

CONTACT INFORMATION	California State University, Fresno Department of Chemistry 2555 East San Ramon Avenue M/S SB70 Fresno, CA 93740-8034	✉ hmuchalski@csufresno.edu ☎ (559) 278-2711
RESEARCH INTERESTS	Stereoselective synthesis, catalysis, total synthesis of natural products, lipid peroxidation, synthesis of deuterium-reinforced compounds.	
ACADEMIC APPOINTMENTS	Assistant Professor	2015–present
	Department of Chemistry, California State University, Fresno	
	Visiting Scholar	2015–present
	Department of Chemistry, Vanderbilt University	
	Postdoctoral Scholar	2012–2015
	Department of Chemistry, Vanderbilt University	
EDUCATION	Vanderbilt University , Nashville, TN Ph.D., Chemistry (2012) Dissertation: <i>Stereospecific Reactions of α-Amino-β-Diazonium Intermediates: Mechanistic Studies, New Reaction Discovery and their Application to a Two-Directional Total Synthesis of (+)-Zwittermicin A</i> Advisor: Prof. Jeffrey N. Johnston	
	Wroclaw University of Technology , Wroclaw, Poland B.S./M.S., Chemistry (2006) Thesis: <i>Selenium-catalyzed oxidative transformations of substituted naphthols</i> Advisor: Dr. Mirosław Giurg	
RESEARCH EXPERIENCE	California State University , Fresno Assistant Professor	2015–present
	<ul style="list-style-type: none"> Total synthesis of deuterium-reinforced 7-dehydrocholesterol and lathosterol. Study of tunneling in autoxidation of lipids and hydrocarbons. 	
	Vanderbilt University	
	Postdoctoral Researcher (Prof. Ned Porter)	2012–2015
	<ul style="list-style-type: none"> Total synthesis of deuterium-reinforced 7-dehydrocholesterol and lathosterol. Study of tunneling in autoxidation of lipids and hydrocarbons. 	
	Graduate Research Assistant (Prof. Jeffrey Johnston)	2007–2012
	<ul style="list-style-type: none"> Study of the mechanism of the Brønsted acid-catalyzed aza-Darzens reaction. Development of the diastereoselective <i>syn</i>-glycolate Mannich reaction. Total synthesis of zwittermicin A. 	
	Visiting Scholar (Prof. Eva Harth)	07/2005–01/2006
	Wroclaw University of Technology	
	Diploma Research (Dr. Mirosław Giurg)	2003–2006

