17*, 2018 – 2021.
- 25) Sletten, E. T.; Svec, R. L.;** Nguyen, H. M.* "Synthesis of a polymerizable, bivalent glycan mimetic of the HIV envelope spike gp120." *Tetrahedron Lett.* **2015**, *56*, 3473 – 3476 (Memorial Issue for Professor Harry Wasserman).
- 24) Arnold, J. S.; Zhang, Q.; Nguyen, H. M.* "Transition-Metal Catalyzed Allylic Substitutions of Trichloroacetimidates." *Eur. J. Org. Chem.* **2014**, 4925 – 4948.
- 23) McKay, M. J.; Park, N. H.;** Nguyen, H. M.* "Stereoselective Formation of Alpha-Glycosyl Ureas: Scope and Mechanism." *Chem. Eur. J.* **2014**, *20*, 8691 – 8701.
- 22) Arnold, J. S.;** Mwenda, E.;** Nguyen, H. M.* "Sequential Amination and Hydroacylation Reactions for the Enantioselective Synthesis of Seven-Membered Heterocycles." *Angew. Chem. Int. Ed.* **2014**, *53*, 3688 – 3692.
- 21) Zhang, Q.; Nguyen, H. M.* "Rhodium-Catalyzed Regioselective Ring Opening of Vinyl Epoxides with Et₃N·3HF: Formation of Allylic Fluorohydrins." *Chem. Sci.* **2014**, *5*, 291 – 296.
- 20) McKay, M. J.; Nguyen, H. M.* "Recent Development in the Synthesis of Glycosyl Ureas." *Carbohydr. Res.* **2014**, *385*, 18 –44.
- 19) McConnell, M. S.; Mensah, E. A.; Nguyen, H. M.* "Stereoselective α-Glycosylation of Myo-Inositols via Nickel Catalysis" *Carbohydr. Res.* **2013**, *381*, 146 –152.
- 18) Arnold, J. S.; Nguyen, H. M.* "Rhodium-Catalyzed Enantioselective Amination of Allylic Trichloroacetimidates." *Synthesis* **2013**, *45*, 2101 – 2108.

