VLADIMIR B. BIRMAN

Department of Chemistry
Washington University
Campus Box 1134
One Brookings Drive
St. Louis, MO 63130

Telephone: (314) 935-9188 (office)
(314) 935-6663 (lab)
Fax: (314) 935-4481
e-mail: *birman@wustl.edu*

EDUCATION HISTORY

- **Ph.D.** in Chemistry, The University of Chicago, **2000**.
  Thesis title: *"Application of the Heck Cyclization Methodology to the Synthesis of Geissoschizine and Strictamine";* Advisor: Prof. Viresh H. Rawal.
- **B.S.** in Chemistry with Honors and *Magna cum laude,* University of North Carolina at Charlotte, **1995**.

PROFESSIONAL AFFILIATIONS

2009-present **Associate Professor,** Department of Chemistry, Washington University in St. Louis

2003-2009 **Assistant Professor,** Department of Chemistry, Washington University in St. Louis

2000-2003 **Postdoctoral Fellow,** Department of Chemistry, Columbia University, Advisor: Prof. Samuel J. Danishefsky

HONORS

- Thieme Journals Award **(2007)**
- National Institutes of Health National Research Service Award **(2001-2003)**
- The American Institute of Chemists Foundation Student Award **(1999)**
- Division of Organic Chemistry Graduate Fellowship **(1998-1999)**
- Undergraduate Research Award, North Carolina Section of ACS **(1995)**

RESEARCH INTERESTS

- ***Synthetic methodology.*** Amidine-based enantioselective acyl transfer catalysts and their synthetic applications; chiral 2-(ortho-iodoxyphenyl)oxazolines and their application to enantioselective oxidation of phenols, anionic acyl transfer catalysis, new methods of constructing polycyclic structures.
- ***Total synthesis of bioactive natural products.*** Completed synthetic targets include (±)-sceptrin, prekinamycin, (−)-lobeline, and (+)-lingzhiol.

GRANT ACTIVITY

Completed support

- National Institutes of Health, National Research Service Award F32 NS41726 *"Asymmetric Total Synthesis of Tetdrodotoxin"* **(2001-2003)** *(postdoctoral fellowship, Columbia University)*
- American Chemical Society-Petroleum Research Fund, Type G Award *"Synthesis of Kinamycin"* **(2006-2008)** $35,000 total costs.

- National Institutes of Health, R01 GM072682 *"Study of a New Class of Chiral Nucleophilic Catalysts"* **(2005-2009)** $884,073 total costs
- National Science Foundation, CHE-1012979 "Brønsted Acid Catalysis in Enantioselective Acyl Substitution" **(2010-2015)** $324,815 total costs
- Washington University in Saint Louis, URSA (University Research Strategic Alliance) "Development of novel chemical probes to map organism-wide S-nitrosylation signaling" (as a co-PI with Prof. Jason Held, **2014-2016**), $25,000 total costs
- NIH, Innovative Molecular Analysis Technologies for Cancer Research (R21) Role: co-PI (PI: Jason Held), **(2016-2018)** $610,000 total costs.
- National Science Foundation, CHE- 1566588 " Catalytic activation of thioesters via nucleophilic acyl substitution " **(2016-2019)** $450,000 total costs

Current support

- American Chemical Society-Petroleum Research Fund, Type ND Award "Self-Complementary Urea-based Arrays" **(2022-2024)** $110,000 total costs

