

DEPARTMENT OF CHEMISTRY
UNIVERSITY OF MICHIGAN • ANN ARBOR, MI 48109
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NATHANIEL K. SZYMCZAK

APPOINTMENTS

Professor of Chemistry. University of Michigan Ann Arbor, Michigan	2021-present
Associate Professor of Chemistry. University of Michigan Ann Arbor, Michigan	2017-2021
Dow Corning Assistant Professor of Chemistry. University of Michigan Ann Arbor, Michigan	2012-2017
Assistant Professor of Chemistry. University of Michigan Ann Arbor, Michigan	2010-2017

PROFESSIONAL PREPARATION

California Institute of Technology Postdoctoral Associate Advisor: Jonas Peters	2009-2010
Massachusetts Institute of Technology Postdoctoral Associate Advisor: Jonas Peters	2007-2009
University of Oregon Ph. D. in Chemistry Advisor: David Tyler	2002-2007
University of Illinois-Urbana-Champaign B.S. in Chemistry Advisor: Thomas Rauchfuss	1998-2002

HONORS AND AWARDS

<i>JACS Young Investigator – Virtual Issue</i>	2019
<i>Kavli Frontiers of Science Fellow – China</i>	2018, 2022
<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 AS CORRESPONDING AUTHOR

*denotes Principal Investigator, underline denotes undergraduate co-author, ‡ denotes shared authorship, non-UM graduate students denoted with a dotted underline, all other co-authors are UM graduate students or post-doctorals

- 54) Wade Wolfe, M. W.; Yu, L. S.; Guo, S.; Vogel, T. R.; Tucker, J. W.; Szymczak, N. K.* Nucleophilic strategies to construct –CF₂– linkages using borazine-CF₂Ar reagents. *Chem. Comm.* **2022**, *Advance Article*. DOI: <https://doi.org/10.1039/D2CC01938H>
- 53) Wang, B.; Seo, C. S. G.; Zhang, C.; Chu, J.;* Szymczak, N. K.* A Borane Lewis Acid in the Secondary Coordination Sphere of a Ni(II) Imido Imparts Distinct C-H Activation Selectivity. *J. Am. Chem. Soc.* **2022**, *144*, 34, 15793–15802. *[Featured in Chemical & Engineering News, 2022, August 26.](#)
- 52) Norwine, E. E.; Kiernicki, J. J.; Zeller, M.; Szymczak, N. K.* Distinct Reactivity Modes of a Cuprous Hydride Enabled by an Intramolecular Lewis Acid. *J. Am. Chem. Soc.* **2022**, *144*, 15038–15046
- 51) Davies, A. M.; Li, Z-Y.; Stephenson, C. R. J.;* Szymczak, N. K.* Valorization of Ethanol: Ruthenium-Catalyzed Guerbet and Sequential Functionalization Processes. *ACS Catalysis*. **2022**, *2022*, *12*, 6729-6736.
- 50) Nasrallah, D. J.; Zehnder, T. E.; Ludwig, J. R.; Steigerwald, D. C.; Kiernicki, J. J.; Szymczak, N. K.* Schindler, C. S.* Hydrazone and Oxime Olefination via Ruthenium Alkylidenes. *Angew. Chem. Int. Ed.* **2022**, *e202112101*.
- 49) Shanahan, J. P.; Moore, C. M.; Kampf, J.; Szymczak, N. K.* Modulation of H⁺/H⁻ Exchange in Iridium-Hydride 2-Hydroxypyridine Complexes by Remote Lewis Acids. *Chem. Comm.* **2021**, *57*, 5718-5721.
- 48) Kiernicki, J. J.; Zeller, M.; Szymczak, N. K.* Requirements for Late-Stage Hydroboration of Pyridine N-Heterocyclic Carbene Iron(0) Complexes: The Role of Ancillary Ligands. *Organometallics*, **2021**, *40*, 2658-2665.
- 47) Kiernicki, J. J.; Norwine, E. E.; Zeller, M.; Szymczak, N. K.* Substrate Specific Metal–Ligand Cooperative Binding: Considerations for Weak Intramolecular Lewis Acid/Base Pairs. *Inorg. Chem.*, **2021**, *60*, 13806-13810.
- 46) Taher, D.; Wilson, J. R.; Ritch, G. Zeller, M.; Szymczak, N. K.* Late-stage ligand functionalization via the Staudinger reaction using phosphine-appended 2,2'-bipyridine. *Chem. Comm.* **2021**, *57*, 5718-5721.
- 45) Wilson, J. R.; Zeller, M.; Szymczak, N. K.* Hydrogen-Bonded Nickel(I) Complexes. *Chem. Comm.* **2021**, *57*, 753-756.
- 44) Wade Wolfe, M.; Shanahan, J. P.; Kampf, J.; Szymczak, N. K.* Defluorinative Functionalization of Pd (II) Fluoroalkyl Complexes. *J. Am. Chem. Soc.* **2020**, *142*, 18698.
- 43) Kiernicki, J. J.; Norwine, E. E.; Lovasz, M. A.; Zeller, M.; Szymczak, N. K.* Mobility of Lewis Acids within the Secondary Coordination Sphere: Toward a Model for Cooperative Substrate Binding. *Chem. Comm.* **2020**, *56*, 13105-13108.
- 42) Shanahan, J. P.; Szymczak, N. K.* Lewis Acid Effects on Calculated Ligand Electronic Parameters. *Organometallics* **2020**, *39*, 4297–4306. **Special Issue: Organometallic Chemistry of the Main-Group Elements.*