- 17) McConnell, M. S.; Yu, F.; Nguyen, H. M.* "Nickel-Catalyzed α -Glycosylation of C(1)-Hydroxyl Group of Inositol Acceptors: A Formal Synthesis of Mycothiol." *Chem. Commun.* **2013**, *49*, 4313 – 4315.
- 16) Arnold, J. S.; Cizio, G. T.;*** Heitz, D. R.;*** Nguyen, H. M.* "Rhodium-Catalyzed Enantioselective Amination of Racemic Secondary Allylic Trichloroacetimidates with *N*-Methyl Anilines." *Chem. Commun.* **2012**, *48*, 11531 – 11533.
- 15) Yu, F.; Nguyen, H. M.* "Studies on the Selectivity Between Nickel-Catalyzed 1,2-*Cis*-2-Amino Glycosylation of Hydroxyl Groups of Thioglycoside Acceptors with C(2)-Substituted Benzylidene *N*-Phenyl Trifluoroacetimidates and Intermolecular Aglycon Transfer of the Sulfide Group." *J. Org. Chem.* **2012**, *77*, 7330 – 7343.
- 14) McKay, M. J.; Nguyen, H. M.* "Recent Advances in Transition Metal-Catalyzed Glycosylation." *ACS Catalysis* **2012**, *2*, 1563 – 1595.
- 13) Arnold, J. S.; Nguyen, H. M.* "Rhodium-Catalyzed Dynamic Kinetic Asymmetric Transformations of Racemic Tertiary Allylic Trichloroacetimidates with Aniline Nucleophiles." *J. Am. Chem. Soc.* **2012**, *134*, 8380 – 8383.
- 12) Topczewski, J. J.; Tewson, T. J.; Nguyen, H. M.* "Iridium-Catalyzed Allylic Fluorination of Trichloroacetimidates." *J. Am. Chem. Soc.* **2011**, *133*, 19318 – 19321.
- 11) Arnold, J. S.; Cizio, G. T.;*** Nguyen, H. M.* "Synthesis of α,α -Disubstituted Allylic Aryl Amines by Rhodium-Catalyzed Amination of Tertiary Allylic Trichloroacetimidates." *Org. Lett.* **2011**, *13*, 5576 – 5578.
- 10) Mensah, E. A.; Yu, F.; Nguyen, H. M.* "Nickel-Catalyzed Stereoselective Glycosylation with C(2)-*N*-Substituted Benzylidene D-Glucosamine and Galactosamine Trichloroacetimidates for the Formation of 1,2-*cis*-2-Amino Glycosides. Applications to the Synthesis of Heparin Disaccharides, GPI Anchor Pseudodisaccharides, and α -GalNAc." *J. Am. Chem. Soc.* **2010**, *132*, 14288 – 14302.
- 9) Arnold, J. A.; Stone, R. F.;*** Nguyen, H. M.* "Rhodium-Catalyzed Regioselective Amination of Secondary Allylic Trichloroacetimidates with Unactivated Aromatic Amines." *Org. Lett.* **2010**, *12*, 4580 – 4583.
- 8) Mensah, E. A.; Nguyen, H. M.* "Nickel-Catalyzed Stereoselective Formation of α -2-Deoxy-2-Amino-Glycosides." *J. Am. Chem. Soc.* **2009**, *131*, 8778 – 8780.
- 7) McKay, M. J.; Naab, B. D.;*** Mercer, G. J.; Nguyen, H. M.* "Selective Formation of β -O-Aryl Glycosides in the Absence of the C(2)-Ester Neighboring Group." *J. Org. Chem.* **2009**, *74*, 4705 – 4711.
- 6) Park, N. H.;*** Nguyen, H. M.* "Stereoselective Rearrangement of Glycosyl Trichloroacetimidates: Application to the Synthesis of Alpha-Glycosyl Ureas." *Org. Lett.* **2009**, *11*, 2433 – 2436.
- 5) Mensah, E. A.; Azzarelli, J. A.;*** Nguyen, H. M.* "Palladium-Controlled β -Selective Glycosylation in the Absence of the C(2)-Ester Participatory Group." *J. Org. Chem.* **2009**, *74*, 1650 – 1657.
- 4) Mercer, G. J.; Yang, J.; McKay, M. J.; Nguyen, H. M. "Palladium(II)-Catalyzed Rearrangement of Glycal Trichloroacetimidates: Application to the Stereoselective Synthesis of Glycosyl Ureas." *J. Am. Chem. Soc.* **2008**, *130*, 11210 – 11218.
- 3) Yang, J.; Cooper-Vanosdell, C.;*** Mensah, E. A.; Nguyen, H. M.* "Cationic Palladium(II)-Catalyzed Stereoselective Glycosylation with Alpha-Glycosyl Trichloroacetimidates" *J. Org. Chem., Featured Article*, **2008**, *73*, 794 – 800.
- 2) Yang, J.; Mercer, G. J.; Nguyen, H. M.* "Palladium-Catalyzed Glycal Imidate Rearrangement: Stereoselective Formation of Alpha- and Beta-Glycosyl Trichloroacetamides." *Org. Lett.* **2007**, *9*, 4231 – 4234.
- 1) Schuff, B. P, Mercer, G. J, Nguyen, H. M.* "Palladium-Catalyzed Stereoselective Formation of Alpha-O-Glycosides." *Org. Lett.* **2007**, *9*, 3173 – 3176.

Supervised Career:

1. Trost, B. M.;* Nguyen, H. M.; Koradin, C. "Synthesis of a Tricyclic Core of Rameswaralide." Invited a Special Issue in Honor of Professor Harry Wasserman, *Tetrahedron. Lett.* **2011**, *52*, 2033 – 2036.
2. Nguyen, H. M.; Chen, Y.; Duron, S. G.; Gin, D. Y.* "Sulfide-Mediated Dehydrative Glycosylation." *J. Am. Chem. Soc.* **2001**, *123*, 8766 – 8772.
3. Nguyen, H. M.; Poole, J. L.; Gin, D. Y.* "Chemoselective Iterative Dehydrative Glycosylation." *Angew. Chem. Int. Ed.* **2001**, *40*, 414 – 417.

