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Academic Appointments	<b>Assistant Professor</b> Department of Chemistry, California State University Fresno <b>Visiting Scholar</b> Department of Chemistry, Vanderbilt University <b>Postdoctoral Scholar</b> Department of Chemistry, Vanderbilt University	<b>2015–present</b> <b>2015–present</b> <b>2012–2015</b>
Education	<b>Vanderbilt University</b> , Nashville, TN Ph.D., Chemistry (2012) Dissertation: <i>Stereospecific Reactions of <math>\alpha</math>-Amino-<math>\beta</math>-Diazonium Intermediates: Mechanistic Studies, New Reaction Discovery and their Application to a Two-Directional Total Synthesis of (+)-Zwittermicin A</i> <b>Wroclaw University of Technology</b> , Wroclaw, Poland B.S./M.S., Chemistry (2006) Thesis: <i>Selenium-catalyzed oxidative transformations of substituted naphthols</i>	
Research Experience	<b>Vanderbilt University</b> Postdoctoral Researcher (Prof. Ned Porter) <ul style="list-style-type: none"><li>• Total synthesis of deuterium-reinforced 7-dehydrocholesterol and lathosterol.</li><li>• Study of tunneling in autoxidation of lipids and hydrocarbons.</li></ul> Graduate Research Assistant (Prof. Jeffrey Johnston) <ul style="list-style-type: none"><li>• Study of the mechanism of the Brønsted acid-catalyzed aza-Darzens reaction.</li><li>• Development of the diastereoselective <i>syn</i>-glycolate Mannich reaction.</li><li>• Total synthesis of zwittermicin A.</li></ul> Visiting Scholar (Prof. Eva Harth) <b>Wroclaw University of Technology</b> Diploma Research (Dr. Miroslaw Giurg)	<b>2012–2015</b> <b>2007–2012</b> <b>07/2005–01/2006</b> <b>2003–2006</b>

**Refereed Journal Articles** ( †undergraduate co-author)

- [1] Lamberson, C. R.; Muchalski, H.; McDuffee, K. B.; Tallman, K. A.; Xu, L.; Porter, N. A. Propagation rate constants for the peroxidation of sterols on the biosynthetic pathway to cholesterol *Chemistry and Physics of Lipids* **2017**, *207*, Part B, 51–58. DOI:10.1016/j.chemphyslip.2017.01.006
- [2] Muchalski, H.; Levonyak, A. J. †; Xu, L.; Ingold, K. U.; Porter, N. A. Competition H(D) Kinetic Isotope Effects in the Autoxidation of Hydrocarbons. *J. Am. Chem. Soc.* **2015**, *137*, 94–97. DOI:10.1021/ja511434j
- [3] Muchalski, H.; Xu, L.; Porter, N. A. Tunneling in Tocopherol-Mediated Peroxidation of 7-Dehydrocholesterol. *Org. Biomol. Chem.* **2015**, *13*, 1249–1253. DOI: 10.1039/C4OB02377C
- [4] Lamberson, C. R.; Xu, L.; Muchalski, H.; Montenegro-Burke, J.R.; Shmanai, V. V.; Bekish, A. V.; McLean, J. A.; Clarke, C. F.; Shchepinov, M. S.; Porter, N. A. Unusual Kinetic Isotope Effects of Deuterium Reinforced Polyunsaturated Fatty Acids in Tocopherol-Mediated Free Radical Chain Oxidations. *J. Am. Chem. Soc.* **2014**, *136*, 838–841. DOI: 10.1021/ja410569g
- [5] Giurg, M.; Muchalski, H.; Kowal E. A. Oxofunctionalized *trans*-2-Carboxy-cinnamic Acids by Catalytic Domino Oxidation of Naphthols and Hydronaphthoquinones. *Synth. Commun.* **2012**, *42*, 2526–2539. DOI: 10.1080/00397911.2011.561945
- [6] Troyer, T. L.; Muchalski, H.; Hong, K. B.; Johnston, J. N. Origins of Selectivity in Brønsted Acid Promoted Diazoalkane–Azomethine Reactions (The aza-Darzens Aziridine Synthesis). *Org. Lett.* **2011**, *13*, 1790–1792. DOI: 10.1021/ol200313m
- [7] Muchalski, H.; Hong, K. B.; Johnston, J. N. Brønsted acid-promoted azide-olefin [3 + 2] cycloadditions for the preparation of contiguous aminopolyols: the importance of disiloxane ring size to a diastereoselective, bidirectional approach to zwittermicin A. *Beilstein J. Org. Chem.* **2011**, *6*, 1206–1210.
- [8] Muchalski, H.; Troyer, T. L.; Doody, A. B.; Johnston, J. N. Preparation of isopropyl 2-diazoacetyl-(phenyl)carbamate. *Org. Synth.* **2011**, *Vol. 88*, 212–223.
- [9] Troyer, T. L.; Muchalski, H.; Johnston, J. N. Brønsted acid activation of  $\alpha$ -diazo imide: a *syn*-glycolate Mannich reaction. *Chem. Commun.* **2009**, *32*, 6195–6197.
- [10] Giurg, M.; Kowal, E. A.; Muchalski, H.; Syper, L.; Młochowski, J. Catalytic oxidative domino degradation of alkyl phenols towards 2- and 3-substituted muconolactones. *Synth. Commun.* **2009**, *39*, 251–266.
- [11] Adkins, C. T.; Muchalski, H.; Harth, E. Nanoparticles with Individual Site-Isolated Semiconducting Polymers from Intramolecular Chain Collapse Processes. *Macromolecules* **2009**, *42*, 5786–5792.
- [12] Daniels, R. N.; Kim, K.; Lebois, E. P.; Muchalski, H.; Hughes, M.; Lindsley, C. W. Micro-wave-assisted protocols for the expedited synthesis of pyrazolo[1,5-a] and [3,4-d]pyrimidines. *Tetrahedron Lett.* **2008**, *49*, 305–310.

