

DEPARTMENT OF CHEMISTRY  
UNIVERSITY OF MICHIGAN • ANN ARBOR, MI 48109  
PHONE 734-615-4330 • E-MAIL NSZYM@UMICH.EDU

# NATHANIEL K. SZYMCZAK

## APPOINTMENTS

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<b>Associate Professor of Chemistry. University of Michigan</b> Ann Arbor, Michigan	2017-present
<b>Dow Corning Assistant Professor of Chemistry. University of Michigan</b> Ann Arbor, Michigan	2012-2017
<b>Assistant Professor of Chemistry. University of Michigan</b> Ann Arbor, Michigan	2010-2017

## PROFESSIONAL PREPARATION

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Advisor: Jonas Peters	
<b>Massachusetts Institute of Technology</b> Postdoctoral Associate Advisor: Jonas Peters	2007-2009
<b>University of Oregon</b> Ph. D. in Chemistry Advisor: David Tyler	2002-2007
<b>University of Illinois-Urbana-Champaign</b> B.S. in Chemistry Advisor: Thomas Rauchfuss	1998-2002

## HONORS AND AWARDS

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<i>JACS Young Investigator – Virtual Issue</i>	2019
<i>Kavli Frontiers of Science Fellow – China</i>	2018
<i>Class of 1923 Memorial Teaching Award</i>	2017
<i>Camille Dreyfus Teacher-Scholar Award</i>	2016
<i>Emerging Investigator – ACS Virtual Issue in Bioinorganic</i>	2015
<i>Distinguished Lectureship Award – KAIST</i>	2014
<i>Alfred P. Sloan Research Fellowship</i>	2014-2016
<i>NSF-CAREER Award</i>	2014-2019
<i>Dow Corning Assistant Professor of Chemistry</i>	2012-2014
<i>Young Investigator Award – ACS Division of Inorganic Chemistry</i>	2006
<i>IGERT Graduate Fellowship – National Science Foundation</i>	2004-2006

PUBLICATIONS

\*denotes Principal Investigator, underline denotes undergraduate co-author, † denotes shared authorship

