

Adam T. Fiedler

Department of Chemistry, Marquette University, Milwaukee, WI 53233

Education

University of Wisconsin – Madison Madison, Wisconsin	Ph.D. in Inorganic Chemistry , August 2006 Research Advisor: Thomas C. Brunold Thesis Title: <i>Spectroscopic and Computational Studies of Metal-Thiolate Interactions in Metalloenzymes and Related Model Complexes</i>
University of Wisconsin – Madison Madison, Wisconsin	B.S. in Chemistry , May 2001 Research Advisor: Hans J. Reich

Professional Experience

August 2022 – present	Chairperson Chemistry Department Marquette University
August 2020 – present	Professor Chemistry Department Marquette University
August 2015 – present	Associate Professor Chemistry Department Marquette University
August 2009 – August 2015	Assistant Professor Chemistry Department Marquette University
August 2006 – July 2009	Postdoctoral Research Associate Chemistry Department University of Minnesota Research Advisor: Lawrence Que, Jr.
January 2007 – January 2009	NIH Postdoctoral Research Fellow Chemistry Department University of Minnesota
June 2002 – July 2006	Graduate Research Associate Chemistry Department University of Wisconsin – Madison

Honors and Awards

February 2019	Chemistry Department Nominee for Teacher of the Year Award
April 2012	Sigma Xi (Marquette Chapter) Rising Star Award
March 2012	Way Klingler Young Scholar Award
March 2011	NSF CAREER Award
January 2007	NIH Ruth Kirschstein National Research Service Award
May 2005	Graduate Student Research Excellence Award
June 2002	NSF Graduate Research Fellowship

Marquette University Peer-Reviewed Publications (* indicates the corresponding authors).

31. Ekanayake, D.M.; Sheridan, P.E.; Lindeman, S.V.; Fiedler, A.T.* “Diverse Coordination Geometries Derived from Trisaminocyclohexane Ligands with Appended Outer-Sphere Hydrogen Bond Donors.” *European Journal of Inorganic Chemistry* **2023**, *26*, e202300434. doi.org/10.1002/ejic.202300434.
30. Devkota, L.; SantaLucia, D.J.; Wheaton, A.M.; Pienkos, A.J.; Lindeman, S.V.; Krzystek, J.; Ozerov, M.; Berry, J.F.; Telser, J.;;* Fiedler, A.T.* “Spectroscopic and Magnetic Studies of Co(II) Scorpionate Complexes: Is there a Halide Effect on Magnetic Anisotropy?” *Inorganic Chemistry* **2023**, *62*, 5984-6002. doi.org/10.1021/acs.inorgchem.2c04468
29. Kumar, P.; Devkota, L.; Casey, M.C.; Fischer, A.A.; Lindeman, S.V.; Fiedler, A.T.* “Reversible Dioxygen Binding to Co(II) Complexes with Noninnocent Ligands” *Inorganic Chemistry* **2022**, *61*, 16664-16677. doi.org/10.1021/acs.inorgchem.2c02246
28. Pathiranaage, W.L.K.; Gumataotao, N.; Fiedler, A.T.;;* Holz, R.C.;;* Bennett, B.* “Identification of an Intermediate Species along the Nitrile Hydratase Reaction Pathway by EPR Spectroscopy.” *Biochemistry* **2021**, *60*, 3771-3782. doi.org/10.1021/acs.biochem.1c00574
27. Ekanayake, D.M.; Pham, D.; Probst, A.L.; Miller, J.R.; Popescu, C.V.;;* Fiedler, A.T.* “Electronic structures and spectroscopic signatures of diiron intermediates generated by O₂ activation of nonheme iron(II)–thiolate complexes.” *Dalton Transactions* **2021**, *50*, 14432-14443. doi.org/10.1039/D1DT02286E
26. Reid, S.A.;;* MacBride, L.; Nobile, L.; Fiedler, A.T.; Gardinier, J.R. “Implementation and evaluation of an adaptive online summer preparatory course for general chemistry: Whom does it benefit?” *Chemical Education Research and Practice* **2021**, *22*, 303-311. [doi: 10.1039/d0rp00283f](https://doi.org/10.1039/d0rp00283f)
25. Ekanayake, D.M.; Fischer, A.A.; Elwood, M.E.; Guzek, A.M.; Lindeman, S.V.; Popescu, C.V.;;* Fiedler, A.T.* “Nonheme Iron-Thiolate Complexes as Structural Models of Sulfoxide Synthase Active Sites.” *Dalton Transactions* **2020**, *49*, 17745-17757. [doi:10.1039/d0d03403g](https://doi.org/10.1039/d0d03403g)
24. Kumar, P.; SantaLucia, D.J.; Kaniewska-Laskowska, K.; Lindeman, S. V.; Ozarowski, A.; Krzystek, J.; Ozerov, M.; Telser, J.; Berry, J.F.;;* Fiedler, A.T.* “Probing the Magnetic Anisotropy of Co(II) Complexes Featuring Redox-Active Ligands.” *Inorganic Chemistry* **2020**, *59*, 16178-16193. [doi: 10.1021/acs.inorgchem.0c01812](https://doi.org/10.1021/acs.inorgchem.0c01812)

