

**John P. Wolfe**  
University of Michigan  
Department of Chemistry  
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Ann Arbor, MI 48109  
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## **EDUCATION AND EXPERIENCE**

### **University of Michigan** (July 2002–present)

Associate Professor of Chemistry (August 2008–present)

William R. Roush Assistant Professor of Chemistry (September 2006–August 2008)

Assistant Professor of Chemistry (July 2002–September 2006)

### **University of California, Irvine** (September 1999–May 2002)

NIH NRSA Postdoctoral Fellow (September 1999–May 2002)

Overman Group Coordinator (March 2001–May 2002)

Research Advisor: Professor Larry E. Overman

Research Area: Synthesis of polycyclic guanidine derivatives, studies towards the total synthesis of cylindramide, development of new tandem cation-olefin cyclization/pinacol rearrangement reactions.

### **Massachusetts Institute of Technology** (September 1994–August 1999)

Ph.D. in Organic Chemistry

Thesis Title: “Late Transition Metal Catalyzed C–N and C–C Bond Forming Reactions”

Graduate Advisor: Professor Stephen L. Buchwald

### **University of Colorado, Boulder** (1988–1994)

B.A. in Chemistry

Undergraduate Research Assistant (1993–1994)

Research Advisor: Professor Gary A. Molander

Research Area: Development of a SmI<sub>2</sub>-promoted alternative to the cyanoacetic ester synthesis.

## **HONORS AND AWARDS**

2008–2009 GlaxoSmithKline Chemistry Scholar Award

2006 William R. Roush Junior Faculty Development Award

2006 Camille Dreyfus Teacher-Scholar Award

2005 Eli Lilly Grantee Award

2004 Amgen Young Investigator’s Award

2003–2005 3M Untenured Faculty Award

2002 Lilly Unrestricted Research Award

2002 Research Corporation Innovation Award

2002 Dreyfus New Faculty Award

1999–2002 NIH Postdoctoral Fellowship

1998 Roche Award For Excellence in Organic Chemistry

1997 ACS Organic Division Graduate Fellowship

1997 Boehringer-Ingelheim Graduate Fellowship

## INDEPENDENT PUBLICATIONS

### University of Michigan

[60] “Mild Conditions for Pd-Catalyzed Carboamination of Terminal-,  $\alpha$ -Disubstituted, and  $\beta$ -Disubstituted  $\gamma$ -Aminoalkenes. Scope, Limitations, and Mechanism of Pyrrolidine Formation.” Myra B. Bertrand, Joshua D. Neukom, and John P. Wolfe. Submitted for publication.

[59] “Stereoselective Synthesis of *cis*- and *trans*-3,5-Disubstituted Pyrazolidines via Pd-Catalyzed Carboamination Reactions. Use of Allylic Strain to Control Product Stereochemistry Through *N*-Substituent Manipulation.” Natalie C. Giampietro and John P. Wolfe. *J. Am. Chem. Soc.* **2008**, accepted for publication.

[58] “Stereoselective Synthesis of Imidazolidin-2-ones via Pd-Catalyzed Alkene Carboamination. Scope and Limitations.” Jonathan A. Fritz and John P. Wolfe. *Tetrahedron* **2008**, *64*, 6838–6852.  
• Invited paper.

[57] “A Concise Asymmetric Synthesis of *cis*-2,6-Disubstituted *N*-Aryl Piperazines via Pd-Catalyzed Carboamination Reactions.” Josephine S. Nakhla and John P. Wolfe. *Org. Lett.* **2007**, *9*, 3279–3282.

[56] “Palladium-Catalyzed Synthesis of Cyclopentane-Fused Benzocyclobutenes via Tandem Directed Carbopalladation/C–H Bond Functionalization.” Myra B. Bertrand and John P. Wolfe. *Org. Lett.* **2007**, *9*, 3073–3075.