- 39) Kiernicki, J. J.; Norwine, E. E.; Zeller, M.; Szymczak, N. K.\* Tetrahedral Iron Featuring an Appended Lewis Acid: Distinct Pathways for the Reduction of Hydroxylamine and Hydrazine *Chem. Comm.* **2019**, DOI: [10.1039/C9CC05720J](https://doi.org/10.1039/C9CC05720J)
- 38) Shanahan, J. P.; Szymczak, N. K.\* Hydrogen Bonding to a Dinitrogen Complex at Room Temperature: Impacts on N<sub>2</sub> Activation. *J. Am. Chem. Soc.* **2019**, *141*, 8550-8556.
- 37) Hale, L. V. A.;<sup>†</sup> Sikes, N. M.;<sup>†</sup> Szymczak, N. K.\* Reductive C–C Coupling from  $\alpha,\beta$ -Unsaturated Nitriles by Intercepting Keteniminates. *Angew. Chem. Int. Ed.* **2019**, *58*, 1-6. \*Selected as VIP article
- 36) Kiernicki, J. J.; Shanahan, J. P. Zeller, M.; Szymczak, N. K.\* Tuning Ligand Field Strength with Pendent Lewis Acids: Access to High Spin Iron Hydrides. *Chem. Sci.* **2019**, *10*, 5539-5545 \*Selected as [Editor's Choice Article](#).
- 35) Geri, J. B.; Aguilera, E. Y.; Szymczak, N. K.\* Nucleophilic Difluoromethylation Reagents from Difluoromethane. *Chem. Comm.*, **2019**, *55*, 5119-5122.
- 34) Kiernicki, J. J.; Zeller, M.; Szymczak, N. K.\* Requirements for Lewis Acid-Mediated Capture and N–N Bond Cleavage of Hydrazine at Iron. *Inorg. Chem.*, **2019**, *58*, 1147-1154.
- 33) Dahl, E. W.;<sup>†</sup> Kiernicki, J. J;<sup>†</sup> Zeller, M.; Szymczak, N. K.\* Hydrogen Bonds Dictate O<sub>2</sub> Capture and Release within a Zinc Tripod. *J. Am. Chem. Soc.*, **2018**, *140*, 10075-10079.
- 32) Geri, J. B.; Wade Wolfe, M. M.; Szymczak, N. K.\* The Difluoromethyl Group as a Masked Nucleophile: A Lewis Acid/Base Approach. *J. Am. Chem. Soc.*, **2018**, *140*, 9404-9408. \*Featured in [JACS Young Investigator Virtual Issue, 2019](#).
- 31) Geri, J. B.; [Ciatti, J. L.](#); Szymczak, N. K.\* Charge effects regulate reversible CO<sub>2</sub> reduction catalysis. *Chem. Comm.* **2018**, *54*, 7790-7703.
- 30) Hale, L. V. A.; Szymczak, N. K.\* Hydrogen Transfer Catalysis Beyond the Primary Coordination Sphere. *ACS Catalysis*. **2018**, *8*, 6446-6461.
- 29) Dahl, E. W.; Dai, H. T.; T.; Szymczak, N. K.\* Phenylamino Derivatives of Tris(2-pyridylmethyl)amine: Hydrogen-Bonded Peroxodicopper Complexes. *Chem. Comm.* **2018**, *54*, 892-895.
- 28) Kiernicki, J. J.; Zeller, M.; Szymczak, N. K.\* Hydrazine Capture and N-N Bond Cleavage at Iron Enabled by Flex-ible Appended Lewis Acids. *J. Am. Chem. Soc.*, **2017**, *139*, 18194-18197.
- 27) Geri, J. B.; Wade Wolfe, M. M.; Szymczak, N. K.\* Borazine-CF<sub>3</sub><sup>-</sup> Adducts for Rapid, Room Temperature, and Broad Scope Trifluoromethylation *Angew. Chem., Int. Ed.*, **2018**, *57*, 1-7 \*Featured in [Chemical & Engineering News, 2018, Jan. 1](#).
- 26) Geri, J. B.; Szymczak, N. K.\* Recyclable Trifluoromethylation Reagents from Fluoroform. *J. Am. Chem. Soc.*, **2017**, *139*, 9811-9814. \*Featured in [JACS Spotlights August 1, 2017](#).
- 25) Geri, J. B.; Shanahan, J. P.; Szymczak, N. K.\* Testing the Push–Pull Hypothesis: Lewis Acid Augmented N<sub>2</sub> Activation at Iron. *J. Am. Chem. Soc.*, **2017**, *139*, 5952-5956.
- 24) Dahl, E. W.; [Louis-Goff, T.](#); Szymczak, N. K.\* Second sphere ligand modifications enable a recyclable catalyst for oxidant-free alcohol oxidation to carboxylates. *Chem. Comm.* **2017**, *53*, 2287-2289.
- 23) Hale, L. V. A.; Szymczak, N. K.\* Stereoretentive Deuteration of  $\alpha$ -Chiral Amines with D<sub>2</sub>O. *J. Am. Chem. Soc.*, **2016**, *138*, 13489-13492.

