Steven L. Castle, Ph.D.

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Brigham Young University
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PROFESSIONAL APPOINTMENTS

Brigham Young University – Provo, Utah

2020–present Director, Simmons Center for Cancer Research
2013–present Professor, Department of Chemistry and Biochemistry
2008–2013 Associate Professor, Department of Chemistry and Biochemistry
2002–2008 Assistant Professor, Department of Chemistry and Biochemistry
Development of new synthetic organic chemistry methodology, application of this methodology to natural product total synthesis and chemical biology

2000–2002 **University of California, Irvine** – Irvine, California
NIH Postdoctoral Fellow (Professor Larry E. Overman)
Methods for the total synthesis of bisguanidine alkaloids such as palau'amine

EDUCATION

1995–2000 **The Scripps Research Institute** – La Jolla, California
Ph.D., Chemistry (Professor Dale L. Boger)
Dissertation: "Total Synthesis of the Vancomycin Aglycon and Related Compounds"

1989–1990, 1992–1995 **Brigham Young University** – Provo, Utah
B.S. with Honors, Chemistry (Professor Jerald S. Bradshaw)
Undergraduate research on the synthesis of chiral pyridino crown ethers, graduated *Summa Cum Laude*

1986–1989, 1992 **University of South Florida** – Tampa, Florida
Summer Research Assistant (Professor Raymond N. Castle)
The synthesis of novel polycyclic aromatic heterocycles via photocyclization

AFFILIATIONS

American Chemical Society, member since 1995
Sigma Xi, member since 2004

AWARDS AND HONORS

2017 Wesley P. Lloyd Award for Distinction in Graduate Education, BYU
2012 Long-Term Invitation Fellowship, Japan Society for the Promotion of Science
2011 College High-Impact Research Program Award, Brigham Young University
2009 #1 Most-Accessed Article, *J. Am. Chem. Soc.*, April–June 2009
2008 Top-50 Most Cited Article Award, *Tetrahedron* 2005–2008
2006 Invited Participant, ACS Organic Division Young Investigators Symposium
2004 Research Innovation Award, Research Corporation
2004 Student Honor Association Award, Brigham Young University
2000–2002 National Institutes of Health Postdoctoral Fellowship
1995–1998 National Science Foundation Graduate Research Fellowship
1995 Honorable Mention, *USA Today* Academic All-American
1995 BYU Outstanding Senior in Chemistry

PUBLICATIONS (Corresponding Author denoted by asterisk)

Publications from faculty research at Brigham Young University

64. Moyá, D. A.; Lee, M. A.; Chanthakhoun, J. C.; LeSueur, A. K.; Joaquin, D.; Barfuss, J. D.; Castle, S. L.* "Towards a Streamlined Synthesis of Peptides Containing α,β-Dehydroamino Acids." *Tetrahedron Lett.* **2021**, *74*, 153175.

63. Singh, J.; Nickel, G. A.; Cai, Y.; Jones, D. D.; Nelson, T. J.; Small, J. E.; Castle, S. L.* "Synthesis of Functionalized Pyrrolines via Microwave-Promoted Iminyl Radical Cyclizations." *Org. Lett.* **2021**, *23*, 3970–3974.

62. Cai, Y.; Ma, Z.; Jiang, J.; Lo, C. C. L.; Luo, S.; Jalan, A.; Cardon, J. M.; Ramos, A.; Moyá, D. A.; Joaquin, D.; Castle, S. L.* "Convergent Total Synthesis of Yaku'amide A." *Angew. Chem. Int. Ed.* **2021**, *60*, 5162–5167.

61. Joaquin, D.; Lee, M. A.; Kastner, D. W.; Singh, J.; Morrill, S. T.; Damstedt, G.; Castle, S. L.* "Impact of Dehydroamino Acids on the Structure and Stability of Incipient 3_{10}-Helical Peptides." *J. Org. Chem.* **2020**, *85*, 1601–1613.