[55] “Stereoselective Synthesis of Isoxazolidines through Pd-Catalyzed Carboetherification of *N*-Butenylhydroxylamines.” Michael B. Hay and John P. Wolfe. *Angew. Chem. Int. Ed.* **2007**, *46*, 6492–6494.

[54] “Mild Conditions for the Synthesis of Functionalized Pyrrolidines via Pd-Catalyzed Carboamination Reactions.” Myra B. Bertrand, Matthew L. Leathen, and John P. Wolfe. *Org. Lett.* **2007**, *9*, 457–460.

[53] “Synthesis and Reactivity of Azapalladacyclobutanes.” Joshua E. Ney and John P. Wolfe. *J. Am. Chem. Soc.* **2006**, *128*, 15415–15422.

[52] “Tandem Wittig Rearrangement/Aldol Reactions for the Synthesis of Glycolate Aldols.” Myra B. Bertrand and John P. Wolfe. *Org. Lett.* **2006**, *8*, 4661–4663.

[51] “A New Synthesis of Imidazolidin-2-ones via Pd-Catalyzed Carboamination of *N*-Allylureas.” Jonathan A. Fritz, Josephine S. Nakhla, and John P. Wolfe. *Org. Lett.* **2006**, *8*, 2531–2534.

[50] “A Concise Stereoselective Synthesis of Preussin, 3-*epi*-Preussin and Analogs.” Myra B. Bertrand and John P. Wolfe. *Org. Lett.* **2006**, *8*, 2353–2356.

[49] “Synthesis of Polysubstituted Tetrahydrofurans via Pd-Catalyzed Carboetherification Reactions.” Michael B. Hay and John P. Wolfe. *Tetrahedron Lett.* **2006**, *47*, 2793–2796.

[48] “Intramolecular Pd-Catalyzed Carboetherification and Carboamination. Influence of Catalyst Structure on Reaction Mechanism and Product Stereochemistry.” Josephine S. Nakhla, Jeff W. Kampf, and John P. Wolfe. *J. Am. Chem. Soc.* **2006**, *128*, 2893–2901.

[47] “Palladium-Catalyzed Synthesis of 2,1'-Disubstituted Tetrahydrofurans from  $\gamma$ -Hydroxy Internal Alkenes. Evidence for Alkene Insertion into a Pd–O Bond and Stereochemical Scrambling via  $\beta$ -Hydride Elimination.” Michael B. Hay and John P. Wolfe. *J. Am. Chem. Soc.* **2005**, *127*, 16468–16476.