23. Fischer, A.A.; Miller, J.R.; Jodts, R.J.; Ekanayake, D.M.; Lindeman, S.V.; Brunold, T.C.*; Fiedler, A.T.* “Spectroscopic and Computational Comparisons of Thiolate-Ligated Ferric Nonheme Complexes to Cysteine Dioxygenase: Second-Sphere Effects on Substrate (Analogue) Positioning.” *Inorganic Chemistry* **2019**, *58*, 16487-16499. doi.org/10.1021/acs.inorgchem.9b02432
22. Kumar, P.; Lindeman, S.V.; Fiedler, A.T.* “Cobalt Superoxo and Alkylperoxo Complexes Derived from Reaction of Ring-Cleaving Dioxygenase Models with O₂.” *Journal of the American Chemical Society* **2019**, *141*, 10984-10987. doi.org/10.1021/jacs.9b05320
21. Fischer, A.A.; Lindeman, S.V.; Fiedler, A.T.* “A Synthetic Model of the Nonheme Iron–Superoxo Intermediate of Cysteine Dioxygenase.” *Chemical Communications* **2018**, *54*, 11344-11347. doi.org/10.1039/C8CC06247A
20. Wang, D.; Ekanayake, D.M.; Lindeman, S.V.; Verani, C.N.*; Fiedler, A.T.* “Multielectron Redox Chemistry of Transition Metal Complexes Supported by a Non-innocent N₃P₂ Ligand: Synthesis, Characterization, and Catalytic Properties.” *European Journal of Inorganic Chemistry* **2018**, 4133-4141. doi.org/10.1002/ejic.201800843
19. Fischer, A.A.; Lindeman, S.V., Fiedler, A.T.* “Spectroscopic and Computational Studies of Reversible O₂ Binding by a Cobalt Complex Relevant to Cysteine Dioxygenase.” *Dalton Transactions* **2017**, *46*, 13229-13241. (Invited contribution to “Frontiers in Spectroscopic Techniques in Inorganic Spectroscopy” themed issue). doi: 10.1039/C7DT01600J
18. Kpogo, K.K.; Mazumder, S.; Wang, D.; Schlegel, H.B.*; Fiedler, A.T.*; Verani, C.N.* “Bimetallic Cooperativity in Proton Reduction with an Amido-Bridged Cobalt Catalysts.” *Chemistry – A European Journal* **2017**, *23*, 9272-9279. doi: 10.1002/chem.201701982
17. Stein, N.; Gumataotao, N.; Hajnas, N.; Wu, R.; Lankathilaka, K.P.W.; Bornscheuer, U.T.; Liu, D.; Fiedler, A.T.*; Holz, R.C.*; Bennett, B.* “Multiple States of Nitrile Hydratase from *Rhodococcus equi* TG328-2: Structural and Mechanistic Insights from EPR and DFT Studies.” *Biochemistry* **2017**, *56*, 3068-3077. doi: 10.1021/acs.biochem.6b00876
16. Fiedler, A.T.*; Fischer, A.A. “Oxygen Activation by Mononuclear Mn, Co, and Ni Centers in Biology and Synthetic Complexes.” *Journal of Biological Inorganic Chemistry* **2017**, *22*, 407-425. (Invited review article to the special issue: “60 Years of Oxygen Activation.”). doi: 10.1007/s00775-016-1402-7
15. Fischer, A. A.; Stracey, N.; Lindeman, S.V.; Brunold, T.C.*; Fiedler, A.T.* “Synthesis, X-ray Structures, Electronic Properties, and O₂/NO Reactivities of Thiol Dioxygenase Active-site Models.” *Inorganic Chemistry* **2016**, *55*, 11839-11853. doi: 10.1021/acs.inorgchem.6b01931
14. Baum, A.E.; Lindeman, S.V.; Fiedler, A.T.* “Mononuclear Iron-(hydro/semi)quinonate Complexes Featuring Neutral and Charged Scorpionates: Synthetic Models of Intermediates in the Hydroquinone Dioxygenase Mechanism.” *European Journal of Inorganic Chemistry*, **2016**, 2455-2464. (Invited contribution to the special issue: “The Significance of Scorpionate Ligands 50 Years On.”). doi: 10.1002/ejic.201501380