60. Zhang, C.-T.; Zhu, R.; Wang, Z.; Ma, B.; Zajac, A.; Smiglak, M.; Xia, C.-N.; Castle, S. L.;* Wang, W.-L.* "Continuous Flow Synthesis of Diaryl Ketones by Coupling of Aryl Grignard Reagents with Acyl Chlorides Under Mild Conditions in the Ecofriendly Solvent 2-Methyltetrahydrofuran." *RSC Adv.* **2019**, *9*, 2199–2204.

59. Cardon, J. M.; Coombs, J. C.; Ess, D. H.; Castle, S. L.* "Insights into Base-Free OsO_4-Catalyzed Aminohydroxylations Employing Chiral Ligands." *Tetrahedron* **2019**, *75*, 945–948.

58. Jackman, M. M.; Im, S.; Bohman, S. R.; Lo, C. C. L.; Garrity, A. L.; Castle, S. L.* "Synthesis of Functionalized Nitriles via Microwave-Promoted Fragmentations of Cyclic Iminyl Radicals." *Chem.–Eur. J.* **2018**, *24*, 594–598.

57. Jalan, A.; Kastner, D. W.; Webber, K. G. I.; Smith, M. S.; Price, J. L.;* Castle, S. L.* "Bulky Dehydroamino Acids Enhance Proteolytic Stability and Folding in β-Hairpin Peptides." *Org. Lett.* **2017**, *19*, 5190–5193.

56. Castle, S. L.* "Remodeling Vancomycin Yields a Victory in the Battle Against Bacteria." *Proc. Natl. Acad. Sci. U.S.A.* **2017**, *114*, 6656–6657 (invited Commentary article).

55. Jackman, M. M.; Cai, Y.; Castle, S. L.* "Recent Advances in Iminyl Radical Cyclizations." *Synthesis* **2017**, *49*, 1785–1795.

54. Borges, R. S.;* Castle, S. L.* "The Antioxidant Properties of Salicylate Derivatives: A Possible New Mechanism of Anti-inflammatory Activity." *Bioorg. Med. Chem. Lett.* **2015**, *25*, 4808–4811.

53. Jiang, J.; Ma, Z.; Castle, S. L.* "Bulky α,β-Dehydroamino Acids: Their Occurrence in Nature, Synthesis, and Applications." *Tetrahedron* **2015**, *71*, 5431–5451.

52. Jiang, J.; Luo, S.; Castle, S. L.* "Solid-Phase Synthesis of Peptides Containing Bulky Dehydroamino Acids." *Tetrahedron Lett.* **2015**, *56*, 3311–3313.

51. Cai, Y.; Jalan, A.; Kubosumi, A. R.; Castle, S. L.* "Microwave-Promoted Tin-Free Iminyl Radical Cyclization with TEMPO Trapping: A Practical Synthesis of 2-Acylpyrroles." *Org. Lett.* **2015**, *17*, 488–491.

50. Castle, S. L.* "Better Chemistry Through Radicals." *Nature* **2014**, *516*, 332–333 (invited News & Views article).

49. Ma, Z.; Jiang, J.; Luo, S.; Cai, Y.; Cardon, J. M.; Kay, B. M.; Ess, D. H.;* Castle, S. L.* "Selective Access to *E*- and *Z*-ΔIle-Containing Peptides via a Stereospecific E2 Dehydration and an O → N Acyl Transfer." *Org. Lett.* **2014**, *16*, 4044–4047.

48. Castle, S. L.* "Total Synthesis of the Congested Propellane Alkaloid (–)-Acutumine." *Chem. Rec.* **2014**, *14*, 580–591.

47. Wu, J.; Ma, B.;* Wang, Y.; Zhang, Y.; Yan, S.; Castle, S. L. "Lewis Acid Facilitated Regioselective Synthesis of τ-Histidinoalanine." *Tetrahedron Lett.* **2014**, *55*, 3114–3116.

