

Peter Norris B.Sc., Ph.D.

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Born	May 1965, Whiston, Lancashire, England (British Subject, US Resident)	
Education	Salford University, England The Ohio State University	B.Sc. (Honours) in Chemistry 1986 Ph.D. in Organic Chemistry 1992

Professional Experience

- 2004-** Professor of Chemistry, Department of Chemistry, Youngstown State University
- 2000-04** Associate Professor of Chemistry, Department of Chemistry, Youngstown State
- 1996-00** Assistant Professor of Chemistry, Department of Chemistry, Youngstown State
- 1993-96** Postdoctoral Fellow, American University, Washington, DC (Prof. Horton)
- 1992-93** Visiting Lecturer, Organic Chemistry, Ohio Wesleyan University, Delaware, OH

Awards

- 2007** YSU School of Graduate Studies and Research award for success in external funding
- 2007** NEOUCOM graduating class award for excellence in teaching (2006-07)
- 2006** NEOUCOM graduating class award for excellence in teaching (2005-06)

Recent Funding

- National Science Foundation (Chemical Research Instrumentation and Facilities) Grant (with A.D. Hunter and others), **2007-2010**
\$475,000, "CAMRA-YSU, Cyber-Accessible Magnetic Resonance at YSU"
- American Chemical Society Petroleum Research Fund Type B Grant, **2006-2010**
\$50,000, "Stereospecific Carbenoid Insertions on Furanoses as a Route to Branched-chain Sugars, C-Glycosides, and Fused Heterocycles"
- PACER Proposal for YSU Center for Biotechnology (with D. Fagan and J. Smiley), **1999-2006**
\$130,000, "YSU Center for Biotechnology"
- National Institutes of Health (Academic Research Enhancement Award) Grant, **2003-2007**
\$132,000, "Synthesis of Glycomimetics of the Capsular Polysaccharide Aminosugars of *S. aureus* Types 5 and 8"

University Service

- STEM College Dean Search Committee 2006-07
- University Research Professorship Committee 2006-07, 2007-08, 2010-11
- University Research Council Awards Committee 2004-05, 2007-08
- Chair's Sabbatical Committee 2007
- Center of International Student Programs Scholarship Committee 2007-11
- Diversity Awards Committee 2008-10
- **Acting Chair of Geological & Environmental Sciences 2008-10**
- **Acting Director of Environmental Studies program 2009-10**

College Service

- Goldwater Scholarship Committee, 1999-02
- Arts and Sciences Dean's Advisory Committee, 1999-01
- College of Arts and Sciences Promotion Committee 2001-2002
- College of Science, Technology, Engineering, & Math Promotion Committee 2007-2008
- STEM Promotion Appeals Committee 2009
- STEM Graduate Studies Committee 2009-10 (GES representative)
- STEM Web Committee (Chair 2010)

Department Service

- Chemistry Department Pre-Pharmacy Advisor 2009-present
- Department Seminar Coordinator 1999-00, 2000-01
- Interim Graduate Program Director January -July 2006
- Department Graduate Admissions 2005-07, 2008-10
- PRDAC, Safety, Advisory committees
- Analytical/Organic Faculty Search Committee Chair 2005-06
- Physical Chemistry Faculty Search Committee 2004-05
- Biochemistry Faculty Search Committee 2006-07
- BioOrganic Faculty Search Committee Chair 2007-08
- GES External Chair Search Committee Chair 2008-10

Other Service

- Webmaster, American Chemical Society Carbohydrate Division 1999-2009
- Boardman Local Schools EXCEL program mentor 2006-present
- American Chemical Society Project SEED Mentor, 1997-present
- Editor for Annual Reports in Organic Synthesis, 2001-04
- Review grant proposals for the American Chemical Society Petroleum Research Fund, Research Corporation, and the National Science Foundation
- Review Manuscripts for *Bioorganic Medicinal Chemistry*, *Bioorganic Medicinal Chemistry Letters*, *Carbohydrate Research*, *Tetrahedron Letters*, *Organic Letters*, *Journal of Organic Chemistry*, *Synthesis*, *Journal of Carbohydrate Chemistry*
- Occasional Chair for sessions at American Chemical Society Meetings, including Spring 2010 meeting in San Francisco (Carbohydrate Division)
- Pre-Pharmacy advisor, Department of Chemistry
- Thesis committee member for 10 YSU MS students (non-Norris group)