PUBLICATIONS *(asterisk indicates primary authors)*

1. Son, R.; Yin, J.; Birman, V. B.,* Phenazine-Based Butterfly Coil Foldamers: the Third Generation, *manuscript in preparation*
2. Yin, J.; Birman, V. B.,* Phenazine-Based Molecular Actuators: the Second Generation, *Org. Lett.* **2022**, *24*, 8759-8763. https://doi.org/10.1021/acs.orglett.2c03450
3. Yin, J.; Birman, V. B.,* Phenazine-Based Oligomers as Redox-Responsive Molecular Actuators, *J. Org. Chem.* **2022,** *87*, 15744-15753. https://doi.org/10.1021/acs.joc.2c01445
4. Yin, J.; Straub, M. R.; Liao, J.; Birman, V. B.,* Acylative Kinetic Resolution of Cyclic Hydroxamic Acids, *Org. Lett.* **2022**, *24*, 1546-1549. https://doi.org/10.1021/acs.orglett.2c00218
5. Straub, M. R.; Birman, V. B.,* Organocatalytic Kinetic Resolution of N-Boc-Isoxazolidine-5-ones. *Org. Lett.* **2021**, *23*, 984-988. DOI: 10.1021/acs.orglett.0c04196
6. Ahlemeyer, N. A.; Straub, M. R.; Leace, D. M.; Matz, B. A.; Birman, V. B.,* Cascade Cyclizations of α,β-Unsaturated Thioesters: Additional Examples, *J. Org. Chem.* **2021,** *86*, 1191-1197. DOI: 10.1021/acs.joc.0c02091
7. Clements, J. L.; Pohl, F.; Muthupandi, P.; Rogers, S. C.; Mao, J.; Doctor, A.; Birman, V. B.; Held, J. M.,* A clickable probe for versatile characterization of S-nitrosothiols. *Redox Biology* **2020**, 101707. DOI: 10.1016/j.redox.2020.101707
8. Yin, J.; Khalilov, A. N.; Muthupandi, P.; Ladd, R.; Birman, V. B.,* Phenazine-1,6-dicarboxamides: redox-responsive molecular switches. *J. Am. Chem. Soc.* **2020,** *142*, 60-63. DOI: 10.1021/jacs.9b11160
9. Leace, D. M.; Straub, M. R.; Matz, B. A.; Birman, V. B.,* Organocatalyzed Rearrangement of S-(2-Oxoalkyl)-thioenoates. *J. Org. Chem.* **2019,** *84*, 7523-7531. DOI: 10.1021/acs.joc.9b00925
10. Straub, M. R.; Birman, V. B.,* Organocatalytic Enantioselective Synthesis of α-Fluoro-β-amino Acid Derivatives. *Org. Lett.* **2018**, *20*, 7550–7553. DOI: 10.1021/acs.orglett.8b03297 (Addition/correction DOI: 10.1021/acs.orglett.8b04089).

11. Ahlemeyer, N. A.; Streff, E. V.; Muthupandi, P.; Birman, V. B.,* Dramatic Acceleration of an Acyl Transfer-Initiated Cascade by Using Electron-Rich Amidine-Based Catalysts. *Org. Lett.* **2017,** *19,* 6486-6489. DOI: 10.1021/acs.orglett.7b03044

12. Dergunov, S. A.;* Khabiyev, A. T.; Shmakov, S. N.; Kim, M. D.; Ehterami, N.; Weiss, M. C.; Birman, V. B.; Pinkhassik, E.,* Encapsulation of Homogeneous Catalysts in Porous Polymer Nanocapsules Produces Fast-Acting Selective Nanoreactors" *ACS Nano,* **2016**, *10,* 11397-11406. DOI: 10.1021/acsnano.6b06735

13. Birman, V. B.,* Amidine-Based catalysts: Design, Development, and Applications. *Aldrichimica Acta* **2016**, *49,* 23-33.

14. Ahlemeyer, N. A.; Birman, V. B.,* Asymmetric Catalytic Synthesis of Thiochromenes via an Acyl Transfer-Initiated Cascade. *Org. Lett.* **2016,** *18,* 3454-3457. DOI: 10.1021/acs.orglett.6b01639

15. Sharmah Gautam, K.; Birman, V. B.,* Biogenetically Inspired Synthesis of Lingzhiol. *Org. Lett.* **2016,** *18,* 1499-1501. DOI: 10.1021/acs.orglett.5b03212

16. Abbott, G. L.; Wu, X.; Zhao, Z.; Guo, L.; Birman, V. B.; Hasinoff, B. B.; Dmitrienko, G. I.,* Prekinamycin and an isosteric-isoelectronic analogue exhibit comparable cytotoxicity towards K562 human leukemia cells. *MedChemComm* **2014,** *5,* 1364-1370. DOI: 10.1039/C4MD00197D

17. Ehterami, N.; Dergunov, S. A.; Ussipbekova, Y.; Birman, V. B.; Pinkhassik, E.,* Catalytic ship-in-a-bottle assembly within hollow porous nanocapsules. *New J. Chem.* **2014**. *38,* 481-485. DOI: 10.1039/C3NJ01449E

18. Bumbu, V. D.; Yang, X.; Birman, V. B.,* Kinetic Resolution of N-Acyl-Thiolactams via Catalytic Enantioselective Deacylation. *Org. Lett.* **2013**, *15,* 2790-2793. DOI**:** 10.1021/ol401122g

