

HAIRONG GUAN

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EDUCATION

Ph.D.	Columbia University	2005
M.Phil.	Columbia University	2004
M.A.	Columbia University	2002
B.S.	Peking University, Beijing, China	2000

PROFESSIONAL EXPERIENCE

<i>Stella and Hoke S. Greene</i> Chair in Catalytic Chemistry, University of Cincinnati	2017-present
Professor of Chemistry, University of Cincinnati	2016-present
Associate Professor of Chemistry, University of Cincinnati	2012-2016
Assistant Professor of Chemistry, University of Cincinnati	2007-2012
Visiting Professor, Ruprecht-Karls-Universität Heidelberg (host by Prof. Lutz H. Gade)	2018
Visiting Professor, Ruprecht-Karls-Universität Heidelberg (host by Prof. Peter Hofmann)	2014
Research Associate, University of Wisconsin-Madison (Prof. Charles P. Casey)	2005-2007
Graduate Student, Columbia University (Prof. Jack R. Norton)	2000-2005
Undergraduate Researcher, Peking University (Prof. Zhenfeng Xi)	1999-2000

PROFESSIONAL AFFILIATIONS

American Chemical Society (ACS)
Royal Society of Chemistry (RSC)
Sigma Xi
Chinese-American Chemistry and Chemical Biology Professors Association (CAPA)

AWARDS AND HONORS

Golden Goggles Lectureship, Middle Tennessee State University	2019
Humboldt Research Fellowship for Experienced Researchers	2018-2020
Rising Star for contributions to <i>Base Metal Catalysis</i> , International Symposium for Young Chinese Chemists	2017
Elected Fellow of the Graduate School, University of Cincinnati	2017
Lowenstein Scholar, University of Cincinnati	2015
Sigma Xi Young Investigator Award, University of Cincinnati	2015
Advisory Board Member of <i>Inorganic Chemistry Frontiers</i>	2013-present
Alfred P. Sloan Research Fellow	2013-2015
National Science Foundation CAREER Award	2010-2015
Dissertation with distinction, Columbia University	2005
Pegram Award, Columbia University	2005

RESEARCH INTERESTS

Synthetic inorganic and organic chemistry; mechanistic organometallic chemistry; homogeneous catalysis by transition metal complexes; small molecule activation; biomass conversion.