13. Lane, A.C.; Barnes, C.L.; Antholine, W.E.*; Wang, D.; Fiedler, A.T.*; Walensky, J.R.* “Di- and Trinuclear Mixed-Valence Copper Amidinate Complexes from Reduction of Iodine.” *Inorganic Chemistry* **2015**, *54*, 8509-8517. doi: [10.1021/acs.inorgchem.5b01161](https://doi.org/10.1021/acs.inorgchem.5b01161)
12. Wang, D.; Lindeman, S.V.; Fiedler, A.T.* “Bimetallic Complexes Supported by a Redox-Active Ligand with Two Pincer-Type Coordination Sites.” *Inorganic Chemistry* **2015**, *54*, 8744-8754. doi: [10.1021/acs.inorgchem.5b01380](https://doi.org/10.1021/acs.inorgchem.5b01380)
11. Baum, A.E.; Park, H.; Lindeman, S.V.; Fiedler, A.T.* “Synthesis and Spectroscopic Characterization of High-Spin Mononuclear Fe(II) *p*-Semiquinonate Complexes.” *Inorganic Chemistry* **2014**, *53*, 12240-12242. doi: [10.1021/ic502564r](https://doi.org/10.1021/ic502564r)
10. Wang, D.; Lindeman, S.V.; Fiedler, A.T.* “Synthesis of Homo- and Heterobimetallic Ni^{II}-M^{II} (M = Fe, Co, Ni, Zn) Complexes Based on an Unsymmetric Ligand Framework: Structures, Spectroscopic Features, and Redox Properties.” *Inorganica Chimica Acta* **2014**, *421*, 559-567. doi: [10.1016/j.ica.2014.07.018](https://doi.org/10.1016/j.ica.2014.07.018)
9. Bittner, M.M.; Lindeman, S.V.; Popescu C.V.*; Fiedler, A.T.* “Dioxygen Reactivity of Biomimetic Fe(II) Complexes with Noninnocent Catecholate, *o*-Aminophenolate, and *o*-Phenylenediamine Ligands.” *Inorganic Chemistry* **2014**, *53*, 4047-4061. doi: [10.1021/ic403126p](https://doi.org/10.1021/ic403126p)
8. Baum, A.E.; Lindeman, S.V.; Fiedler, A.T.* “Preparation of a Semiquinonate-Bridged Diiron(II) Complex and Elucidation of its Geometric and Electronic Structures.” *Chemical Communications* **2013**, *49*, 6531-6533. doi: [10.1039/c3cc4298of](https://doi.org/10.1039/c3cc4298of)
7. Wang, D.; Lindeman, S.V., Fiedler, A.T.* “Intramolecular Hydrogen Bonding in Cu(II) Complexes with 2,6-Pyridinedicarboxamide Ligands: Synthesis, Structural Characterization, and Physical Properties.” *European Journal of Inorganic Chemistry* **2013**, 4473-4484. doi: [10.1002/ejic.201300579](https://doi.org/10.1002/ejic.201300579)
6. Bittner, M.M.; Kraus, D.; Lindeman, S.V.; Popescu, C.V.*; Fiedler, A.T.* “Synthetic, Spectroscopic and DFT Studies of Iron Complexes with Iminobenzo(semi)quinone Ligands: Implications for *o*-Aminophenol Dioxygenases.” *Chemistry – A European Journal* **2013**, *19*, 9686-9698. doi: [10.1002/chem.201300520](https://doi.org/10.1002/chem.201300520)
5. Park, H.; Bittner, M.M.; Baus, J.S.; Lindeman, S.V.; Fiedler, A.T.* “Fe(II) Complexes That Mimic the Active Site Structure of Acetylacetonate Dioxygenase: O₂ and NO Reactivity.” *Inorganic Chemistry* **2012**, *51*, 10279-10289. doi: [10.1021/ic3012712](https://doi.org/10.1021/ic3012712)
4. Baum, A.E.; Park, H.; Wang, D.; Lindeman, S.V.; Fiedler, A.T.* “Structural, Spectroscopic, and Electrochemical Properties of Nonheme Fe(II)-Hydroquinonate Complexes: Synthetic Models of Hydroquinone Dioxygenases.” *Dalton Transactions* **2012**, *41*, 12244-12253. doi: [10.1039/c2dt31504a](https://doi.org/10.1039/c2dt31504a) (IF = 3.81; 12 Citations)
3. Bittner, M.M.; Lindeman, S.V.; Fiedler, A.T.* “A Synthetic Model of the Putative Fe(II)-Iminobenzosemiquinonate Intermediate in the Catalytic Cycle of *o*-Aminophenol Dioxygenases.” *Journal of the American Chemical Society* **2012**, *134*, 5460-5463. (This paper was selected for the “Models of Metalloenzymes” virtual issue). doi: [10.1021/ja212163t](https://doi.org/10.1021/ja212163t) (IF = 10.68; 35 Citations)