- [46] “Synthesis of *N*-Aryl-2-allyl Pyrrolidines via Palladium-Catalyzed Carboamination Reactions of  $\gamma$ -(*N*-Arylamino)alkenes with Vinyl Bromides.” Joshua E. Ney, Michael B. Hay, Qifei Yang, and John P. Wolfe. *Adv. Synth. Catal.* **2005**, *347*, 1614–1620
- Invited Paper.
- [45] “Palladium-Catalyzed Tandem *N*-Arylation/Carboamination Reactions for the Stereoselective Synthesis of *N*-Aryl-2-Benzyl Pyrrolidines.” Qifei Yang, Joshua E. Ney, and John P. Wolfe. *Org. Lett.* **2005**, *7*, 2575–2578.
- Featured in “Some Items of Interest to Process R&D Chemists and Engineers.” *Org. Proc. Res. Dev.* **2005**, *9*, 376,”
- [44] “Selective Synthesis of 5- or 6-Aryl Octahydrocyclopenta[*b*]pyrroles from a Common Precursor Through Control of Competing Pathways in a Pd-Catalyzed Reaction.” Joshua E. Ney and John P. Wolfe. *J. Am. Chem. Soc.* **2005**, *127*, 8644–8651.
- [43] “Stereoselective Synthesis of *N*-Protected Pyrrolidines via Pd-Catalyzed Reactions of  $\gamma$ -(*N*-acylamino) and  $\gamma$ -(*N*-boc-amino)alkenes with Aryl Bromides.” Myra B. Bertrand and John P. Wolfe. *Tetrahedron* **2005**, *61*, 6447–6459.
- Invited paper, featured in “Some Items of Interest to Process R&D Chemists and Engineers.” *Org. Proc. Res. Dev.* **2005**, *9*, 522.
- [42] “Palladium-Catalyzed Synthesis of Tetrahydrofurans from  $\gamma$ -Hydroxy Terminal Alkenes: Scope, Limitations, and Stereoselectivity.” Michael B. Hay, Alison R. Hardin, and John P. Wolfe. *J. Org. Chem.* **2005**, *70*, 3099–3107.
- [41] “Palladium-Catalyzed Synthesis of *N*-Aryl-2-Benzylindolines via Tandem Arylation of 2-Allylaniline: Control of Selectivity Through *in situ* Catalyst Modification.” Ricardo Lira and John P. Wolfe. *J. Am. Chem. Soc.* **2004**, *126*, 13906–13907.
- [40] “Palladium-Catalyzed Synthesis of *N*-Aryl Pyrrolidines from  $\gamma$ -(*N*-Arylamino)Alkenes: Evidence for Chemoselective Alkene Insertion into Pd–*N* Bonds.” Joshua E. Ney and John P. Wolfe. *Angew. Chem. Int. Ed.* **2004**, *43*, 3605–3608.
- [39] “Stereoselective Synthesis of Tetrahydrofurans via the Palladium-Catalyzed Reaction of Aryl Bromides with  $\gamma$ -Hydroxy Alkenes. Evidence for an Unusual Intramolecular Olefin Insertion into a Pd(Ar)(OR) Intermediate.” John P. Wolfe and Michael A. Rossi. *J. Am. Chem. Soc.* **2004**, *126*, 1620–1621.
- [38] “A New, Mild Synthesis of *N*-Sulfonyl Ketimines via the Palladium-Catalyzed Isomerization of Aziridines.” John P. Wolfe and Joshua E. Ney. *Org. Lett.* **2003**, *5*, 4607–4610.

## INDEPENDENT REVIEWS AND BOOK CHAPTERS

University of Michigan

Reviews (In Peer Reviewed Journals)

- [37] “Stereoselective Synthesis of Saturated Heterocycles via Pd-Catalyzed Alkene Carboetherification and Carboamination Reactions.” John P. Wolfe. *Synlett* **2008**, In press.
- [36] “Palladium-Catalyzed Carboetherification and Carboamination Reactions of  $\gamma$ -Hydroxy- and  $\gamma$ -Aminoalkenes for the Synthesis of Tetrahydrofurans and Pyrrolidines.” John P. Wolfe. *Eur. J. Org. Chem.* **2007**, 571–582.

[35] “Recent Advances in the Stereoselective Synthesis of Tetrahydrofurans.” John P. Wolfe and Michael B. Hay. *Tetrahedron* **2007**, *63*, 261–290.

[34] “Recent Developments in Palladium-Catalyzed Heterocycle Synthesis and Functionalization.” John P. Wolfe and Jennifer S. Thomas. *Curr. Org. Chem.* **2005**, *9*, 625–655.

#### Book Chapters

[33] “[1,1'-Biphenyl]-2-ylidicyclohexylphosphine.” Myra B. Bertrand and John P. Wolfe in *The Electronic Encyclopedia of Reagents for Organic Synthesis*. <http://mrw.interscience.wiley.com/eros/>. Published online 2008.

[32] “Bis-[2-(Diphenylphosphino)phenyl]ether, (Dpe-Phos).” John P. Wolfe in *The Electronic Encyclopedia of Reagents for Organic Synthesis*. <http://mrw.interscience.wiley.com/eros/>. Published online 2008.

[31] “The Nef Reaction.” John P. Wolfe in *Name Reactions in Functional Group Interconversions*; Li, J. J. Ed.; John Wiley and Sons: Hoboken, NJ; 2007, pp 645–652.

