October 2015

Jeffrey N. Johnston

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Professional:

2011-present	Stevenson Professor of Chemistry, Vanderbilt University & Institute of Chemical Biology
1/2006-2013	co-Director of Synthesis Core Facility, Vanderbilt Institute of Chemical Biology
2008-present	Director, Beckman Scholars Program, Vanderbilt University
1/2006-2011	Professor of Chemistry, Vanderbilt University & Institute of Chemical Biology
8/2005	promoted to Professor of Chemistry, Indiana University
2005	Associate Professor of Chemistry, Indiana University
1999-2005	Assistant Professor of Chemistry, Indiana University

Education:

1992-1997	Ph.D. Chemistry (Synthetic Organic), The Ohio State University, Columbus, Ohio
1989-1992	Bachelor of Science in Chemistry, *summa cum laude*, University Scholar, Xavier University, Cincinnati, Ohio

Research Training:

1997-1999	NIH Postdoctoral Fellow with Prof. David A. Evans Harvard University, Cambridge, Massachusetts *Development of a Catalytic Enantioselective Mukaiyama-Michael Reaction*
1992-1997	Graduate Research Fellow with Prof. Leo A. Paquette The Ohio State University, Columbus, Ohio *Elucidation of the Origin of Stereoselectivity in Oxonium Ion-Initiated Pinacol Rearrangements* *Stereoselective Synthesis of the Polycavernoside A Disaccharide Subunit* *Studies Toward the Total Synthesis of Taxol*

Honors and Awards:

2015	VICB Most Highly Cited Article Award, Vanderbilt University
2014	Arthur C. Cope Scholar Award in Organic Chemistry, American Chemical Society
2013	Aldrich Lecturer, University of Ottawa, CA
2013	Japan Society for the Promotion of Science (JSPS), Fellow
2013	VICB Most Highly Cited Article Award, Vanderbilt University
2012	*Organic Syntheses* Lecturer, Wayne State University
2012	Keynote Speaker, 44th Annual SURC Conference
2011-2018	Stevenson Chair in Chemistry
2011	Chancellor's Award for Research
2011	Fellow, American Association for the Advancement of Science (AAAS)
2006	Gakushuin University (Japan) Visiting Professor
2004	IU Outstanding Junior Faculty Award
2003-2005	Eli Lilly Grantee Award
2003	Amgen Young Investigator Award
2002-2005	Mentor, IU Beckman Scholars Program and IU STARS Program (99-00, 03-05)
2005-2006	Astellas USA Faculty Award
2002-2005	Yamanouchi USA Faculty Award
2001	IU Trustees Teaching Award
2000-2001	Boehringer-Ingelheim Young Investigator Award
2000	IU Summer Faculty Fellowship

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1997-1999 National Institutes of Health Postdoctoral Fellowship (Harvard)
1997 Wyeth-Ayerst Industrial Fellowship (OSU)
1993-1996 GAANN Fellowship (OSU)

Leadership Positions (Elected or Appointed):

2014-pres Executive Committee, Arnold and Mabel Beckman Foundation, Beckman Postdoctoral Fellows Program
2014-pres Provost's Committee on Promotion and Tenure Review
2013-2015 Executive Committee, Member-at-Large, Division of Organic Chemistry, American Chemical Society
- Symposium Planning Committee, Chair

2011-2015 Faculty Senate, Executive Committee, Vanderbilt University
- Vice-Chair, 2013/14

2013-2014 Chancellor's Academic Strategic Plan, Executive Committee
2013-pres ACS Committee on Professional Training
2009-pres Associate Editor, *Beilstein Journal of Organic Chemistry*
2008-2012 Executive Committee, Arnold and Mabel Beckman Foundation, Beckman Scholars Program
2008-2011 External Advisory Board, NSF-RISE Program, Jackson State University
2006-2010 Editorial Advisory Board, *Chemistry Central Journal*
2003-2012 Appointed to Beckman Scholars Advisory Panel (reappointed in 2004, 2006-2009)

Consulting:

2011-2013 Expert Witness
2005-2008 Procter & Gamble Pharmaceuticals
(Corporate Research – Miami Valley, OH and Process - Norwich, NY)
2001-2005 Procter & Gamble Pharmaceuticals
(Medicinal - Mason, OH and Process - Norwich, NY)
2001-2002 Arqule

Patents

1. "Vinyl and aryl amination process for preparation of pyrrolidine or indoline subunits from, e.g., *o*-halophenethylamines and ketones, via corresponding imines", Johnston, J. N.; Viswanathan, R. US 6,670,479.

2. "Preparation of chiral (2-aminonaphthyl)isoquinoline derivatives and their metal complexes as enantioselective ethylation catalysts and precatalysts for olefin polymerization", Johnston, J. N. WO 2002085820.

3. "Stereoselective methods, catalysts and intermediates for the synthesis of (–)-Nutlin-3 and related compounds", Johnston, J. N.; Davis, T. A. provisional patent filed 7/10; patent issued 11/18/2014: US 8,889,863.