19. Yang, X.; Bumbu, V. D.; Liu, P.; Li, X.; Jiang, H.; Uffman, E. W. Guo, L.; Zhang, W.; Jiang, X.; Houk, K. N.;* Birman, V. B.,* Catalytic, Enantioselective N-Acylation of Lactams and Thiolactams Using Amidine-Based Catalysts. *J. Am. Chem. Soc.,* **2012**, *134*, 17605-17612. DOI: 10.1021/ja306766n

20. Yang, X.; Liu, P.; Houk, K. N.;* Birman, V. B.,* Manifestation of Felkin-Anh Control in Enantioselective Acyl Transfer Catalysis: Kinetic Resolution of Carboxylic Acids. *Angew. Chem., Int. Ed.* **2012**, *51,* 9638-9642. DOI: 10.1002/anie.201203327

21. Liu, P.; Yang, X.; Birman, V. B.;* Houk, K. N.,* Origin of Enantioselectivity in Benzotetramisole-Catalyzed Dynamic Kinetic Resolution of Azlactones. *Org. Lett.* **2012**, *14,* 3288-3291. DOI: 10.1021/ol301243f

22. Li, X.; Jiang, H.; Uffman, E. W. Guo, L.; Zhang, Y.; Yang, X.; Birman, V. B.,* Kinetic Resolution of Secondary Alcohols Using Amidine-Based Catalysts. *J. Org. Chem.* **2012,** *77*, 1722-1737. DOI: 10.1021/jo202220x

23. Yang, X.; Birman, V. B.,* Kinetic Resolution of α-Substituted Alkanoic Acids Promoted by Homobenzotetramisole. *Chem. Eur. J.* **2011**, *17,* 11296-11304. DOI: 10.1002/chem.201101028

24. Yang, X.; Bumbu, V. D.; Birman, V. B.,* Kinetic Resolution of *β*-Lactams via Enantioselective N-Acylation. *Org. Lett.* **2011**, *13,* 4755-4757. DOI: 10.1021/ol201911z

25. Bumbu, V. D.; Birman, V. B.,* Kinetic Resolution of N-Acyl-β-Lactams via Benzotetramisole-Catalyzed Enantioselective Alcoholysis. *J. Am. Chem. Soc.* **2011,** *133,* 13902-13905. DOI: 10.1021/ja2058633

26. Yang, X.; Birman, V. B.,* Nonenzymatic Dynamic Kinetic Resolution of α-(Arylthio)- and α-(Alkylthio)alkanoic Acids. *Angew. Chem., Int. Ed.* **2011**, *50,* 553-555. DOI: 10.1002/anie.201007860

27. Lu, G.; Birman, V. B.,* Dynamic Kinetic Resolution of Azlactones Catalyzed by Chiral Brønsted Acids. *Org. Lett.* **2011**, *13,* 356-358. DOI: 10.1021/ol102736t [Addition/Correction DOI: 10.1021/ol200367y].

28. Seizert, C. A.; Bumbu, V. D.; Birman, V. B.,* A Cope Rearrangement-Based Route to Hexahydroazulenes. *Org. Lett.* **2010,** *12,* 3472-3475. DOI: 10.1021/ol1013125

29. Yang, X.; Lu, G.; Birman, V. B.,* Benzotetramisole-Catalyzed Dynamic Kinetic Resolution of Azlactones. *Org. Lett.* **2010,** *12,* 892-895. DOI: 10.1021/ol902969j

30. Zhang, Y.; Birman, V. B.,* Effects of Methyl Substituents on the Activity and Enantioselectivity of Homobenzotetramisole-Based Catalysts in the Kinetic Resolution of Alcohols. *Adv. Synth. Catal.* **2009**, *351,* 2525-2529. DOI: 10.1002/adsc.200900383

31. Yang, X.; Birman, V. B.,* Homobenzotetramisole-Catalyzed Kinetic Resolution of α–aryl-, α–aryloxy-, and α–arylthioalkanoic Acids. *Adv. Synth. Catal.* **2009**, *351,* 2301-2304. DOI: 10.1002/adsc.200900451

32. Yang, X.; Birman, V. B.,* Acyl Transfer catalysis with 1,2,4-Triazole Anion. *Org. Lett.* **2009,** *11,* 1499-1502. DOI: 10.1021/ol900098q