- 22) Tseng, K-N T.; Kampf, J.; Szymczak, N. K.\* Modular Attachment of Appended Boron Lewis Acids to a Ruthenium Pincer Catalyst: Metal–Ligand Cooperativity Enables Selective Alkyne Hydrogenation. *J. Am. Chem. Soc.*, **2016**, *33*, 10378-10381.
- 21) Hale, L. V. A.;<sup>‡</sup> Malakar, T.;<sup>‡</sup> Tseng, K-N T.; Zimmerman, P. M.; Paul, A.;;\* Szymczak, N. K.\* The Mechanism of Acceptorless Amine Double Dehydrogenation by *N,N,N*-Amide Ruthenium (II) Hydrides: A Combined Experimental and Computational Study. *ACS Catalysis*, **2016**, *6*, 4799-4813.
- 20) Moore, C. M.; Bark, B.; Szymczak, N. K.\* Simple Ligand Modifications with Pendent OH Groups Dramatically Impact the Activity and Selectivity of Ruthenium Catalysts for Transfer Hydrogenation: the Importance of Alkali Metals. **2016**, *ACS Catalysis*, *6*, 1981-1990.
- 19) Tseng, K-N T.; Lin, S.; Kampf, J.; Szymczak, N. K.\* Upgrading Ethanol to 1-Butanol with a Homogeneous Air-Stable Ruthenium Catalyst. *Chem. Comm.* **2016**, *52*, 2901-2904. \*[Featured in Chemistry World \(1-13-2016\)](#).
- 18) Dahl, E. W.; Szymczak, N. K.\* Hydrogen Bonds Dictate the Coordination Geometry of Copper: Characterization of a Square Planar Cu(I). *Angew. Chem., Int. Ed.*, **2016**, *55*, 3101-3105.
- 17) Geri, J. B.; Szymczak, N. K.\* A Proton-Switchable Bifunctional Ruthenium Complex that Enables Catalytic Nitrile Hydroboration. . *J. Am. Chem. Soc.*, **2015**, *137*, 12808-12814.
- 16) Carter, T. J; Heiden, Z. M.;;\* Szymczak, N. K.\*; Discovery of Low Energy Pathways to Metal-Mediated B=N bond Reduction Guided by Computation and Experiment. *Chem. Sci.* **2015**, *6*, 7258-7266.
- 15) Tseng, K-N T.; Kampf, J.; Szymczak, N. K.\*. Mechanism of *N,N,N*-Amide Ruthenium(II) Hydride Mediated Acceptorless Alcohol Dehydrogenation: Inner-Sphere  $\beta$ -H Elimination vs. Outer-Sphere Bifunctional Metal-Ligand Cooperativity. *ACS Catalysis*, **2015**, *5*, 5468-5485.
- 14) Moore, C. M.; Szymczak, N. K.\*. Nitrite Reduction by Copper Through Ligand-Mediated Proton and Electron Transfer. *Chem. Sci.*, **2015**, *6*, 3373-3377
- 13) Tseng, K-N T.; Kampf, J.; Szymczak, N. K.\*. Regulation of Iron-Catalyzed Olefin Hydroboration by Ligand Modifications at a Remote site. *ACS Catalysis.*, **2015**, *5*, 411-415.
- 12) Moore, C. M.; Szymczak, N. K.\*. Beyond H<sub>2</sub>: Exploiting 2-Hydroxypyridine as a Design Element from [Fe]-Hydrogenase for Energy-Relevant Catalysis *Curr. Opin. Chem. Biol.*, **2015**, *25*, 9-17. \*Invited contribution.
- 11) Moore, C. M.; Szymczak, N. K.\*. Redox-induced Fluoride Ligand Dissociation Stabilized by Intramolecular Hydrogen Bonding. *Chem. Comm.*, **2015**, *51*, 5490-5492. ”\*Selected for Journal Cover
- 10) Tseng, K-N T.; Szymczak, N. K.\*; Dehydrogenative Oxidation of Primary Amines to Nitriles. *Synlett (Synfacts)*. **2014**, *25*, 2385-2389
- 9) Carter, T. J; Wang, J. Y.; Szymczak, N. K.\*; Manganese-Mediated Hydride Delivery to a Borazine by Stepwise Reduction and Protonation. *Organometallics*, **2014**, *33*, 1540–1543.
- 8) Moore, C. M.; Quist, D. A.; Kampf, J. W.; Szymczak, N. K.\*. A 3-Fold-Symmetric Ligand Based on 2-Hydroxypyridine: Regulation of Ligand Binding by Hydrogen Bonding. *Inorg. Chem.*, **2014**, *53*, 3278 – 3280. \*Selected as a Highlighted Manuscript on the Inorganic Chemistry homepage.
- 7) Tseng, K-N T.; Rizzi, A.; Szymczak, N. K.\*; Oxidant-Free Conversion of Primary Amines to Nitriles. *J. Am. Chem. Soc.*, **2013**, *135*, 16352–16355. [Featured in the Organic Chemistry Portal](#)