PEER-REVIEWED PUBLICATIONS

1. Eberhardt, N. A.; Wellala, N. P. N.; Li, Y.; Krause, J. A.; Guan, H. "Dehydrogenative Coupling of Aldehydes with Alcohols Catalyzed by a Nickel Hydride Complex." *Organometallics* **2019**, *38*, ASAP.
2. Wellala, N. P. N.; Dong, H. T.; Krause, J. A.; Guan, H. "Janus POCOP Pincer Complexes of Nickel." *Organometallics* **2018**, *37*, 4031-4039.
3. Dai, H.; Guan, H. "Switching the Selectivity of Cobalt-Catalyzed Hydrogenation of Nitriles." *ACS Catal.* **2018**, *8*, 9125-9130.
4. Li, Y.; Krause, J. A.; Guan, H. "Cobalt POCOP Pincer Complexes via Ligand C–H Bond Activation with $\text{Co}_2(\text{CO})_8$: Catalytic Activity for Hydrosilylation of Aldehydes in an Open vs. a Closed System." *Organometallics* **2018**, *37*, 2147-2158.
5. Wellala, N. P. N.; Luebking, J. D.; Krause, J. A.; Guan, H. "Roles of Hydrogen Bonding in Proton Transfer to κ^{P} , κ^{N} , $\kappa^{\text{P}}\text{-N}(\text{CH}_2\text{CH}_2\text{P}^i\text{Pr}_2)_2$ Ligated Nickel Pincer Complexes". *ACS Omega* **2018**, *3*, 4986-5001.
6. Dai, H.; Guan, H. "Iron Dihydride Complexes: Synthesis, Reactivity, and Catalytic Applications." *Isr. J. Chem.* **2017**, *57*, 1170-1203 (*special issue on Iron Catalysis*).
7. Rodrigo, S. K.; Guan, H. "Mechanistic Study of Nickel-Catalyzed Reductive Coupling of Ynoates and Aldehydes." *J. Org. Chem.* **2017**, *82*, 5230-5235.
8. Adhikary, A.; Krause, J. A.; Guan, H. "How Does the Carbon Hybridization Impact the Rate of Metal-Carbon Bond Cleavage by an Alkyne? A Case Study with POCOP-Pincer Ligated Palladium Hydrocarbyl Complexes." *J. Organomet. Chem.* **2017**, *845*, 151-156 (*special issue on Organometallic Chemistry of Pincer Complexes honoring Professor Gerard van Koten*).
9. Haley, R. A.; Mack, J.; Guan, H. "2-in-1: Catalyst and Reaction Medium." *Inorg. Chem. Front.* **2017**, *4*, 52-55.
10. Ma, Q.-Q.; Liu, T.; Adhikary, A.; Zhang, J.; Krause, J. A.; Guan, H. "Using CS_2 to Probe the Mechanistic Details of Decarboxylation of Bis(phosphinite)-Ligated Nickel Pincer Formate Complexes." *Organometallics* **2016**, *35*, 4077-4082.
11. Ma, Q.-Q.; Liu, T.; Li, S.; Zhang, J.; Chen, X.; Guan, H. "Highly Efficient Reduction of Carbon Dioxide with a Borane Catalyzed by Bis(phosphinite) Pincer Ligated Palladium Thiolate Complexes." *Chem Commun.* **2016**, *52*, 14262-14265.
12. Bailey, A. D.; Murphy, B. P.; Guan, H. "Mechanistic Insights into Oxidative Oligomerization of *p*-Phenylenediamine and Resorcinol." *J. Phys. Chem. A.* **2016**, *120*, 8512-8520.
13. Chakraborty, A.; Kinney, R. G.; Krause, J. A.; Guan, H. "Cooperative Iron-Oxygen-Copper Catalysis in Reduction of Benzaldehyde Under the Water-Gas Shift Reaction Conditions." *ACS Catal.* **2016**, *6*, 7855-7864.
14. Eberhardt, N. A.; Guan, H. "Nickel Hydride Complexes." *Chem. Rev.* **2016**, *116*, 8373-8426 (*thematic issue on Metal Hydrides*).
15. Haley, R. A.; Zellner, A. R.; Krause, J. A.; Guan, H.; Mack, J. "Nickel Catalysis in a High Speed Ball Mill: A Recyclable Mechanochemical Method for Producing Substituted Cyclooctatetraene Compounds." *ACS Sustainable Chem. Eng.* **2016**, *4*, 2464-2469.
16. Xu, T.; Wu, Y.; Yuan, Z.; Guan, H.; Liu, G. "Mechanistic Investigation on the Silver-Catalyzed Oxidative Intramolecular Aminofluorination of Alkynes." *Organometallics* **2016**, *35*, 1347-1349.
17. Li, H.; Meng, W.; Adhikary, A.; Li, S.; Ma, N.; Zhao, Q.; Yang, Q.; Eberhardt, N. A.; Leahy, K. M.; Krause, J. A.; Zhang, J.; Chen, X.; Guan, H. "Metathesis Reactivity of Bis(phosphinite) Pincer

