Joshua G Pierce
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2620 Yarbrough Drive
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Professional Experience

2018 – present	**Associate Professor, Department of Chemistry, NC State University**
2018 – present	**Founder, President and CEO of Synoxa Sciences, Inc**
2018 – present	**Associate Director, Emerging and Infectious Diseases (CMI, NC State)**
2018 – present	**Leader, Natural Products to Drugs Initiative (CMI, NC State)**
2016 – present	**Member, Executive Advisory Board (CMI, NC State)**
2013 – present	**Member, Comparative Medicine Institute (CMI) (NC State)**
2012 – 2018	**Assistant Professor, Department of Chemistry, NC State University**
2009 – 2011	**The Scripps Research Institute**, La Jolla, CA NIH NRSA Postdoctoral Fellow Worked as part of a team that developed an amidine analog of vancomycin that overcomes bacterial resistance. Mentor: Professor Dale L. Boger

Education

2003 – 2008	**University of Pittsburgh**, Pittsburgh, PA Ph.D. in Organic Chemistry Developed several novel metal mediated reactions and applied them to the synthesis of biologically active molecules. Worked on the total synthesis of tuberostemonone. Advisor: Professor Peter Wipf
1999 – 2003	**University of Pittsburgh**, Pittsburgh, PA B.S. in Chemistry (Bioscience Option) with Honors Synthesized and demonstrated the efficacy of a chiral ligand for the addition of diethyl zinc to aldehydes. Advisor: Professor Peter Wipf

Fellowships and Awards

2019 – Present	LORD Corporation Distinguished Scholar
2017 – 2021	University Faculty Scholar
2017	Thieme Chemistry Journals Awardee
2015 – 2020	NSF CAREER Award
2015	Sigma Xi Research Award
2009 – 2011	NIH NRSA Postdoctoral Award
2008	Schering Plough Science and Innovation Award
2008	Roche Excellence in Chemistry Award
2007 – 2008	Mellon Pre-doctoral Fellowship
2006 – 2007	ACS Organic Division Fellowship Sponsored by Wyeth Pharmaceuticals
2002	Silverman Award, Department of Chemistry, University of Pittsburgh
1999 – 2003	University Scholar, University of Pittsburgh

RESEARCH OVERVIEW

Research in the Pierce group is focused on harnessing the diverse architectures of marine natural products to inspire advances in chemical reaction development, chemical biology and therapeutic lead identification. *In addition to our published work, we have advanced projects in the synthesis of complex natural products (monanchocidin, batzelladine D, curvulamine, ansalactams A-D, the melokhanines, the abyssomicins and clindamycin) as well as several methods development projects toward medicinally relevant heterocycles.* A subset of our projects have integrated chemical biology studies to explore the molecules' mechanism of action and reveal lead molecules for further development; others are focused on exploring reaction mechanism and asymmetric development. Finally, we are invested in pursuing the commercialization of key discoveries from our lab, both through start-up creation and industry engagement.

PUBLICATIONS

43. **Synthesis and Antimicrobial Activity of Batzelladine D**. Lin, Y-C,; Riboucourt, A; Pierce, J. G. **2020**, *Submitted.* Preprint: https://doi.org/10.26434/chemrxiv.9924692.v2

42. **Stereocontrolled Synthesis of Melokhanine E**. Cholewczynski, A,; Williams, P.; Pierce, J. G, *Org. Lett,* **2020**, *22*, 714. Preprint: https://doi.org/10.26434/chemrxiv.10022858.v1

41. **Biofilm Modulation of *Staphylococcus aureus* with 4-Oxazolidinones**. Frohock, B.; Gilbertie, J. M.; Schnabel, L. V.; Pierce, J. G. **2020**, *ChemBioChem*, *In Press*. Preprint: https://doi.org/10.26434/chemrxiv.9759302.v1 VIP Paper and Journal Front Cover.

40. **Expanded Structure-Activity Studies of Lipoxazolidinone Antibiotics**. Robinson, K.; Mills, J. J.; Pierce, J. G. *ACS Med. Chem. Lett.,* **2019**, *10*, 374.

39. **Accidental intoxications in toddlers: lack of cross-reactivity of vilazodone and its urinary metabolite M17 with drug of abuse screening immunoassays**. Martinez-Brokaw, C. D.; Radke, J. B.; Pierce, J. G.; Ehlers, A.; Ekins, S.; Wood, K. E.; Maakestad, J.; Rymer, J. A.; Tamama, K.; Krasowski, M. D. *BMC Clin. Path.* **2019**, *19*, 2.

38. **Synthesis and Biological Activity of the Antimicrobial Natural Product Lipoxazolidinone A**. Mills, J. J.; Robinson, K.; Zehnder, T. E.; Pierce, J. G. *Angew. Chem. Int. Ed.* **2018**, *57*, 8682.