33. Boppisetti, J. K.; Birman, V. B.,* Asymmetric Oxidation of o-Alkylphenols with Chiral 2-(o-Iodoxyphenyl)-Oxazolines. *Org. Lett.* **2009,** *11,* 1221-1223. DOI: 10.1021/ol8029092

34. Li, X.; Liu, P.; Houk, K. N.;* Birman, V. B.,* Origin of Enantioselectivity in CF_3-PIP-Catalyzed Kinetic Resolution of Secondary Benzylic Alcohols. *J. Am. Chem. Soc.* **2008,** *130,* 13836-13837. DOI: 10.1021/ja805275s

35. Birman, V. B.;* Li, X., Homobenzotetramisole: An Effective Catalyst for Kinetic Resolution of Arylcycloalkanols *Org. Lett.* **2008,** *10,* 1115-1118. DOI: 10.1021/ol703119n

36. Birman, V. B.;* Jiang, H.; Li, X., Enantioselective Synthesis of Lobeline via Nonenzymatic Desymmetrization. *Org. Lett.* **2007,** *9,* 3237-3240. DOI: 10.1021/ol071064i

37. Birman, V. B.;* Zhao, Z.; Guo, L., Benzo[b]fluorenes via Indanone Dianion Annulation. A Short Synthesis of Prekinamycin. *Org. Lett.* **2007***, 9,* 1223-1225. DOI: 10.1021/ol0629768

38. Birman, V. B.;* Li, X.; Han, Z., Nonaromatic Amidine Derivatives as Acylation Catalysts. *Org. Lett.* **2007***, 9,* 37-40. DOI: 10.1021/ol0623419

39. Birman, V. B.;* Guo, L., Kinetic Resolution of Propargylic Alcohols Catalyzed by Benzotetramisole *Org. Lett.* **2006***, 8,* 4859-4861. DOI: 10.1021/ol061906y

40. Birman, V. B.;* Jiang, H.; Li, X.; Guo, L.; Uffman, E. W., Kinetic Resolution of 2-Oxazolidinones via Catalytic, Enantioselective N-Acylation. *J. Am. Chem. Soc.* **2006**, *128,* 6536-6537. DOI: 10.1021/ja061560m

41. Birman, V. B.;* Li, X., Benzotetramisole: A Remarkably Enantioselective Acyl Transfer Catalyst. *Org. Lett.* **2006,** *8,* 1351-1354. DOI: 10.1021/ol060065s

42. Birman, V. B.;* Li, X.; Jiang, H.; Uffman, E. W., Influence of Electronic and Steric Factors on 2,3-Dihydroimidazo[1,2-*a*]pyridine-Based Enantioselective Acylation Catalysts. *Tetrahedron* **2006**, *62,* 285-294. (Symposium-in-Print on Organocatalysis). DOI: 10.1016/j.tet.2005.08.119

43. Birman, V. B.;* Jiang, H., Kinetic Resolution of Alcohols Using a 1,2-Dihydroimidazo[1,2-*a*]quinoline Enantioselective Acylation Catalyst. *Org. Lett.* **2005**, *7,* 3445-3447. DOI: 10.1021/ol051063v

44. Birman, V. B.;* Uffman, E. W.; Jiang, H.; Li, X.; Kilbane, C. J., 2,3-Dihydroimidazo[1,2-a]pyridines: A New Class of Enantioselective Acyl Transfer Catalysts and Their Use in Kinetic Resolution of Alcohols. *J. Am. Chem. Soc.* **2004**, *126,* 12226-12227. DOI: 10.1021/ja0491477

45. Birman, V. B.;* Jiang, X.-T., Synthesis of Sceptrin Alkaloids. *Org. Lett.* **2004**, *6,* 2369-2371. DOI: 10.1021/ol049283g

46. Birman V. B.; Danishefsky, S. J.,* The Total Synthesis of (±)-Merrilactone A. *J. Am. Chem. Soc.* **2002**, *124,* 2080-2081. DOI: 10.1021/ja012495d

47. Iwama, T.; Birman, V. B.; Kozmin, S. A.; Rawal, V. H.,* Regiocontrolled Synthesis of Carbocycle-Fused Indoles via Arylation of Silyl Enol Ethers with o-Nitrophenylphenyliodonium Fluoride. *Org. Lett.* **1999**, *1,* 673-676. DOI: 10.1021/ol990759j

48. Birman V. B.,* Rheingold, A. L.; Lam, K.-C., Spirobiindane-7,7'-diol: A Novel, C_2-Symmetric Chiral Ligand. *Tetrahedron: Asymmetry* **1999**, *10,* 125-131. DOI: 10.1016/S0957-4166(98)00481-9