- 6) Moore, C. M.; Szymczak, N. K.\*. Approaches for the Incorporation of Appended Functionality in Pincer Ligands. In *Pincer and Pincer-type Complexes – Application in Organic Synthesis and Catalysis*; 1<sup>st</sup> Ed. Szabó, K. J.; Wendt, O. F., Ed. Wiley-VCH: Weinheim, Germany, **2014**; 117-147.
- 5) Tseng, K-N T.; Kampf, J. W.; Szymczak, N. K.\*; Base-Free, Acceptorless, and Chemoselective Alcohol Dehydrogenation Catalyzed by an Amide-Derived *NNN*-Ruthenium(II) Hydride Complex. *Organometallics*, **2013**, *32*, 2046-2049. \**Top 10 Most Read Articles: April-June 2013*.
- 4) Tutusaus, O.; Ni, C.; Szymczak, N. K.\*; A Transition Metal Lewis Acid-Base Triad System for Cooperative Substrate Binding. *J. Am. Chem. Soc.*, **2013**, *135*, 3403-3406. \*[\*Featured in Chemical & Engineering News, 2013, 91, 29.\*](#)
- 3) Moore, C. M.; Szymczak, N. K.\*. 6,6'-Dihydroxy Terpyridine: A Proton-Responsive Bifunctional Ligand and its Application in Catalytic Transfer Hydrogenation of Ketones. *Chem. Comm.*, **2013**, *49*, 400 – 402.
- 2) Carter, T. J.; Kampf, J. W.; Szymczak, N. K.\*. Reduction of Borazines Mediated by Low-Valent Chromium Species. *Angew. Ch., Int. Ed.*, **2012**, *51*, 13168-13172. \**Featured in Advances in Engineering*
- 1) Moore, C. M.; Szymczak, N. K.\*. A Tris(2-quinolylmethyl)amine Scaffold that Promotes Hydrogen Bonding within the Secondary Coordination Sphere. *Dalton Trans.*, **2012**, *41*, 7886-7889. *Invited contribution for "New Talent: The Americas."* - \**Top ten most accessed articles in May 2012\**

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*Publications from Graduate and Postdoctoral Work*

- 17) McCrory, C. C. L.; Szymczak, N. K.; Peters, J. C.\* Evaluating Activity for Hydrogen-Evolving Cobalt and Nickel Complexes at Elevated Pressures of Hydrogen and Carbon Monoxide. *Electrocatalysis*, **2016**, *7*, 87-96.
- 16) Bayram, Ercan; Linehan, John C.\*; Fulton, John L.; Szymczak, Nathaniel K.; Finke, Richard G.\*; Determination of the Dominant Catalyst Derived from the Classic [RhCp\*Cl<sub>2</sub>]<sub>2</sub> Precatalyst System: Is it Single-Metal Rh<sub>1</sub>Cp\*-Based, Subnanometer Rh<sub>4</sub> Cluster-Based, or Rh(0)<sub>n</sub> Nanoparticle-Based Cyclohexene Hydrogenation Catalysis at Room Temperature and Mild Pressures? *ACS Catalysis*, **2015**, *5*, 3876-3886.
- 15) Ercan, B.; Linehan, J.; Fulton, J.; Roberts, J.; Szymczak, N.; Smurthwaite, T.; Ozkar, S.; Balasubramanian, M.; Finke, R. Is It Homogeneous or Heterogeneous Catalysis Derived from [RhCp\*Cl<sub>2</sub>]<sub>2</sub>? In *Operando-XAFS, Kinetic and Crucial Kinetic Poisoning Evidence for Subnanometer Rh<sub>4</sub> Cluster-Based Benzene Hydrogenation Catalysis*. *J. Am. Chem. Soc.*, **2011**, *133*, 18889-18902.
- 14) Neiner, D.; Karkamamkar, A.; Bowden, M.; Choi, Y. J.; Luedtke, A.; Holladay, J.; Fisher, A.; Szymczak, N.; Autrey, T. Kinetic and Thermodynamic Investigation of Hydrogen Release from Ethane 1,2-Di-Amineborane. *Energy Environ. Sci.*, **2011**, *4*, 4187-4193
- 13) Szymczak, N. K.; Berben, L. A.; Peters, J. C. Redox-Rich Dicobalt Macrocycles as Templates for Multi-Electron Transformations. *Chem. Comm*, **2009**, 6729-6731
- 12) Szymczak, N. K.; Braden, D. A.; Crossland, J. L.; Turov, Y.; Zakharov, L. N.; Tyler, D. R. Aqueous Coordination Chemistry of H<sub>2</sub>. Why is Coordinated H<sub>2</sub> Inert to Substitution by Water in *trans*-Ru(P<sub>2</sub>)<sub>2</sub>(H<sub>2</sub>)H<sup>+</sup>-type Complexes (P<sub>2</sub> = a Chelating Phosphine)? *Inorg. Chem.*, **2009**, *48*, 2976-2984
- 11) Yelle, R. B.; Crossland, J. C.; Szymczak, N, K.; Tyler, D. R. Theoretical Studies of N<sub>2</sub> Reduction to Ammonia in Fe(dmpe)<sub>2</sub>N<sub>2</sub>. *Inorg. Chem.*, **2009**, *48*, 861-871