[30] “The Shapiro Reaction.” John P. Wolfe in *Name Reactions in Functional Group Interconversions*; Li, J. J. Ed.; John Wiley and Sons: Hoboken, NJ; 2007, pp 405–413.

[29] “The Rubottom Oxidation.” John P. Wolfe in *Name Reactions in Functional Group Interconversions*; Li, J. J. Ed.; John Wiley and Sons: Hoboken, NJ; 2007, pp 282–290.

[28] “Chapter 1: An Introduction to Palladium Catalysis.” John P. Wolfe and Jie Jack Li in *Palladium in Heterocyclic Chemistry*, 2<sup>nd</sup> ed; Li, J. J., Ed.; Elsevier: Oxford; 2007, pp 1–35.

[27] “The Meyers Oxazoline Method.” John P. Wolfe in *Name Reactions in Heterocyclic Chemistry*; Li, J. J. Ed.; John Wiley and Sons: Hoboken, NJ; 2005, pp 237–248.

[26] “The Bischler-Napieralski Reaction.” John P. Wolfe in *Name Reactions in Heterocyclic Chemistry*; Li, J. J. Ed.; John Wiley and Sons: Hoboken, NJ; 2005, pp 376–385.

## **POSTDOCTORAL, GRADUATE, AND UNDERGRADUATE PUBLICATIONS**

### University of California, Irvine (Postdoctoral Publications)

[25] “New Cationic Olefin Cyclization–Pinacol Reactions. Ring-Expanding Cyclopentane Annulations that Directly Install Useful Functionality in the Cyclopentane Ring.” Larry E. Overman and John P. Wolfe. *J. Org. Chem.* **2002**, *67*, 6421–6429.

[24] “Synthesis of Polycyclic Guanidines via Cyclocondensation Reactions of *N*-Amidinylium Ions.” Larry E. Overman and John P. Wolfe. *J. Org. Chem.* **2001**, *66*, 3167–3175.

[23] “Synthesis of 3-Acyltetrahydrofurans From Formaldehyde Acetals of Allylic Diols.” Catherine M. Gasparski, Paul M. Herrinton, Larry E. Overman, and John P. Wolfe. *Tetrahedron Lett.* **2000**, *41*, 9431–9434.

Massachusetts Institute of Technology (Graduate Publications)