- Ligated Nickel Chloride, Isothiocyanate and Azide Complexes." *J. Organomet. Chem.* **2016**, *804*, 132-141.
18. Hu, Y.; Shaw, A. P.; Guan, H.; Norton, J. R.; Sattler, W.; Rong, Y. "Synthesis and Resolution of Chiral Ruthenium Complexes Containing the 1-Me-3-PhCp Ligand." *Organometallics*. **2016**, *35*, 39-46.
 19. Wellala, N. P. N.; Guan, H. "A Diphenyl Ether Derived Bidentate Secondary Phosphine Oxide as a Preligand for Nickel-Catalyzed C–S Cross-Coupling Reactions." *Org. Biomol. Chem.* **2015**, *13*, 10802-10807.
 20. Adhikary, A.; Guan, H. "Catalysis Involving Phosphinite-Based Metallacycles." *ACS Catal.* **2015**, *5*, 6858-6873 (*invited Perspective*).
 21. Adhikary, A.; Krause, J. A.; Guan, H. "Configurational Stability and Stereochemistry of P-Stereogenic Nickel POCOP-Pincer Complexes." *Organometallics* **2015**, *34*, 3603-3610.
 22. Chakraborty, S.; Bhattacharya, P.; Dai, H.; Guan, H. "Nickel and Iron Pincer Complexes as Catalysts for the Reduction of Carbonyl Compounds." *Acc. Chem. Res.* **2015**, *48*, 1995-2003 (*special issue on Earth Abundant Metals in Homogeneous Catalysis*).
 23. Wilson, G. L. O.; Abraha, M.; Krause, J. A.; Guan, H. "Reactions of Phenylacetylene with Nickel POCOP-Pincer Hydride Complexes Resulting in Different Outcomes from Their Palladium Analogues." *Dalton Trans.* **2015**, *44*, 12128-12136 (*themed issue on Earth Abundant Element Compounds in Homogeneous Catalysis*).
 24. Fairweather, N. T.; Gibson, M. S.; Guan, H. "Homogeneous Hydrogenation of Fatty Acid Methyl Esters and Natural Oils Under Neat Conditions." *Organometallics* **2015**, *34*, 335-339.
 25. Qu, S.; Dai, H.; Dang, Y.; Song, C.; Wang, Z.-X.; Guan, H. "Computational Mechanistic Study of Fe-Catalyzed Hydrogenation of Esters to Alcohols: Improving Catalysis by Accelerating Pre-catalyst Activation with a Lewis Base." *ACS Catal.* **2014**, *4*, 4377-4388.
 26. Bhattacharya, P.; Krause, J. A.; Guan, H. "Activation of Dihydrogen and Silanes by Cationic Iron Bis(phosphinite) Pincer Complexes." *Organometallics* **2014**, *33*, 6113-6121.
 27. Bhattacharya, P.; Krause, J. A.; Guan, H. "Mechanistic Studies of Ammonia Borane Dehydrogenation Catalyzed by Iron Pincer Complexes." *J. Am. Chem. Soc.* **2014**, *136*, 11153-11161.
 28. Chakraborty, S.; Dai, H.; Bhattacharya, P.; Fairweather, N. T.; Gibson, M. S.; Krause, J. A.; Guan, H. "Iron-Based Catalysts for the Hydrogenation of Esters to Alcohols." *J. Am. Chem. Soc.* **2014**, *136*, 7869-7872.
 29. Adhikary, A.; Schwartz, J. R.; Meadows, L. M.; Krause, J. A.; Guan, H. "Interaction of Alkynes with Palladium POCOP-Pincer Hydride Complexes and Its Unexpected Relation to Palladium-Catalyzed Hydrogenation of Alkynes." *Inorg. Chem. Front.* **2014**, *1*, 71-82 (*invited paper*).
 30. Rodrigo, S. K.; Powell, I. V.; Coleman, M. G.; Krause, J. A.; Guan, H. "Efficient and Regioselective Nickel-Catalyzed [2+2+2] Cyclotrimerization of Ynoates and Related Alkynes." *Org. Biomol. Chem.* **2013**, *11*, 7653-7657.
 31. Chakraborty, S.; Patel, Y. J.; Krause, J. A.; Guan, H. "A Robust Nickel Catalyst for Cyanomethylation of Aldehydes. Activation of Acetonitrile under Base-Free Conditions." *Angew. Chem. Int. Ed.* **2013**, *52*, 7523-7526.
 32. Chakraborty, S.; Zhang, J.; Patel, Y. J.; Krause, J. A.; Guan, H. "Pincer-Ligated Nickel Hydridoborate Complexes: the Dormant Species in Catalytic Reduction of Carbon Dioxide with Boranes." *Inorg. Chem.* **2013**, *52*, 37-47 (*featured on cover*).