49. Birman V. B.; Rawal V. H.,* A General, Stereocontrolled Route to the Geissoschizine Family of Alkaloids. A Concise Synthesis of the Apogeissoschizine Skeleton. *J. Org. Chem.* **1998**, *63,* 9146-9147. DOI: 10.1021/jo981415u

50. Birman V. B.; Rawal V. H.,* A Novel Route to the Geissoschizine Skeleton: The Influence of Ligands on the Diastereoselectivity of the Heck Cyclization. *Tetrahedron Lett.* **1998**, *39,* 7219-7222. DOI: 10.1016/S0040-4039(98)01591-3

51. Birman V. B.; Chopra A.; Ogle C. A.,* A Novel Approach to Tricyclic Pharmaceuticals via Directed Dilithiation of Diaryl Compounds. *Tetrahedron Lett.* **1996**, *37,* 5073-5076. DOI: 10.1016/0040-4039(96)01068-4

BOOK CHAPTERS

1. Birman, V. B., 2,3,5,6-Tetrahydro-6-phenylimidazo- [2,1-b]thiazole **(**Tetramisole), in *Electronic Encyclopedia of Reagents for Organic Synthesis*, Paquette, L. A. Ed.; John Wiley and Sons, Ltd, 2016.
2. Li, X.; Jiang, H.; Birman, V. B., 2,3-dihydro-2-phenylimidazo[2,1- b]benzothiazole, in *Electronic Encyclopedia of Reagents for Organic Synthesis*, Paquette, L. A. Ed.; John Wiley and Sons, Ltd, 2016.
3. Li, X.; Jiang, H.; Birman, V. B., 2,3-Dihydro-2-phenylimidazo[2,1-b]benzothiazole, in *Encyclopedia of Reagents for Organic Synthesis* Paquette, L. A. Ed.; John Wiley and Sons Ltd., Singapore, 2009, Vol. 5, 3814-5. DOI: 10.1002/047084289X.rn00976

PATENTS

- Danishefsky, S. J.; Meng, Z.; Birman V. B. *Enantioselective Synthesis of Merrilactone A and its Analogs"* PCT Int. Appl. 2005 WO 2005051303
- Danishefsky, S. J.; Birman V. B. *"The Total Synthesis of Merrilactone A and its Analogs"* PCT Int. Appl. 2003 WO 2003051303.

INVITED LECTURES

1. Missouri Organic Day: University of Missouri in Columbia, April 24, 2021.
2. University of North Carolina at Charlotte, February 17, 2020.
3. Lewis Base Catalyzed Asymmetric Transformations Symposium, 251st National ACS meeting, San Diego, CA, March 13, 2016, ORGN 73
4. Recent Trends in Organocatalysis, Pacifichem 2015, Honolulu, HI, December 18, 2015
5. Meyers Symposium for Organic Chemistry, Southern Illinois University Carbondale, April 18, 2015
6. University of South Florida, Tampa, FL, October 22, 2014
7. 1st Japan-USA Organocatalytic Symposium, Honolulu, HI, December 15, 2012.
8. Illinois State University, Normal, IL, April 8, 2011.
9. Jackson State University, Jackson, MS, January 21, 2011.
10. University of Vermont, October 14, 2010.
11. Washington University Medical School, April 20, 2010.
12. University of Memphis, TN, April 2, 2010.
13. University of South Carolina, Columbia, SC, November 13, 2009
14. Cope Scholar Organic Synthesis symposium, 2009 Midwest Regional ACS Meeting, Iowa City, IA. October 21-24, 2009
15. Vanderbilt University, Nashville, TN, September 14, 2009
16. Rutgers University, October 24, 2008
17. Syracuse University, October 14, 2008
18. University of California-San Diego, May 12, 2008.
19. Texas Christian University, Fort Worth, TX, April 29, 2008.
20. Northern Illinois University, De Kalb, IL, April 28, 2008.
21. Purdue University, November 20, 2007.
22. University of Chicago, November 9, 2007.
23. University of Minnesota-Duluth, September 28, 2007.
24. Texas A&M University, September 7, 2007.
25. Young Investigators' Symposium, 234th ACS Meeting, Boston, MA, August 19, 2007
26. Gordon Research Conference on Natural Products, Tilton, NH, July 23-27, 2007
27. Eli Lilly, Indianapolis, IN, June 19, 2007.