- [13] Niswender C. M.; Lebois E. P.; Luo Q.; Kim K.; Muchalski H.; Yin H.; Conn P. J.; Lindsley C. W. Positive allosteric modulators of the metabotropic glutamate receptor subtype 4 (mGluR4): Part I. Discovery of pyrazolo[3,4-d]pyrimidines as novel mGluR4 positive allosteric modulators. *Bioorg. Med. Chem. Lett.* **2008**, *18*, 5626–5630.
- [14] Croce, T. A.; Hamilton, S. K.; Chen, M. L.; Muchalski, H.; Harth, E. M. Alternative *o*-Quinodimethane Cross-Linking Precursors for Intramolecular Chain Collapse Nano-particles. *Macromolecules* **2007**, *40*, 6028–6031.

### Reviews and Book Chapters

- [15] Hubert Muchalski Site-Specific Synthesis and Application of Deuterium-Labeled Sterols. *ARKIVOC* **2017** part ii, 507–533.
- [16] Muchalski, H.; Johnston, J. N. Aziridination. In *Science of Synthesis: Stereoselective Synthesis*; de Vries, J. G., Ed.; Thieme: Stuttgart, **2011**; Vol. 1, pp 155–184
- [17] Johnston, J. N.; Muchalski, H.; Troyer, T. L. Protonate or Alkylate: Stereoselective Brønsted Acid Catalysis of C–C Bond Formation Using Diazoalkanes. *Angew. Chem. Int. Ed.* **2010**, *49*, 2290–2298.

### Invited Talks

University of Tulsa, Tulsa, OK (1/2015); Kent State University, Kent, OH (1/2015); California State University, Fresno, CA (1/2015); Murray State University, Murray, KY (11/2014); University of Tampa, Tampa, FL (12/2015); University of Lodz, Lodz, Poland (5/2012); Wroclaw University of Technology, Wroclaw, Poland (5/2012).