ORCiD: orcid.org/0000-0002-0885-636X

Publications

all publications are peer-reviewed

Publications during Independent Research Career

X. "Enantioselective Synthesis of α-Bromonitroalkanes for Umpolung Amide Synthesis: Preparation of *tert*-Butyl ((1*S*)-1-(4-(benzyloxy)phenyl)-2-bromo-2-nitroethyl)carbamate" Lim, V. T.; Tsukanov, S. V.; Doody, A. B.; Johnston, J. N. *Org. Syn.* submitted – accepted for checking.

75. "Development of an Intermittent-Flow Enantioselective aza-Henry Reaction using an Arylnitromethane

and Homogeneous Brønsted Acid-Base Catalysis with a Recycle" Tsukanov, S. V.; Johnson, M.D.; May, S. A. Rosemeyer, M.; Watkins, M. A.; Yates, M. H.; Johnston, J. N. *Org. Proc. Res. Dev.* **2015,** in revision.

74. "A One-Pot Amidation of Primary Nitroalkanes" Schwieter, K. E.; Johnston, J. N. *Chem. Commun.* **2015,** *51*, Advance Article.

73. "Enantioselective Addition of Bromonitromethane to Aliphatic *N*-Boc Aldimines Using a Homogeneous Bifunctional Chiral Organocatalyst" Schwieter, K. E.; Johnston, J. N. *ACS Catalysis* **2015,** *5*, 6559-6562.

72. "A Unified Approach to the Four Azaindoline Families by Inter-/Intramolecular Annulative Diamination of Vinylpyridines" Danneman, M. W.; Hong, K. B.; Johnston, J. N. *Org. Lett.* **2015,** *17*, 3806–3809. PMC in progress

71. "Enantioselective Small Molecule Synthesis by Carbon Dioxide-Fixation using a Dual Brønsted Acid/Base Organocatalyst" Vara, B. A.; Struble, T. J.; Wang, W.; Dobish, M. C.; Johnston, J. N. *J. Am. Chem. Soc.* **2015,** *137*, 7302-7305. PMC in progress

70. "Oxidative Inter-/Intermolecular Alkene Diamination of Hydroxy Styrenes with Electron–Rich Amines" Danneman, M. W.; Hong, K. B.; Johnston, J. N. *Org. Lett.* **2015,** *17*, 2558–2561. PMC in progress

69. "Enantioselective Synthesis of D-α-Amino Amides from Aliphatic Aldehydes" Schwieter, K. E.; Johnston, J. N. *Chem. Sci.* **2015,** *6*, 2590-2595. Open Access; PMC4378585

68. "Adaptation of a Small Molecule Hydrogen Bond-Donor Catalyst to an Enantioselective Hetero-Diels-Alder Reaction Hypothesized for Brevianamide Biosynthesis" Sprague, D. J.; Nugent, B. M.; Yoder, R. A.; Vara, B. A.; Johnston, J. N. *Org. Lett.* **2015,** *17*, 880-883. Open Access; PMC4339957

Selected as Editor's Choice.
Most downloaded article in first month after publication.

67. "Pharmacological p53 Activation with Aurora Kinase Inhibition Strongly Improves Melanoma Therapy" Vilgelm, A. E.; Liu, Y.; Hawkins, O. E.; Davis, T.; Smith, J.; Weller, K. P.; Horton, L. W.; McClain, C. M.; Ayers, G .D.; Turner, D. C.; Essaka, D. C.; Stewart, C. F.; Sosman, J. A.; Kelley, M. C.; Ecsedy, J. A.; Johnston, J. N.; Richmond, A. *Cancer Res.* **2015,** *75*, 181-193. PMC in progress

66. "Brønsted Acid-Catalyzed Phosphoramidic Acid Additions to Alkenes: Diastereo- and Enantioselective Halogenative Cyclizations for the Synthesis of *C*- and *P*-Chiral Phosphoramidates" Toda, Y.; Pink, M.; Johnston, J. N. *J. Am. Chem. Soc.* **2014,** *136*, 14734–14737. PMC4210055

65. "Umpolung Amide Synthesis Using Substoichiometric NIS and Oxygen as a Terminal Oxidant" Schwieter, K. E.; Shen, B.; Shackleford, J. P.; Leighty, M. W.; Johnston, J. N. *Org. Lett.* **2014,** *16*, 4714-4717. PMC4168777

64. "Organocatalytic, Diastereo- and Enantioselective Synthesis of Nonsymmetric *cis*-Stilbene Diamines: A Platform for the Preparation of Single Enantiomer *cis*-Imidazolines for Protein-Protein Inhibition" Vara, B. A.; Mayasundari, A.; Tellis, J. C.; Danneman, M. W.; Arredondo, V.; Davis, T. A.; Min, J.; Finch, K.; Guy, R. K.; Johnston, J. N. *J. Org. Chem.* **2014,** *79*, 6913–6938. PMC4120989

63. "Alkene Diamination Using Electron Rich Amines: Hypervalent Iodine-Promoted Inter/Intramolecular C-N Bond Formation" Hong, K. B.; Johnston, J. N. *Org. Lett.* **2014,** *16*, 3804-3807. (NSF funded) PMID: 24981419

62. "Silyl Imine Electrophiles in Enantioselective Catalysis: A Rosetta Stone for Peptide Homologation, Enabling Diverse *N*-Protected Aryl Glycines from Aldehydes in Three Steps" Makley, D. M.; Johnston, J. N. *Org. Lett.* **2014,** *16*, 3146-3149. PMC4059254

61. "Preparation of (–)-Nutlin-3 Using Enantioselective Organocatalysis at Decagram Scale" Davis, T. A.; Vilgelm, A. E.; Richmond, A.; Johnston, J. N. *J. Org. Chem*. **2013,** *78*, 10605-10616. PMC3880828

Highlighted by Kocienski, P. *Synfacts* **2014,** *10*, 1.