Lecture and Conference Presentations

Invited Talks

1. 07/2007 Tufts University, Department of Chemistry, Medford, MA
2. 10/2007 University of Toledo, Department of Chemistry, Toledo, OH
3. 12/2007 University of Colorado, Department of Chemistry, Boulder, CO
4. 09/2008 GlaxoSmithKline, Hamilton, MT
5. 01/2009 University of Iowa, Department of Chemistry, Iowa City, IA
6. 02/2009 University of Alabama, Department of Chemistry, Birmingham, AL
7. 04/2009 Rensselaer Polytechnic Institute, Biocatalysis Center, Troy, NY
8. 05/2009 San Jose State University, Department of Chemistry, San Jose, CA
9. 08/2009 Acora Pharmaceutical Company, Somerville, MA
10. 11/2009 Wayne State University, Department of Chemistry, Detroit, MI
11. 01/2010 West Virginia University, Department of Chemistry, Morgantown, WV
12. 03/2010 ACS Young Glycobiology Investigators Symposium, San Francisco, CA
13. 04/2010 Vanderbilt University, Department of Chemistry, Nashville, TN
14. 09/2010 Midwest Carbohydrate Symposium, Toledo, OH
15. 11/2010 Brown University, Department of Chemistry, Providence, RI
16. 11/2010 University of Connecticut, Department of Chemistry, Storrs, CT
17. 11/2010 Macalester College, Department of Chemistry, St. Paul, MN
18. 03/2011 Merck Research Pharmaceutical Company, Rahway, NJ
19. 03/2011 University of Iowa College of Pharmacy, Iowa City, IA
20. 06/2011 Carbohydrate Gordon Conference, Colby College, NH
21. 08/2011 ACS Academic Young Investigator Symposium, Denver, CO
22. 09/2011 University of California at Santa Barbara, Department of Chemistry, Santa Barbara, CA
23. 09/2011 University of California at Irvine, Department of Chemistry, Irvine, CA
24. 09/2011 Indiana University, Department of Chemistry, Bloomington, IN
25. 11/2011 Northwestern University, Department of Chemistry, Evanston, IL
26. 12/2011 Iowa State University, Department of Chemistry, Ames, IA
27. 02/2012 University of Illinois at Urbana-Champaign, Department of Chemistry, Urbana, IL
28. 02/2012 University of Illinois at Chicago, Department of Chemistry, Chicago, IL
29. 02/2012 University of Massachusetts at Amherst, Department of Chemistry, Amherst, MA
30. 03/2012 Tufts University, Department of Chemistry, Medford, MA
31. 03/2012 Northeastern University, Department of Chemistry, Boston, MA
32. 03/2012 University of Texas, Department of Chemistry and Biochemistry, Austin, TX
33. 03/2012 Texas A&M University, Department of Chemistry, College Station, TX
34. 03/2012 ACS Division of Carbohydrate and Organic Chemistry, San Diego, CA
35. 04/2012 New York University, Department of Chemistry, New York City, NY
36. 04/2012 Sloan Kettering Center, Department of Pharmacology and Chemistry, New York City, NY
37. 05/2012 Canadian Chemical Society, Division of Carbohydrate, Calgary, CA
38. 05/2012 University of California at Davis, Department of Chemistry, Davis, CA
39. 05/2012 Theravance Pharmaceutical Company, San Francisco, CA
40. 07/2012 International Young Investigator Carbohydrate Award, Madrid, Spain
41. 07/2012 International Carbohydrate Symposium, Madrid, Spain
42. 08/2012 ACS Division of Carbohydrate, Philadelphia, PA
43. 09/2012 University of Iowa, Department of Chemistry, Iowa City, IA
44. 09/2012 University of Pennsylvania, Department of Chemistry, Philadelphia, PA