37. **3-Hydroxy-1,5-dihydro-2*H*-pyrrol-2-ones as Novel Antibacterial Scaffolds Against Methicillin-Resistant *Staphylococcus aureus*** Cusumano, A. Q.; Pierce, J. G. *Bioorg. Med. Chem. Lett.* **2018**, *28*, 2732. (*Invited Submission for issue in Honor of Dale L. Boger)*.

36. **Coupling of Thioamides with 4-Bromoacrotonate Esters and Subsequent Conjugate Addition for the Rapid One-Pot Synthesis of Functionalized Thiazolines**. Parker, P. D.; Ge, Y.; Pierce, J. G. *Tetrahedron Lett.*, **2018**, *59*, 277.

35. **Synthesis of Quaternary-Substituted Thiazolines via Halocyclization of *S*-Allyl Thioimidate Salts**. Parker, P. D.; Lemercier, B. C.; Pierce, J. G. *J. Org. Chem.* **2018**, *83, 12 (Featured Article & Front Cover).*

34. **Mast cell degranulation and calcium influx are inhibited by an Echinacea purpurea extract and the alkylamide dodeca-2E,4E-dienoic acid isobutylamide.** Gulledge, T. V.; Collette, N. M.; Moazami, Y.; Juzumaite, M.; Tong, S.; Mackey, E.; Moeser, A. J.; Pierce, J. G.; Cech, N. B.; Laster, S. M. *J Ethnopharmacol.* **2018***, 212*, 166.

33. **Direct Access to Highly Functionalized Heterocycles through the Condensation of Cyclic Imines and alpha-Oxoesters**. Cusumano, A. Q.; Boudreau, M. W.; Pierce, J. G. *J. Org. Chem.* **2017**, *82*, 13714.

32. **5-Benzylidene-4-oxazolidinones Potently Inhibit Biofilm Formation in Methicillin-Resistant *Staphylococcus aureus***. Edwards, G. A.; Shymanska, N. V.; Pierce, J. G. *Chem. Commun.* **2017**, *53*, 7353. (Invited Submission for Emerging Investigators Issue)

31. **Stereoselective Synthesis of Quaternary Pyrrolidine-2,3-diones and beta-Amino Acids**. Shymanska, N. V.; Pierce, J. G. *Org. Lett.* **2017**, *19*, 2961.

30. **Structure, Synthesis and Biological Properties of the Pentacyclic Gaunidinium Alkaloids**. Shi, Y.; Moazami, Y. M.; Pierce, J. G. *Bioorg. Med. Chem.* **2017**, *25*, 2817. (Invited Submission in honor of Xiaoguang Lei).

29. **How Cancer Cells Become Resistant to Cationic Lytic Peptides: It's the Sugar!** Pierce, J. G. *Cell Chem. Biol.* **2017**, *24*, 121. (Invited Preview)

28. **Stereocontrolled Synthesis of Plagiogyrin A**. Shi, Y.; Pierce, J. G. *Org. Lett.* **2016**, *18*, 5308.

27. **Examining Ubiquitinated Peptide Enrichment Efficiency through an Epitope Labeled Protein**. Parker, J. L.; Oh, Y. Y.; Moazami, Y.; Pierce, J. G.; Dean, R. A; Muddiman, D. C. *Anal. Biochem.* **2016**, *512*, 114.

26. **Synthesis of 1,2,4-Oxadiazoles via DDQ-Mediated Oxidative Cyclization of Amidoximes**. Parker, P. D.; Pierce, J. G. *Synthesis* **2016**, *48,* 1902. Invited Special Topics Article for "Cyclization Tactics and Strategies"

25. **Thiohydroximic Acids: Versatile Reagents for Organic Synthesis**. Lemercier, B. C.; Pierce, J. G *Synlett* **2015**, *27*, 181. Invited SYNPACT perspective.

24. **Synthesis of 1,4,2-Oxathiazoles via Oxidative Cyclization of Thiohydroximic Acids**. Lemercier, B. C.; Pierce, J. G. *Org. Lett.* **2015**, *17*, 4542.

23. **Synthesis and Biological Evaluation of a Series of Fatty Acid Amides from Echinacea**. Moazami, Y.; Gulledge, T.; Laster, S. M.; Pierce, J. G. *Bioorg. Med. Chem. Lett.* **2015**, *25*, 3091.

22. **Synthesis of 2,3-Dihydro-1,3-oxazin-4-ones via a Mild Formal [4+2] Cycloaddition of Acylketenes with Aldimines**. Moazami, Y.; Pierce, J. G. *Synthesis* **2015** *47*, 3363.