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60. (invited) "Serratezomine A" Pigza, J. A.; Johnston, J. N. in "Total Synthesis of Natural Products" Li, J. J.; Corey, E. J. Eds.; Springer: Heidelberg, **2012**, p. 131.

59. "Total Synthesis of the Lycopodium Alkaloid Serratezomine A Using Free Radical-Mediated Vinyl Amination to Prepare a β-Stannyl Enamine Linchpin" Pigza, J. A.; Han, J.-S.; Chandra, A.; Mutnick, D. M.; Pink, M.; Johnston, J. N. *J. Org. Chem.* **2013**, *78*, 822-843. PMC3565160

Selected as *Featured Article* by Editors.

58. "VNI cures the acute and chronic experimental Chagas disease" Villalta, F.; Dobish, M. C.; Nde, P. N.; Kleshchenko, Y. Y.; Hargrove, T. Y.; Johnson, C. A.; Waterman, M. R.; Johnston, J. N.; Lepesheva, G. I. *J. Infect. Dis.* **2013**, *208*, 504-511. PMC3698996

57. "Organocatalytic, Enantioselective Synthesis of VNI: A Robust Therapeutic Development Platform for Chagas, a Neglected Tropical Disease" Dobish, M. C.; Villalta, F.; Waterman, M. R.; Lepesheva, G. I.; Johnston, J. N. *Org. Lett.* **2012**, *14*, 6322-6325. PMC23214987

56. "Enantioselective Synthesis of α-Oxy Amides via Umpolung Amide Synthesis" Leighty, M. W.; Shen, B.; Johnston, J. N. *J. Am. Chem. Soc.* **2012**, *134*, 15233. PMC3477818

Highlighted by Kocienski, P. *Synfacts* **2012**, *8*, 1293.

55. "Chiral Proton Catalysis of Secondary Nitroalkane Additions to Azomethine: Synthesis of a Potent GlyT1 Inhibitor" Davis, T. A.; Danneman, M. W.; Johnston, J. N. *Chem. Commun.* **2012**, *48*, 5578-5580. PMC4133115

54. "Achiral Counterion Control of Enantioselectivity in a Brønsted Acid Catalyzed Iodolactonization" Dobish, M. C.; Johnston, J. N. *J. Am. Chem. Soc.* **2012**, *134*, 6068-6071. PMC Journal – in process: PMC3326820

53. "Preparation of a Chiral Bis(Amidine) Ligand: Pyrrolidine Bis(Amidine)" Davis, T. A.; Dobish, M. C.; Schwieter, K. E.; Chun, A. C.; Johnston, J. N. *Org. Synth.* **2012**, *89*, 380-393. PMC3505069

52. "Discovery of Competing Anaerobic and Aerobic Pathways in Umpolung Amide Synthesis Allows for Site-Selective Amide ^{18}O-Labeling" Shackleford, J. P.; Shen, B.; Johnston, J. N. *Proc. Natl. Acad. Sci.* **2012**, *109*, 44-46. PMC3252937

51. "Total Synthesis of the Chlorinated Hapalindoles K, A, G" Chandra, A.; Johnston, J. N. *Angew. Chem. Int. Ed.* **2011**, *50*, 7641-7644. PMC3357111

Highlighted by Ley, S. V.; Newton, S. *Synfacts* **2011**, *11*, 1156.

50. "Enantioselective Organocatalysis in the Synthesis of Stilbene *cis*-Diamines: A Concise Preparation of (–)-Nutlin-3, a Potent p53/MDM2 Inhibitor" Davis, T. A.; Johnston, J. N. *Chem. Sci.* **2011**, *2*, 1076 - 1079. PMC3375951

Highlighted by Simon Hadlington in *Chemistry World* **2011** March 25.
Highlighted by Borman, S. "Chiral Route To Key Anticancer Agent" *Chemical & Engineering News*, April 11, 2011, 89, 41.