Proposals Submitted While at YSU

- National Science Foundation (RUI) proposal, “Novel Approaches to N-Heterocycles, **2011-2014** **\$200,000** – **pending**.
- YSU University Research Council, “Synthesis and Study of Bacillithiol Analogs, **2010-2011** **\$5,000**, N.V. Stourman (P.I.) – **Funded**
- National Institutes of Health (Academic Research Enhancement Award) Grant, **2007-2010** **\$180,000**, “Synthesis of Glycomimetics of the Capsular Polysaccharide Aminosugars of *S. aureus* Types 5 and 8” – **Not Funded**
- National Science Foundation Chemical Research Instrumentation and Facilities, **2007-2010** **\$475,000**, “CAMRA-YSU, Cyber-Accessible Magnetic Resonance at YSU” – **Funded**
- National Science Foundation Major Research Instrumentation Program, **2006-2009** **\$892,000**, “Acquisition of a 600 MHz NMR Spectrometer” – **Not Funded**
- American Chemical Society Petroleum Research Fund Type B Grant, **2006-2009** **\$50,000**, “Stereospecific Carbenoid Insertions on Furanoses as a Route to Branched-chain Sugars, C-Glycosides, and Fused Heterocycles.” – **Funded**
- PACER Proposal for YSU Center for Biotechnology (with D. Fagan and J. Smiley), **2003** **\$15,000**, “Supplement to YSU Center for Biotechnology” – **Funded**
- National Institutes of Health (Academic Research Enhancement Award) Grant, **2003-2007** **\$132,000**, “Synthesis of Glycomimetics of the Capsular Polysaccharide Aminosugars of *S. aureus* Types 5 and 8” – **Funded**
- ACS Summer Fellowship for Visiting Faculty from the ACS-PRF program, **2002** **\$8,000**, “Synthesis of C-Disaccharides Using the Dithiane Approach.” – **Not Funded**
- Research Corporation Cottrell College Science Award, **2001-2003** **\$53,000**, “Synthesis of C-Disaccharides Using Dithiane Chemistry” – **Funded**
- National Institutes of Health (Academic Research Enhancement Award) Grant, **2000-2003** **\$123,000**, “Synthesis of Aminosugar Components of the Capsular Polysaccharides of *S. Aureus* Types 5 and 8” – **Not Funded**
- PACER Proposal for YSU Center for Biotechnology (with D. Fagan and J. Smiley), **2000** **\$95,000**, “YSU Center for Biotechnology” – **Funded**
- Research Corporation Cottrell College Science Award, **1999-2001** **\$30,000**, “Synthesis and Utility of Vinylidene-1,1-bis(phenylsulfones)” – **Not Funded**
- American Chemical Society Petroleum Research Fund Type G Grant, **1999-2001** **\$25,000**, “Synthesis of C-Glycosides from D-Glucose-derived Bis(phenylsulfones)” – **Funded**
- Research Corporation Cottrell College Science Award, **1998-2000** **\$28,000**, “Synthesis and Evaluation of Novel Glycosidase Inhibitors” – **Not Funded**
- OhioLink Small Grant Program (with T.D. Kim, L.A. McAllister and C. Cardwell), **1998** **\$5000**, “A Website for Chemistry” – **Funded**
- National Science Foundation Research at Undergraduate Institutions (with TD Kim), **1997-2000** **\$175,000**, “Design, Synthesis and Biological Evaluation of Novel Glycosidase Inhibitors” – **Not Funded**
- National Science Foundation Technology Grant (J.A. Jackson PI and others), **1997-1999** **\$100,000**, “A Computer Laboratory for Chemistry” – **Not Funded**
- Ohio Board of Regents Technology Initiative (J.A. Jackson PI and others), **1997** **\$90,000**, “A Computer Laboratory for Chemistry” – **Funded**

Publications & Structure Communications

1. "Synthesis of 1,5-dideoxy-1,5-imino-D-xylonolactam *via* acid-catalyzed intramolecular Schmidt rearrangement," **P. Norris**, D. Horton, and B.R. Levine, *Tetrahedron Lett.* **1995**, *36*, 7811-7814.
2. "Characterization and interconversions of 2-S-ethyl-2-thio-D-mannose diethyl dithioacetal and the facile interconversion of 2-thio-D-mannopyranose derivatives," D. Horton, **P. Norris**, and B. Berrang, *Carbohydr. Res.* **1996**, *283*, 3783-3793.
3. "Cycloaddition of cyclopentadiene to 3-deoxy-1,2:5,6-di-O-isopropylidene- α -D-erythro-hex-3-enofuranose: synthesis and representative chemistry of 1,6-anhydro-2,3-dideoxy- α -D-glycero-hex-2-enopyran-4-ulose ("isolevoglucosenone")," D. Horton, J.P. Roski, and **P. Norris**, *J. Org. Chem.* **1996**, *61*, 3783-3793.
4. "Intramolecular 1,3-dipolar cycloadditions of 5-azido-5-deoxyaldopentose ketene dithioacetal bis-(sulfones) in the synthesis of imino sugar analogs," **P. Norris**, D. Horton, and D.E. Giridhar, *Tetrahedron Lett.* **1996**, *37*, 3925-3928.
5. "Cycloaddition of acetylenes with 5-azido-5-deoxy-D-aldopentose derivatives: synthesis of triazole reversed nucleoside analogs," **P. Norris**, D. Horton, and B.R. Levine, *Heterocycles* **1996**, *43*, 2643-2655.
6. "Dialkyl dithioacetals of sugars," D. Horton and **P. Norris**, in "*Preparative Carbohydrate Chemistry*," S. Hanessian (ed.), Marcel Dekker, New York, NY, 35-51, **1997**.
7. "5-Deoxy-5-C-(5-ethoxycarbonyl-1,2,3-triazol-1-yl)-1,2-O-isopropylidene- α -D-xylofuranose," D. Horton, B.R. Levine, **P. Norris**, R.L. Luck and J.V. Silverton, *Acta Cryst.* C53, **1997**, 120-122.
8. "Dipolar cycloaddition reactions of a soluble polymer-supported dipolarophile. Synthesis of sugar-derived triazoles," M. Moore and **P. Norris**, *Tetrahedron Lett.* **1998**, *39*, 7027-7030.
9. "Chiral tetrahydrofuran synthesis from D-ribose diphenyl dithioacetal," **P. Norris**, *Heterocyclic Comm.* **1999**, *5*, 113-114.
10. "Synthesis of carbohydrate-derived 1,2,3-triazoles using 1,3-dipolar cycloaddition on a soluble polymer support," S. Freeze and **P. Norris**, *Heterocycles* **1999**, *51*, 1807-1817.
11. "Solution and solid state structure of D-talo-2,6-anhydro-1,1-bis(ethylsulfonyl)-3,4,5-trihydroxyhexane," **P. Norris** and T.R. Wagner, *Carbohydr. Res.* **1999**, *322*, 147-150.
12. "Development of reactions of 6- and 5-substituted-1,3-dimethyluracils with dimethyl-sulfoxonium methylide," **P. Norris** and H. Shechter, *J. Org. Chem.* **1999**, *64*, 7290-7298.
13. "A convenient synthesis of glycosyl chlorides from sugar hemiacetals using triphosgene as the chlorine source" R.M. Cichillo and **P. Norris**, *Carbohydr. Res.* **2000**, *328*, 431-434.
14. "Synthesis of a partially protected azidodeoxysugar: a project suitable for the advanced undergraduate chemistry laboratory," **P. Norris**, S. Freeze, and C.J. Gabriel, *J. Chem. Ed.*, **2001**, *78*, 75-76.
15. "Preparation of a D-glucose-derived alkene; an E2 reaction for the undergraduate organic chemistry laboratory," **P. Norris** and A. Fluxe, *J. Chem. Ed.*, **2001**, *78*, 1676-1678.
16. "Intramolecular carbene and nitrene insertions at C-2 of diacetone-D-glucose," D.F. Berndt and **P. Norris**, *Tetrahedron Lett.* **2002**, *43*, 3961-3962.
17. "Annual Reports in Organic Synthesis," P.M. Weintraub, K. Turnbull, J. Sabol, and **P. Norris** (Editors), Academic Press (Elsevier, Netherlands, Publishers), **2002**, ISBN: 0120408325.
18. "X-Ray crystal structure of methyl 1,2,3,4-tetra-O-acetyl- β -D-glucopyranuronate," T.R. Wagner, Y.Y. Root, and **P. Norris**, *Carbohydr. Res.* **2002**, *337*, 2343-2346.
19. "Crystal structure of 1,2;5,6-di-O-isopropylidene-3-O-(phenylacetyl)-D-glucofuranose," J. Sheville, D. F. Berndt, **P. Norris** and T. R. Wagner, *J. Chem. Cryst.*, **2003**, *33*, 409-412.