21. **Rapid Synthesis and Antimicrobial Activity of Novel 4-Oxazolidinone Heterocycles**. Shymanska, N. V.; An, I. H.; Guevara-Zuluaga, S.; Pierce, J. G. *Bioorg. Med. Chem. Lett*. **2015**, *25, 4887.* Invited submission to 25th Anniversary Issue.

20. **Synthesis of the 5,6-Dihydroxymorpholin-3-one Fragment of Monanchocidin A**. Shi, Y.; Pierce, J. G. *Org. Lett.* **2015**, *17*, 968.

19. **A Rapid Synthesis of 4-Oxazolidinones: Total Synthesis of Synoxazolidinones A and B**. Shymanska, N. V.; An, I. H.; Pierce, J. G. *Angew. Chem. Int. Ed.* **2014**, *53*, 5401.

18. **Synthesis of Thiazolines by Copper Catalyzed Aminobromination of Thiohydroximic Acids.** Lemercier, B. C.; Pierce, J. G. *Org. Lett.* **2014**, *16*, 2074.

17. **Synthesis of Thiohydroxamic Acids and Thiohydroximic Acid Derivatives**. Lemercier, B. C.; Pierce, J. G. *J. Org. Chem.* **2014**, *79*, 2321.

16. **Synthesis of a Library of Tricyclic Azepinoisoindolinones**. Miller, B.; Mao, S.; Rosenker, K. M. G.; Pierce, J. G.; Wipf, P. *Beilstein J. Org. Chem.* **2012**, *8*, 1091.

15. **Silver(I)-Promoted Conversion of Thioamides to Amidines: Divergent Synthesis of a Key Series of Vancomycin Aglycon Residue 4 Amidines that Clarify Binding Behavior to Model Ligands**. Okano, A.; James, R. C.; Pierce, J. G.; Xie, J.; Boger, D. L. *J. Am. Chem. Soc.* **2012**, *134*, 8790.

14. **Redesign of Glycopeptide Antibiotics – Back to the Future**. James, R. C.; Pierce, J. G.; Okano, A.; Xie, J.; Boger, D. L. *ACS Chemical Biology*, **2012**, *7*, 000.

13. **Total Synthesis of [Ψ[C(=S)NH]Tpg^4]Vancomycin Aglycon, Ψ[C(=NH)NH]Tpg^4]Vancomycin Aglycon, and Related Key Compounds: Reengineering Vancomycin for Dual D-Ala-D-Ala and D-Ala-D-Lac Binding**. Xie, J.; Okano, A.; Pierce, J. G.; James, R. C.; Stamm, S.; Crane, C.; Boger, D. L. *J. Am. Chem. Soc.* **2012**, *134*, 1284.

12. **A Redesigned Vancomycin Engineered for Dual D-Ala-D-Ala and D-Ala-D-Lac Binding Exhibits Potent Antimicrobial Activity Against Vancomycin-Resistant Bacteria**. Xie, J.; Pierce, J. G.; James, R. C.; Okano, A.; Boger, D. L. *J. Am. Chem. Soc.* **2011**, *133*, 13946.

11. **Large-scale asymmetric synthesis of the bioprotective agent JP4-039 and analogs**. Frantz, M-C.; Pierce, J. G.; Pierce, J. M.; Kangying, L.; Qingwei, W.; Johnson, M.; Wipf, P. *Org. Lett.* **2011**, *13*, 2318.

10. **Synthesis and Evaluation of Selected Key Methyl Ether Derivatives of Vancomycin Aglycon**. Crane, C. M.; Pierce, J. G.; Leung, S. S. F.; Tirado-Rives, J.; Jorgensen, W. L.; Boger, D. L. *J. Med. Chem.* **2010**, *53*, 7229.

9. **The Mitochondria-Targeted Nitroxide JP4-039 Augments Potentially Lethal Irradiation Damage Repair**. Rajagopalan, M. S.; Gupta, K.; Epperly, M. W.; Franicola, D.; Zhang, X.; Wang, H.; Zhao, H.; Tyurin, V. A.; Pierce, J. G.; Kagan, V. E.; Wipf, P.; Kanai, A.; Greenberger, J. S. *In Vivo* **2009**, *23*, 717.

8. **Synthesis of Hydroxylated L-Choi derivatives from L-Tyrosine: Octahydro-1*H*-indole Carboxylates**. Wipf, P.; Pierce, J. G.; Fushimi, M.; Kasi, D.; Cuzzupe, A. *J. Org. Chem.* **2008**, *73*, 7807.

7. **Synthesis of Functionalized Isoindolinones: Addition of *In Situ* Generated Organoalanes to Acyliminium Ions**. Pierce, J. G.; Waller, D. L.; Wipf, P. *J. Organometallic Chem.* **2007**, *692*, 4618.