49. "Origins of Selectivity in Brønsted Acid Promoted Diazoalkane-Azomethine Reactions (The aza-Darzens Aziridine Synthesis)" Troyer, T. L.; Muchalski, H.; Hong, K. B.; Johnston, J. N. *Org. Lett.* **2011**, *13*, 1790–1792. PMID: 21366339 (NSF funded)

48. "Stereoselective Synthesis of Complex Polycyclic Aziridines: Use of the Brønsted Acid-Promoted aza-Darzens Reaction to Prepare an Orthogonally Protected Mitomycin C Intermediate with Maximal Convergency" Srinivasan, J.; Mathew, P. A.; Williams, A. L.; Huffman, J. C.; Johnston, J. N. *Chem. Commun.* **2011**, *47*, 3975-3977. PMC3334326

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47. "Preparation of Isopropyl 2-Diazoacetyl(phenyl)carbamate" Muchalski, H.; Doody, A. B.; Troyer, T. L.; Johnston, J. N. *Org. Synth.*, **2011**, *88*, 212-223. PMC3505074

46. "Geometric Restraint Drives On- and Off-Pathway Catalysis by the *Escherichia Coli* Menaquinol:Fumarate Reductase" Tomasiak, T. M.; Archuleta, T. L.; Andréll, J.; Luna-Chávez, C.; Davis, T. A.; Sarwar, M.; Ham, A. J.; McDonald, H.; Yankovskaya, V.; Stern, H. A.; Johnston, J. N.; Maklashina, E.; Cecchini, G.; Iverson, T. M. *J. Biol. Chem.* **2011**, *286*, 3047-3056. PMC3024798

45. (invited) "Transformations of Alkenes: Aziridination" Muchalski, H.; Johnston, J. N., In *Science of Synthesis: Stereoselective Synthesis*, de Vries, J. G., Ed.; Thieme: Stuttgart, (2011); Vol. 1, p 155.

44. "A Chiral *N*-Phosphinyl Phosphoramide: Another Offspring for the Sage Phosphoric Acid Progenitor" Johnston, J. N. *Angew. Chem. Int. Ed.* **2011**, *50*, 2890-2891. PMC3415224

43. "Brønsted Acid-Promoted Azide-Olefin Cycloadditions for the Preparation of Contiguous Aminopolyols Derived from an anti-1,3-Diol Scaffold: The Importance of Disiloxane Ring Size to Diastereoselection" Muchalski, H.; Hong, K. B.; Johnston, J. N. *Beilstein J. Org. Chem.* **2010**, *6*, 1206-1210. PMC3028999

42. "Chiral Brønsted Base-Promoted Nitroalkane Alkylation: Enantioselective Synthesis of Chiral Nonracemic *sec*-Alkyl-3-Substituted Indoles" Dobish, M. C.; Johnston, J. N. *Org. Lett.* **2010**, *12*, 5744-5747. PMC3005818

41. "Umpolung Reactivity in Amide and Peptide Synthesis" Shen, B.; Makley, D. M.; Johnston, J. N. *Nature* **2010**, *465*, 1027-1032. PMC2945247

Highlighted by Jaenicke, L. in *Chemie in unserer Zeit* **2010**, *44*, 319
Highlighted in *Organic Process Research & Development* **2010**, 14, 1052-1060 (doi: 10.1021/op100229b)
Highlighted in *Chemical & Engineering News*, June 28, 2010 Borman, S. "New Route to Amide Formation"
Highlighted by Scheidt, K. "Organic chemistry: Amide bonds made in reverse" *Nature* **2010**, *465* , 1020 (doi:10.1038/4651020a)

40. "Bifunctional Asymmetric Catalysis: Amplification of Brønsted Basicity Can Orthogonally Increase the Reactivity of a Chiral Brønsted Acid" Davis, T. A.; Wilt, J. C.; Johnston, J. N. *J. Am. Chem. Soc.* **2010**, *132*, 2880-2882. PMC2838452

39. "To Protonate or Alkylate: Stereoselective Brønsted Acid Catalysis of Carbon-Carbon Bond Formation Using Diazoalkanes, Leading to Highly Functionalized Chiral Small Molecules" Johnston, J. N.; Muchalski, H.; Troyer, T. L. *Angew. Chem. Int. Ed.* **2010**, *49*, 2290-2298. PMID: 20209537 (NSF funded)

38. "A Brønsted Acid Catalyzed *syn*-Selective Glycolate Mannich Reaction" Troyer, T. L.; Muchalski, H.; Johnston, J. N. *Chem. Commun.* **2009**, 6195-6197. (NSF funded)

37. "Comparison of Triazolinium Triflate Fragmentation Rates as a Tool to Assay Relative Competency of Brønsted Bases in Proton Tranfer" Donahue, M. G.; Hong, K. B.; Johnston, J. N. *Bioorg. Med. Chem. Lett.* **2009**, *19*, 4971-4973. (NSF funded)

36. "Total Synthesis of the Lycopodium Alkaloid (+)-Serratezomine A" Chandra, A.; Pigza, J. A.; Han, J.-S.; Mutnick, D. M.; Johnston, J. N. *J. Am. Chem. Soc.* **2009**, *131*, 3470-3471. PMC2677822

Highlighted in Kocienski, P.; Schmidt, A. W. *SynFacts* **2009**, *9*, 946

35. "A Formal Enantioselective Acetate Mannich Reaction: The Nitro Functional Group as a Traceless Agent for Activation and Enantiocontrol in the Synthesis of β-Amino Acids" Shen, B.; Johnston, J. N. *Org. Lett.* **2008**, *10*, 4397-4400. PMID: 18798639 (NSF funded)