- 41) Kiernicki, J. J.; Zeller, M.; Szymczak, N. K.* Examining the Generality of Metal-Ligand Cooperativity Across a Series of First-Row Transition Metals: Capture, Bond Activation, and Stabilization. *Inorg. Chem.* **2020**, *59*, 9279–9286.
- 40) Shanahan, J. P.; Mullis, D. M.; Zeller, M.; Szymczak, N. K.* Reductively Stable Hydrogen-Bonding Ligands Featuring Appended CF₂-H Units. *J. Am. Chem. Soc.* **2020**, *142* (19), 8819–8827.
- 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**, *55*, 11896–11899.
- 38) Shanahan, J. P.; Szymczak, N. K.* Hydrogen Bonding to a Dinitrogen Complex at Room Temperature: Impacts on N₂ Activation. *J. Am. Chem. Soc.* **2019**, *141*, 8550–8556.
- 37) Hale, L. V. A.;[†] Sikes, N. M.;[†] Szymczak, N. K.* Reductive C–C Coupling from α,β -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.* Difluoromethane as a Precursor to Difluoromethyl Borates. *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.;[†] Kiernicki, J. J.;[†] Zeller, M.; Szymczak, N. K.* Hydrogen Bonds Dictate O₂ 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 CO₂ 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 Flexible Appended Lewis Acids. *J. Am. Chem. Soc.*, **2017**, *139*, 18194–18197.
- 27) Geri, J. B.; Wade Wolfe, M. M.; Szymczak, N. K.* Borazine-CF₃⁻ 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 N₂ 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 α -Chiral Amines with D₂O. *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.;[†] Malakar, T.;[†] 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 β -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 H₂: 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*; 1st 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**

PUBLICATIONS NOT AS CORRESPONDING AUTHOR

- 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*Cl₂]₂ Precatalyst System: Is it Single-Metal Rh₁Cp*-Based, Subnanometer Rh₄ Cluster-Based, or Rh(0)_n 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*Cl₂]₂? In *Operando-XAFS, Kinetic and Crucial Kinetic Poisoning Evidence for Subnanometer Rh₄ 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 H₂. Why is Coordinated H₂ Inert to Substitution by Water in *trans*-Ru(P₂)₂(H₂)H⁺-type Complexes (P₂ = 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 N₂ Reduction to Ammonia in Fe(dmpe)₂N₂. *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, NH₂BH₂, Dictates Selectivity and Extent of H₂