- 10) Pons, V; Baker, R. T.; Szymczak, N. K.; Heldebrant, D. J.; Linehan, J. C.; Matus, M. H.; Grant, D. J.; Dixon, D. A. Coordination of Aminoborane,  $\text{NH}_2\text{BH}_2$ , Dictates Selectivity and Extent of  $\text{H}_2$  Release in Metal-Catalysed Ammonia Borane Dehydrogenation. *Chem. Comm.*, **2008**, 48, 6597 - 6599
- 9) Shaw, W. J.; Linehan, J. C.; Szymczak, N. K.; Heldebrant, D. J.; Yonker, C.; Baker, R. T.; Autrey, T. In Situ Multinuclear NMR Spectroscopic Studies of the Thermal Decomposition of Ammonia Borane in Solution. *Angew. Ch., Int. Ed.*, **2008**, 120, 7603-7606
- 8) Szymczak, N. K.; Tyler, D. R. Aspects of Dihydrogen Coordination Chemistry Relevant to Reactivity in Aqueous Solution. *Coord. Chem. Rev.*, **2008**, 252(1-2), 212-230
- 7) Fulton, J. L.; Linehan, J. C.; Autrey, T.; Balasubramanian, M.; T.; Chen, Y.; Szymczak, N. K.. When is a Nanoparticle a Cluster? An Operando EXAFS Study of Amine Borane Dehydrocoupling by  $\text{Rh}_4$  Clusters. *J. Am. Chem. Soc.*, **2007**, 129, 11936-11949
- 6) Gilbertson, J. D.; Szymczak, N. K.; Crossland, J. C.; Miller, W. K.; Lyon, D. K.; Foxman, B. M.; Davis, J.; Tyler, D. R. Water-Soluble Transition Metal Phosphine Complexes: Investigation of the Aqueous Binding and Activation of  $\text{H}_2$  and  $\text{N}_2$  in *trans*- $\text{Fe}^{\text{II}}(\text{P}_2)_2\text{X}_2$ -type Complexes ( $\text{P}_2$  = a Chelating Phosphine). *Inorg. Chem.*, **2007**, 46, 1205-1214
- 5) Szymczak, N. K.; Zakharov, L. N.; Tyler, D. R. Solution Chemistry of a Water-Soluble  $\eta^2$ - $\text{H}_2$  Complex: Evidence for  $\text{H}_2$  acting as a Hydrogen Bond Donor. *J. Am. Chem. Soc.* **2006**, 128, 15830-15835
- 4) Szymczak, N. K.; Oelkers, A. B.; Tyler, D. R. Detection of Hydrogen Bonding in Solution: A  $^2\text{H}$  Nuclear Magnetic Resonance Method Based on Rotational Motion of a Donor/Acceptor Complex. *Phys. Chem. Chem. Phys.* **2006**, 8, 4002-4008
- 3) Gilbertson, J. D.; Szymczak, N. K.; Tyler, D. R. Reduction of  $\text{N}_2$  to Ammonia and Hydrazine Utilizing  $\text{H}_2$  as the Reductant. *J. Am. Chem. Soc.*, **2005**, 127, 10184-10185
- 2) Szymczak, N. K.; Han, F.; Tyler, D. R. Arrested Chloride Abstraction from *trans*- $\text{RuCl}_2(\text{DMeOPrPE})_2$  with  $\text{TIPF}_6$ ; Formation of a 1-D Coordination Polymer having Unusual Octahedral Coordination around Thallium(I). *J. Chem. Soc., Dalton Trans*, **2004**, 3941-3942
- 1) Gilbertson, J. D.; Szymczak, N. K.; Tyler, D. R.  $\text{H}_2$  Activation in Aqueous Solution: Formation of *trans*- $[\text{Fe}(\text{DMeOPrPE})_2\text{H}(\text{H}_2)]^+$  via the Heterolysis of  $\text{H}_2$  in Water. *Inorg. Chem.*, **2004**, 43, 3341-3343