- [22] "Palladium-Catalyzed Amination of Aryl Halides and Aryl Triflates: *N*-hexyl-2-methyl-4-methoxyaniline, *N*-methyl-*N*-(4-chlorophenyl)aniline." John P. Wolfe and Stephen L. Buchwald. *Org. Synth.* **2001**, 78, 23–35.
- [21] "Scope and Limitations of the Pd/BINAP Catalyzed Amination of Aryl Bromides." John P. Wolfe and Stephen L. Buchwald. *J. Org. Chem.* **2000**, 65, 1144–1157.
- [20] "A Simple, Efficient Catalyst System for the Palladium-Catalyzed Amination of Aryl Chlorides, Bromides, and Triflates." John P. Wolfe, Hiroshi Tomori, Joseph P. Sadighi, Jingjun Yin, and Stephen L. Buchwald. *J. Org. Chem.* **2000**, 65, 1158–1174.
- [19] "Highly Active Palladium Catalysts for Suzuki Coupling Reactions." John P. Wolfe, Robert A. Singer, Bryant H. Yang, and Stephen L. Buchwald. *J. Am. Chem. Soc.* **1999**, 121, 9550–9561.
- [18] "A Highly Active Catalyst For the Room-Temperature Catalytic Amination and Suzuki Coupling of Aryl Chlorides." John P. Wolfe and Stephen L. Buchwald. *Angew. Chem. Int. Ed.* **1999**, 38, 2413–2416.
- [17] "Novel Electron-Rich Bulky Phosphine Ligands Facilitate the Palladium-Catalyzed Preparation of Diaryl Ethers." Attila Aranyos, David W. Old, Ayumu Kiyomori, John P. Wolfe, Joseph P. Sadighi, and Stephen L. Buchwald. *J. Am. Chem. Soc.* **1999**, 121, 4369–4378.
- [16] "A Highly Active Catalyst for Palladium-Catalyzed Cross-Coupling Reactions: Room-Temperature Suzuki Couplings and Amination of Unactivated Aryl Chlorides." David W. Old, John P. Wolfe, and Stephen L. Buchwald. *J. Am. Chem. Soc.* **1998**, 120, 9722–9723.
- [15] "The Rational Development of Practical Catalysts for Aromatic Carbon-Nitrogen Bond Formation." John P. Wolfe, Seble Wagaw, Jean-Francois Marcoux, and Stephen L. Buchwald. *Acc. Chem. Res.* **1998**, 31, 805–818.
- [14] "Asymmetric Arylation of Ketone Enolates." Jens Åhman, John P. Wolfe, Malisa V. Troutman, Michael Palucki, and Stephen L. Buchwald. *J. Am. Chem. Soc.* **1998**, 120, 1918–1919.
- [13] "An Ammonia Equivalent for the Palladium-Catalyzed Amination of Aryl Halides and Triflates." John P. Wolfe, Jens Åhman, Joseph P. Sadighi, Robert A. Singer, and Stephen L. Buchwald. *Tetrahedron Lett.* **1997**, 38, 6367–6370.
- [12] "Improved Functional Group Compatibility in the Palladium-Catalyzed Amination of Aryl Bromides." John P. Wolfe and Stephen L. Buchwald. *Tetrahedron Lett.* **1997**, 38, 6359–6362.
- [11] "Room-Temperature Catalytic Amination of Aryl Iodides." John P. Wolfe and Stephen L. Buchwald. *J. Org. Chem.* **1997**, 62, 6066–6068.
- [10] "Nickel-Catalyzed Amination of Aryl Chlorides." John P. Wolfe and Stephen L. Buchwald. *J. Am. Chem. Soc.* **1997**, 119, 6054–6058.
- [9] "Palladium-Catalyzed Intermolecular Carbon-Oxygen Bond Formation: A New Synthesis of Aryl Ethers." Michael Palucki, John P. Wolfe, and Stephen L. Buchwald. *J. Am. Chem. Soc.* **1997**, 119, 3395–3396.
- [8] "Palladium-Catalyzed Amination of Aryl Triflates." John P. Wolfe and Stephen L. Buchwald. *J. Org. Chem.* **1997**, 62, 1264–1267.

[7] "Synthesis of Oxygen Heterocycles via a Palladium-Catalyzed C–O Bond Forming Reaction." Michael Palucki, John P. Wolfe, and Stephen L. Buchwald. *J. Am. Chem. Soc.* **1996**, *118*, 10333–10334.

[6] "An Improved Catalyst System for Aromatic Carbon-Nitrogen Bond Formation: The Possible Involvement of Bis(Phosphine) Palladium Complexes as Key Intermediates." John P. Wolfe, Seble Wagaw, and Stephen L. Buchwald. *J. Am. Chem. Soc.* **1996**, *118*, 7215–7216.

[5] "Intramolecular Palladium-Catalyzed Aryl Amination and Aryl Amidation." John P. Wolfe, Roger A. Rennels, and Stephen L. Buchwald. *Tetrahedron* **1996**, *52*, 7525–7546.

[4] "Palladium-Catalyzed Amination of Aryl Iodides." John P. Wolfe and Stephen L. Buchwald. *J. Org. Chem.* **1996**, *61*, 1133–1135.

#### University of Colorado, Boulder (Undergraduate Publications)

[3] "A New Approach to the Cyanoacetic Ester Synthesis." Gary A. Molander and John P. Wolfe. *J. Brazilian. Chem. Soc.* **1996**, *7*, 335–341.