28. University of California-Los Angeles, March 19, 2007.
29. University of California-Santa Barbara, March 16, 2007.
30. Ohio State University, February 15, 2007.
31. International Symposium on Organocatalysis in Organic Synthesis: University of Glasgow, UK, July 6, 2006.
32. NSF workshop, Holderness, NH, June 2006.
33. Missouri Organic Day: University of Missouri in Columbia, April 29, 2006
34. University of Missouri in Kansas City, January 12, 2006
35. University of Missouri in St. Louis, November 7, 2005
36. Wichita State University, October 5, 2005
37. CV Therapeutics, Inc. Palo Alto, CA, September 23, 2005
38. University of North Carolina at Charlotte, 2003

CONTRIBUTED PRESENTATIONS

(asterisk indicates primary author; presenting author is underlined)

1. Yin, J.; Straub, M. R.; Liao, J.; Birman, V. B.,* "Kinetic resolution of cyclic hydroxamic acids via Catalytic, Enantioselective O-Acylation", National ACS Spring Meeting, San Diego, CA, March 20-24, 2022, ORGN, 3661048 (oral)
2. Yin, J.; Birman, V. B.,* "Interleafed phenazine based oligomers as redox-responsive molecular muscles: the 1st generation", National ACS Spring Meeting, San Diego, CA, March 20-24, 2022, ORGN 3661179 (oral)
3. Yin, J.; Birman, V. B.,* "2nd generation of interleafed redox-responsive phenazine based oligomers", National ACS Spring Meeting, San Diego, CA, March 20-24, 2022, ORGN 3661316 (oral)
4. Son, R.; Birman, V. B.,* "Dibenzofuran and Phenazine-Based Redox-Responsive Oligomers", 257th National ACS meeting, San Diego, CA, March 13-17, 2022, ORGN 3652776 (oral)
5. Yin, J.; Khalilov, A. N.; Muthupandi, P. Ladd, R., Birman, V.B.* "Toward redox-responsive foldamers: a phenazine-based molecular switch" Gordon Research Conference on Artificial Molecular Switches and Motors, Holderness, NH, June 9-14, 2019 (poster).
6. Straub, M. R.; Birman, V.B.* "Organocatalytic enantioselective synthesis of α-fluoro-β-amino acid derivatives" National ACS meeting, Orlando, FL, March 31-April 4, 2019, ORGN 336 (oral)
7. Straub, M. R.; Leace, D. M.; Matz, B. A.; Birman, V.B.* "Lewis base-catalyzed rearrangement of S-phenacyl thioesters" 257th National ACS meeting, Orlando, FL, March 31-April 4, 2019, ORGN 337 (oral)
8. Sharmah Gautam, K.; Birman, V.B.* "Biogenetically inspired total synthesis of lingzhiol" 251st National ACS meeting, San Diego, CA, March 13-17, 2016, ORGN 416 (oral)
9. Sharmah Gautam, K.; Birman, V.B.* "Axially chiral N-heterocyclic carbenes: Design and application to asymmetric catalysis" 251st National ACS meeting, San Diego, CA, March 13-17, 2016, ORGN 141 (poster)