20. "Addition of lithiated nucleophiles to 2,3-*O*-isopropylidene-*D*-erythronolactone: stereoselective formation of a furanose *C*-disaccharide," J.L. McCartney, C.T. Meta, R.M. Cichillo, M.D. Bernardina, T.R. Wagner, and **P. Norris**, *J. Org. Chem.* **2003**, *68*, 10152-10155.
21. "Synthesis of glucopyranosyl amides using polymer-supported reagents," Y.Y. Root, M.S. Bailor, and **P. Norris**, *Synth. Commun.* **2004**, *34*, 2499-2506.
22. "Annual Reports in Organic Synthesis" P.M. Weintraub, K. Turnbull, J. Sabol, and **P. Norris** (Editors), Academic Press (Elsevier, Netherlands, Publishers), **2003**, ISBN: 0120408333.
23. "Annual Reports in Organic Synthesis" P.M. Weintraub, K. Turnbull, J. Sabol, and **P. Norris** (Editors), Academic Press (Elsevier, Netherlands, Publishers), **2004**, ISBN 0120408341.
24. "Rapid access to glucopyranosyl-1,2,3-triazoles *via* Cu(I)-catalyzed reactions in water" R.A. Akula, D.P. Temelkoff, N.D. Artis, and **P. Norris**, *Heterocycles* **2004**, *63*, 2719-2725.
25. "2,3,4,6-Tetra-*O*-acetyl- β -*D*-glucopyranosyl azide," D.P. Temelkoff, **P. Norris**, and M. Zeller, *Acta Cryst. E.*, **2004**, *E60*, 1975-1976. (Structure Communication).
26. "6-Deoxy-1,2:3,4-di-*O*-isopropylidene- α -*D*-galacto-heptodialdo-1,5-pyranose diphenyl-dithioacetal," T.D. Weaver, **P. Norris**, and M. Zeller, *Acta Cryst. E.*, **2004**, *E60*, 2113-2114.
27. "Prop-2-ynyl 1,2,3,4-tetra-*O*-acetyl- β -*D*-glucopyranuronate," D.P. Temelkoff, **P. Norris**, and M. Zeller, *Acta Cryst. E.*, **2004**, *E60*, 2273-2274. (Structure Communication).
28. "Methyl 4-*O*-benzyl-6-deoxy-2,3-*O*-isopropylidene- α -*L*-talopyranoside," M.T. Maust, **P. Norris**, and M. Zeller, *Acta Cryst. E.*, **2004**, *E61*, 643-644. (Structure Communication).
29. "2,3,4-Tri-*O*-acetyl- α -*L*-fucopyranosyl azide," **P. Norris** and M. Zeller, *Acta Cryst. E.*, **2005**, *E61*, 729-730. (Structure Communication).
30. "Methyl 2,3,4-tri-*O*-acetyl-1-azido-1-deoxy- β -*D*-glucopyranuronate at 100 K," C.R. Smith, **P. Norris**, and M. Zeller, *Acta Cryst. E.*, **2005**, *E61*, 736-737. (Structure Communication).
31. "Cu(I)-catalyzed formation of *D*-mannofuranosyl 1,4-disubstituted 1,2,3-triazole carbohybrids," P.L. Miner, T.R. Wagner, and **P. Norris**, *Heterocycles* **2005**, *65*, 1035-1049.
32. "1,2,3,4-Tetra-*O*-acetyl- β -*L*-fucopyranose," A.-B. Alhassan, **P. Norris**, and M. Zeller, *Acta Cryst. E.*, **2005**, *E61*, 3668-3669. (Structure Communication).
33. "4-(Acetylamino)benzenesulfonyl azide," M.L. Vicarel, **P. Norris**, and M. Zeller, *Acta Cryst. E.*, **2006**, *E62*, 1751-1753. (Structure Communication).
34. "Crystal and molecular structure of 6,7-dideoxy-1,2;3,4;9,10-tris-*O*-(1-methylethylidene)-*D*-erythro- α -*D*-galacto-undeco-pyranosid-8-ulose," T.D. Weaver, M. Zeller, and **P. Norris**, *J. Chem. Cryst.*, **2006**, *36*, 647-654.
35. "Application of bis(diphenylphosphino)ethane (DPPE) in Staudinger-type *N*-glycopyranosyl amide synthesis," D.P. Temelkoff, C.R. Smith, D.A. Kibler, M. Zeller, S. McKee, S. Duncan, M. Hunsen, and **P. Norris**, *Carbohydr. Res.* **2006**, *341*, 1645-1656.
36. *N*-Glycoside neoglycotrimers from 2,3,4,6-tetra-*O*-acetyl- β -*D*-glucopyranosyl azide," D.P. Temelkoff, M. Zeller, and **P. Norris**, *Carbohydr. Res.* **2006**, *341*, 1081-1090.
37. "Crystal structure of 1-(2,3:5,6-di-*O*-isopropylidene- β -*D*-mannofuranosyl)-1*H*-[1,2,3]triazol-4,5-dicarboxylic acid diethyl ester," H. Seibel, P.L. Miner, **P. Norris**, and T.R. Wagner, *J. Chem. Cryst.*, **2007**, *37*, 157-163.
38. "Carbohydrate mimetics for *Staphylococcus aureus* capsule," D. L. Fagan, M.L. Vicarel, A.-B. Alhassan, and **P. Norris**, *FASEB J.* **2007**, *21*:712.1.
39. "3,4-Di-*O*-acetyl-2-azidodeoxy-1-*O*-nitro- α -*L*-fucose," D.C. McCutcheon, **P. Norris**, and M. Zeller, *Acta Cryst. E*, **2007**, *E63*, o3484. (Structure Communication).