45. 09/2012 Rutgers University, Department of Chemistry, New Brunswick, NJ
46. 10/2012 Purdue University, Department of Chemistry, West Lafayette, IN
47. 11/2012 University of Wisconsin, College of Pharmacy, Madison, WI
48. 01/2013 University of Pittsburg, Department of Chemistry, Pittsburg, PA
49. 03/2013 University of North Carolina, Department of Chemistry, Chapel Hill, NC
50. 04/2013 Pennsylvania State University, Department of Chemistry, University Park, PA
51. 09/2013 Boston College, Department of Chemistry, Chestnut Hill, MA
52. 09/2013 SUNY-Stony Brook, Department of Chemistry, Stony Brook, NY
53. 11/2013 Baylor University, Department of Chemistry and Biochemistry, Waco, TX
54. 11/2013 ACS Southwest Regional Meeting, Waco, TX
55. 12/2013 University of Kansas, Department of Chemistry, Lawrence, KS
56. 01/2014 27th International Carbohydrate Symposium, Bangalore, India
57. 01/2014 Frontiers in Chemistry and Biology of Carbohydrates, Indian Institute of Science, Pune, India
58. 01/2014 Indian Institute of Technology at Bombay, Mumbai, India
59. 03/2014 New Directions in Carbohydrate Synthesis, ACS Meeting in Dallas
60. 04/2014 University of Kansas, Department of Chemistry, Lawrence, KS
61. 06/2014 ACS Northwest Regional Meeting, Missoula, MT
62. 08/2014 Domino and Rearrangement Reactions in Carbohydrates, ACS Meeting in San Francisco
63. 08/2014 Current Topics in Glycoscience, ACS Meeting in San Francisco
64. 10/2014 University of Massachusetts, Department of Chemistry, Lowell, MA
64. 11/2014 Brandeis University, Department of Chemistry, Waltham, MA
65. 11/2014 Corden Pharmaceutical Company, Woburn, MA
66. 11/2014 University of Copenhagen, Department of Chemistry, Copenhagen, Denmark
67. 11/2014 Technical University of Denmark, Department of Chemistry, Lyngby, Denmark
69. 02/2015 Northwestern University, Department of Chemistry, Evanston, IL
70. 03/2015 Frontiers in Glycoscience Symposium, ACS Meeting in Denver, CO
71. 05/2015 Loyola University of Chicago, Department of Chemistry, Chicago, IL
72. 12/2015 Chemical Glycosylation Symposium, Pacificchem, Honolulu, Hawaii
73. 12/2015 Fluorine Chemistry Symposium, Pacificchem, Honolulu, Hawaii
74. 03/2016 University of Texas at El Paso, Department of Chemistry, El Paso, TX
75. 04/2016 University of Nebraska, Department of Chemistry, Lincoln, TX
76. 04/2016 USDA-National Animal Disease Center, Ames, IA
77. 06/2016 NIH Glycoscience Symposium, Bethesda, MD
78. 10/2016 University of South Florida, Department of Chemistry, Tampa, FL
79. 10/2016 University of Maryland, Department of Chemistry, College Park, MD
80. 11/2016 University of Missouri, Department of Chemistry and Biochemistry, Saint Louis, MO
81. 11/2016 Washington University, Department of Chemistry, Saint Louis, MO
82. 11/2016 SUNY – Stony Brook, Department of Chemistry, Stony Brook NY
83. 03/2017 University of Florida, Department of Chemistry, Gainesville, FL
84. 04/2017 University of Texas at El Paso, Department of Chemistry, El Paso, TX
85. 05/2017 Wayne State University, Department of Chemistry, Detroit, MI
86. 08/2017 NIH Glycoscience Symposium, Bethesda, MD
87. 08/2017 Frontiers in Carbohydrate Symposium, ACS Meeting in DC
88. 10/2017 ACS Midwest Regional Meeting, Lawrence, KS.

Poster Presentations

1. 06/2007 Carbohydrate Gordon Conference, Tilton, NH
2. 07/2007 Organic Reactions and Processes Gordon Conference, Smithfield, RI
3. 07/2008 Stereochemistry Gordon Conference, Newport, RI
4. 07/2008 Organic Reactions and Processes Gordon Conference, Smithfield, RI
5. 06/2009 Carbohydrate Gordon Conference, Tilton, NH
6. 07/2009 Natural Products Gordon Conference, Tilton, NH
7. 07/2010 Organic Reactions and Processes Gordon Conference, Smithfield, RI
8. 06/2011 Carbohydrates Gordon Conference, Waterville, ME
9. 07/2011 Natural Products Gordon Conference, Smithfield, RI

10. 06/2012 Heterocycles Gordon Conference, Newport, RI
11. 06/2013 Carbohydrates Gordon Conference, Dover, VT
12. 06/2014 Heterocycles Gordon Conference, Newport, RI