46. Loertscher, B. M.; Castle, S. L.* "Radical Cyclizations and Sequential Radical Reactions." In *Comprehensive Organic Synthesis, 2nd Ed.*; Knochel, P. and Molander, G. A., Eds.; Elsevier: Oxford, 2014; Vol. 4, pp 742–809.

45. Loertscher, B. M.; Zhang, Y., Castle, S. L.* "Exploration of an Epoxidation–Ring-Opening Strategy for the Synthesis of Lyconadin A and Discovery of an Unexpected Payne Rearrangement." *Beilstein J. Org. Chem.* **2013**, *9*, 1179–1184.

44. Loertscher, B. M.; Young, P. R.; Evans, P. R.; Castle, S. L.* "Diastereoselective Synthesis of Vicinal Tertiary Diols." *Org. Lett.* **2013**, *15*, 1930–1933.

43. Castle, S. L.;* Ma, B. "Total Synthesis of the Unusual Peptide Celogentin C" In *Strategies and Tactics in Organic Synthesis*; Harmata, M., Ed.; Academic Press: UK, 2013; Vol. 9, pp 45–77.

42. Quast, A. D.; Wilde, N. C.; Matthews, S. S.; Maughan, S. T.; Castle, S. L.; Patterson, J. E.* "Improved Assignment of Vibrational Modes in Sum-Frequency Spectra in the C–H Stretch Region for Surface-Bound C_{18} Alkylsilanes." *Vib. Spectrosc.* **2012**, *61*, 17–24.

41. Ma, Z.; Naylor, B. C.; Loertscher, B. M.; Hafen, D. D.; Li, J. M.; Castle, S. L.* "Regioselective Base-Free Intermolecular Aminohydroxylations of Hindered and Functionalized Alkenes." *J. Org. Chem.* **2012**, *77*, 1208–1214.

40. Castle, S. L.* "Six-Membered Hetarenes with More Than Three Heteroatoms." In *Science of Synthesis Knowledge Updates 2011/4*; Weinreb, S. M., Ed.; Thieme: Stuttgart, 2012; Vol. 2011/4, Section 17.3.4, pp 345–375.

39. Johnson, A. G.; Loertscher, B. M.; Moeck, A. R.; Matthews, S. S.; Ess, D. H.;* Castle, S. L.* "Experimental and Theoretical Investigation of the Scope of Enantioselective Ketone Allylations Employing Nakamura's Allylzinc–Bisoxazoline Reagent." *Bioorg. Med. Chem. Lett.* **2011**, *21*, 2706–2710.

38. Loertscher, B. M.; Castle, S. L.* "Back to Basics." *Nature Chem.* **2010**, *2*, 807–808 (invited News & Views article).

37. Banerjee, B.; Litvinov, D. N.; Kang, J.; Bettale, J. D.; Castle, S. L.* "Stereoselective Additions of Thiyl Radicals to Terminal Ynamides." *Org. Lett.* **2010**, *12*, 2650–2652.

36. Ma, B.; Banerjee, B.; Litvinov, D. N.; He, L.; Castle, S. L.* "Total Synthesis of the Antimitotic Bicyclic Peptide Celogentin C." *J. Am. Chem. Soc.* **2010**, *132*, 1159–1171.

35. Li, F.; Tartakoff, S. S.; Castle, S. L.* "Enantioselective Total Synthesis of (–)-Acutumine." *J. Org. Chem.* **2009**, *74*, 9082–9093**.**

34. Ma, B.; Litvinov, D. N.; He, L.; Banerjee, B.; Castle, S. L.* "Total Synthesis of Celogentin C." *Angew. Chem., Int. Ed.* **2009**, *48*, 6104–6107.

33. Zhang, Y.; Loertscher, B. M.; Castle, S. L.* "An Annulation Method for the Synthesis of Alkyl-substituted 6-Carbomethoxy-2-pyridones." *Tetrahedron* **2009**, *65*, 6584–6590.

32. Li, F.; Tartakoff, S. S.; Castle, S. L.* "Total Synthesis of (–)-Acutumine." *J. Am. Chem. Soc.* **2009**, *131*, 6674–6675.