33. Rodrigo, S. K.; Guan, H. "Quick Installation of a 1,4-Difunctionality via Regioselective Nickel-Catalyzed Reductive Coupling of Ynoates and Aldehydes." *J. Org. Chem.* **2012**, *77*, 8303-8309.
34. Zhang, J.; Adhikary, A.; King, K. M.; Krause, J. A.; Guan, H. "Substituent Effects on Ni-S Bond Dissociation Energies and Kinetic Stability of Nickel Arylthiolate Complexes Supported by a Bis(phosphinite)-Based Pincer Ligand." *Dalton Trans.* **2012**, *41*, 7959-7968 (*New Talent Americas Issue*).
35. Chakraborty, S.; Patel, Y. J.; Krause, J. A.; Guan, H. "Catalytic Properties of Nickel Bis(phosphinite) Pincer Complexes in the Reduction of CO₂ to Methanol Derivatives." *Polyhedron* **2012**, *32*, 30-34 (*Metal Mediated Transformations of CO₂ Issue*).
36. Casey, C. P.; Guan, H. "Trimethylsilyl-Substituted Hydroxycyclopentadienyl Ruthenium Hydrides as Benchmarks to Probe Ligand and Metal Effects on the Reactivity of Shvo Type Complexes." *Organometallics* **2012**, *31*, 2631-2638 (*F. Gordon A. Stone Commemorative Issue*).
37. Bhattacharya, P.; Guan, H. "Synthesis and Catalytic Applications of Iron Pincer Complexes." *Comments on Inorg. Chem.* **2011**, *32*, 88-112 (*invited review*).
38. Bhattacharya, P.; Krause, J. A.; Guan, H. "Iron Hydride Complexes Bearing Phosphinite-Based Pincer Ligands: Synthesis, Reactivity, and Catalytic Application in Hydrosilylation Reactions." *Organometallics* **2011**, *30*, 4720-4729.
39. Huang, F.; Zhang, C.; Jiang, J.; Wang, Z.-X.; Guan, H. "How Does the Nickel Pincer Complex Catalyze the Conversion of CO₂ to a Methanol Derivative? A Computational Mechanistic Study." *Inorg. Chem.* **2011**, *50*, 3816-3825.
40. Zhang, J.; Medley, C. M.; Krause, J. A.; Guan, H. "Mechanistic Insights into C-S Cross-Coupling Reactions Catalyzed by Nickel Bis(phosphinite) Pincer Complexes." *Organometallics* **2010**, *29*, 6393-6401.
41. Chakraborty, S.; Zhang, J.; Krause, J. A.; Guan, H. "An Efficient Nickel Catalyst for the Reduction of Carbon Dioxide with a Borane." *J. Am. Chem. Soc.* **2010**, *132*, 8872-8873.
42. Chakraborty, S.; Guan, H. "First-Row Transition Metal Catalyzed Reduction of Carbonyl Functionality: A Mechanistic Perspective." *Dalton Trans.* **2010**, *39*, 7427-7436 (*invited Perspective*).
43. Coleman, M. G.; Brown, A. N.; Bolton, B. A.; Guan, H. "Iron-Catalyzed Oppenauer-Type Oxidation of Alcohols." *Adv. Synth. Catal.* **2010**, *352*, 967-970.
44. Casey, C. P.; Guan, H. "Cyclopentadienone Iron Alcohol Complexes: Synthesis, Reactivity, and Implications for the Mechanism of Iron Catalyzed Hydrogenation of Aldehydes." *J. Am. Chem. Soc.* **2009**, *131*, 2499-2507.
45. Zhang, J.; Krause, J. A.; Huang, K.-W.; Guan, H. "Ancillary Ligand and Ketone Substituent Effects on the Rate of Ketone Insertion into Zr-C Bonds of Zirconocene-1-aza-1,3-diene Complexes." *Organometallics* **2009**, *28*, 2938-2946.
46. Chakraborty, S.; Krause, J. A.; Guan, H. "Hydrosilylation of Aldehydes and Ketones Catalyzed by Nickel PCP-Pincer Hydride Complexes." *Organometallics* **2009**, *28*, 582-586.
47. Guan, H. "Titanium and Zirconium Mediated or Catalyzed Umpolung Reactions." *Curr. Org. Chem.* **2008**, *12*, 1406-1430 (*invited review*).
48. Shaw, A. P.; Guan, H.; Norton, J. R. "Synthesis and Properties of Carboxy-Substituted Half-Sandwich Ruthenium Complexes with Chelating Bisphosphine Ligands (η^5 -C₅H₄CO₂H)Ru(η^2 -L)X (X = I, H)." *J. Organomet. Chem.* **2008**, *693*, 1382-1388.
49. Casey, C. P.; Guan, H. "An Efficient and Chemoselective Iron Catalyst for the Hydrogenation of Ketones." *J. Am. Chem. Soc.* **2007**, *129*, 5816-5817.