Student and Postdoc Posters and Presentations

43. 06/2017 Eric Sletten, Carbohydrate Gordon Conference, Mt. Snow, VT
42. 06/2017 Ravi Loka, Carbohydrate Gordon Conference, Mt. Snow, VT
41. 04/2017 Ravi Loka, Biotechnology-Pharmaceutical Symposium, University of Illinois, Chicago, IL
40. 04/2017 Eric Sletten, Biotechnology-Pharmaceutical Symposium, University of Illinois, Chicago, IL
39. 04/2017 Alexandre Sorlin, Biotechnology-Pharmaceutical Symposium, University of Chicago
38. 10/2016 Fei Yu, Midwest Carbohydrate Symposium, Michigan State University, MI
37. 06/2016 Fei Yu, International Carbohydrate Symposium, New Orleans, LA
36. 04/2016 Ravi Loka, Biotechnology-Pharmaceutical Symposium, University of Illinois, Chicago, IL
35. 04/2016 Eric Sletten, Biotechnology-Pharmaceutical Symposium, University of Illinois, Chicago, IL
34. 03/2016 Michael Vinyard, ACS National Meeting in San Diego, CA
33. 10/2015 Eric Sletten, Midwest Carbohydrate Symposium, Cleveland State Univ., OH
32. 06/2015 Michael Vinyard, ACS National Organic Symposium
31. 10/2014 Ravi Loka, Midwest Carbohydrate Symposium, University of Michigan, MI
30. 10/2014 Mathew McConnell, Midwest Carbohydrate Symposium, University of Michigan, MI
29. 10/2014 Eric Sletten, Midwest Carbohydrate Symposium, University of Michigan, MI
28. 10/2014 Riley Svec, Pfizer Pharmaceutical Company, Groton, CT
27. 03/2014 Jeff Arnold, ACS National Meeting, Dallas, TX
26. 12/2013 Matthew McConnell, Western Illinois University
25. 06/2013 Jeff Arnold, Heterocycles Gordon Conference
24. 06/2013 Matthew McKay, Carbohydrates Gordon Conference
23. 06/2013 Matthew McConnell, Carbohydrates Gordon Conference
22. 04/2013 Kathleen White, ACS Meeting in New Orleans
21. 11/2012 Kathleen White, UT Southwestern Medical Center, Dallas, TX, (McKnight Finalist Poster)
20. 10/2012 Jeff Arnold, Midwest ACS Regional Meeting, Missouri
19. 09/2012 Drew Heitz, Pfizer Pharmaceutical Company, Groton, CT, (ACS SURF, Poster)
18. 08/2012 Matthew McKay, ACS National Meeting, Philadelphia, PA, (Poster)
17. 08/2012 Matthew McConnell, ACS National Meeting, Philadelphia, PA, (Poster)
16. 08/2012 Jeffrey Arnold, ACS National Meeting, Philadelphia, PA, (Poster)
15. 07/2012 Joseph Topczewski, Stereochemistry Gordon Conference, Newport, RI, (Poster)
14. 05/2012 Gregory Cizio, University of Iowa, Department of Chemistry Award (Poster)
13. 05/2012 Kathleen White, University of Iowa, Department of Chemistry Award (Poster)
12. 09/2011 Enoch Mensah, University of Michigan, Ann Arbor, MI (Invited Postdoctoral Talk)
11. 06/2011 Jeffrey Arnold, National Organic Symposium, Princeton, NJ, (Poster)
10. 06/2011 Matthew McKay, National Organic Symposium, Princeton, NJ, (Poster)
9. 06/2011 Enoch Mensah, Carbohydrates Gordon Conference, Waterville, ME, (Poster)
8. 03/2010 Joseph Azzarelli, ACS National Meeting, San Francisco, CA (Poster)
7. 09/2009 Enoch Mensah, ACS Midwest Meeting, Iowa City, IA, (Invited Talk)
6. 09/2009 Jeff Arnold, ACS Midwest Meeting, Iowa City, IA (Poster)
5. 09/2009 Matthew McKay, ACS Midwest Meeting, Iowa City, IA (Poster)
4. 06/2009 Enoch Mensah, National Organic Symposium, Boulder, CO (Poster)
3. 06/2009 Jeffrey Arnold, National Organic Symposium, Boulder, CO (Poster)
2. 06/2009 Matthew McKay, National Organic Symposium, Boulder, CO (Poster)
1. 06/2009 Nathan Park, National Organic Symposium, Boulder, CO (Poster)