31. Nielsen, D. K.; Nielsen, L. L.; Jones, S. B.; Toll, L.; Asplund, M. C.; Castle, S. L.* "Synthesis of Isohasubanan Alkaloids via Enantioselective Ketone Allylation and Discovery of an Unexpected Rearrangement." *J. Org. Chem.* **2009**, *74*, 1187–1199.

30. Banerjee, B.; Capps, S. G.; Kang, J.; Robinson, J. W.; Castle, S. L.* "Second-Generation DBFOX Ligands for the Synthesis of β-Substituted α-Amino Acids via Enantioselective Radical Conjugate Additions." *J. Org. Chem.* **2008**, *73*, 8973–8978.

29. Li, F.; Castle, S. L.* "Synthesis of the Acutumine Spirocycle Via a Radical–Polar Crossover Reaction." *Org. Lett.* **2007**, *9*, 4033–4036.

28. Ma, B.; Parkinson, J. L.; Castle, S. L.* "Novel *Cinchona* Alkaloid Derived Ammonium Salts as Catalysts for the Asymmetric Synthesis of β-Hydroxy-α-amino Acids Via Aldol Reactions." *Tetrahedron Lett.* **2007**, *48*, 2083–2086.

27. Ma, B.; Litvinov, D. N.; Srikanth, G. S. C.; Castle, S. L.* "Use of Nitro Chemistry to Synthesize Unusual Peptides: Application to the Left-Hand Fragment of Celogentin C." *Synthesis* **2006**, 3291–3294.

26. Jones, S. B.; He, L.; Castle, S. L.* "Total Synthesis of (±)-Hasubanonine." *Org. Lett.* **2006**, *8*, 3757–3760.

25. Grant, S. W.; Zhu, K.; Zhang, Y.; Castle, S. L.* "Stereoselective Cascade Reactions that Incorporate a 7-*exo* Acyl Radical Cyclization." *Org. Lett.* **2006**, *8*, 1867–1870.

24. He, L.; Yang, L.; Castle, S. L.* "Synthesis of the Celogentin C Right-hand Ring." *Org. Lett.* **2006**, *8*, 1165–1168.

23. He, L.; Srikanth, G. S. C.; Castle, S. L.* "Synthesis of β-Substituted α-Amino Acids via Lewis Acid Promoted Enantioselective Radical Conjugate Additions." *J. Org. Chem.* **2005**, *70*, 8140–8147.

22. Srikanth, G. S. C.; Castle, S. L.* "Advances in Radical Conjugate Additions." *Tetrahedron* **2005**, *61*, 10377–10441 (invited review).

21. Reeder, M. D.; Srikanth, G. S. C.; Jones, S. B.; Castle, S. L.* "Synthesis of the Core Structure of Acutumine." *Org. Lett.* **2005**, *7*, 1089–1092.

20. Mettath, S.; Srikanth, G. S. C.; Dangerfield, B. S.; Castle, S. L.* "Asymmetric Synthesis of β-Hydroxy Amino Acids via Aldol Reactions Catalyzed by Chiral Ammonium Salts." *J. Org. Chem.* **2004**, *69*, 6489–6492.

19. Srikanth, G. S. C.; Castle, S. L.* "Synthesis of β-Substituted α-Amino Acids via Lewis Acid Promoted Radical Conjugate Additions to α,β-Unsaturated α-Nitro Esters and Amides." *Org. Lett.* **2004**, *6*, 449–452.

18. Castle, S. L.;* Srikanth, G. S. C. "Catalytic Asymmetric Synthesis of the Central Tryptophan Residue of Celogentin C." *Org. Lett.* **2003**, *5*, 3611–3614.

Publications from graduate research at The Scripps Research Institute

17. Boger, D. L.;* Castle, S. L. "Synthesis of Cycloisodityrosine Peptides." In *Houben–Weyl Methods of Organic Chemistry, Synthesis of Peptides and Peptidomimetics*; Goodman, M., Ed.; Thieme: Stuttgart, 2003; Vol. E 22c, pp 194–206.