34. "A Diastereo- and Enantioselective Synthesis of α-Substituted *anti*-α,β-Diaminophosphonic Acid Derivatives" Wilt, J. C.; Pink, M.; Johnston, J. N. *Chem. Commun.* **2008**, 4177-4179. PMID: 18802521 (NSF funded)

October 2015
selected as 'Hot Article' by *Chemical Communications* reviewers and editor

33. "A Preparation of Enantiomerically Enriched Axially Chiral β-Diketimines: Synthesis of (-)- and (+)-IAN Amine" Luesse, S. B.; Counceller, C. M.; Wilt, J. C.; Perkins, B. R.; Johnston, J. N. *Org. Lett.* **2008**, *10*, 2445-2447. PMID: 18476708 (NSF funded)

32. "A Diastereo- and Enantioselective Synthesis of α-Substituted *syn*-α,β-Diamino Acids" Singh, A.; Johnston, J. N. *J. Am. Chem. Soc.* **2008**, *130*, 5866-5867. PMID: 18410096 (NSF & Astellas funded)

Highlighted in List, B.; Muller, S. *SynFacts* **2008**, *7*, 757

31. "Free Radical-Mediated Aryl Amination: Convergent Two- and Three-Component Couplings to Chiral 2,3-Disubstituted Indolines" Viswanathan, R.; Smith, C. R.; Prabhakaran, E. N.; Johnston, J. N. *J. Org. Chem.* **2008**, *73*, 3040-3046.

30. "On the Nature of Rate Acceleration in the Synthesis and Fragmentation of Triazolines by Brønsted Acid: Secondary Catalysis by Water (Hydronium Triflate)" Hong, K. B.; Donahue, M. G.; Johnston, J. N. *J. Am. Chem. Soc.* **2008**, *130*, 2323-2328.

29. "Synthesis of the ABC- and D-Ring Systems of the Indole Alkaloid Ambiguine G" Chandra, A.; Viswanathan, R.; Johnston, J. N. *Org. Lett*. **2007**, *9*, 5027-5029. PMC2617716

28. "Chiral Proton Catalysis: Enantioselective Brønsted Acid Catalyzed Additions of Nitroacetic Acid Derivatives as Glycine Equivalents" Singh, A. S.; Yoder, R. A.; Shen, B. S.; Johnston, J. N. *J. Am. Chem. Soc.* **2007**, *129*, 3466-3467.

27. "Synthesis of an Advanced Intermediate En Route to the Mitomycin Natural Products" Williams, A. L.; Srinivasan, J. M.; Johnston, J. N. *Org. Lett.* **2006**, *8*, 6047-6049. PMC2533355

26. "Preparation of a Protected Phosphoramidon Precursor via an *H*-Phosphonate Coupling Strategy" Donahue, M. G.; Johnston, J. N. *Bioorg. Med. Chem. Lett.* **2006**, *16*, 5602-5604.

25. "Chiral Proton Catalysis: pK_a Determination for a BAM-HX Brønsted Acid" Hess, A. S.; Yoder, R. A.; Johnston, J. N. *Synlett* **2006** (*Brønsted Acid Catalysis Cluster*) *1*, 147-149.

24. "A Case Study in Biomimetic Total Synthesis: Polyolefin Carbocyclizations to Terpenes and Steroids" Yoder, R. A.; Johnston, J. N. *Chem. Rev.* **2005**, *105*, 4730-4756. PMC2575671

23. "Brønsted Acid-Promoted Olefin Aziridination and Formal *anti*-Aminohydroxylation" Mahoney, J. M.; Smith, C. R.; Johnston, J. N. *J. Am. Chem. Soc.* **2005**, *127*, 1354-1355.

22. "Free Radical-Mediated Aryl Amination: A Practical Synthesis of (*R*)- and (*S*)-7-Azaindoline α-Amino Acid" Srinivasan, J. M.; Burks, H. E.; Smith, C. R.; Viswanathan, R.; Johnston, J. N. *Synthesis* (Practical Synthetic Procedures, invited) **2005**, 330-333.

21. "A Remarkably Facile Zirconium(IV) to Aluminum(III) β-Diketiminate Transmetalation That Also Results in a More Active Olefin Polymerization Precatalyst" Cortright, S. B.; Coalter, J. N. III; Pink, M.; Johnston, J. N. *Organometallics* **2004**, *23*, 5885-5888.

20. "IAN-Amines: Chiral C_2-Symmetric Zirconium(IV) Complexes from Readily Modified Axially Chiral C_1-Symmetric β-Diketimines" Cortright, S. B.; Huffman, J. C.; Yoder, R. A.; Coalter, J. N. III; Johnston, J. N. *Organometallics* **2004**, *23*, 2238-2250.

19. "Chiral Proton Catalysis: A Catalytic Enantioselective Direct Aza-Henry Reaction" Nugent, B. M.; Yoder, R. A.; Johnston, J. N. *J. Am. Chem. Soc*. **2004**, *126*, 3418-3419.

Highlighted in Science & Technology Concentrates, *Chemical & Engineering News*, March 22, 2004

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18. "The Brønsted Acid-Catalyzed Direct Aza-Darzens Synthesis of *N*-Alkyl *cis*-Aziridines" Williams, A. L.; Johnston, J. N. *J. Am. Chem. Soc.* **2004,** *126*, 1612-1613.