50. Guan, H.; Saddoughi, S. A.; Shaw, A. P.; Norton, J. R. "Ruthenium-Catalyzed Ionic Hydrogenation of Aziridinium Cations." *Organometallics* **2005**, *24*, 6358-6364.
51. Guan, H.; Iimura, M.; Magee, M. P.; Norton, J. R.; Zhu, G. "Ruthenium-Catalyzed Ionic Hydrogenation of Iminium Cations. Scope and Mechanism." *J. Am. Chem. Soc.* **2005**, *127*, 7805-7814.
52. Guan, H.; Iimura, M.; Magee, M. P.; Norton, J. R.; Janak, K. E. "Effect of Chelate Ring Size on the Rate of Hydride Transfer from CpRu(P-P)H (P-P = Chelating Diphosphine) to an Iminium Cation." *Organometallics* **2003**, *22*, 4084-4089.
53. Chen, J.; Song, Q.; Li, P.; Guan, H.; Jin, X.; Xi, Z. "Stereoselective Synthesis of Polysubstituted 2,5-Dihydrofurans from Reaction of 1,4-Dilithio-1,3-dienes with Aldehydes." *Org. Lett.* **2002**, *4*, 2269-2271.
54. Xi, Z.; Li, Z.; Umeda, C.; Guan, H.; Li, P.; Kitora, M.; Takahashi, T. "Copper(I)-Catalyzed Tandem Inter-Intramolecular Cyclization Reaction of Zirconacycles: Formation of Highly Substituted Styrenes, Vinylcyclohexadienes, and Related Compounds." *Tetrahedron* **2002**, *58*, 1107-1117.
55. Xi, Z.; Song, Q.; Chen, J.; Guan, H.; Li, P. "Dialkenylation of Carbonyl Groups by Alkenyllithium Compounds: Formation of Cyclopentadiene Derivatives by the Reaction of 1,4-Dilithio-1,3-dienes with Ketones and Aldehydes." *Angew. Chem. Int. Ed.* **2001**, *40*, 1913-1916.

OTHER PUBLICATIONS

56. Eberhardt, N. A.; Guan, H. Reduction of CO₂ Mediated or Catalyzed by Pincer Complexes. In *Pincer Compounds: Chemistry and Applications*; Morales-Morales, D., Ed.; Elsevier, Amsterdam, **2018**; Chapter 4, pp. 67-99.
57. Hayes, J. C.; Guan, H.; Collias, D. "Production of Terephthalic Acid via Reductive Coupling of Propiolic Acid or Propiolic Acid Derivatives." US provisional patent filed (serial number 62/132550) on March 13, **2015**
58. Chakraborty A.; Guan, H. "Iron, dicarbonylhydro[(1,2,3,3a,7a-η)-4,5,6,7-tetrahydro-2-hydroxy-1,3-bis(trimethylsilyl)-1H-inden-1-yl]" *e-Encyclopedia of Reagents for Organic Synthesis* **2014**
59. Adhikary, A.; Guan, H. Nickel-Catalyzed Cross-Coupling Reactions. In *Pincer and Pincer-Type Complexes: Application in Organic Synthesis and Catalysis*; Szabó, K. J.; Wendt, O. F., Eds.; Wiley-VCH: Weinheim, **2014**; pp 117-147. (ISBN: 9783527334421)
60. Casey, C. P.; Guan, H. "Process for the Preparation of Alcohols by Iron-Catalyzed Selective Hydrogenation of Carbonyl Derivatives." U.S. Patent 7,834,224, November 16, **2010**.
61. Guan, H. "Ruthenium-Catalyzed Ionic Hydrogenation Reactions: Mechanistic Studies and Synthetic Applications." VDM Verlag Dr. Müller: Saarbrücken, **2008**, ISBN: 978-3-639-07325-6.