2. Bittner, M.M.; Baus, J.S.; Lindeman, S.V.; Fiedler, A.T.* “Synthesis and Structural Characterization of Iron(II) Complexes with Tris(imidazolyl)phosphane Ligands: A Platform for Modeling the 3-Histidine Facial Triad of Nonheme Fe Dioxygenases.” *European Journal of Inorganic Chemistry* **2012**, 1848-1856. doi: [10.1002/ejic.201101282](https://doi.org/10.1002/ejic.201101282) (IF = 3.12; 14 Citations)
1. Park, H.; Baus, J.S.; Lindeman, S.V.; Fiedler, A.T.* “Synthesis and Characterization of Fe(II) β -Diketonate Complexes with Relevance to Acetylacetonate Dioxygenase: Insights into the Electronic Properties of the 3-His Facial Triad.” *Inorganic Chemistry* **2011**, 50, 11978–11989. doi: [10.1021/ic2011115s](https://doi.org/10.1021/ic2011115s) (IF = 4.60; 25 Citations)

Publications from Prior Research Activities (Pre-Marquette University)

19. Xue, G.; Geng, C.; Ye, S.; Fiedler, A.T.; Neese, F.*; Que, L.* “Hydrogen Bonding Effects on the Reactivity of $[X-Fe^{III}-O-Fe^{IV}=O]$ (X = OH, F) Complexes towards C–H Bond Cleavage.” *Inorganic Chemistry* **2013**, 52, 3976–3984.
18. Fiedler, A.T.;[†] Van Heuvelen, K.M.;[†] Shan, X.; De Hont, R.F.; Meier, K.K.; Bominaar, E.L.*; Münck, E.*; Que, L.* “An $[O=Fe^V=NR]^+$ Center Formed by One-Electron Oxidation of an Oxoiron(IV) Complex.” *Proceedings of the National Academy of Sciences, U.S.A.* **2012**, 109, 11933-11938. ([†] = co-first authors).
17. Fiedler, A.T.; Que, L.* “Reactivities of Fe(IV) Complexes with Oxo, Hydroxo, and Alkylperoxo Ligands: An Experimental and Computational Study.” *Inorganic Chemistry* **2009**, 48, 11038-11047.
16. Martinho M.; Xue, G.; Fiedler A.T.; Que L.*; Bominaar E.L.; Münck E.* “Mössbauer and DFT Study of the Ferromagnetically Coupled Diiron(IV) Precursor to a Complex with an $Fe^{IV}_2(\mu-O)_2$ Diamond Core.” *Journal of the American Chemical Society* **2009**, 131, 5823-5830.
15. Xue, G.; Fiedler, A.T.; Martinho, M.; Münck, E.*; Que, L.* “Insights into the P-to-Q Conversion in the Catalytic Cycle of Methane Monooxygenase from a Synthetic Model System.” *Proceedings of the National Academy of Sciences, U.S.A.* **2008**, 105, 20615-20620
14. Fiedler, A.T.; Shan, X.; Mehn, M.P.; Kaizer, J.; Torelli, S.; Frisch, J.R.; Kodera, M.; Que, L.* “Spectroscopic and Computational Studies of $(\mu-oxo)(\mu-1,2-Peroxo)$ diiron(III) Complexes of Relevance to Nonheme Diiron Oxygenase Intermediates.” *Journal of Physical Chemistry A* **2008**, 112, 13037-13044.
13. Ray, K.; England, J.; Fiedler, A.T.; Martinho, M.; Münck, E.; Que, L.* “An Inverted and More Oxidizing Isomer of $[Fe^{IV}(O)(TMC)(NCCH_3)]^{2+}$.” *Angewandte Chemie International Edition* **2008**, 47, 8068-8071.
12. Xue, G.; Wang, D.; De Hont, R.; Fiedler, A.T.; Shan, X.; Münck, E.; Que, L.* “A Synthetic Precedent for the $[Fe^{IV}_2(O)_2]$ Diamond Core Proposed for Methane Monooxygenase Intermediate Q.” *Proceedings of the National Academy of Sciences* **2007**, 104, 20713-20718.
11. Fiedler, A.T.; Brunold, T.C.* “Spectroscopic and Computational Studies of Ni^{3+} Complexes with Mixed S/N Ligation: Implications for the Active Site of Nickel Superoxide Dismutase.” *Inorganic Chemistry* **2007**, 46, 8511-8523 (Chosen for cover art).