17. "Enantioenriched Axially Chiral β-Diketimines: Determination of the IAN-Amine Barrier to Atropisomerization" Cortright, S. B.; Yoder, R. A.; Johnston, J. N. *Heterocycles* (Special Issue in Honor of Leo A. Paquette's 70th Birthday) **2004,** *62*, 223-227.

16. "Free Radical-Mediated Vinyl Amination: A Mild, General Pyrrolidinyl Enamine Synthesis" Nugent, B. M.; Williams, A. L., Prabhakaran, E. N.; Johnston, J. N. *Tetrahedron* (Symposium in Print: New Synthetic Methods), **2003,** *59*, 8877-8888.

15. "The First Azacyclopentenyl Carbinyl Radical Isomerizations (ACCRI): Independent Use of Steric and Electronic (Polarization) Effects as Gating Elements " Viswanathan, R.; Mutnick, D.; Johnston, J. N. *J. Am. Chem. Soc.* **2003,** *125*, 7266-7271.

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14. "Free Radical-Mediated Aryl Amination and its Use in a Convergent [3+2] Strategy for Enantioselective Indoline α-Amino Acid Synthesis" Viswanathan, R.; Plotkin, M. A.; Prabhakaran, E. N.; Johnston, J. N. *J. Am. Chem. Soc.* **2003,** *125*, 163–168.

13. "Free Radical-Mediated Vinyl Amination: Access to *N,N*-Dialkyl Enamines and their β-Stannyl and β-Thio Derivatives", Prabhakaran, E. N.; Cox, A. L.; Nugent, B. M.; Nailor, K. E.; Johnston, J. N. *Org. Lett.* **2002,** *4*, 4197–4200.

12. "IAN-Amines: Direct Entry to a Chiral C_2-Symmetric Zirconium(IV) β-Diketimine Complex", Cortright, S. B.; Johnston, J. N. *Angew. Chem. Int. Ed.* **2002,** *41*, 345-348.

11. "Use of the *vicinal* Element Effect for Regiochemical Control of Quinone Substitutions and its Implication for Convergent Mitomycin Construction", Cox, A. L.; Johnston, J. N. *Org. Lett.* **2001,** *3*, 3695-3697.

10. "Nonconventional Carbon Additions to Azomethines. Aryl Amination /Indoline Synthesis by Direct Aryl Radical Addition to Azomethine Nitrogen", Johnston, J. N.; Plotkin, M. A.; Viswanathan, R.; Prabhakaran, E. N. *Org. Lett.* **2001,** *3*, 1009–1011.

Graduate and Postdoctoral Publications

9. "Enantioselective and Diastereoselective Mukaiyama-Michael Reactions Catalyzed by Bis(oxazoline) Copper(II) Complexes", Evans, D. A.; Scheidt, K. A.; Johnston, J. N.; Willis, M. C. *J. Am. Chem. Soc.* **2001,** *123*, 4480-4491.

8. "Stereocontrolled Elaboration of Natural (–)-Polycavernoside A, a Powerfully Toxic Metabolite of the Red Alga *Polycavernosa tsudai*", Paquette, L. A.; Barriault, L.; Pissarnitski, D.; Johnston, J. N. J. *Am. Chem. Soc*. **2000,** 122, 619-631.

7. "Catalytic Enantioselective Michael Additions to Unsaturated Ester Derivatives Using Chiral Copper(II) Lewis Acid Complexes", Evans, D. A.; Willis, M. C.; Johnston, J. N. *Org. Lett.* **1999,** *1*, 865-868.

6. "Stereochemical Models for the Enantiocontrolled Construction of Fully Functionalized C-Rings via Intramolecular Aldolization in Advanced Precursors to Taxol", Paquette, L. A.; Zeng, Q.; Tsui, H.-C.; Johnston, J. N. *J. Org. Chem*. **1998,** *63*, 8491-8509.

5. "Application of an S→O Allylic Transposition in the Context of a Bridgehead Olefinic System. New Opportunities for the Structural Modification of Bicyclo[6.2.1]undecanes via Transannular Ring Closure", Johnston, J. N., Tsui, H.-C.; Paquette, L. A. *J. Org. Chem*. **1998,** *63*, 129-136.

4. "New Extensions of the Anionic Oxy-Cope/Intramolecular SN' Reaction Cascade", Johnston, J. N.; Long, Y. O.; Paquette, L. A. *Synth. Comm*. **1998,** *28*, 1509-1515.

3. "Single Stereodifferentiation Associated with Carbon Atom Insertion during the Oxonium Ion-Initiated Pinacol Rearrangement of Dihydrofuranyl and Dihydropyranyl Carbinols", Paquette, L. A.; Lanter, J. C.; Johnston, J. N. *J. Org. Chem.* **1997**, *62*, 1702-1712.

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Reviews

16. "Methanesulfonic acid, 1,1,1-trifluoro-,comd. with(1R,2R)-N1,N2-di-2-quinolinyl-1,2-cyclohexanediamine (1:1)", Yousefi, R.; Johnston, J. N. *Encyclopedia of Reagents for Organic Synthesis*, Fuchs, P.; Wipf, P.; Rovis, T. Eds.; John Wiley & Sons Ltd.: Sussex, **2015**; in press.