10. Ahlemeyer, N.A.; Birman, V.B.* "Fused imidazoline ligands: Design and application to asymmetric catalysis" 251st National ACS meeting, San Diego, CA, March 13-17, 2016, ORGN 140 (poster)
11. Ahlemeyer, N.A.; Birman, V.B.* "Asymmetric catalytic synthesis of thiochromenes" 251st National ACS meeting, San Diego, CA, March 13-17, 2016, ORGN 86 (oral)
12. Yang, X.; Bumbu, V. D.; Lu, G.; Birman, V.B.;* Liu, P.; Houk, K. N.* "Enantioselective alcoholysis of acyl donors in the presence of amidine-based catalysts: scope, limitations, and origins of enantioselectivity" International Conference on Catalysis in Organic Synthesis (ICCOS-2012) September, 2012, Moscow, Russia (poster).
13. Bumbu, V. D.; Yang, X.; Birman, V. B.* "Kinetic resolution of β-lactams via catalytic, enantioselective N-acylation" Joint 46th Midwest and 39th Great Lakes Regional Meeting of ACS, St. Louis, MO, October 19-22, 2011, MWGL-394.
14. Bumbu, V. D.; Birman, V. B.* "Kinetic resolution of N-acyl-β-lactams via nonenzymatic enantioselective alcoholysis" 242nd ACS National Meeting, Denver, CO, August 28-September 1, 2011, ORGN 22 (oral).
15. Lu, G.; Birman, V. B.* "Brønsted acid-catalyzed dynamic kinetic resolution of azlactones" 241st ACS National Meeting, Anaheim, CA, March 27-31, 2011, ORGN 903 (oral)
16. Yang, X.; Lu, G.; Birman, V. B.* "Benzotetramisole-catalyzed dynamic kinetic resolution of azlactones" 239th ACS National Meeting, San Francisco, CA, March 21-25, 2010, ORGN 502 (oral)
17. Padakanti, P. K.; Zhang, Y.; Birman, V. B.* "Enantioselective Steglich rearrangement catalyzed by HBTM and its analogs" 238th ACS National Meeting, Washington, DC, August 16-20, 2009, ORGN 384 (oral)
18. Zhang, Y.; Birman, V. B.* "HBTM and its analogs: Remarkable effects of methyl substituents" 238th ACS National Meeting, Washington, DC, August 16-20, 2009, ORGN 383 (oral)
19. Yang, X.; Birman, V. B.* "Kinetic resolution of 2-arylalkanoic acids using amidine-based catalysts" 238th ACS National Meeting, Washington, DC, August 16-20, 2009, ORGN 332 (oral)
20. Seizert, C.A.; Birman, V. B.* "Cope rearrangement route to hexahydroazulenes" 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009. ORGN 195 (oral)
21. Yang, X.; Birman, V. B.* "1,2,4-Triazolide anion: An active nucleophilic catalyst for ester aminolysis" 237th ACS National Meeting, Salt Lake City, UT, March 22-26, 2009. ORGN 187 (oral)
22. Li, X.; Lu, P.; Cheong, P. H.-Y.; Um, J. A.; Houk, K. N.;* Birman, V. B.* "Origins of enantioselectivity in CF_3-PIP-catalyzed asymmetric acylation: A computational study" 236th ACS National Meeting, Philadelphia, PA, August 17-21, 2008. ORGN 438 (poster)
23. Vladimir B.Birman* "Design, Development and Applications of a New Class of Enantioselective Acyl Transfer Catalysts" Gordon Research Conference on Natural Products, Tilton, NH, July 20-25, 2008 (Poster).
24. Jiang, H.; Li, X.; Birman, V. B.;* "Enantioselective synthesis of (–)-lobeline via nonenzymatic desymmetrization" Gordon Research Conference on Natural Products, Tilton, NH, July 23-27, 2007 (Poster).

25. Birman, V. B.;* Li, X.; Jiang, H.; Guo, L.; Boppisetti, J. K.; Uffman, E. W.; Jiang, X.; Han, Z.; Kilbane, C. J.; Flor, E. L.; Krylov, V. B. "Design, Development and Applications of a New Class of Enantioselective Acyl Transfer Catalysts" Eighth Tetrahedron Symposium June 27 – 29, 2007, Berlin, Germany (Poster).

26. Birman, V. B.;* Zhao, Z.; Guo, L. "Studies Towards the Total Synthesis of Kinamycins" Eighth Tetrahedron Symposium June 27 – 29, 2007, Berlin, Germany (Poster).

27. Li, X.; Birman, V. B.* "Ring-expanded tetramisole analogues as enantioselective acyl transfer catalysts" 234th ACS National Meeting, Boston, MA, August 19-23, 2007, ORGN 650.

28. Boppisetti, J. K.; Birman, V. B.* "The first asymmetric oxidation of phenols to ortho-quinols using a new class of enantioselective oxidants" 234th ACS National Meeting, Boston, MA, August 19-23, 2007, ORGN 389.

29. Birman, V. B.* "Design, development and applications of a new class of enantioselective acyl transfer catalysts" 234th ACS National Meeting, Boston, MA, August 19-23, 2007, ORGN 061 (Young Academic Investigators' Symposium).

30. Boppisetti, J. K.; Li, X.; Birman, V. B.* "Structural variation of Cl-PIQ and BTM, enantioselective acyl transfer catalysts" 233rd ACS National Meeting, Chicago, IL, March 26-30, 2007, ORGN 740 (Poster).

31. Birman, V. B.;* Guo, L. "Kinetic resolution of propargylic alcohols using Cl-PIQ and BTM" 233rd ACS National Meeting, Chicago, IL, March 26-30, 2007, ORGN 739 (Poster).