16. McAtee, J. J.; Castle, S. L.; Jin, Q.; Boger, D. L.* "Synthesis and Evaluation of Vancomycin and Vancomycin Aglycon Analogues that Bear Modifications in the Residue 3 Asparagine." *Bioorg. Med. Chem. Lett.* **2002**, *12*, 1319–1322.

15. Boger, D. L.;* Kim, S. H.; Mori, Y.; Weng, J.-H.; Rogel, O.; Castle, S. L.; McAtee, J. J. "First and Second Generation Total Synthesis of the Teicoplanin Aglycon." *J. Am. Chem. Soc.* **2001**, *123*, 1862–1871.

14. Boger, D. L.;* Weng, J.-H.; Miyazaki, S.; McAtee, J. J.; Castle, S. L.; Kim, S. H.; Mori, Y.; Rogel, O.; Strittmatter, H.; Jin, Q. "Thermal Atropisomerism of Teicoplanin Aglycon Derivatives: Preparation of the *P*,*P*,*P* and *M*,*P*,*P* Atropisomers of the Teicoplanin Aglycon via Selective Equilibration of the DE Ring System." *J. Am. Chem. Soc.* **2000**, *122*, 10047–10055.

13. Boger, D. L.;* Kim, S. H.; Miyazaki, S.; Strittmatter, H.; Weng, J.-H.; Mori, Y.; Rogel, O.; Castle, S. L.; McAtee, J. J. "Total Synthesis of the Teicoplanin Aglycon." *J. Am. Chem. Soc.* **2000**, *122*, 7416–7417.

12. Boger, D. L.;* Miyazaki, S.; Kim, S. H.; Wu, J. H.; Castle, S. L.; Loiseleur, O.; Jin, Q. "Total Synthesis of the Vancomycin Aglycon." *J. Am. Chem. Soc.* **1999**, *121*, 10004–10011.

11. Boger, D. L.;* Miyazaki, S.; Kim, S. H.; Wu, J. H.; Loiseleur, O.; Castle, S. L. "Diastereoselective Total Synthesis of the Vancomycin Aglycon with Ordered Atropisomer Equilibrations." *J. Am. Chem. Soc.* **1999**, *121*, 3226–3227.

10. Boger, D. L.;* Castle, S. L.; Miyazaki, S.; Wu, J. H.; Beresis, R. T.; Loiseleur, O. "Vancomycin CD and DE Macrocyclization and Atropisomerism Studies." *J. Org. Chem.* **1999**, *64*, 70–80.

9. Boger, D. L.;* Miyazaki, S.; Loiseleur, O.; Beresis, R. T.; Castle, S. L.; Wu, J. H.; Jin, Q. "Thermal Atropisomerism of Aglucovancomycin Derivatives: Preparation of (*M*,*M*,*M*)- and (*P*,*M*,*M*)-Aglucovancomycins." *J. Am. Chem. Soc.* **1998**, *120*, 8920–8926.

8. Boger, D. L.;* Beresis, R. T.; Loiseleur, O.; Wu, J. H.; Castle, S. L. "Synthesis of the Vancomycin CDE Ring System." *Bioorg. Med. Chem. Lett.* **1998**, *8*, 721–724.

7. Boger, D. L.;* Loiseleur, O.; Castle, S. L.; Beresis, R. T.; Wu, J. H. "Thermal Atropisomerism of Fully Functionalized Vancomycin CD, DE, and CDE Ring Systems." *Bioorg. Med. Chem. Lett.* **1997**, *7*, 3199–3202.

6. Boger, D. L.;* Zhou, J.; Borzilleri, R. M.; Nukui, S.; Castle, S. L. "Synthesis of (9*R*,12*S*)- and (9*S*,12*S*)-Cycloisodityrosine and Their *N*-Methyl Derivatives." *J. Org. Chem.* **1997**, *62*, 2054–2069.