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13. (invited) Book review of *Recent Developments in Asymmetric Organocatalysis* by Hélène Pellissier (CNRS and Paul Cézanne University, Aix-Marseille III, France), Royal Society of Chemistry: Cambridge. 2010.; Johnston, J. N. *J. Am. Chem. Soc.* **2011**, *133*, 2330.

12. (invited) "A Chiral N-Phosphinyl Phosphoramide: Another Offspring for the Sage Phosphoric Acid Progenitor" Johnston, J. N. *Angew. Chem. Int. Ed.* **2011**, *50*, 2890-2891.

11. (invited) "Transformations of Alkenes: Aziridination" Muchalski, H.; Johnston, J. N., In *Science of Synthesis: Stereoselective Synthesis*, de Vries, J. G., Ed.; Thieme: Stuttgart, (2011); Vol. 1, p 155.

10. "To Protonate or Alkylate: Stereoselective Brønsted Acid Catalysis of Carbon-Carbon Bond Formation Using Diazoalkanes, Leading to Highly Functionalized Chiral Small Molecules" Johnston, J. N.; Muchalski, H.; Troyer, T. L. *Angew. Chem. Int. Ed.* **2010**, *49*, 2290-2298.

9. (invited) "A Case Study in Biomimetic Total Synthesis: Polyolefin Carbocyclizations to Terpenes and Steroids" Yoder, R. A.; Johnston, J. N. *Chem. Rev.* **2005** *(Natural Product Synthesis thematic issue)*, *105*, 730.

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7. "*N*-Glyoxylol-(2*R*)-bornane-10,2-sultam", Johnston, J. N. *Electronic Encyclopedia of Reagents for Organic Synthesis*, Roush, W. R.; Wipf, P.; Rigby, J. H.; Paquette, L. A. Eds.; John Wiley & Sons Ltd.: Sussex, 2002.

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5. "2,6-Bis[(4*S*)-4-isopropyloxazolin-2-yl]pyridine", Johnston, J. N. *Electronic Encyclopedia of Reagents for Organic Synthesis*, Roush, W. R.; Wipf, P.; Rigby, J. H.; Paquette, L. A. Eds.; John Wiley & Sons Ltd.: Sussex, 2001.

4. "Chromium(VI) Oxide-3,5-Dimethylpyrazole", Johnston, J. N. *Encyclopedia of Reagents for Organic*

Synthesis, Danheiser, R. L.; Paquette, L. A. Eds.; John Wiley & Sons Ltd.: Sussex, 1995; Vol. 2, 1275.

3. "Diphenylacetylene", Johnston, J. N. *Encyclopedia of Reagents for Organic Synthesis*, Rigby, J. H.; Paquette, L. A. Eds.; John Wiley & Sons Ltd.: Sussex, 1995; Vol. 4, 2195.

2. "Lithium Aluminum Hydride-Cerium(III) Chloride", Johnston, J. N. *Encyclopedia of Reagents for Organic Synthesis*, Hart, D. J.; Paquette, L. A. Eds.; John Wiley & Sons Ltd.: Sussex, 1995; Vol. 5, 3017.

1. "Lithium Aluminum Hydride-Cobalt(II) Chloride", Johnston, J. N. *Encyclopedia of Reagents for Organic Synthesis*, Hart, D. J.; Paquette, L. A. Eds.; John Wiley & Sons Ltd.: Sussex, 1995; Vol. 5, 3020.

Presentations (Recent)

(trips to non-Ph.D. granting institutions in *italics*)

(151-170)
ACS Central Regional Meeting, Cincinnati, OH 5/18-21/16; Université de Montréal, Montréal, Québec 4/6/2016; FORUM Pharmaceuticals (Discovery Chemistry), Waltham, MA 11/20/15; ACS Southeast-Southwest Joint Regional Meeting, Memphis, TN 11/6/15; Bristol-Myers-Squibb (Process R&D Chemistry), New Brunswick, NJ 10/21/15; Bristol-Myers-Squibb (Discovery Chemistry), Lawrenceville, NJ 10/20/15; Northwestern University, Evanston, IL 9/24/15; Abbvie (Process Chemistry), Chicago, IL 9/23/15; Northern Illinois University, DeKalb, IL 9/22/15; International Union of Pure and Applied Chemistry (IUPAC) Conference, Organocatalysis II, BEXCO, Busan, Korea 8/12/15; Arnold O. Beckman Foundation Symposium, Irvine, CA 8/7/15; Gordon Research Conference: Natural Products, Andover, NH 7/26-31/15; Chirality 2015, Boston, MA 6/28-7/1/15; University of Delaware, Newark, DE 5/1/15; Meyers Symposium for Organic Chemistry, Southern Illinois University, Carbondale, IL 4/18/15; *Xavier University*, Cincinnati, OH 4/10/15; University of California, Davis, CA 3/3/15; Arthur C. Cope Scholar Award Symposium (CERM), Pittsburgh, PA 10/29/14; Symposium in honor of Franklin Davis, Temple University, Philadelphia, PA 10/29/14; University of Calgary, Calgary, CA 9/26/14