6. **Expedient Synthesis of the α-*C*-Glycoside Analogue of the Immunostimulant Galactosylceramide (KRN7000)**. Wipf, P.; Pierce, J. G. *Org. Lett.* **2006**, *8*, 3375.

5. **Synthesis of Homoallylic Amines by Hydrozirconation-Imine Addition of Allenes**. Wipf, P.; Pierce, J. G. *Org. Lett.* **2005**, *7*, 3537.

4. **Silver(I)-Catalyzed Addition of Zirconocenes to Glycal Epoxides. A New Synthesis of α-*C*-Glycosides**. Wipf, P.; Pierce, J. G.; Zhuang, N. *Org. Lett.* **2005**, *7*, 483.

3. **Lipase-Catalyzed Resolution of 4-Trimethylsilyl-3-Butyn-2-ol and Conversion of the (*R*)-Enantiomer to (*R*)-3-Butyn-2-yl-Mesulate and (*P*)-1-Tributylstannyl-1,2-Butadiene**. Marshall, J. A.; Chobanian, H. Checked by Wipf, P.; Pierce, J. G. *Org. Synth.* **2005**, *82*, 43.

2. **Catalytic Reduction of Amides to Amines with Hydrosilanes Using a Triruthenium Carbonyl Cluster as the Catalyst**. Motoyama, Y.; Itonaga, C.; Ishida, T.; Takasaki, M.; Nagashima, H. Checked by Wipf, P.; Pierce, J. G. *Org. Synth*. **2005**, *82*, 188.

1. **Investigation of Ligand Loading and Asymmetric Amplification in CHAOx-Catalyzed Diethylzinc Additions**. Wipf, P.; Pierce, J. G.; Wang, X. *Tetrahedron: Asymmetry* (Special Issue on Asymmetric Syntheses on a Process Scale) **2003**, *14*, 3605.

PATENTS

8. **One Step Synthesis of Phosphate-based Inhibitors and Applications Thereof**. D'Antonio, E.; Pierce, J. G. (10/2019 – Provisional, NC State/USC)
7. **Alkamide Compounds and Uses Thereof**. Pierce, J. G.; Gulledge, T.; Mishra, S. K.; Baeumer, W.; Laster, S. M. (7/2017 – Provisional, NC State)
6. **Dual Inhibitors of JAK and TRPV1**. Pierce, J. G.; Fourches, D.; Baeumer, W. (12/2016; 12/2017 refiled – Provisional, NC State)
5. **4-Oxazolidinone Antimicrobial Agents**. Mills, J. J.; Pierce, J. G. (9/2016 - Provisional, NC State; Patent Filed 8/2017)
4. **5-Benzylidene-4-Oxazolidinones**. Edwards, G. E.; Pierce, J. G. (9/2016 - Provisional, NC State; Patent Filed 8/2017)
3. **Materials and Analytical Methods for Detection and Quantification of Free Beta-N-Methylamino-L-Alanine (BMAA) and BMAA Incorporated into Proteins**. Louizk, P L..; Moazami, Y.; Williams, G. J.; Pierce, J. G.; Muddiman, D. C. (7/2016 – Provisional, NC State; Patent Filed 6/2017)
2. **Novel Th2 Polarizing Compounds**. Groettrup, M.; Wipf, P.; Muller, M.; Pierce, J. G. *WO 2013/007792*
1. **Use of Targeted Nitroxide Agents in Preventing, Mitigating and Treating Radiation Injury**. Wipf, P.; Belikova, N. A.; Jiang, J.; Greenberger, J. S.; Pierce, J. G.; Epperly, M. W. *US-2011-0172214-A*