Publications from undergraduate research at Brigham Young University

5. Habata, Y.; Bradshaw, J. S.;* Young, J. J.; Castle, S. L.; Huszthy, P.; Pyo, T.; Lee, M. L.; Izatt, R. M. "New Pyridino-18-crown-6 Ligands Containing Two Methyl, Two *tert*-

Butyl, or Two Allyl Substituents on Chiral Positions Next to the Pyridine Ring." *J. Org. Chem.* **1996**, *61*, 8391–8396.

Publications from summer research during high school and college at the University of South Florida

4. Luo, J.-K.; Castle, S. L.; Castle, R. N.* "The Synthesis of Novel Polycyclic Heterocyclic Ring Systems Via Photocyclization. **12**. Benzo[*h*]naphtho[2',1':4,5]thieno[2,3-*c*]quinoline and benzo[*f*]naphtho[2',1':4,5]thieno[2,3-*c*]quinoline." *J. Heterocycl. Chem.* **1993**, *30*, 653–658.

3. Luo, J.-K.; Castle, S. L.; Castle, R. N.* "The Synthesis of Difluoro[1]benzothieno[2,3-*c*]quinolines and Their *N*-Methyl Quaternary Salts." *J. Heterocycl. Chem.* **1990**, *27*, 2047–2052.

2. Castle, S. L.; Luo, J.-K.; Kudo, H.; Castle, R. N.;* Lee, M. L., "The Synthesis of Novel Polycyclic Heterocyclic Ring Systems Via Photocyclization. 1. Thieno[3',2':4,5]thieno[2,3-*c*]quinoline and thieno[2',3':4,5]thieno[2,3-*c*]quinoline." *J. Heterocycl. Chem.* **1988**, *25*, 1363–1365.

1. Castle, S. L.; Buckhaults, P. J.; Baldwin, L. J.; McKenney, J. D., Jr.; Castle, R. N.,* "The Synthesis of Monomethoxy[1]benzothieno[2,3-*c*]quinolines." *J. Heterocycl. Chem.* **1987**, *24*, 1103–1108.

PRESENTATIONS

111. 7/29/19 Natural Products Gordon Research Conference – Andover, NH (Poster)
110. 6/26/19 American Peptide Symposium – Monterey, CA (Poster)
109. 8/27/18 European Peptide Symposium – Dublin, Ireland (Poster)
108. 7/30/18 Natural Products Gordon Research Conference – Andover, NH (Poster)
107. 6/27/17 ACS Northwest Regional Meeting – Corvallis, OR (Invited Talk)
106. 6/18/17 American Peptide Symposium – Whistler, BC, Canada (Talk)
105. 5/19/17 Huazhong Univ. of Sci. and Technology – Wuhan, China (Invited Talk)
104. 5/19/17 Central China Normal University – Wuhan, China (Invited Talk)
103. 5/18/17 Wuhan University – Wuhan, China (Invited Talk)
102. 5/16/17 Chongqing University – Chongqing, China (Invited Talk)
101. 5/15/17 Southwest University – Chongqing, China (Invited Talk)
100. 5/11/17 Sichuan University – Chengdu, China (Invited Talk)
99. 6/20/16 Heterocycles Gordon Research Conference – Newport, RI (Poster)
98. 4/02/16 University of South Florida – Tampa, FL (Invited Talk)
97. 2/22/16 Peptides Gordon Research Conference – Ventura, CA (Poster)
96. 1/07/16 Huntsman Cancer Institute – Salt Lake City UT (Invited Talk)
95. 12/18/15 Pacifichem 2015 – Honolulu, HI (Invited Talk)
94. 4/27/15 Vanderbilt University – Nashville, TN (Invited Talk)
93. 7/22/14 Natural Products Gordon Research Conf. – Andover, NH (Invited Talk)
92. 7/21/14 Natural Products Gordon Research Conference – Andover, NH (Poster)
91. 4/25/14 Zhejiang University – Hangzhou, China (Invited Talk)