### Conference Talks

Muchalski, H.; Lamberson, C. R.; Levonyak, A. J.; Xu, L.; Porter, N. A. *Does quantum mechanical tunneling make free radical peroxidation favorable?*, Abstracts of Papers, 248th ACS National Meeting, San Francisco, CA, United States, August 10-14, 2014, AEI-60

**Muchalski, H.**; Xu, L; Porter, N. A. *Kinetic isotope effect of deuterium-reinforced 7-dehydro-cholesterol in tocopherol-mediated free radical chain oxidation*, Abstracts of Papers, 247th ACS National Meeting, Dallas, TX, United States, March 16-20, 2014, ORGN-333

Olvera, A.C.†; Ramos Flores, J.†; **Muchalski, H.**. *Towards Understanding of Peroxidation of Mammalian Sterols: Microwave-Assisted Synthesis of 7-Dehydrocholesterol Isomers*, Abstracts of Papers, 247th ACS National Meeting, Dallas, TX, United States, March 16-20, 2014, ORGN-333

### Conference Posters

Olvera, A.C.†; Ramos Flores, J.†; Muchalski, H. *Towards Understanding of Peroxidation of Mammalian Sterols: Microwave-Assisted Synthesis of 7-Dehydrocholesterol Isomers*, Abstracts of Papers, 253rd ACS National Meeting, San Francisco, CA, United States, April 2-6, 2017 (2017), ORGN-521

Olvera, A.C.†; Ramos Flores, J.†; Muchalski, H. *Microwave-Assisted Synthesis of 7-Dehydrocholesterol Isomers for Structure–Oxidizability Relationship Studies*, SACNAS 2016

Muchalski, H. *Kinetic Isotope Effect of Deuterium-Reinforced 7-Dehydrocholesterol in Toco-pherol-Mediated Free Radical Chain Oxidation*, Vanderbilt Institute of Chemical Biology Symposium, 2013

Muchalski, H. *Stereospecific Reactions of  $\alpha$ -Amino- $\beta$ -Diazonium Intermediates: Mechanistic Studies, New Reaction Discovery and Application to a Bidirectional Synthesis of (+)-Zwittericin A*, Gordon Research Conferences: Organic Reactions & Processes, 2011

Muchalski, H. *Alkylate and Oxygenate Before You Protonate: Novel Reactivity of  $\alpha$ -Diazo Imide*, Vanderbilt Institute of Chemical Biology Retreat, 2009

Adkins, Chinessa T.; Muchalski, Hubert; Cohen, Mitchell J.; Harth, Eva *Synthesis of semi-conducting nanoparticles*, Abstracts of Papers, 236th ACS National Meeting, Philadelphia, PA, United States, August 17-21, 2008, POLY-006

Croce, T.; Muchalski, H.; Adkins, C. T.; Huang, K.; Hamilton, S. K.; Harth, E. *Design and Synthesis of Nanoscopic Objects for Applications in Medicine and Materials Sciences*, Conference Proceedings for the Austral Asian Polymer Symposium, **2006**, 45, 56

Croce, Teresa A.; Muchalski, Hubert; Adkins, Chinessa T.; Huang, Kui; Hamilton, Sharon K.; van der Ende, Alice; Harth, Eva *Approaches in the development of 3-D nanoscopic, multimodal vectors*, Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006, PMSE-171

Croce, Teresa A.; Muchalski, Hubert; Adkins, Chinessa T.; Huang, Kui; Hamilton, Sharon K.; van der Ende, Alice; Harth, Eva *Approaches in the development of 3-D nanoscopic, multimodal vectors*, Polymer Preprints **2006**, 94, 270

Muchalski, H.; Giurg. M.; Mlochowski, J. *Fluorinated diaryl diselenides as catalysts for hydroperoxide oxidation of hydroxyarenes*, 14th International Symposium on Fluorine Chemistry, 2004

Grants Submitted	<ul style="list-style-type: none"><li>• "New Strategies for the Synthesis of Deuterium-Reinforced Fatty Acids" CSUPERB New Investigator Award (2016)</li><li>• "RUI: Synthesis and characterization of stable sulfenic acids" National Science Foundation (2016)</li><li>• "Synthesis of sulfenic acid-based antioxidants" Undergraduate New Investigator Grant, Petroleum Research Fund (2016)</li><li>• "Development of gold-catalyzed synthesis of Z-vinyl acetates" CSUPERB New Investigator Award (2017)</li></ul>
Research Support Received	"New Approaches to Isotopic Reinforcement in Lipids," CSU Fresno New PI start-up package, Principal Investigator, 2015–2018
Professional Development	Cottrell Scholars Collaborative New Faculty Workshop Summer 2017 NSF cCWCS Active Learning in Organic Chemistry Summer 2017 NSF Division of Chemistry Early Career Investigator Workshop Spring 2017 DISCOVERe Summer Institute, Fresno State Spring 2016 FLC: Writing a Journal Article, Fresno State 2015–2016 Certificate in College Teaching, Vanderbilt University, Nashville, TN 2014–2015 Postdoc to PUI Professor Workshop, Hope College, Holland, MI Fall 2013
Service	Temporary Substitute Councilor, National Meeting of the ACS in San Francisco (April 2017) Department of Chemistry Search Committee (Fall 2016)