(126-150) Arthur C. Cope Scholar Award Symposium, San Francisco, CA 8/12/14; Gordon Research Conference: Heterocycles, Providence, RI 6/15-20/14; *University of Tennessee-Chattanooga*, Chattanooga, TN 5/30/14; University of Pennsylvania, PA 5/12/14; University of Louisville, Louisville, TN 4/25/14; *Tennessee Technological University*, TN 1/31/14; University of Missouri, St. Louis, St. Louis, MO 11/11/13; Amgen, San Francisco, CA 10/25/13; University of Ottawa, Ottawa, Ontario 9/25/13; Nagoya University, Department of Applied Chemistry, Graduate School of Engineering, Nagoya, Japan 5/31/13; Osaka University, Institute of Scientific and Industrial Research, Osaka, Japan 5/30/13; Kyoto University, Faculty of Science, Kyoto, Japan 5/29/13; International Conference of Organocatalysis, Kyoto, Japan 5/27-28/13; Tohoku University, Sendai, Japan 5/24/13; University of Tokyo, Tokyo, Japan 5/22/13; Tokyo Institute of Technology, Tokyo, Japan 5/21/13; Gakushuin University, Tokyo, Japan 5/20/13; University of Southern Mississippi, MS 4/4/13; Duke University, NC 2/5/13; Clemson University, SC 1/10/13; Rutgers University, New Brunswick, NJ 1/8/13; 1st Japan-US Organocatalysis Symposium, HI 12/15-19/12; Scripps Research Institute, La Jolla, CA 10/2/2012; University of California, San Diego, CA 10/1/2012; 34th Reaction Mechanisms Conference, Columbia, MO 6/19-23/12;

(101-125)
44th Annual SURC Conference (Southeastern Undergraduate Research Conference) Mississippi State University, MS 4/12/12 [Keynote Speaker]; Gordon Research Conference: Peptides: Chemistry and Biology, Ventura, CA 2/19-24/12; Wayne State University, Detroit, MI 1/26/11 [*Organic Syntheses* Lecturer]; Michigan State University, East Lansing, MI 1/25/11; University of Vermont, Burlington, VT 10/7/11; Dartmouth University, Hanover, NH 10/6/11; Amgen, Thousand Oaks, CA 9/26/11; Cal Tech, Pasadena, CA 9/28/11; University of Alberta, Edmonton CA 9/22/11; American Peptide Symposium, San Diego, CA 6/29/11; Leipzig University, GE 5/29/11; *Hope College*, Holland, MI 3/4/11; *Calvin College*, Grand Rapids, MI 3/3/11; Case Western Reserve University, Cleveland, OH 1/13/11; University of Iowa, Ames, IA 11/12/10; University of California, Santa Barbara, CA 9/17/10; Roche Colorado Corporation Peptide Symposium 2010, Boulder, CO 9/16/10; Vanderbilt Institute of Chemical Biology, Vanderbilt University, Nashville, TN 9/8/10; Latest Trends in Organic Synthesis, St. Catharines, Ontario, CA 8/11-14/10; Rice University, Houston, TX 1/27/10; University of Houston, Houston, TX 1/26/10; University of Cambridge, UK, 7/3/09; University of Manchester, UK, 7/2/09; University of Ediburgh, Scotland 6/30/09; University of Liverpool, UK 6/29/09;

(76-100) University of Miami, Miami, FL 2/20/09; University of South Florida, Tampa, FL 2/19/09; SERMACS, Nashville, TN 11/13/08; East Carolina University, Greenville, NC 10/3/08; Queen's University, Queens, Ontario, CA 9/12/08; University of Massachusettss, Amherst, 6/24/08; The Ohio State University, Columbus, OH 5/10/08; University of Texas, Austin, TX 9/7/07; Texas Christian University, Fort Worth, TX 9/6/07; University of Texas, Arlington, TX 9/5/07; ICCA-X, Nashville, TN 8/13/07 *College of William & Mary*, Williamsburg, VA 3/30/07; Brown University, Providence, RI 2/27/07; *Jackson State University*, Jackson, MS 2/2/07; Merck & Co. (process chemistry research), Rahway, NJ 1/17/07; Astra Zeneca (Medicinal), DE 9/21/06; ACS National Meeting, San Francisco, CA, 9/11/06; University of Chicago, Chicago, IL 5/12/06; University of Wisconsin, Madison, WI 5/11/06; The Pennsylvania State University, State College, PA 4/24/06; Osaka University, Osaka, Japan 3/22/06; Keio University, Tokyo, Japan 3/20/06; Tokyo University of Agriculture and Technology, Tokyo, Japan 3/17/06; Gakushuin University, Tokyo, Japan 3/16/06; Tokyo University of Science, Tokyo, Japan 3/15/06

Mentoring

(see research group website for publication details and current position)

NSF REU: 8 students
HHMI: 1 student
Graduates: 10 B.S., 5 M.S., 18 Ph.D.
Postdoctoral Scholars: 11
Current: 9 graduate students, 1 postoctoral associate, 1 visiting scientist, 2 undergraduates