TEACHING AND RESEARCH GROUP

Summary of Teaching Assignments at the University of Iowa

<u>Semester/Year</u>	<u>Course No. and Title</u>	<u>Enrollment</u>	<u>Median</u>
Spring 2017	2220 Organic Chemistry II	229	5.50/6.00
Fall 2016	4372 Advanced Organic Chemistry	18	5.83/6.00
Fall 2015	5328 Mechanism of Organic Reactions	16	5.59/6.00
Fall 2015	4372 Advanced Organic Chemistry	15	6.00/6.00
Fall 2014	4:172 Advanced Organic Chemistry	23	5.91/6.00
Spring 2014	4:124 Organic Chemistry II for Majors	58	5.00/6.00
Fall 2013	4:172 Advanced Organic Chemistry	33	5.83/6.00
Spring 2013	4:124 Organic Chemistry II for Majors	34	5.75/6.00
Fall 2012	4:172 Advanced Organic Chemistry	52	5.80/6.00
Spring 2012	4:124 Organic Chemistry II for Majors	43	5.76/6.00
Fall 2011	4:172 Advanced Organic Chemistry	34	5.81/6.00
Spring 2011	4:124 Organic Chemistry II for Majors	42	5.93/6.00
Fall 2010	4:141 Organic Chemistry Laboratory	128	5.71/6.00
Spring 2010	4:124 Organic Chemistry II for Majors	44	5.88/6.00
Fall 2009	4:141 Organic Chemistry Laboratory	152	5.29/6.00

Current Group Members

	<u>Student Names</u>	<u>Years at Iowa</u>	<u>Position</u>
1.	Dr. Fei Yu		Research Associate
2.	Dr. Ravi Loka		Postdoctoral Fellow
3.	Edo Mwenda	5 th Year	Graduate Student
4.	Eric Sletten	4 rd Year	Graduate Student
5.	Alisa Fairweather	3 rd Year	Graduate Student
6.	Anh Lu	3 rd Year	Graduate Student
7.	Jason Mixdorf	2 st Year	Graduate Student
8.	Jalen Dickson	2 st Year	Graduate Student
9.	Alexandre Sorlin	2 st Year	Graduate Student
10.	Greg Jenson	1 st Year	Graduate Student
11.	Grant Forsythe	1 st Year	Graduate Student
12.	Grant Shivers	1 st Year	Graduate Student
13.	Eric Brown	1 st Year	Graduate Student
14.	Jiayi Li	Senior	Undergraduate Student

Alumni

	<u>Student Names</u>	<u>Group Title</u>	<u>Dates in Group</u>	<u>Current Position</u>
1.	Enoch Mensah	Graduate Student	Ph.D. – 05/2012	Assist. Prof. Indiana Univ. Southeast
2.	Matthew McKay	Graduate Student	Ph.D. – 05/2014	Patent Agent, Cabot Microelectronics
3.	Jeffrey Arnold	Graduate Student	Ph.D. – 05/2014	Senior Scientist, Corden Pharm
4.	Matthew McConnell	Graduate Student	Ph.D. – 08/2015	Postdoc, Northwestern University
5.	Qi Zhang	Graduate Student	Ph.D. – 05/2016	Postdoc, Washington University
5.	Patrick Ndungu	Graduate Student	M.S. – 05/2013	Catalyst, TX
6.	Alex Suihkonen	Graduate Student	M.S. – 05/2012	3M Analytical Group, MN
7.	Brandon Schuff	Graduate Student	M.S. – 05/2007	Pfizer, Groton, CT
1.	Michael Vinyard	Undergraduate	10/2012 – 05/2016	Graduate Student at Harvard
1.	Riley Svec	Undergraduate	08/2012 – 05/2015	Graduate Student at Illinois
2.	Kathleen White	Undergraduate	08/2011 – 05/2013	Graduate Student at MIT
3.	Drew Heitz	Undergraduate	08/2011 – 05/2013	Graduate Student at UPenn
4.	Nathan Oldenhuis	Undergraduate	08/2011 – 05/2012	Graduate Student at UC-Irvine

5.	Gregory Cizio	Undergraduate	09/2010 – 07/2012	Scientist at Gilead
6.	Robert Stone	Undergraduate	05/2010 – 08/2010	Graduate Student at Illinois
7.	Joseph Azzarelli	Undergraduate	01/2008 – 05/2010	Graduate Student at MIT
8.	Benjamin Naab	Undergraduate	09/2008 – 05/2010	Senior Scientist at Dow Chemical
9.	Nathan Park	Undergraduate	09/2007 – 07/2009	Postdoc at IBM, San Jose, CA
1.	Russ Pesavento	Visiting Scientist	08/2012 – 05/2016	Research Prof. at UI-Chicago
2.	Joseph Topczewski	Visiting Student	01/2011 – 01/2012	Assist. Prof. Univ. of Minnesota
3.	Gregory Mercer	Postdoc Fellow	01/2007 – 12/2008	Corden Pharmaceutical Company
4.	Jaemoon Yang	Postdoc Fellow	08/2007 – 08/2008	Cambridge Isotope Lab, MA