Treasurer, San Joaquin Valley Local Section of the ACS (2015–present)  
Temporary Substitute Councilor, National Meeting of the ACS in Philadelphia (August 2016)  
Beckman Scholars Program Review Committee (2012)  
Reviewer for journal Chemical Science (RSC)  
Reviewer for journal Organic and Biomolecular Chemistry (RSC)  
Reviewer for journal RSC Advances (RSC)  
Reviewer for journal Chemistry and Biodiversity

Honors and Awards College Research and Scholarly Activities Award (2017/2018)  
College Professional Development Award (2017/2018)  
College Professional Development Award (2016/17)  
University Graduate Fellowship (2006–2012)  
Warren Research Fellow (2010)  
Vanderbilt Teaching Fellow Award  
Poster Award, Vanderbilt Institute of Chemical Biology Retreat (2009)  
Best Poster Award, Vanderbilt Institute of Chemical Biology Retreat (2007)

Professional Memberships American Chemical Society

Teaching Experience	<b>California State University</b> , Fresno, CA	<b>2015–present</b>
	• CHEM 129B: Organic Chemistry Laboratory 2 undergraduate, 19 students	2018S
	• CHEM 128A: Organic Chemistry 1 undergraduate, 45 students	2017F
	• CHEM 129B: Organic Chemistry Laboratory 2 undergraduate, 12 students	2017F
	• CHEM 128B: Organic Chemistry 2 undergraduate, 41 students	2017S
	• CHEM 129B: Organic Chemistry Laboratory 2 undergraduate, 9 students	2016F
	• CHEM 128A: Organic Chemistry 1 undergraduate, 43 students	2016F
	• CHEM 128B: Organic Chemistry 2 undergraduate, 57 students	2015S
	• CHEM 129A: Organic Chemistry Laboratory 1 undergraduate, 15 students	2015S
	• CHEM 128A: Organic Chemistry 1 undergraduate, 56 students	2015F
	• CHEM 240T: Topics in Advanced Organic Chemistry (Graduate) graduate, 9 students	2015F
	<b>Vanderbilt University</b> , Nashville, TN	
	• CHEM 5230 (G): Physical Organic Chemistry (co-instructor)	2014S
• CHEM 2221L (U): Organic Chemistry Laboratory (TA)	2006–2010	
• CHEM 2222L (U): Organic Chemistry Laboratory (TA)	2006–2010	
• CHEM 1601 (U): General Chemistry Recitation (Fellowship)	2008	
Mentoring	<b>Graduate Students</b>	
	• Quang D. Le, (M.S.) Project: Evaluation of electronic and steric factors that stabilize sulfenic acid functional group	2016–
	<b>Undergraduate Students</b>	
	• Parveen Kaur (B.S. Biochemistry)	2016–
	• Melissa Sanchez (B.S. Chemistry)	2017–
	• Christopher Dillon (B.S. Chemistry)	2018–
	• Dana Lichtenstein (B.A. Biology)	2018–
	• Bagieng Keophimphone (B.S. Biochemistry)	2018–
	• Ryan R. Watters (B.S. Chemistry)	2016–2017
	• Jenay Mommer (B.S. Biochemistry)	2016–2017
	• Amanda C. Olvera (B.A. Biology)	2016–2017
	• Austin S. Dean (B.A. Biology)	2016
	• Aakashdeep Singh (B.S. Biochemistry)	2016
	• Juan Ramos Flores (B.S. Biochemistry)	2016