40. "Pyranosyl *N*-glycosyl amines: emerging targets with diverse biological potential," (Review article) **P. Norris**, *Current Topics in Medicinal Chemistry*, 2008, 8, 101-113.
41. "1-Oxa-2,4-diazines and 1-thia-2,4-diazines," (Book chapter) **P. Norris**, in *Comprehensive Heterocyclic Chemistry*, A.R. Katritzky (Ed.), Elsevier, **2008** (ISBN: 0-08-044991-3).
42. "6-Membered rings, 1 other element," (Book chapter) **P. Norris**, in *Comprehensive Heterocyclic Chemistry*, A.R. Katritzky (Ed.), Elsevier, **2008** (ISBN: 0-08-044991-3).
43. "Carbohydrate mimetics as potential antiinfective treatments for *Staphylococcus aureus*," D. L. Fagan, M. Royal, M. L. Vicarel, and **P. Norris**, *FASEB J.*, **2008**, 22, 859.20.
44. "Rhodium(II)-catalyzed decomposition of 3-*O*-(2-diazo-2-phenylacetyl)-1,2;5,6-di-*O*-isopropylidene- α -D-allofuranose; diastereoselective ether formation," I.A. Sacui, M. Zeller, and **P. Norris**, *Carbohydr. Res.*, **2008**, 343, 1819-1823.
45. "4-Butyl 1-(2,3,4-tri-*O*-acetyl- β -L-fucopyranosyl)-1*H*-1,2,3-triazole," A.-B. Alhassan, **P. Norris**, and M. Zeller, *Acta. Cryst. E.*, **2009**, E65, o1992-o1993. (Structure Communication).
46. "2,3;5,6-Di-*O*-isopropylidene-1-*O*-(2-phenylacetyl- α -D-mannofuranose," I.A. Sacui, **P. Norris**, and M. Zeller, *Acta. Cryst. E.*, **2010**, E66, o2341-o2342. (Structure Communication).
47. "Reactions of several monosaccharide-derived alcohols with *p*-acetamidobenzenesulfonyl azide and DBU," I.A. Sacui and **P. Norris**, *Tetrahedron Lett.*, **2011**, 52, 2670-2672.
48. "Synthesis of a D-glucopyranosyl azide: spectroscopic evidence for stereochemical inversion in the S_N2 reaction," O. G. Adesoye, I. N. Mills, D. P. Temelkoff, J. A. Jackson, and **P. Norris**, *J. Chem. Ed.* **2011**, submitted.

Abstracts From Conferences

1. "The unusually facile epimerization of aldoses having an alkylthio group at C-2," **P. Norris**, D. Horton, and B. Berrang, *Abstracts of Papers*, XVIIth International Carbohydrate Symposium, Ottawa, Canada, July **1994**.
2. "Synthesis of enantiomerically pure norbornenes and norbornanes from carbohydrates," **P. Norris**, D. Horton, and J.P. Roski," *Abstracts of Papers*, 208th National Meeting of the American Chemical Society, Washington, D.C., August **1994**.
3. "A new route to iminosugars," **P. Norris**, D. Horton, and B.R. Levine, *Abstracts of Papers*, 209th National Meeting of the American Chemical Society, Anaheim, CA, April **1995**.
4. "Reactions of 5-substituted-1,3-dimethyluracils with dimethylsulfoxonium methylide," **P. Norris** and H. Shechter, *Abstracts of Papers*, 29th American Chemical Society Mid-Atlantic Regional Meeting, Washington, D.C., May **1995**.
5. "Synthesis of triazoles by cycloaddition of acetylenes to 5-azido-5-deoxy-D-xylose and 5-azido-5-deoxy-D-ribose derivatives," **P. Norris**, B. R. Levine, and D. Horton, *Abstracts of Papers*, 29th American Chemical Society Mid-Atlantic Regional Meeting, Washington, D.C., May **1995**.
6. "Synthesis of chiral polyhydroxylated bicyclic triazolines," **P. Norris**, D. Horton, and D. Giridhar, *Abstracts of Papers*, 211th National Meeting of the American Chemical Society, New Orleans, LA, March **1996**.
7. "Cycloadditions of 5-azido-5-deoxyaldopentoses with acetylenes: regiochemical outcome and manipulation to acyclic nucleoside analogs," **P. Norris**, B.R. Levine, D. Horton, R.L. Luck, and J.V. Silverton, *Abstracts of Papers*, 30th American Chemical Society Mid-Atlantic Regional Meeting, Philadelphia, PA, USA, May **1996**.