Student Awards and Fellowships

Fellowships

22. Jason Mixdorf, Graduate NRC Fellowship, 2016
21. Edo Mwenda, Graduate College Summer Fellowship, 2016
20. Eric Sletten, Graduate College Summer Fellowship, 2016
19. Eric Sletten, Graduate College Post-Comp Fellowship, 2016
18. Michael Vinyard, Big Ten Graduate Fellowship, 2015
17. Riley Svec, ACS Division Organic Chemistry SURF Fellowship, 2014
16. Michael Vinyard – NASA Scholarship, 2013
15. Kathleen White – NSF Graduate Fellowship, 2013
13. Matt McConnell – Graduate Summer Fellowship, 2103
12. Qi Zhang – Graduate Summer Fellowship, 2013
11. Drew Heitz – ACS Division of Organic Chemistry SURF Fellowship, 2012
10. Kathleen White – MIT Amgen Scholar Summer Fellowship, 2012
9. Nathan Park – NSF Graduate Fellowship, 2011
8. Enoch Mensah – Graduate College Summer Fellowship, 2011
7. Jeff Arnold – Graduate College Summer Fellowship, 2011
6. Matthew McKay – Graduate College Summer Fellowship, 2011
5. Benjamin Naab – NSF Graduate Fellowship, 2010
4. Joseph Azzarelli – ACS Division of Organic Chemistry SURF Fellowship, 2009
3. Nathan Park – Georgia Institute of Technology REU Program, 2009
2. Benjamin Naab – Sloan Kettering Institute Summer Fellowship, 2009
1. Joseph Azzarelli – MIT Amgen Scholar Summer Fellowship, 2008

Awards

23. Qi Zhang - Lynn Anderson Research Excellence Award, 2016
22. Michael Vinyard, ACS Division of Organic Chemistry Senior Award, 2016
21. Jiayi Li, Junior Chemistry Alumni Award, 2016
20. Jason Mixdorf, NSF Pre-Doctoral Fellowship Honorable Mention, 2016
19. Michael Vinyard, Elected to Phi Beta Kappa Society, 2016
18. Riley Svec, ACS Division of Organic Chemistry Senior Award, 2015
17. Jeff Arnold - Lynn Anderson Research Excellence Award, 2013
16. Matthew McConnell – Glenn Rhodes Wilson Memorial Fellow, 2013
15. Edo Mwenda – McCloskey Fellow, 2013
14. Drew Heitz – Undergraduate Outstanding Senior Award, 2013
13. Kathleen White – ACS Division of Organic Chemistry Graduating Senior Award, 2013
12. Riley Svec – Undergraduate Outstanding Sophomore Award, 2013
11. Gregory Cizio – Ken Sando Scholarship, 2012
10. Nathan Oldenhuis – Chemistry Alumni Award, 2012
9. Kathleen White – Russell K. Simms Scholarship, 2012
8. Drew Heitz – Donald and Margaret Burton Organic Scholarship, 2012
7. Joseph Azzarelli – Rhodes Scholarship Finalist, 2011
6. Enoch Mensah – Lynn Anderson Research Excellence Award, 2011
5. Greg Cizio – Viksnins, Harris and Padys Award, 2011

4. Nathan Park – NSF Predoctoral Fellowship, 2011
3. Benjamin Naab – NSF Predoctoral Fellowship, 2010
2. Joseph Azzarelli – Barry Goldwater Scholarship, 2009
1. Benjamin Naab – Barry Goldwater Scholarship, 2009

SERVICE

Federal Government Grant Review

2006 – 2007	Ad hoc Reviewer, NSF, Division of Chemistry
10/2008	NSF Organic Synthesis Panelist, Division of Chemistry
10/2011	NSF Synthesis Proposal Panel Reviewer, Division of Chemistry
2011	ACS-PRF Proposal Reviewer
2012	ACS-PRF Proposal Reviewer
2012	NIH, Physiological Chemistry Study Section, Special Emphasis Panel
2012	NIH, K-99 Panel Review
2015	NSF Panelist for Center of Chemical Evolution
2015	NIH Ad Hoc Member, SBCA Study Section
06/2016	NIH Ad Hoc Member, BCMB Study Section
10/2016	NIH Ad Hoc Member, SBCA Study Section