32. Achanta, S.; Padakanti, P. Birman, V. B.* "Dimerization strategies for the construction of the central core of lomaiviticins" 233rd ACS National Meeting, Chicago, IL, March 26-30, 2007, ORGN 405 (Poster).

33. Li, X.; Han, Z.; Birman, V. B.* "Catalytic activity of nonaromatic amidine derivatives in acylation reactions" 233rd ACS National Meeting, Chicago, IL, March 26-30, 2007, ORGN 367.

34. Zhao, Z.; Guo, L.; Birman, V. B.* "Total synthesis of prekinamycin and progress towards kinamycins" 233rd ACS National Meeting, Chicago, IL, March 26-30, 2007, ORGN 341.

35. Jiang, H.; Li, X.; Birman, V. B.* "Enantioselective synthesis of lobeline via nonenzymatic desymmetrization" 233rd ACS National Meeting, Chicago, IL, March 26-30, 2007, ORGN 297.

36. Zhao, Z.; Guo, L.; Birman, V. B.* "Synthetic studies towards diazobenzo[b]fluorene antibiotics" 231st ACS National Meeting, Atlanta, GA, March 26-30, 2006, ORGN 473.

37. Li, X.; Jiang, H.; Uffman, E. W.; Birman, V. B.* "Variation of steric and electronic parameters of DHIP catalysts" 231st ACS National Meeting, Atlanta, GA, March 26-30, 2006, ORGN 176 (Poster).

38. Jiang, H.; Birman, V. B.* "2,3-Dihydroimidazo[1,2a]quinolines: The second generation of asymmetric acylation catalysts" National Organic Symposium, Salt Lake City, Utah, June 2005

39. Birman, V. B.;* Li, X. "Benzotetramisole: A highly selective catalyst for kinetic resolution of benzylic alcohols and 2-oxazolidinones" 231st ACS National Meeting, Atlanta, GA, March 26-30, 2006, ORGN 032.

40. Birman, V. B.;* Jiang, H. "2,3-Dihydroimidazo[1,2a]quinolines: The second generation of asymmetric acylation catalysts" 229th ACS National Meeting, San Diego, March 13-17, 2005 ORGN 313.

41. Birman, V. B.;* Uffman, E. W. "Kinetic resolution of chiral oxazolidinones via catalytic, enantioselective N-acylation" 229th ACS National Meeting, San Diego, March 13-17, 2005 ORGN 312.

42. Birman, V. B.;* Jiang, X. "Synthesis of Sceptrin Alkaloids" Gordon Research Conference on Natural Products, Tilton, NH, July, 2004

43. Birman, V. B.;* Kilbane, C. J.; Uffman, E. W. "New asymmetric catalysts from an old heterocycle: Practical approach to rational catalyst design" 227th ACS National Meeting, Anaheim, CA, March 28-April 1, 2004, ORGN 534.

44. Reddy, T. J.; Birman, V. B.; Rawal, V. H.* "Catalytic asymmetric total synthesis of (+)-geissoschizine" 226th ACS National Meeting, New York, NY, September 7-11, 2003, ORGN 711.

45. Birman, V. B.; Rawal, V. H.* "Synthetic approaches to strictamine and geissoschizine using the Heck cyclization methodology" 218th ACS National Meeting, New Orleans, Aug. 22-26, 1999, ORGN 625.

46. Chopra, A.; Birman, V. B.; Ogle, C. A.* "A novel approach to thioxanthene-based tricyclic pharmaceuticals via directed dilithiation of diphenylsulfone." 212th ACS National Meeting, Orlando, FL, August 25-29, 1996, MEDI 086.

REVIEWING ACTIVITIES

- Peer review of manuscripts submitted to *Journal of the American Chemical Society, Journal of Organic Chemistry, Organic Letters, Chemical Reviews, ACS Catalysis, Accounts of Chemical Research, Angewandte Chemie Int. Edit., Chemistry—A European Journal, European Journal of Organic Chemistry, Advanced Synthesis and Catalysis, Chemical Communications, Organic and Biomolecular Chemistry, Chemical Science, Tetrahedron, Tetrahedron Letters, Synlett,* and proposals submitted to National Science Foundation, National Institutes of Health, American Chemical Society—Petroleum Research Fund, U.S.-Israel Binational Science Foundation, Fonds Québécois de la Recherche sur la Nature et les Technologies, and Research Corporation.