8. "Utility of ω -azidodeoxyaldopentose dithioacetals in the synthesis of iminosugar analogs," **P. Norris** and D. Horton, *Abstracts of Papers*, XVIIIth International Carbohydrate Symposium, Milan, Italy, July **1996**.
9. "D-Arabinose diethyl dithioacetal as a source of chiral polyhydroxylated nitrogen heterocycles," **P. Norris** and D. Horton, *Abstracts of Papers*, 212th National Meeting of the American Chemical Society, Orlando, FL, August **1996**.
10. "Carbohydrate-derived bicyclic triazolines: mechanism of formation and confirmation of structure," **P. Norris**, T.R. Wagner, and D. Horton, *Abstracts of Papers*, 9th European Carbohydrate Symposium, Utrecht, The Netherlands, July **1997**.
11. "Synthesis and reactions of some carbohydrate-derived acyl azides," D. Smith, L. Evanoff, Z. Jovanovic, and **P. Norris**, *Abstracts of Papers*, 30th Central Regional Meeting of the American Chemical Society, Cleveland, OH, May **1998**.
12. "Synthesis of carbohydrate-derived oxalate esters," C. Ciolli, R. Hirschl, T. Phares, K. Hay, B. Arthur, R. Alexander, A. Neider, **P. Norris**, and T.D. Kim, *Abstracts of Papers*, 30th Central Regional Meeting of the American Chemical Society, Cleveland, OH, May **1998**.
13. "Simple interactive websites for chemistry," **P. Norris**, T.D. Kim, C. Gabriel, A. Freeman, and A. Makam, *Abstracts of Papers*, 30th Central Regional Meeting of the American Chemical Society, Cleveland, OH, May **1998**.
14. "Synthesis and properties of a chiral D-galactose-derived ethylene diamine ligand," S. Freeze, W. Li, and **P. Norris**, *Abstracts of Papers*, 217th National Meeting of the American Chemical Society, Anaheim, CA, March **1999**.
15. "Synthesis, structure and reactions of several sugar-derived bis(sulfones)" **P. Norris**, R.M. Cicchillo, A. Fluxe, H. Risley, B. Del Fraino, and T.R. Wagner, *Abstracts of Papers*, 31st Central Regional Meeting of the American Chemical Society, Columbus, OH, June **1999**.
16. "New applications of liquid phase synthesis using polyethylene glycol monomethyl ether as a support," **P. Norris**, S. Freeze, B. Brookes, D. Berndt, and J. Caplinger, *Abstracts of Papers*, 31st Central Regional Meeting of the American Chemical Society, Columbus, OH, June **1999**.
17. "Synthesis and properties of new carbohydrate-derived amphiphiles," **P. Norris**, R. Hirschl, C. Ciolli, and T.D. Kim, *Abstracts of Papers*, 31st Central Regional Meeting of the American Chemical Society, Columbus, OH, June **1999**.
18. "New chemistry of carbohydrate-derived bis(phenylsulfones)," **P. Norris**, R.M. Cicchillo and A. Fluxe, *Abstracts of Papers*, 50th Southeastern Regional Meeting of The American Chemical Society, Knoxville, TN, October **1999**. (Invited Symposium Speaker).
19. "Stereoselective synthesis of C-glycosides," **P. Norris**, R.M. Cicchillo, A. Fluxe, and D.F. Berndt, *Abstracts of Papers*, 219th National Meeting of the American Chemical Society, San Francisco, March **2000**.
20. "Synthesis and chemistry of novel aminodeoxy- and diazodeoxysugars," C.J. Gabriel, A. Freeman, A. Rozzo, D. Smith, T. LeFever, and **P. Norris**, *Abstracts of Papers*, 32nd Central Regional Meeting of the American Chemical Society, Covington, KY, May **2000**.
21. "Development of bis(phenylsulfones) as synthons in organic chemistry," R.M. Cicchillo, A. Fluxe, J. McCartney, C. Brown, and **P. Norris**, *Abstracts of Papers*, 32nd Central Regional Meeting of the American Chemical Society, Covington, KY, May **2000**.
22. "An approach to C-disaccharides using dithiane chemistry," J.L. McCartney, R.M. Cicchillo, and **P. Norris**, *Abstracts of Papers*, 221st National Meeting of the American Chemical Society, San Diego, CA, March **2001**.