90. 4/24/14 Soochow University – Suzhou, China (Invited Talk)
89. 4/23/14 Jiangnan University – Wuxi, China (Invited Talk)
88. 4/21/14 Changzhou University – Changzhou, China (Invited Talk)
87. 7/29/13 Natural Products Gordon Research Conference – Andover, NH (Poster)
86. 4/10/13 ACS National Meeting – New Orleans, LA (Invited Talk)
85. 1/22/13 Westminster College – Salt Lake City, UT (Invited Talk)
84. 12/03/12 University of Montana – Missoula, MT (Invited Talk)
83. 11/08/12 BYU-Hawaii – Laie, HI (Invited Talk)
82. 9/12/12 Daiichi Sankyo Pharmaceuticals – Tokyo, Japan (Invited Talk)
81. 9/07/12 Hokkaido University – Sapporo, Japan (Invited Talk)
80. 8/29/12 The University of Tokyo – Tokyo, Japan (Invited Talk)
79. 7/30/12 Waseda University – Tokyo, Japan (Invited Talk)
78. 7/23/12 Tokyo Institute of Technology – Tokyo, Japan (Invited Talk)
77. 6/27/12 Keio University – Yokohama, Japan (Invited Talk)
76. 6/22/12 Nagoya University – Nagoya, Japan (Invited Talk)
75. 6/18/12 Chiba University – Chiba, Japan (Invited Talk)
74. 6/13/12 Tohoku University – Sendai, Japan (Invited Talk)
73. 2/10/12 University of Delaware – Newark, DE (Invited Talk)
72. 10/26/11 Utah State University – Logan, UT (Invited Talk)
71. 12/18/10 Pacifichem 2010 – Honolulu, HI (Invited Talk)
70. 11/08/10 Utah Valley University – Orem, UT (Invited Talk)
69. 10/08/10 University of Nevada, Las Vegas – Las Vegas, NV (Invited Talk)
68. 10/07/10 Northern Arizona University – Flagstaff, AZ (Invited Talk)
67. 9/03/10 Amgen – Thousand Oaks, CA (Invited Talk)
66. 9/02/10 UC Santa Barbara – Santa Barbara, CA (Invited Talk)
65. 5/21/10 Kyoto University – Kyoto, Japan (Invited Talk)
64. 5/19/10 The University of Tokyo – Tokyo, Japan (Invited Talk)
63. 5/17/10 Peking Univ. School of Pharm. Sciences – Beijing, China (Invited Talk)
62. 5/17/10 Bioduro – Beijing, China (Invited Talk)
61. 5/14/10 Tianjin University – Tianjin, China (Invited Talk)
60. 5/13/10 Nankai University – Tianjin, China (Invited Talk)
59. 5/12/10 Renmin University – Beijing, China (Invited Talk)
58. 5/12/10 Beijing Normal University – Beijing, China (Invited Talk)
57. 5/11/10 Peking University School of Chemistry – Beijing, China (Invited Talk)
56. 5/10/10 Nanjing University – Nanjing, China (Invited Talk)
55. 5/07/10 E. China Univ. of Science & Technology – Shanghai, China (Invited Talk)
54. 5/06/10 East China Normal University – Shanghai, China (Invited Talk)
53. 5/05/10 Shanghai Institute of Organic Chemistry – Shanghai, China (Invited Talk)
52. 5/05/10 Fudan University – Shanghai, China (Invited Talk)
51. 5/04/10 Shanghai Institute of Materia Medica – Shanghai, China (Invited Talk)
50. 2/12/10 Rutgers University – Piscataway, NJ (Invited Talk)
49. 1/19/10 Westminster College – Salt Lake City, UT (Invited Talk)
48. 10/30/09 Idaho State University – Pocatello, ID (Invited Talk)
47. 10/27/09 Southern Utah University – Cedar City, UT (Invited Talk)
46. 10/12/09 Oregon State University – Corvallis, OR (Invited Talk)
45. 7/27/09 Natural Products Gordon Research Conference – Tilton, NH (Poster)