INVITED LECTURES

74. SERMACS – Heterocyclic Chemistry in the Southeast and Beyond (Savanah, GA – October, 2019)

73. Heterocyclic Compounds Gordon Research Conference (Newport, RI – June 2019)
72. Gilead Sciences/University of Washington (Seattle, WA – June 2019)
71. Academic Drug Discovery Symposium, ACS National Meeting (Orlando, FL – April 2019)
70. Flinders University (Adelaide, Australia – December 2018)
69. Monash University (Melbourne, Australia – December 2018)
68. University of Tasmania (Hobart, Australia – December 2018)
67. University of Queensland (Brisbane, Australia – December 2018)
66. RACI Organic Division National Conference, University of Western Australia (Perth, Australia – December 2018)
65. Pennsylvania State University (University Park, PA – October 2018)
64. The University of Florida (Gainesville, FL – September 2018)
63. University of South Florida (Tampa, FL – March 2018)
62. The University of Toledo (Toledo, OH – December 2017)
61. The Ohio State University, Department of Chemistry (Columbus, OH – November 2017)
60. The Ohio State University, College of Pharmacy (Columbus, OH – November 2017)
59. Natural Products & Bioactive Compounds Gordon Research Conference (Andover, MA – July 2017)
58. Shanghai Institute of Organic Chemistry (Shanghai, China – May 2017)
57. East China Normal University (Shanghai, China – May 2017)
56. Nankai University (Tianjin, China – May 2017)
55. Tianjin University (Tianjin, China – May 2017)
54. Tsinghua University (Beijing, China – May 2017)
53. Peking University (Beijing, China – May 2017)
52. University of Oregon (Eugene, OR – April 2017)
51. Oregon State University (Corvallis, OR – April 2017)
50. Emory University (Atlanta, GA – April 2017)
49. Duke University (Durham, NC – February 2017)
48. University of Notre Dame (South Bend, IL – March 2017)
47. University of Illinois at Chicago (Chicago, IL – March 2017)
46. Northwestern University (Evanston, IL – March 2017)
45. Temple University (Philadelphia, PA – March 2017)
44. University of Pennsylvania (Philadelphia, PA – March 2017)
43. Memorial Sloan Kettering Cancer Center (New York, NY – March 2017)
42. The Scripps Research Institute (La Jolla, CA – March 2017)
41. Janssen Pharmaceuticals (La Jolla, CA – March 2017)
40. Caltech (Pasadena, CA – March 2017)
39. Dart Neurosciences (San Diego, CA – March 2017)
38. University of California, San Diego (San Deigo, CA – March 2017)
37. University of Pittsburgh (Pittsburgh, PA – March 2017)
36. Princeton University (Princeton, NJ – February 2017)
35. Vanderbilt University (Nashville, TN – February 2017)
34. Purdue University (West Lafayette, IN – February 2017)
33. University of Indiana (Bloomington, IN – February 2017)
32. University of California, Riverside (Riverside, CA – February 2017)
31. University of California, Irvine (Irvine, CA – February 2017)
30. University of California, Los Angeles (Los Angeles, CA – February 2017)

29. University of California, Santa Barbara (Santa Barbara, CA – February 2017)
28. University of Colorado (Boulder, CO – January 2017)
27. University of Oklahoma (Norman, OK – January 2017)
26. Oklahoma State University (Stillwater, OK – January 2017)
25. University of California, Berkeley (Berkeley, CA – January 2017)
24. Baylor University (Waco, TX – January 2017)
23. University of Texas Southwestern Medical Center at Dallas (Dallas, TX – January 2017)
22. Boston University (Boston, MA – December 2016)
21. Georgia State University (Atlanta, GA – December 2016)
20. Wayne State University (Detroit, MI – October, 2016)
19. University of Michigan (Ann Arbor, MI – October, 2016)
18. University of Kentucky (Lexington, KY – October, 2016)
17. St Jude Children's Research Hospital (Memphis, TN – October 2016)
16. Georgia Tech University (Atlanta, GA – September, 2016)
15. University of North Carolina at Chapel Hill (Chapel Hill, NC – September, 2016)
14. University of North Carolina at Wilmington (Wilmington, NC – September, 2016)
13. University of Kansas (Lawrence, KS – September 2016)
12. Young Academic Investigators Symposium, ACS National Meeting (Philadelphia, PA – August 2016)
11. National Cancer Institute, Chemical Biology Laboratory (Fredrick, MD – May 2016)
10. BASF (RTP, NC – April 2016)
9. University of California, Davis (Davis, CA – April 2016)
8. FloHet – 2015 (Gainesville, FL – February 2016)
7. SERMACS 2015, Tomorrow's Therapeutics: Natural Product Session (Memphis, TN – November 2015)
6. IUPAC Congress, Young Chemists Lecture (Busan, South Korea – August 2015)
5. American Society of Pharmacognosy, 2015 Annual Meeting (Copper Mountain, CO – July 2015)
4. Heterocyclic Compounds Gordon Research Conference (Salve Regina, RI – June 2015)
3. University of Tulsa, Department of Chemistry and Biochemistry (Tulsa, OK – September 2013)
2.Chemical Biology and High Throughput Chemistry Gordon Conference – Graduate Research Symposium (New London, NH – June 2009)
1. Roche Excellence in Chemistry Symposium (Palo Alto, CA – May 2008)

POSTER PRESENTATIONS (INDEPENDENT CAREER)

11. Natural Products Gordon Conference (Andover, NH – July 2019)
10. Natural Products Gordon Conference (Andover, NH – July 2016)
9. Organic Reactions and Processes Gordon Conference (Eaton, MA – July 2016)
8. BASF iTeam Event (RTP, NC – December 2015)
7. Chemical Biology and High Throughput Chemistry GRC (New London, NH – June 2015)
6. Natural Products Gordon Conference (Andover, NH – July 2014)
5. Heterocycles Gordon Conference (Salve Regina, RI – June 2014)
4. Natural Products Gordon Conference (Andover, NH – July 2013)
3. National Organic Symposium Meeting (University of Washington, Seattle, WA – June 2013)
2. Chemical Biology and High Throughput Chemistry GRC (New London, NH – June 2013)
1. National Organic Symposium Meeting (Duke University, Durham, NC – 2007)