### POSTDOCTORAL REVIEWS

#### University of California, Irvine

[2] "2-Dicyclohexylphosphino-2'-(*N,N*-dimethylamino)biphenyl." John P. Wolfe. Published online (2002, Release 2) in *The Electronic Encyclopedia of Reagents for Organic Synthesis*. <http://mrw.interscience.wiley.com/eros/>

[1] "1-(Di-*tert*-butylphosphino)biphenyl." John P. Wolfe. Published online (2002, Release 2) in *The Electronic Encyclopedia of Reagents for Organic Synthesis*. <http://mrw.interscience.wiley.com/eros/>

### PATENTS

#### Massachusetts Institute of Technology

[8] "Ligands for Metals and Improved Metal-catalyzed Processes Based Thereon." Stephen L. Buchwald, David W. Old, John P. Wolfe, Michael Palucki, and Ken Kamikawa. US Patent # 7,026,498 (2006)

[7] "Ligands for Metals and Improved Metal-catalyzed Processes Based Thereon." Stephen L. Buchwald, David W. Old, John P. Wolfe, Michael Palucki, and Ken Kamikawa. US Patent # 6,946,560 (2006)

[6] "Arylation and Vinylation of Activated Carbon." Stephen L. Buchwald, John P. Wolfe, Jens Ahman, Malisa Troutman, Michael Palucki, Ken Kamikawa, and Andre Chieffi. US Patent # 6,867,310 (2005)

[5] "Ligands for Metals and Improved Metal-Catalyzed Processes Based Thereon." Stephen L. Buchwald, John P. Wolfe, David W. Old, Ken Kamikawa, and Michael Palucki. US Patent # 6,395,916 (2002).

[4] "Arylamine Synthesis." John P. Wolfe, Jens Ahman, Joseph P. Sadighi, Robert A. Singer, and Stephen L. Buchwald. US Patent # 6,323,366 (2001).

[3] "Ligands for Metals and Improved Metal-Catalyzed Processes Based Thereon." Stephen L. Buchwald, David W. Old, John P. Wolfe, Michael Palucki, and Ken Kamikawa. US Patent # 6,307,087 (2001).

[2] "Synthesis of Aryl Ethers." Stephen L. Buchwald, John P. Wolfe, and Michael Palucki. US Patent # 6,166,226 (2000).

[1] "Synthesis of Aryl Ethers." Stephen L. Buchwald, John P. Wolfe, and Michael Palucki. US Patent # 5,847,166 (1998).

## INVITED SEMINARS

[61] Astra Zeneca, Inc., Wilmington, DE: Tuesday, June 17, 2008.

[60] ACS Central Regional Meeting, Columbus OH: Thursday, June 12, 2008.

[59] University of Rochester: Friday, April 18, 2008.

[58] DuPont Agrochemicals, Wilmington DE: Wednesday, April 9, 2008.

[57] Organic Chemistry Day Symposium, University of Missouri-Columbia: Saturday, April 5, 2008.

[56] Michigan State University: Wednesday, March 26, 2008.

[55] Pfizer, Inc., Groton, CT: Thursday, March 20, 2008.

[54] Eli Lilly Grantee Symposium, Eli Lilly, Indianapolis, IN: Tuesday, March 4, 2008.

[53] The Scripps Research Institute, La Jolla, CA: Tuesday, February 26, 2008.

[52] University of Illinois, Chicago: Tuesday, February 12, 2008.

[51] Hoffman La Roche, Nutley NJ: Thursday, January 24, 2008.

[50] Amgen Pharmaceuticals, S. San Francisco CA: Wednesday, January 8, 2008.

[49] Genentech, S. San Francisco CA: Wednesday, November 28, 2007.

[48] University of California, Berkeley: Tuesday, November 27, 2007.

[47] Oakland University: Wednesday, November 7, 2007.

[46] Wayne State University: Wednesday, October 24, 2007.

[45] Florida State University: Tuesday, October 2, 2007.