TEACHING EXPERIENCE	California State University , Fresno, CA • CHEM 128A: Organic Chemistry I • CHEM 240T: Advanced Organic Chemistry Vanderbilt University , Nashville, TN • CHEM 5230 (G): Physical Organic Chemistry (co-instructor) • CHEM 2221L (U): Organic Chemistry Laboratory (TA) • CHEM 2222L (U): Organic Chemistry Laboratory (TA) • CHEM 1601 (U): General Chemistry Recitation (Teaching Fellowship)	2015–present 2014S 2006–2010 2006–2010 2008
PROFESSIONAL DEVELOPMENT	DISCOVERe Summer Institute , Fresno State Postdoc to PUI Professor Workshop , Hope College, Holland, MI ACS-sponsored workshop for postdoctoral fellows pursuing a faculty position in the chemical sciences at a Primarily Undergraduate Institution (PUI) Certificate in College Teaching , Vanderbilt University, Nashville, TN Two-semester series of seminars and practicum sessions to gain a clearer, deeper, more active approach to teaching and learning in higher education.	Spring 2016 Fall 2013 2014
SERVICE	Treasurer, San Joaquin Valley Local Section of the ACS (2015–present) 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)	
FELLOWSHIPS AND AWARDS	College Professional Development Award (2016) University Graduate Fellowship (2006–2012) Warren Research Fellow (2010) Poster Award, Vanderbilt Institute of Chemical Biology Retreat (2009) Teaching Fellow Award Best Poster Award, Vanderbilt Institute of Chemical Biology Retreat (2007)	
PROFESSIONAL MEMBERSHIPS	American Chemical Society	
PUBLICATIONS	Refereed Journal Articles (undergraduate co-authors underlined) [1] Hubert Muchalski; <u>Alexander J. Levonyak</u> ; Libin Xu; Keith U. Ingold; Ned A. Porter Competition H(D) Kinetic Isotope Effects in the Autoxidation of Hydrocarbons. <i>J. Am. Chem. Soc.</i> 2015 , <i>137</i> , 94–97. DOI:10.1021/ja511434j [2] Hubert Muchalski; Libin Xu; Ned A. Porter Tunneling in Tocopherol-Mediated Peroxidation of 7-Dehydrocholesterol. <i>Org. Biomol. Chem.</i> 2015 , <i>13</i> , 1249–1253. [3] Connor R. Lamberson; Libin Xu; Hubert Muchalski; J. Rafael Montenegro-Burke; Vadim V. Shmanai; Andrei V. Bekish; John A. McLean; Catherine F. Clarke; Mikhail S. Shchepinov; Ned A. Porter Unusual Kinetic Isotope Effects of Deuterium Reinforced Polyunsaturated Fatty Acids in Tocopherol-Mediated Free Radical Chain Oxidations. <i>J. Am. Chem. Soc.</i> 2014 , <i>136</i> , 838–841.	

- [4] Giurg, M.; Muchalski, H.; Kowal, E. A. Oxofunctionalized *trans*-2-Carboxycinnamic Acids by Catalytic Domino Oxidation of Naphthols and Hydronaphthoquinones. *Synth. Commun.* **2012**, *42*, 2526–2539.
- [5] 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.
- [6] 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 zwittericin A. *Beilstein J. Org. Chem.* **2011**, *6*, 1206–1210.
- [7] 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.
- [8] Troyer, T. L.; Muchalski, H.; Johnston, J. N. Brønsted acid activation of α -diazo imide: a syn-glycolate Mannich reaction. *Chem. Commun.* **2009**, *32*, 6195–6197.
- [9] Giurg, M.; Kowal, E. A.; Muchalski, H.; Syper, L.; Mochowski, J. Catalytic oxidative domino degradation of alkyl phenols towards 2- and 3-substituted muconolactones. *Synth. Commun.* **2009**, *39*, 251–266.
- [10] Adkins, C. T.; Muchalski, H.; Harth, E. Nanoparticles with Individual Site-Isolated Semiconducting Polymers from Intramolecular Chain Collapse Processes. *Macromolecules* **2009**, *42*, 5786–5792.
- [11] 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.
- [12] 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.
- [13] 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

- [14] Hubert Muchalski Synthesis and Applications of Deuterium-Labeled Steroids. *ARKIVOC* **2017** Submitted.
- [15] 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
- [16] 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
- CONFERENCE POSTERS
- Muchalski, H. *Kinetic Isotope Effect of Deuterium-Reinforced 7-Dehydrocholesterol in Tocopherol-Mediated Free Radical Chain Oxidation*, Vanderbilt Institute of Chemical Biology Symposium, 2013
- Muchalski, H. *Stereospecific Reactions of α -Amino- β -Diazonium Intermediates: Mechanistic Studies, New Reaction Discovery and Application to a Bidirectional Synthesis of (+)-Zwittermicin A*, Gordon Research Conferences: Organic Reactions & Processes, 2011
- Muchalski, H. *Alkylate and Oxygenate Before You Protonate: Novel Reactivity of α -Diazo Imide*, Vanderbilt Institute of Chemical Biology Retreat, 2009
- Adkins, Chinessa T.; Muchalski, Hubert; Cohen, Mitchell J.; Harth, Eva *Synthesis of semiconducting 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