Other Oral Presentations (Independent Career)

12. ACS-National Meeting (Boston, MA – August 2018)
11. Coastal Carolina University (Conway, SC – October 2016)
10. ACS-National Meeting (Boston, MA – August 2015)
9. Salisbury State University, Department of Chemistry (Salisbury, MD – March 2015)
8. Appalachian State University, Department of Chemistry (Boone, NC – October 2014)
7. Southeastern Regional Meeting of the ACS (Nashville, TN – October 2014)
6. ACS-National Meeting (San Francisco, CA – August 2014)
5. Natural Sciences Museum, Science Café (Raleigh, NC – August 2014)
4. Southeastern Regional Meeting of the ACS (Atlanta, GA – November 2013)
3. ACS-National Meeting (Indianapolis, IN – August 2013)
2. ACS-National Meeting (New Orleans, LA – March 2013)
1. ACS-National Meeting (San Diego, CA – March 2005)

Conference Discussion Leader / Session Chair

7. Natural Products Gordon Conference (Andover, NH – July 2016)
6. ACS-National Meeting (Boston, MA – August 2015)
5. ACS-National Meeting (San Francisco, CA – August 2014)
4. ACS-National Meeting (Indianapolis, IN – August 2013)
3. Chemical Biology and High Throughput Chemistry GRC (New London, NH – June 2013)
2. Southeastern Regional Meeting of the ACS (Atlanta, GA – November 2013)
1. Southeastern Regional Meeting of the ACS (Raleigh, NC – October 2012)

Teaching and Related Activities

Courses Taught

CH221 (Organic Chemistry 1, Bruice textbook)
Spring 2014, 185 enrolled

CH225 (Organic Chemistry 1 for Majors, Loudon textbook)
Fall 2016, 49 enrolled
Fall 2017, 48 enrolled
Fall 2018, 60 enrolled

CH227 (Organic Chemistry 2 for Majors, Loudon textbook)
Spring 2015, 67 enrolled
Spring 2016, 76 enrolled

CH723 (Synthesis)
Spring 2012, 18 enrolled
Spring 2018, 17 enrolled
Spring 2019, 11 enrolled
Developed a graduate level synthesis course that combined named reactions with natural products total synthesis.

CH755 (Advanced Organic Chemistry)
Fall 2012, 20 enrolled
Fall 2013, 8 enrolled
Fall 2014, 25 enrolled
Fall 2015, 19 enrolled

A reaction and reaction mechanisms course for entry-level graduate students and undergraduates.

CH610 (Intro to Graduate Studies)

Fall 2012, 28 enrolled
Fall 2013, 29 enrolled
Fall 2014, 32 enrolled
Fall 2015, 24 enrolled
Introduction to Graduate Studies, co-taught with Prof. Walter Weare

CH601/801 (Chemistry Seminar Program)

Spring 2012, 125 enrolled
Fall 2012, 120 enrolled
Spring 2013, 122 enrolled
Fall 2013, 120 enrolled
Spring 2014, 119 enrolled
Fall 2014, 125 enrolled
Spring 2015, 90 enrolled
Fall 2015, 120 enrolled
Seminar Course for all enrolled graduate students.

CH499 (Undergraduate Research)

Summer 2014, 2 enrolled
Fall 2014, 7 enrolled
Spring 2015, 4 enrolled
Fall 2015, 6 enrolled

CH795 (Medicinal Chemistry, guest lecturer)

Fall 2018, 10 enrolled

STUDENTS MENTORED

Postdoctoral Fellows

Il Hwan An, Ph.D. (January 2013 – December 2013)
PhD – Michigan State (Maleczka)

Aubert Ribaucourt (July 2017 – July 2019)
PhD – Oxford (Hodgson)

Nicholas Masarro (August 2019 –)
PhD – University of Oklahoma (Sharma)

Graduate Students

Esam Almanasrah (August 2018 –)
BS – University of West Florida

Anna Cholowczyski (August 2016 –)
BS – San Diego State University

Grant Edwards (August 2014 –)
MS/BS – University of Tulsa (Chalker)