[44] Texas A&M University: Thursday, September 20, 2007.

[43] Second USA-UK Synthesis Workshop, Clift Hotel, San Francisco, CA: July 30, 2007.

[42] Gordon Research Conference on Heterocyclic Chemistry, Salve Regina University, Newport, RI: June 26, 2007.

[41] Johnson & Johnson, La Jolla: Wednesday, May 16, 2007.

[40] Roche Palo Alto, LLC: Wednesday, May 2, 2007.

[39] University of Illinois, Urbana-Champaign: Thursday, April 12, 2007.

- [38] University of Vermont: Thursday, March 22, 2007.
- [37] University of Sherbrooke: Wednesday, March 21, 2007.
- [36] University of Delaware: Wednesday, February 28, 2007.
- [35] University of Utah: Thursday, February 22, 2007.
- [34] Brigham Young University: Wednesday, February 21, 2007.
- [33] Bristol Myers Squibb, New Brunswick, NJ: Thursday, February 8, 2007.
- [32] Notre Dame University: Wednesday, January 31, 2007.
- [31] Purdue University: Tuesday, January 30, 2007.
- [30] University of Wisconsin, Madison: Tuesday, December 12, 2006.
- [29] Cornell University: Monday, November 13, 2006.
- [28] University of Waterloo: Tuesday, November 7, 2006.
- [27] University of North Carolina, Chapel Hill: Friday, October 27, 2006.
- [26] Duke University: Thursday, October 26, 2006.
- [25] University of Colorado, Boulder: Tuesday, October 17, 2006.
- [24] Colorado State University: Monday, October 16, 2006.
- [23] University of California, Santa Barbara: Friday, September 29, 2006.
- [22] University of California, Irvine: Thursday, September 28, 2006.
- [21] California Institute of Technology: Wednesday, September 27, 2006.
- [20] 2006 Fall ACS National Meeting, Young Investigators Symposium: San Francisco CA, Sunday, September 10, 2006.
- [19] Gordon Research Conference on Heterocyclic Chemistry, Salve Regina University, Newport, RI, July 2, 2006.
- [18] ACS Northwest Regional Meeting, Reno NV: Tuesday, June 27, 2006.
- [17] Bristol Meyers Squibb, Wallingford, CT: Wednesday, June 14, 2006.
- [16] Bristol Meyers Squibb, Hopewell, NJ: Tuesday, June 13, 2006.
- [15] ACS Great Lakes Regional Meeting, Milwaukee, WI: Thursday, June 1, 2006.
- [14] Abbott labs, Chicago, IL: Friday, April 21, 2006.
- [13] 2006 Spring ACS National Meeting, Symposium on the 1-2-1 General-Organic-General Curriculum: Atlanta, GA, Tuesday, March 28, 2006.

- [12] 2006 Spring ACS National Meeting, ACS Award for Creativity in Organic Synthesis Symposium: Atlanta, GA, Monday, March 27, 2006.
- [11] Pacifichem: December 15, 2005.
- [10] University of Pennsylvania: Monday, November 7, 2005.
- [9] University of Texas, Austin: Friday, September 30, 2005.
- [8] Eli Lilly, Indianapolis, Indiana: Tuesday, June 21, 2005.
- [7] 2005 NSF Workshop on Synthetic Organic Chemistry: June 9–June 13 2005.
- [6] Merck Research Laboratories, West Point, PA, March 8, 2005.
- [5] Merck Process Research and Development, Rahway, NJ, March 7, 2005.
- [4] Amgen Pharmaceuticals, 2004 Young Investigator's Symposium, Thousand Oaks, CA: September 17, 2004.
- [3] Organic Reactions and Processes Gordon Research Conference, Roger Williams University, Bristol, RI: July 22, 2004 (Invited Oral Presentation Following Poster Competition).
- [2] 3M Pharmaceuticals, St. Paul, MN: April 9, 2004.
- [1] Grand Valley State University: September 19, 2003.