23. "Approaches to aminodeoxy sugar derivatives" A. Fluxe, D.F. Berndt, J.G. Lisko, and **P. Norris**, *Abstracts of Papers*, 34th Middle Atlantic Regional Meeting of the American Chemical Society, Baltimore, MD, May **2001**.
24. "Chemical synthesis of *O*- and *C*-glycosides" H. Risley, J.L. McCartney, and **P. Norris**, *Abstracts of Papers*, 34th Middle Atlantic Regional Meeting of the American Chemical Society, Baltimore, MD, May **2001**.
25. "Synthesis of derivatives of D-ManAcA and D-FucNAc: aminosugar components of *S. aureus* capsular polysaccharides," J.G. Lisko, Y.Y. Root, A. Fluxe, and **P. Norris**, *Abstracts of Papers*, 222nd National Meeting of the American Chemical Society, Orlando, FL, April **2002**.
26. "The dithiane approach to *C*-disaccharides: kinetic vs. thermodynamic ketol formation," C.T. Meta and **P. Norris**, *Abstracts of Papers*, 222nd National Meeting of the American Chemical Society, Orlando, FL, April **2002**.
27. "Preparation of *C*-glycoside and aminosugar glycomimetics," J. Conley, C.T. Meta, Y.Y. Root, M. Stonestreet, P. Santore, A. Finamore, D. Kibler, and **P. Norris**, 34th Central Regional Meeting of the American Chemical Society, Ypsilanti, MI, June **2002**.
28. "Parallel synthesis of diverse *N*-glycosides using polymer-supported reagents," **P. Norris**, Y.Y. Root, M.S. Bailor, and P.L. Miner, *Abstracts of Papers*, 1st Annual Ohio Valley Organic Chemistry Conference, Miami, OH, February **2003**.
29. "New carbohydrate-related experiments for the undergraduate organic laboratory," **P. Norris**, D. Baker, and T.R. Wagner, *Abstracts of Papers*, 224th National Meeting of the American Chemical Society, New Orleans, LA, March **2003**.
30. "Synthesis of *N*- and *C*-glycoside glycomimetics," M. S. Bailor, M. D. Bernardina, T. R. Wagner, and **P. Norris**, *Abstracts of Papers*, 224th National Meeting of the American Chemical Society, New Orleans, LA, March **2003**.
31. "Parallel synthesis of *N*-glycosides," Y. Y. Root, P. L. Miner, and **P. Norris**, *Abstracts of Papers*, 224th National Meeting of the American Chemical Society, New Orleans, LA, March **2003**.
32. "Monosaccharide platforms for the synthesis of diverse chiral compounds," **P. Norris**, P. L. Miner, D. Kibler, and R.A. Akula, *Abstracts of Papers*, 35th Central Regional Meeting of the American Chemical Society, Pittsburgh, PA, October **2003**.
33. "*N*-Glycoside synthesis using microwave heating," **P. Norris**, T. Myers, R. Hurt, S. J. Duncan, J. A. Sacui, and S. McKee, *Abstracts of Papers*, 35th Central Regional Meeting of the American Chemical Society, Pittsburgh, PA, October **2003**.
34. "Formation of new *N*-glycosides from D-mannofuranose" P. L. Miner, M. L. Vicarel, H. Seibel, T. R. Wagner, and **P. Norris**, *Abstracts of Papers*, 227th National Meeting of the American Chemical Society, Anaheim, CA, April **2004**.
35. "Synthesis of diverse sugar-derived 1,2,3-triazoles" **P. Norris** and T.R. Wagner, *Abstracts of Papers*, 228th National Meeting of the American Chemical Society, Philadelphia, PA, August **2004**.
36. "Synthesis of *C*-linked 1,2,3-triazole carbohydrate mimics," T. D. Weaver, M. T. Maust, and **P. Norris**, *Abstracts of Papers*, 229th National Meeting of the American Chemical Society, San Diego, CA, March **2005**.
37. "Synthesis of *N*-glycosyl amides and triazoles," D. P. Temelkoff, C. R. Smith, M. Zeller, M. Hunsen, and **P. Norris**, *Abstracts of Papers*, 229th National Meeting of the American Chemical Society, San Diego, CA, March **2005**.
38. "Triazole-linked carbohydrates: synthesis of furanose derivatives," B. J. Dobosh, S. Gore, K. Pavlidakey, and **P. Norris**, *Abstracts of Papers*, 229th National Meeting of the American Chemical Society, San Diego, CA, March **2005**.

39. "*N*-Glycosyl triazole-linked sugars: pyranose derivatives," B. Pirigy, R. Risi, A. Malich, W. Chuang, and **P. Norris**, *Abstracts of Papers*, 229th National Meeting of the American Chemical Society, San Diego, CA, March **2005**.
40. "Synthesis and reactions of novel azidodeoxy and diazosugars," I. A. Sacui, M. L. Vicarel, R. Risi, M. Zeller, and **P. Norris**, *Abstracts of Papers*, 231st National Meeting of the American Chemical Society, Atlanta, GA, March **2006**.
41. "Towards mimics of the aminosugars found in the capsular polysaccharides of *S. aureus* types 5 and 8," A.-B. Alhassan, S.J. Duncan, M. Maust, M. Zeller, and **P. Norris**, *Abstracts of Papers*, 231st National Meeting of the American Chemical Society, Atlanta, GA, March **2006**.
42. "Progress towards scalable syntheses of aminosugars found in *S. aureus* capsular polysaccharides," R.P. Conway, G.A. Cox, and **P. Norris**, *Abstracts of Papers*, 233rd National Meeting of the American Chemical Society, Chicago, IL, March **2007**.
43. "*In situ* alkyl and acyl azide synthesis using *p*-ABSA/DBU," T. Vadjinia, B. Katzman, and **P. Norris**, *Abstracts of Papers*, 40th Central Regional Meeting of the American Chemical Society, Columbus, OH, June **2008**.
44. "Synthesis of *N*-2-modified analogs of *N*-acetyl-L-fucosamine," D. C. McCutcheon, A.-B. Alhassan, M. Zeller, and **P. Norris**, *Abstracts of Papers*, 40th Central Regional Meeting of the American Chemical Society, Columbus, OH, June **2008**.
45. "One-pot approach to 1,2,3-triazoles using *in situ* generated azide anion," K. Johnson, D. Temelkoff, J. Campbell, P. Paulitis, K. L. Cunningham, and **P. Norris**, *Abstracts of Papers*, 41st Central Regional Meeting of the American Chemical Society, Cleveland, OH, June **2009**.
46. "Rhodium(II)-catalyzed decomposition of furanose-derived diazoesters," J. L. Patton, A. M. Malich, C. Austin, M. Zeller, and **P. Norris**, *Abstracts of Papers*, 41st Central Regional Meeting of the American Chemical Society, Cleveland, OH, June **2009**.
47. "Towards green azidation chemistry," **P. Norris**, *Abstracts of Papers*, 41st Central Regional Meeting of the American Chemical Society, Cleveland, OH, June **2009**.
48. "*In situ* generated azide anion; applications," K. L. Cunningham, A. A. Okumu, and **P. Norris**, *Abstracts of Papers*, 239th National Meeting of the American Chemical Society, San Francisco, March **2010**.
49. "Synthesis and metal-catalyzed decomposition of furanose-derived diazoesters," **P. Norris**, *Abstracts of Papers*, 239th National Meeting of the American Chemical Society, San Francisco, March **2010**.
50. "Microwave synthesis of 1,4-disubstituted-1,2,3-triazoles from organic azides," P. Norris, *Abstracts of Papers*, 42nd Central Regional Meeting of the American Chemical Society, Dayton, OH, June **2010**.