Bram Frohock (August 2016 –)
BS – University of Tulsa

Kyle Griewisch (August 2017 –)
BS – Catawba College

Jeremy Hoppe (August 2017 –)
BS – Eckerd College

Thane Jones (August 2017 –)
BS – Roanoke College
Berenice Lemercier (August 2011 – December 2015)
MS – University of Rouen, France
Current Position: Vertex Pharmaceuticals (Boston, MA)
Zhanhao Liang (August 2017 –)
BS – Xiamen University, China
You-Chen Lin (August 2016 –)
BS – National Taiwan Normal University
Christina Martinez (August 2015 –)
BS – UNC Charlotte (Troutman)
Jonathan Mills (August 2012 –)
BS – University of North Carolina at Wilmington
Postdoctoral Fellow, Vanderbilt University (S. Fesik)
Current Position: Assistant Professor, Illinois State University
Yasamin Moazami (August 2011 – August 2017)
MS – University of North Carolina at Charlotte (Ogle)
Current Position: Gilead Sciences (Seattle, WA)
Minhua Nie (August 2018 –)
BS/MS – Shenyang Pharmaceutical University, China
Jason Nguyen (August 2013 – May 2015)
BS – University of Puget Sound
Patrick Parker (August 2014 – August 2019)
BS – Lipscomb University
Current Position: Postdoctoral Fellow, UC Irvine (V. Dong)
Nicholas Perry (August 2015 – May 2017)
BS – Salisbury State University
Current Position: Tethis
Xiang Qiu (August 2017 –)
BS – Nankai University, China
Kaylib Robinson (August 2015 –)
BS – UNC Asheville (Wolfe)
Yunlong Shi (August 2011 – April 2017)
BS – Zhejiang University, China
Current Position: Postdoctoral Fellow, The Scripps Research Institute (Carroll)
Nataliia Shymanska (August 2011 – March 2016)
BS – Taras Shevchenko National University of Kyiv
Postdoctoral Fellow, EMBL (Heidelberg, Germany)
Current Position: BASF (Germany)
Alain Valery (August 2015 – December 2017)
BS – CPE Lyon, France

Undergraduate Students and Visiting Students

Matthew Boudreau (January 2013 – May 2016)
North Carolina State University (Chemistry)
Current Position: Graduate Student, Roger Adams Fellow, UIUC

Rachel Cancel (May 2015 - August 2015)
University of North Carolina at Wilmington
Alex Cusumano (August 2014 – May 2018)
North Carolina State University (Chemistry)
Current Position: Graduate Student, Caltech
Devran Dannenberg (January 2018 –)
North Carolina State University (Chemistry)
Naish Lalloo (May 2015 – May 2017)
North Carolina State University (Chemistry)
Yonghe Ge (August 2016 – May 2018)
North Carolina State University (Chemistry)
Larissa Madden (May 2014 – May 2015)
North Carolina State University (Chemical Engineering)
Andrew McLean (January 2012 – January 2014)
North Carolina State University (Human Biology)
Current Position: Medical Student, Wake Forest University (Wake Forest, NC)
Marina Michaud (Summer 2017)
Georgia Southern University
Jacob Nelson (September 2014 – September 2015)
North Carolina State University (Chemistry)
William Parks (May 2014 – June 2014)
North Carolina State University (Chemical Engineering)
Emma Smits (January 2018 –)
North Carolina State University (Chemistry)
Ben Stemen (April 2017 –)
North Carolina State University (Chemistry)
Peyton Williams (August 2015 – May 2018)
North Carolina State University (Chemistry/Biology)
Current Position: Graduate Student, Yale University
Bin Ye (Summer 2013)
Zhejiang University
Sebastian Guevara Zuluaga (Summer 2012)
University of Puerto Rico, Rio Piedras Campus
Yuyang Zhang (Summer 2012)
Zhejiang University
Troy Zehnder (September 2014 – August 2016)
North Carolina State University (Chemistry)
Current Position: Graduate Student, University of Michigan

High School Students

Jackie Omweno (Summer 2015, Project SEED)
Garner Magnet High School
Current Position: Undergraduate Student, NC State University (Raleigh, NC)
Janine Tu (June 2017 – May 2018)
Enole High School
Current Position: Undergraduate Student, Yale University

DaNaujah Venters (Summer 2014, Project SEED)
Knightdale High School
Current Position: Undergraduate Student, NC State University (Raleigh, NC)

DEPARTMENTAL AND UNIVERSITY SERVICE

Executive Advisory Committee, Pain Research Center, NC State University (2019 – Present)
College of Sciences Dean of Research Search Committee (2018-2019)
Chair, Division of Organic Chemistry, NC State University (June 2018 – Present)
Chair of MS Committee and Faculty Advisory Board Member, METRIC, NC State (2018 – Present)
Faculty Advisory Committee for the College of Sciences (2017 – Present) **Chair** (2018 – Present)
Faculty Advisor, Chemistry Graduate Student Association (2017 – Present)
Summer Undergraduate Research Director, SIRI program, CMI (2017 – Present)
Executive Advisory Committee, CMI (2016 – Present)
Working Group Leader (Infectious Disease Drug Discovery), CMI (2013 – 2017)
Chair, Recruiting Committee (2013 – Present)
Director of Undergrad Research (2014 – Present)
Department of Chemistry Chair Selection Committee (2014)
College of Science Undergraduate Research Committee (2014 – 2016)
Department of Chemistry Faculty Search Committee (2013 and 2015)