44. 5/01/09 University of New Mexico – Albuquerque, NM (Invited Talk)
43. 3/09/09 University of California, San Diego – San Diego, CA (Invited Talk)
42. 1/14/09 Utah State University – Logan, UT (Invited Talk)
41. 12/05/08 Boise State University – Boise, ID (Invited Talk)
40. 11/19/08 University of Calgary – Calgary, Alberta, Canada (Invited Talk)
39. 11/18/08 University of Lethbridge – Lethbridge, Alberta, Canada (Invited Talk)
38. 10/09/08 Wyeth Pharmaceuticals – Princeton, NJ (Invited Talk)
37. 10/08/08 Princeton University – Princeton, NJ (Invited Talk)
36. 8/28/08 University of Utah (Chemistry) – Salt Lake City, UT (Invited Talk)
35. 6/24/08 International Conference on Organic Synthesis – Daejeon, Korea (Poster)
34. 6/16/08 ACS Northwest/Rocky Mtn. Reg. Mtg. – Park City, UT (Invited Talk)
33. 4/24/08 Bristol-Myers-Squibb – Princeton, NJ (Invited Talk)
32. 12/10/07 Schering-Plough – Kenilworth, NJ (Invited Talk)
31. 11/28/07 University of Hawaii – Honolulu, HI (Invited Talk)
30. 11/27/07 BYU-Hawaii – Laie, HI (Invited Talk)
29. 10/24/07 Weber State University – Ogden, UT (Invited Talk)
28. 9/27/07 Roche Colorado Peptide Symposium, Boulder, CO (Invited Talk)
27. 7/10/07 Eli Lilly – Indianapolis, IN (Invited Talk)
26. 6/25/07 Heterocycles Gordon Research Conference – Newport, RI (Poster)
25. 4/17/07 GlaxoSmithKline – King of Prussia, PA (Invited Talk)
24. 4/16/07 Penn State University – State College, PA (Invited Talk)
23. 4/03/07 University of Michigan – Ann Arbor, MI (Invited Talk)
22. 3/30/07 University of North Carolina – Chapel Hill, NC (Invited Talk)
21. 3/28/07 North Carolina State University – Raleigh, NC (Invited Talk)
20. 3/27/07 Duke University – Durham, NC (Invited Talk)
19. 3/20/07 Merck Pharmaceuticals – West Point, PA (Invited Talk)
18. 2/16/07 University of Texas – Austin, TX (Invited Talk)
17. 2/15/07 Texas A&M University – College Station, TX (Invited Talk)
16. 1/30/07 AstraZeneca Pharmaceuticals – Waltham, MA (Invited Talk)
15. 1/25/07 University of Utah (Med. Chem.) – Salt Lake City, UT (Invited Talk)
14. 1/19/07 The Scripps Research Institute – La Jolla, CA (Invited Talk)
13. 1/17/07 UC Irvine – Irvine, CA (Invited Talk)
12. 11/17/06 BYU-Idaho – Rexburg, ID (Invited Talk)
11. 9/10/06 ACS National Meeting – San Francisco, CA (Invited Talk)
10. 7/26/06 Natural Products Gordon Research Conference – Tilton, NH (Talk)
9. 7/25/06 Natural Products Gordon Research Conference – Tilton, NH (Poster)
8. 12/19/05 Pacifichem 2005, Honolulu, HI (Poster)
7. 10/14/05 Idaho State University, Pocatello, ID (Invited Talk)
6. 5/02/05 University of Montana – Missoula, MT (Invited Talk)
5. 3/15/05 ACS National Meeting – San Diego, CA (Talk)
4. 7/26/04 Natural Products Gordon Research Conference – Tilton, NH (Poster)
3. 6/07/04 ACS Northwest/Rocky Mtn. Regional Mtg. – Logan, UT (Invited Talk)
2. 3/31/04 ACS National Meeting – Anaheim, CA (Talk)
1. 3/29/03 The Overman Symposium – Irvine, CA (Poster)