MS Students Directed Since 1996

Wei Li	<i>Studies Towards the Synthesis of New Carbohydrate-derived Heterocycles – 1998</i> (Ph.D. in Organic Chemistry from Purdue, May 2003. Now a Research Scientist at Immunogen, Cambridge, MA)
Martin Moore	<i>New Dipolar Cycloaddition Reactions of a Carbohydrate-derived Vinyl Sulfoxide Alkyne Equivalent and a Polymer-supported Alkyne with Azides – 1998</i> (Presently a Research Associate, the Naval Research Laboratory, Washington, DC)
Scott Freeze	<i>Synthesis and Chelating Properties of a Chiral D-Galactose-derived Ligand and Preparation of Sugar-derived 1,2,3-Triazoles on a Soluble Polymer Support – 1999</i>

(Ph.D. in Organic Chemistry from the University of Pennsylvania, August 2005. Now a Research Scientist at **Millennium Pharmaceuticals**, Cambridge, MA)

- Rob Cicchillo** ***Formation of C-Glycosides via Dithioacetal Chemistry – 2000***
(Ph.D. in Biochemistry from Pennsylvania State University, August 2006; Post-doctoral fellow, University of Illinois, now at **Dow AgroSciences**)
- Andy Fluxe** ***Studies Toward the Synthesis of Aminosugars Related to Components of the S. Aureus Capsular Polysaccharide – 2001***
(Presently a Research Associate at **Procter and Gamble R&D** in Cincinnati, OH)
- Dan Berndt** ***Synthesis and Chemistry of New Sugar-derived Diazoesters and Acyl Azides – 2001***
(Presently a Research Associate at the **University of North Carolina-Chapel Hill**)
- J. McCartney** ***Nucleophilic Addition of Sugar-derived Dithiane Nucleophiles to Sugar Lactones: New Approach to C-Disaccharides – 2001***
(Presently a Research Associate at **Vertex Pharmaceuticals**, San Diego, CA)
- Hud Risley** ***Chemical Synthesis of Terpenoid O-Glycosides – 2001***
(Presently a Research Associate at **Pfizer Global Research** in Groton, CT)
- Joe Lisko** ***Formation of Glycomimetics of N-Acetyl-D-glucosamine, N-Acetyl-D-Quinavosamine, and N-Acetyl-D- and L-Fucosamine Using the Nitroglycal Method – 2002***
(Presently a Field Service and Support Specialist at **Gilson, Inc.** in Atlanta, GA)
- Yuriko Root** ***Synthesis of Derivatives of D-ManAcA: Aminosugar Component of S. aureus Capsular Polysaccharides – 2002***
(Presently a Research Associate at **Merck; Schering Plough** in Kenilworth, NJ)
- Dan Kibler** ***Synthesis of C-Glycosides and N-Glycosides – 2003***
(Presently a Science Teacher at **Salem High School**, Salem, OH)
- Penny Miner** ***Synthesis of Diverse Compounds Using Mannofuranose as a Chiral Scaffold – 2004***
(Presently a Research Scientist at **Ricerca Biosciences**, Painesville, OH)
- Rakesh Akula** ***Approaches to Pyranose Carbohybrids – 2005***
(Presently a Pharmacist in Miami, FL)
- Mat Maust** ***Attempted Conversion of L-Rhamnose to N-Acetyl-L-fucosamine – 2005***
(Presently a Research Associate at **Merck; Schering Plough** in Kenilworth, NJ)
- Craig Smith** ***Facile Preparation of Glycomimetics from Uronic Acids – 2005***
(Ph.D. in Organic Chemistry from **The Ohio State University**, 2010; now at **MIT**)
- Travis Weaver** ***Synthesis of C-Glycosides as Carbohydrate Mimics – 2005***
(Presently a Research Analyst at the **Department of Defence**, Washington, DC)
- D. Temelkoff** ***Approaches to the Efficient Synthesis of N-Glycosyl Amides and Triazoles – 2005***
(Presently a Research Associate at **GlaxoSmithKline Pharmaceuticals**, RTP, NC)
- A-B Alhassan** ***Formation of N-Acetyl-L-fucosamine (L-FucNAc) and Analogs as Potential Inhibitors of Staphylococcus aureus Capsular Polysaccharide Biosynthesis - 2006***
(Presently a Research Associate at **Merck; Schering Plough** in Kenilworth, NJ)
- Iulia Sacui** ***Synthesis and Decomposition of Novel Diazosugars – 2006***
(Ph.D. program in Bioorganic Chemistry at **Carnegie-Mellon University**, Fall 2006)

- Sara Duncan ***Towards Glycomimetic Derivatives of N-Acetyl-D-fucosamine - 2006***
(Presently a Research Associate at Merck; Schering Plough in Kenilworth, NJ)
- Monica Vicarel ***Microwave-accelerated Approache to Pyranose Carbohydrids - 2006***
(Presently a Research Associate at Merck; Schering Plough in Kenilworth, NJ)
- Ryan Conway ***Attempted Conversion of L-Rhamnose to N-Acetyl-L-fucosamine - 2007***
(Presently a Research Associate at Roche Pharmaceuticals, Florence, SC)
- Adam Cox ***Synthesis of and Structural Studies on N-Acetyl-D-mannosamine Uronic Acid - 2007***
(Ph.D. program in Organic Chemistry at The Ohio State University, Fall 2007)
- Mike Evans ***Towards Mimics of N-Acetyl-D-fucosamine - 2008***
(Federal Bureau of Investigation, Washington, DC)
- Brian Dobosh ***One-pot Synthesis of Azides From Alcohols Using Microwave Heating (with Prof. Howard Mettee) - 2008***
(Science teacher, Hubbard Schools, Hubbard, OH)
- Ashley Malich ***Intramolecular Carbenoid Insertion on Furanose Platforms - 2008***
(Presently a Research Associate at Monobind Pharmaceuticals, Irvine, CA)
- Kat Pavlidakey ***Isolation and NMR Studies on S. aureus CP (with Prof. Diana Fagan) - 2008***
(Pharm.D. program, Auburn University, Fall 2008)
- Jennie Patton ***Towards a total Synthesis of (+)-Canadensolide by Diazo Insertion Chemistry - 2008***
(Presently a Research Associate at Ricerca Biosciences, Painesville, OH)
- C. Hartranft ***One-pot Synthesis of Azides From Alcohols - 2009***
(D.O. program at Ohio University, Fall 2007)
- D. McCutcheon ***Synthesis of and Structural Studies on UDP-N-Acetyl-L-fucosamine - 2008***
(Ph.D. program in Organic Chemistry at UC-Irvine, Fall 2008)
- Lucas Beagle ***Synthesis of and Structural Studies on N-Acetyl-D-fucosamine (with Prof. Allen Hunter) - 2008***
(Ph.D. program in Organic Chemistry at the University of Florida, Fall 2008)
- Steve Knapp ***Synthesis of Novel Glycosyl Transferase Inhibitors - 2009***
(Pharm.D. program, Duquesne University, Fall 2009)
- Antony Okumu ***One-pot Multistep Synthesis Using Alkyl Azides - 2010***
(Ph.D. program in Organic Chemistry at The Ohio State University, Fall 2010)
- Traci Clymer ***Synthesis of Glycosyl Triazoles and Their Effect on Cell Differentiation - 2010***
(Ph.D. program in Organic Chemistry at Duquesne University, Fall 2010)
- Muyiwa Adesoye ***Synthesis of Analogs of Bacillithiol – 2012***
- Isaac Mills ***Click Chemistry Approach to Novel Polymers – 2012***
- Philip Adero ***Azide-carbenoid cyclizations - 2013***
- Omadee Curry ***Azide-carbenoid cyclizations - 2013***