PROFESSIONAL SERVICE OFF CAMPUS

2019 – present	Panel Member: National Institutes of Health F32/31 Fellowship review study section; Panel Member: National Institutes of Health Special Emphasis Panel (U-Grants)
2018 – present	Panel Member: National Science Foundation, Division of Chemistry Reviewer: *ACS Omega, ACS Infectious Diseases, Journal of Medicinal Chemistry*
2018 – 2020	Executive Committee, National ACS Organic Division – Member at Large
2017 – present	Panel Member: National Science Foundation, Chemistry of Life Processes Ad-Hoc Panel Member: National Institutes of Health, SBCA Study Section Reviewer: *ChemMedChem, ACS Medicinal Chemistry Letters, Organic and Biomolecular Chemistry, ACS Combinatorial Science, Nature Communications*
2016 – present	Reviewer: *Synthesis, Beilstein Journal of Organic Chemistry, European Journal of Medicinal Chemistry, Cell Chemical Biology, Journal of Fluorine Chemistry, Chemical Reviews*
2016 – present	Ad-Hoc Reviewer: National Science Foundation, Division of Chemistry
2015	Guest Editor: *Molecules* Special Issue on Complex Molecule Synthesis
2014 – present	Reviewer: ACS Petroleum Research Foundation
2014 – present	Reviewer: *Journal of the American Chemical Society*, *Chirality, Tetrahedron, Bioorganic and Medicinal Chemistry, European Journal of Organic Chemistry*
2013 – present	Reviewer: *Tetrahedron Letters*
2012 – present	Reviewer: *Journal of Organic Chemistry*
2010 – present	Reviewer: *Bioorganic and Medicinal Chemistry Letters*

CURRENT RESEARCH SUPPORT ($ 3,694,926 TOTAL)

NCBC BIG Grant (July 2019 – June 2020) – PI
"Development of Novel Antimicrobial Agents for the Treatment of Multi-Drug Resistant ESKAPE Pathogens"

NIH RO1 (1R01GM117570) (March 2016 – December 2020)
"Synthesis and Chemical Biology of Pentacyclic Guanidinium Alkaloids"

NIH RO1 (1R01GM110154) (August 2015 – July 2020)
"Synthesis and Chemical Biology of Oxazolidinone and Pyrrolidinone Natural Products"

NSF CAREER Award (1454845) (July 2015 – June 2020)
"CAREER: Novel Methods for the Stereoselective Synthesis of Nitrogen Containing Heterocycles"

NIH T34 (July 2019 – June 2024); Co-PI
"U-TEAM: Undergraduate Interdisciplinary Training in Comparative Biomedical Research"

PREVIOUS RESEARCH SUPPORT ($ 118,000 TOTAL)

Chancellor's Innovation Fund (NC State, July 2017 – December 2018)
"Development of Novel Antimicrobial and Anti-biofilm Compounds"

American Chemical Society Petroleum Research Fund (August 2013 – August 2016)
"Thiohydroxamic Acids as Novel Reagents for the Construction of Heterocycles"

Faculty Research and Professional Development Fund (College of Sciences) (July 2014 – June 2015) "Development of Novel Inhibitors of Deoxyhypusine Synthase: Synthesis and Chemical Biology"

Internal Chemistry Department Development Fund (August 2013 – July 2014)
"Development of Novel Antimicrobial Agents"

NCSU Research Innovation and Seed Funding Program (December 2013 – November 2014)
"Design of Novel Therapeutics for Irritable Bowel Syndrome"
Co-investigators: Scott Laster (Biological Sciences), Adam Moeser (Veterinary Medicine)

NCSU Research Innovation and Seed Funding Program (January 2016 – December 2016)
"Design of Novel Therapeutics for Modulating Bacterial Biofilms"
Co-investigators: Denis Fourches (Chemistry), Johanna Elfenbein (Veterinary Medicine)

Comparative Medicine Seed Funding Program (November 2016 – June 2017)
"Development of Dual Inhibitors for JAK and TRPV1"
Co-Investigators: Wolfgang Baeumer (Veterinary Medicine), Denis Fourches (Chemistry/Bioinformatics)

NCSU Research Innovation and Seed Funding Program (January 2017 – December 2017)
"Development of Synthetic Bilirubin Analogs as Therapeutic Agents for Pancreatic Islet Transplantation"
Co-investigators: Christopher Adin (Veterinary Medicine, Clinical Sciences), Mary Lila (CALS, Plants for Human Health Institute)