- 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 Rh₄ 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 H₂ and N₂ in *trans*-Fe^{II}(P₂)₂X₂-type Complexes (P₂ = 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 η^2 -H₂ Complex: Evidence for H₂ 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 ²H 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 N₂ to Ammonia and Hydrazine Utilizing H₂ 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*-RuCl₂(DMeOPrPE)₂ with TIPF₆; 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. H₂ Activation in Aqueous Solution: Formation of *trans*-[Fe(DMeOPrPE)₂H(H₂)]⁺ via the Heterolysis of H₂ in Water. *Inorg. Chem.*, **2004**, *43*, 3341-3343

ACADEMIC SERVICE

To the Community:

Symposium Organizer:

2020/2021 Pacificchem Meeting, *Metal-Ligand Cooperation for bond activation*, Dec. 15-20, Honolulu, HI.

19th Chinese-American Symposium. *Kavli Frontiers of Science*. July, 2022

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

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

Advisory:

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

Misc. Outreach:

Science Week Podcast Contributor (South Sydney High School; 2021), Interactive Collaborative Inorganic Discussion Organizer (iCID, UM, WWU, UC-Irvine; 2019-present), Michigan Inorganic Chemistry Symposium Organizer (MICS, UM, MSU; 2019-present), Science Fair Judge (Keystone Academy; 2013, 2014), Science Saturdays Presenter (2011)

Manuscript Reviewer:

ACS Catalysis, Accounts of Chemical Research, Angewandte Chemie an International Journal, AIMS Environmental Science, Catalysis Science and Technology, ChemComm, Chemical Reviews, Chemistry, a European Journal, Chemical Science, Current Opinion in Chemical Biology, Dalton Transactions, Energy and Environmental Science, Green Chemistry, Inorganic Chemistry, Journal of the American Chemical Society, Journal of Chemical Education, Journal of Organic Chemistry, Journal of Inorganic Biochemistry, Organic Chemistry Frontiers, Organometallics, Polyhedron, Science Advances, Tetrahedron

Proposal Reviewer:

AFOSR, DOE, ACS-PRF, NSF, SDE/GWIS

Editorial:

Volume co-editor for Comprehensive Coordination Chemistry III
Editorial Advisory Board for *Inorganic Chemistry*, 2021-2024

To the University of Michigan:

LS&A Safety Committee	2018 – present
U-M Research and Academic Safety Committee	2020 – present
Dept. of Chemistry Art Committee	2018 – 2020
Dept. of Chemistry Safety Committee	2014 – present
Chair of Dept. of Chemistry Safety Committee	2018 – present

Key outcomes as Chair: To improve safety culture, we have developed departmental policy of a new tiered safety protocol system to use when performing hazardous experimental operations. This policy includes risk assessment and I was prepared in consultation with the Safety Committee, the LS&A safety officer, and the Chemistry Department to develop a robust policy. In addition to chemical safety, meetings with an officer from DPSS were part of an effort to raise awareness for faculty/students that could occur during active shooter situations during lab and lecture sessions. I anticipate rolling out additional training for faculty and students in conjunction with DPSS on other relevant safety scenarios. Ongoing efforts include improving visibility of safety-related matters through departmental safety newsletters, social media, and incorporating safety moments.

Curriculum Vitae

Nathaniel K. Szymczak

Dept. of Chemistry Faculty Search Committee	2018 – 2020
Dept. of Chemistry Executive Committee	2017 – 2019, 2021 – present
Dept. of Chemistry Graduate Committee	2014 – 2017, 2020
Chemistry Facilitator of a structured study group (90 students)	2020
ADVANCE Panelist on running a research lab	2017
CSIE UM Panelist on managing conflict in the lab	2017
Speaker for Chemistry REBUILD Symposium	2016
CSIE UM Panelist on hiring postdoctoral candidates	2016
Speaker for Provost's seminar workshop: REBUILDing STEM Education at Michigan"	2014
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 (30)	2010 – present