Editorship

2016 – present	Associate Editor for Journal - the Frontiers in Chemistry: Organic Chemistry
2017 – 2018	Guest Editor for Carbohydrate Research Virtual Special Issue entitled “Recent Advances in Chemical and Enzymatic Catalysis for Carbohydrate Reaction Development”

Journal Reviews

2006 – present	Organic Letters
	Angewandte Chemie International Edition
	Journal of American Chemical Society
	Journal of Organic Chemistry
	Carbohydrate Research
	Chemistry – A European Journal
	Tetrahedron
	Tetrahedron Letters
	Chemical Sciences
	Nature Chemistry
	Sciences
	Journal of Carbohydrate Chemistry
	ACS Catalysis
	Nature
	Journal of Fluorine Chemistry
	Chemical Communications
	Organic and Biomolecular Chemistry
	European Journal of Organic Chemistry

Departmental Activities

2009 – 2015	Served on Chemistry Graduate Admissions Committee
2009 – 2015	Served on Chemistry Graduate Recruiting Committee
2009 – present	Invited Speakers for Organic Division Seminar and Departmental Colloquium
2010	Organized the Wawzonek Lectureship (Speaker: Dale Boger)
2010	Organized the Organic Division Seminar

2011– 2012	Served on the Departmental Website Redesign Committee
2013	Organized the Organic Division Seminar
2014	Organized the Wawzonek Lectureship (Speaker: Gary Molander)
2011– 2015	Served on the NMR/Mass Spectroscopy Committee
2011 – present	Serve on Graduate Student Thesis Committee
2015 – present	Serve on the Departmental Colloquium Committee
2014 – 2016	Served on the Departmental Instrument Facilities Committee
2015 – 2016	Served as the Chair of Departmental Instrument Facilities
2016	Organized the Wawzonek Lectureship (Speaker: Rich Silverman)
2016	Served on Faculty Review Committee for Prof. Nicole Becker
2016	Served on Faculty Salary Committee
2016 – 2017	Serve on Graduate Student Awards/Fellowship Committee
2016 – 2017	Serve on Faculty and Staff Awards/Honors Committee
2017	Serve on Faculty Review Committee for Prof. Scott Daly
2017	Organized the Wawzonek Lectureship (Speaker: Veronique Gouverneur)

University Activities

2009 – 2014	Served on Biosciences Program Admissions Committee
2009 – 2014	Served on Biosciences Program Recruiting Committee
2013 – present	Serve on Diversity and Sloan Fellowship Committee
2013 – present	Serve as Faculty Sloan Mentor
2014	Served on Undergraduate Commencement Speaker Selection Committee
2014	Participated in the University Commencement Ceremony
2015	Participated in the University Commencement Ceremony
2015 – 2016	Participated in Student Success Task Force Committee Charged by the Office of the Provost
2016	Worked as Co-Director to apply for an institutional funding for supporting undergraduate students to participate in research through Beckman Scholars Program
2016	Worked to establish the University NSF Center of Glycoscience Phase I through collaboration with UC-Davis.
2017	Participated in recruiting MD-PhD students for College of Medicine.

National and International Activities

07/2011 – 03/2012	Organized and Raised Funding for the Symposium in Honor of the late Professor David Y. Gin at the ACS Meeting, San Diego, CA, 03/2012
08/2014– present	Executive Committee Member, ACS Division of Carbohydrate Chemistry
05/2013	Served on Graduate Student Ph.D. Defense Thesis Committee at Institute of Chemical Science, Pune, India
11/2013	Served on Graduate Student Ph.D. Defense Thesis Committee at University of Copenhagen, Denmark
08/2014	External reviewer for tenure promotion for a chemistry faculty member at Texas State University
03/2014	Organized New Direction in Carbohydrate Synthesis Symposium at the ACS Meeting in Dallas, Texas
02/2017	External reviewer for tenure promotion for a faculty member at Zayed University, University College, Abu Dhabi
03/2017	External reviewer for Austrian Erwin Schrodinger postdoctoral fellowships