## INVITED PRESENTATIONS

### 2019:

NORM 2019, Portland, OR

CSC Meeting, Ontario, CA

National Taiwan Normal University

National Tsinghua University, Taiwan

Kaohsiung Medical University, Taiwan

National Sun Yat-Sen University, Taiwan

Seoul National University, Korea

Yonsei University, Korea

Korea Advanced Institute of Science & Technology (KAIST), Korea

Pohang University of Science and Technology (POSTECH), Korea

Daegu Gyeongbuk Institute of Science and Technology (DGIST), Korea

Ewha University, Seoul, Korea  
Fusion Small Molecule Activation Conference, Nassau, Bahamas

**2018:**

Rutgers University  
University of Toronto  
University of Minnesota, MN  
Organometallics Gordon Research Conference, Salve Regina, RI  
Vertellus, MI  
University of Pennsylvania, PA  
2018 ACS Meeting, New Orleans

**2017:**

West Virginia University, September, 2017  
Institute of Chemistry, Chinese Academy of Sciences, Beijing, China  
Technical Institute of Physics and Chemistry of the Chinese Academy of Sciences, Beijing, China  
Tsinghua University, Beijing, China  
Michigan State University, MI  
Telluride Science Research Center Proton and Electron Transfer Workshop, Telluride, CO  
University of Wisconsin-Madison, WI  
Princeton, NJ

**2016:**

USC, CA  
UNC-Chapel Hill, NC  
University of Chicago, IL  
ACS-Central Regional Meeting, KY  
Los Alamos National Laboratory, NM  
Kaohsiung Medical University, Taiwan  
Telluride Science Research Center Small Molecule Activation Workshop, Telluride, CO  
IONiC VIPER Workshop, Ann Arbor, MI  
International symposium of homogeneous catalysis (ISHC-20), Kyoto, Japan  
International Symposium on Precisely Designed Catalysts with Customized Scaffolding, Osaka, Japan  
Kyoto University, Japan  
University of Utah, UT  
Boston University, MA  
MIT, MA  
UCLA, CA  
UC Irvine, CA  
Caltech, CA  
University of Oregon, OR  
Iowa State University, IA

**2015:**

Pacificchem 2015 (2 invited talks), HI  
UC Berkeley, CA  
Nara Institute of Science and Technology, Japan  
University of Wisconsin LaCrosse, WI  
Washington State University, WA  
Pacific Northwest National Laboratory, WA

Indiana University, IN  
 University of Illinois at Urbana-Champaign, IL  
 Texas A&M University, TX  
 Inorganic Reaction Mechanisms Gordon Research Conference, Galveston, TX  
 University of Washington, WA  
 University of New Hampshire, NH.

**2014:**

University of Tulsa, OK  
 University of Louisville, KY  
 Dow Corning, Midland, MI  
 41st International Conference on Coordination Chemistry, Singapore  
 KAIST International Inorganic Chemistry Symposium, Korea  
 Korea Advanced Institute of Science and Technology Korea  
 Western Washington University, WA  
 Kenyon College, OH  
 University of Cincinnati, OH.