RESEARCH GRANTS

- | | |
|--|-----------------------|
| National Science Foundation (CHE-1800151) <i>SusChEM: Metal-Ligand and Metal-Metal Cooperativities as Design Principles for Base Metal Catalysis</i> (PI) | 09/01/2018-08/31/2021 |
| National Natural Science Foundation of China (21728201) <i>Mechanistic Study and Exploration of Copper-Catalyzed Fluorination Reaction</i> (PI) | 01/01/2018-12/31/2019 |
| National Science Foundation (CHE-1726092) <i>MRI: SusChEM: Acquisition of a 400 MHz Nuclear Magnetic Resonance (NMR) Spectrometer for Research and Training</i> (PI) | 09/01/2017-08/31/2020 |

National Science Foundation (CHE-1625737) <i>MRI: Acquisition of a Single Crystal X-ray Diffractometer for Chemical Crystallography Research and Training</i> (PI)	09/01/2016-08/31/2019
National Science Foundation (CHE-1464734) <i>SusChEM: Catalytic Activation of Small Molecules by Nickel and Iron Pincer Complexes</i> (PI)	09/01/2015-08/31/2018
National Science Foundation (CHE-0952083) <i>CAREER: Nickel and Iron Complexes as Efficient and Selective Catalysts for Carbon Dioxide Reduction and Organic Synthesis</i> (PI)	02/01/2010-01/31/2015
Alfred P. Sloan Foundation <i>Sloan Research Fellowship</i>	09/01/2013-08/31/2015
Procter & Gamble Company <i>Unrestricted Research Grant</i> (PI)	06/2013
Procter & Gamble Company (P&G Chemicals) <i>Research Contract</i> (PI)	05/01/2012-06/30/2016
Procter & Gamble Company (Corporate R&D) <i>Research Contract</i> (PI)	12/01/2014-08/23/2015
The Kellen Company (sponsored by Coca-Cola, Ford, Nike and P&G) <i>Research Contract</i> (PI)	04/04/2016-10/03/2016
American Chemical Society Petroleum Research Fund (49646-DNI3) <i>New Catalysis with Nickel Pincer Complexes</i> (PI)	09/01/2009-08/31/2011
Cambridge Isotope Laboratories, Inc <i>Polarity Reversal Induced by Transition Metals: New Strategies of Forming Carbon-Carbon Bonds</i> (PI)	07/2009

OTHER GRANTS AND HONORARIUMS

Faculty Development Fund	July 2018
Faculty Development Fund	March 2017
Faculty Development Fund	July 2016
UC International Faculty Study Abroad Program Development Grant	Fall 2015
ACS Project SEED grants	2012-2014
University of Cincinnati Center for Enhanced Teaching & Learning (CET&L) grant	July 2010
Oak Ridge Associated Universities (ORAU) visiting industrial scholars grant	April 2010

INVITED SEMINARS

Middle Tennessee State University, Murfreesboro, TN	April 19, 2019
Ruprecht-Karls-Universität Heidelberg, Heidelberg, Germany	October 31, 2018
King Abdullah University of Science and Technology, Thuwal, Saudi Arabia	September 30, 2018
Henan Normal University, Xinxiang, China	May 14, 2018
Shanghai Institute of Organic Chemistry, Shanghai, China	May 11, 2018
Wright State University, Dayton, OH	March 9, 2018
Shanghai Institute of Organic Chemistry, Shanghai, China	May 19, 2017
Wuhan University, Wuhan, China	May 16, 2017
Shandong University, Jinan, China	May 10, 2017
University of Illinois at Chicago, Chicago, IL	October 25, 2016
Henan Normal University, Xinxiang, China	May 4, 2016
Université de Bordeaux, Bordeaux, France	March 22, 2016
University of Notre Dame, Notre Dame, IN	November 6, 2015
Texas Tech University, Lubbock, TX	October 14, 2015
Peking University, Beijing, China	June 10, 2015
Brock University, St. Catharines, ON, Canada	March 20, 2015
University of Guelph, Guelph, ON, Canada	March 19, 2015
University of Toronto, Toronto, ON, Canada	March 18, 2015
University of Buffalo, Buffalo, NY	March 17, 2015