Undergraduate Students Directed Since 1996 (Chemistry 4850)

Lindsay Evanoff (Biology), Dan Smith (Biology), Zorana Jovanovic (Biology), Jason Griffin (Biology), Michael Sullenberger (Chemistry), Robert Hirschl (Chemistry), Chris Ciolli (Chemistry), Kelly Hay (Biology), Tim Phares (Biology), Tom Zak (Combined Science), Bill Schuler (Chemistry), Hud Risley (Chemistry), John Caplinger (Chemistry), Chris Ciolli (Chemistry), Dan Berndt (Biology), Meena Khan (Biology), Amanda McCombes (Chemistry), Andrew Fluxe (Biology), Eric Modlo (BS/MD), John Misdary (BS/MD), Becky Latsch (Chemistry), Cory Brown (Chemistry), Bethany Brookes (Biochemistry), Brian Del Fraino (Biochemistry), Anthony Rozzo (Chemistry), Cory Brown (Chemistry), Chris Gabriel (Chemistry), LaShale Pugh (Biology), Alok Makam (Biology), Chris Meta (Chemistry), Deane Smith (Biochemistry), Peter Santore (Chemistry), Monica Vicarel (Chemistry), Latresa Williamson (Chemistry), Alyson Finnamore (Biochemistry), Anthony Dota (Biochemistry), Adam Luchey (BS/MD), Ryan Conway (Chemistry), Mike Evans (Chemistry), Ben Kutay (Biochemistry), Brian Dobosh (Chemistry/Education), Tracey Meyers (Chemistry), Robin Hurt (Chemistry), Brittany Pirygi (Chemistry), Shamone Gore (Chemistry), Katherine Pavlidacky (Biology), Ashley Malich (Chemistry), Chris Fridrich (BS/MD), DJ Peters (BS/MD), Tracy Vadjinia (Biology), Erin Schuler (Chemistry), Brooke Katzman (Chemistry), Jonathan Mason (Chemistry), Michelle Ross (Biology), Paula Politis (Chemistry), Justin Campbell (Biology), Shalea Thurston (Forensics), Rick Kaiser (Chemistry), Desiree Czapski (Chemistry), Krista Cunningham (Chemistry), Caleb Tatebe (Chemistry), Zach Rodgers (Chemistry), Bradley Ceremuga (Biology), Solita Wilson (Chemistry), Galen Hayek (Biology), Troy Brandt (Chemistry), Randi Dangerfield (Chemistry).

Classes Taught At Youngstown State University

1996-97 Organic Chemistry 719 – 721; Organic Lab Coordinator for 719L – 721L
1997-98 Organic Chemistry 719 – 721; Organic Lab Coordinator for 719L – 721L
1998-99 Organic Chemistry 940 – 942; Organic Lab Coordinator for 719L – 721L 719L – 721L; 823
1999-00 Organic Chemistry 940 – 942; 719L – 721L; 823; 941 – 943
2000-01 Organic Chemistry 3719 – 3720; Organic Lab Coordinator for 719L – 721L 3719L – 3720L; Seminar 6981
2001-02 Organic Chemistry 3719 – 3720; 5821; 5822; 1505L
2002-03 Organic Chemistry 3719 – 3720; 6941; 5822; 1506L
2003-04 Organic Chemistry 3719 – 3720; 3719L – 3720L; 5821; 6942
2004-05 Sabbatical leave
2005-06 Organic Chemistry 3719 – 3720; 6941 – 6942
2006-07 Organic Chemistry 3719 – 3720; 6941 – 6942
2007-08 Organic Chemistry 3719 – 3720; 6941 – 6942; General Chemistry Lab Coordinator
2008-09 Organic Chemistry 3719 – 3720; General Chemistry Lab Coordinator
2009-10 Organic Chemistry 3719 – 3720; General Chemistry Lab Coordinator
2010-11 Organic Chemistry 3719 – 3720; 6941 – 6942; General Chemistry Lab Coordinator
2011-12 Organic Chemistry 3719 – 3720 (with recitations); 6941 – 6942

Invited Seminars

The Ohio State University Chemistry Department (twice), Michigan State University Chemistry Department, Kent State University Chemistry Department (twice), Indiana University Chemistry Department, St. Vincent College Chemistry Department, Duquesne University Chemistry Department, Ashland University Chemistry Department, The University of Toledo Chemistry Department, The University of Cincinnati Chemistry Department, Wright State University Chemistry Department (thrice), Youngstown State University Department of Geological & Environmental Sciences (twice), Penn State University Chemistry Department.