**2013:**

245<sup>th</sup> ACS Meeting New Orleans (2 invited talks)

**2012:**

University of Minnesota Duluth, MN  
 Truman State University, MO  
 Oakland University, MI

**PRODUCTS**

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Sigma-Aldrich Prod. No. 794414. *HRu(bmpi)(PPh<sub>3</sub>)<sub>2</sub>*  
 Sigma-Aldrich Prod. No. 794406. *Ru(bmpi)(PPh<sub>3</sub>)Cl*

**Provisional Patent** Serial number: 62/691,735. *Difluoromethyl and Difluoromethylene Transfer Regents.*  
*Nathaniel K. Szymczak (PI), Jacob B. Geri*

**Patent Pending** WO 2017223406. *Complexes for Nucleophilic, Radical, and Electrophilic Polyfluoroalkylation.* *Nathaniel K. Szymczak (PI), Jacob B. Geri*

**Provisional Patent** (11-16-2015). *Formation of High-Molecular Weight Polyethylene from a Sterically Unencumbered Iron-Based Catalyst.* *Nathaniel K. Szymczak (co-PI), Jeffery A. Byers (co-PI), Jeffrey A. Kehl, Kuei-Nin T. Tseng.*

**PROFESSIONAL AFFILIATIONS**

<i>Michigan Memorial Phoenix Energy Institute – Faculty Fellow</i>	2010 – present
<i>American Chemical Society – Member</i>	2002 – present
<i>American Association for the Advancement of Science – Member</i>	2001 – present

**ACADEMIC SERVICE**

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*To the Community:*

**Symposium Organizer:** 2014 Ohio Inorganic Weekend, Nov. 14-15 at the University of Michigan. ~130 attendees

251<sup>st</sup> ACS Meeting, Philadelphia, *Secondary Coordination Sphere Influences: Stability, Reactivity, and Everything in Between*. Aug. 21-25, 2016.

**Advisory:** International Advisor for Student Symposium, NAIST, Japan, Nov. 9-10, 2015

**Manuscript Reviewer:** ACS Catalysis, AIMS Environmental Science, Catalysis Science and Technology, ChemComm, Chemistry, a European Journal, Chemical Science, Current Opinion in Chemical Biology, Dalton Transactions, Energy and Environmental Science, Inorganic Chemistry, Journal of the American Chemical Society, Journal of Organic Chemistry, Journal of Inorganic Biochemistry, Organic Chemistry Frontiers, Organometallics, Science Advances

**Proposal Reviewer:** Air Force Office of Scientific Research, DOE-SCGF, ACS-PRF, NSF, SDE/GWIS

**Session Moderator:** 2012 Ohio Inorganic Weekend, 245<sup>th</sup> ACS Meeting, New Orleans, 2013 (3 sessions), 41<sup>st</sup> International Conference on Coordination Chemistry, Singapore. 2014, 47<sup>th</sup> Central Regional ACS Meeting, Covington, KY 2016.

**Editorial:** Volume co-editor for Comprehensive Coordination Chemistry III

*To the University of Michigan:*

ADVANCE Panelist on running a research lab	December, 2017
CSIE UM Panelist on managing conflict in the lab	May 2017
Speaker for Chemistry REBUILD Symposium	March 2016
CSIE UM Panelist on hiring postdoctoral candidates	February 2016
Speaker for Provost's seminar workshop: REBUILDing STEM Education at Michigan"	October 2014
Dept. of Chemistry Art Committee (Chair 2018)	2018 – present
Dept. of Chemistry Executive Committee	2017 – present
Dept. of Chemistry Graduate Committee	2014 – 2017
Dept. of Chemistry Safety Committee (Chair 2018)	2014 – present
Dept. of Chemistry Curriculum Committee	2013 – 2016
Dept. of Chemistry Recruiting Committee	2010 – 2013
Dept. of Chemistry Graduate Student Admissions Committee	2011 – 2016
Graduate Thesis Committees (23)	2010 – present
Chemistry Rotation Students (>25)	2010 – present