Georg-August-Universität Göttingen, Göttingen, Germany	October 28, 2014
Ruprecht-Karls-Universität Heidelberg, Heidelberg, Germany	October 21, 2014
Catalytic Research Laboratory (CaRLa), BASF/Heidelberg, Germany	October 16, 2014
Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland	October 6, 2014
San Diego State University, San Diego, CA	May 2, 2014
University of San Diego, San Diego, CA	May 1, 2014
Rochester Institute of Technology, Rochester, NY	October 22, 2013
University of Rochester, Rochester, NY	October 21, 2013
University of New Mexico, Albuquerque, NM	September 27, 2013
Guangzhou Institutes of Biomedicine and Health, CAS, Guangzhou, China	August 19, 2013
South China University of Technology, Guangzhou, China	August 18, 2013
Procter & Gamble Company (P&G Chemicals), Cincinnati, OH	May 13, 2013
University of Illinois at Urbana-Champaign, Urbana, IL	May 7, 2013
University of Montreal, Montreal, QC, Canada	March 20, 2013
Purdue University, West Lafayette, IN	March 5, 2013
Dow Corning Corporation, Midland, MI	May 11, 2012
Indiana University-Purdue University Fort Wayne, Fort Wayne, IN	March 30, 2012
United States Environmental Protection Agency, Cincinnati, OH	March 22, 2012
Fudan University, Shanghai, China	November 22, 2011
Shanghai Institute of Organic Chemistry, Shanghai, China	November 21, 2011
University of Cincinnati, School of Engineering, Cincinnati, OH	November 18, 2011
University of North Carolina, Chapel Hill, NC	November 1, 2011
Berea College, Berea, KY	February 22, 2011
University of Louisville, Louisville, KY	February 18, 2011
West Virginia University, Morgantown, WV	February 9, 2011
California University of Pennsylvania, California, PA	February 8, 2011
Miami University, Oxford, OH	November 18, 2010
Ohio University, Athens, OH	November 15, 2010
Indiana University, Bloomington, IN	October 15, 2010
Transylvania University, Lexington, KY	January 26, 2010
Austin Peay State University, Clarksville, TN	April 11, 2008
Marquette University, Milwaukee, WI	January 25, 2008
Ripon College, Ripon, WI	January 24, 2008
Shepherd Chemical Company, Norwood, OH	December 13, 2007

INVITED TALKS AT CONFERENCES AND SYMPOSIA

43 rd International Conference on Coordination Chemistry (ICCC2018), Sendai, Japan	July 30-August 4, 2018
2nd Base Metal Catalysis Symposium, Kyushu University, Japan	January 24-26, 2018
Symposium on Nickel and Related Chemistry, Shanghai University, China	October 9, 2017
International Symposium for Young Chinese Chemists 2017, Shanghai, China	May 17-18, 2017
Professor Jack R. Norton's 70th Birthday Symposium, Columbia University, New York, NY	May 2, 2015
15 th Asian Chemical Congress (ACC), Symposium on "Organometallic Pincer Complex: Application and Catalysis", Singapore	August 20-23, 2013
96 th Canadian Chemistry Conference, Symposium on "Recent Developments in Pincer Chemistry and Multidentate Ligands", Québec, Canada	May 26-30, 2013

2 nd International Conference on Molecular and Functional Catalysis (ICMFC-2), Singapore	July 30-31, 2012
2011 Spring ACS National Meeting, Symposium in Honor of Professor Charles P. Casey, Anaheim, CA (organizer: Clark Landis)	March 27-28, 2011
Bruker-AXS/MIT Symposium on "Catalysis for the 21st Century", Massachusetts Institute of Technology, Boston, MA (organizer: Peter Müller)	January 15, 2011

COURSES TAUGHT

Chem441– Inorganic Chemistry I
 Chem444/444H – Inorganic Synthesis
 Chem751 – Advanced Inorganic Chemistry I
 Chem753/875 – Organometallic Chemistry
 Chem 4020 – Inorganic Chemistry Lecture
 Chem 4020L – Inorganic Chemistry Laboratory
 Chem 7023 – Chemical Kinetics and Reactivity
 Chem 8043 – Organometallic Chemistry

DEPARTMENT COMMITTEES

Graduate Admissions Committee (member)	Fall 2007-Spring 2012
Morale Committee (member)	Fall 2007-Spring 2008
NMR Facility Manager Search Committee (member)	2008
Hoke S. Greene Chair of Catalysis Search Committee (member)	2008-2010, 2016-2017
Long Range Implementation Committee (member)	Winter 2010-Spring 2014
NMR Facility Faculty Liaison (member, chair since Fall 2013)	Spring 2010-present
Student Awards Committee (member)	Fall 2012-Spring 2014
Graduate Program Co-Director	Fall 2013-Fall 2016
Advisor of Chemistry Graduate Student Association	Fall 2013-present
Executive Committee (member)	Fall 2016-present
Research Council (member)	Fall 2016-Summer 2017
Reappointment, Promotion & Tenure Committee (chair)	Fall 2017-Summer 2018
Faculty Search Committee (chair)	Fall 2017

UNIVERSITY COMMITTEES

GINS cluster hiring Search Committee for an Assistant Professor in Geology	Fall 2009-Winter 2010
Sigma Xi UC Chapter GIAR Awards review panel	Winter 2012
URC Physical Sciences and Engineering review subcommittee	Spring 2013
McMicken College Isabel & Mary Neff Scholarship selection committee	Spring 2013
Sigma Xi Award Committee (chair)	Fall 2013-Spring 2014
Distinguished (STEMM) Research Professor Selection Committee	Fall 2017

REVIEWER FOR JOURNALS

ACS Catalysis
Advanced Synthesis & Catalysis
Angewandte Chemie International Edition
Applied Organometallic Chemistry
Catalysis Science & Technology
Chem (Cell Press)
Chemical Communications
Chemical Reviews

Chemical Science
Chemical Society Reviews
Chemistry-A European Journal
Chemistry-An Asian Journal
Chemistry Today
ChemSusChem
Chinese Journal of Chemistry
Comments on Inorganic Chemistry
Dalton Transactions
Energy & Environmental Science
Inorganic Chemistry
Inorganic Chemistry Frontiers
Inorganica Chimica Acta
International Journal of Inorganic Chemistry
Journal of Catalysis
Journal of Coordination Chemistry
Journal of Molecular Catalysis A: Chemical
Journal of Organic Chemistry
Journal of Organometallic Chemistry
Journal of Polymer Science, Part A: Polymer Chemistry
Journal of the American Chemical Society
Mini Reviews in Organic Chemistry
Nature Chemistry
Nature Protocols
New Journal of Chemistry
Organic & Biomolecular Chemistry
Organic Chemistry Frontiers
Organic Letters
Organometallics
Physical Chemistry Chemical Physics
Polyhedron
Science Advances
Tetrahedron Letters

REVIEWER FOR FUNDING AGENCIES

National Science Foundation (NSF)
Department of Energy (DOE)
American Chemical Society Petroleum Research Fund (ACS-PRF)
Natural Sciences and Engineering Research Council of Canada (NSERC)
Deutsche Forschungsgemeinschaft (DFG)
European Cooperation in Science and Technology (COST)
Israel Science Foundation
Austrian Science Fund
ETH Zurich Research Commission
Netherlands Organisation for Scientific Research (NWO)
Agency for Science Technology and Research (A*STAR) in Singapore
Kentucky Science and Engineering Foundation
Elsevier/Reaxys
China Scholarship Council/Ministry of Education of China