10. Jensen, M.P.; Mairata i Payeras, A; Fiedler, A.T.; Costas, M.; Kaizer, J.; Stubna, A.; Münck, E.; Que, L.* “Kinetic Analysis of the Conversion of Nonheme Alkylperoxoiron(III) Species to Iron(IV) Complexes.” *Inorganic Chemistry* **2007**, *46*, 2398-2408.
9. Fiedler, A. T.; Brunold, T. C.* “Spectroscopic and Computational Insights into the Geometric, Electronic, and Magnetic Properties of the H-Cluster of Fe-Only Hydrogenases and Relevant Model Complexes”, *Chemtracts-Inorganic Chemistry* **2005**, *18*, 653-666.
8. Fiedler, A.T.; Brunold, T.C.* “Computational Studies of the H-Cluster of Fe-Only Hydrogenases: Geometric, Electronic, and Magnetic Properties, and their Dependence on the [Fe₄S₄] Cubane.” *Inorganic Chemistry* **2005**, *44*, 9322-9334.
7. Fiedler, A.T.; Bryngelson, P.A.; Maroney, M.J.; Brunold, T.C.* “Spectroscopic and Computational Studies of Ni Superoxide Dismutase: Electronic Structure Contributions to Enzymatic Function.” *Journal of the American Chemical Society* **2005**, *127*, 5449-5462.
6. Fiedler, A.T.; Brunold, T.C.* “Combined Spectroscopic/Computational Study of Binuclear Fe(I)-Fe(I) Complexes: Implications for the Fully-Reduced Active-Site Cluster of Fe-Only Hydrogenases.” *Inorganic Chemistry* **2005**, *44*, 1794-1809.
5. Fiedler, A.T.; Halfen, H.L.; Halfen, J.A.; Brunold, T.C.* “Synthesis, Structure Determination, and Spectroscopic/ Computational Characterization of a Series of Fe(II)-Thiolate Model Complexes: Implications for Fe-S Bonding in Superoxide Reductases.” *Journal of the American Chemical Society* **2005**, *127*, 1675-1689.
4. Krzystek, J.*; Fiedler, A.T.; Sokol, J. J.; Ozarowski, A.; Zvyagin, S.A.; Brunold, T.C.*; Long, J.R.; Brunel, L.-C.; Telser, J.* “Pseudooctahedral Complexes of Vanadium(III): Electronic Structure Investigation by Magnetic and Electronic Spectroscopy.” *Inorganic Chemistry* **2004**, *43*, 5645-5658.
3. Fox, D.C.; Fiedler, A.T.; Halfen, H.L.; Brunold, T.C.*; Halfen, J.A.* “Electronic Structure Control of the Nucleophilicity of Transition Metal-Thiolate Complexes: An Experimental and Theoretical Study.” *Journal of the American Chemical Society* **2004**, *126*, 7627-7638.
2. Krzystek, J.; Zvyagin, S.A.; Ozarowski, A.; Fiedler, A.T.; Brunold, T.C.*; Telser, J.* ”Definitive Spectroscopic Determination of Zero-Field Splitting in High-Spin Cobalt(II).” *Journal of the American Chemical Society* **2004**, *126*, 2148-2155.
1. Reich, H.J.*; Sanders, A.W.; Fiedler, A.T.; Bevan, M.J. “The Effect of HMPA on the Reactivity of Epoxides, Aziridines, and Alkyl Halides with Organolithium Reagents.” *Journal of the American Chemical Society* **2002**, *124*, 13386-13387.

External Research Funding at Marquette University

5. Agency: National Science Foundation (Division of Chemistry)
Title: “MRI: Track 1 Acquisition of an X-ray Diffraction Instrument for Research and Education in Southeast Wisconsin.”
Award Number: CHE-2320762
Inclusive Dates: 9/1/2023– 8/31/2026
Amount Awarded: \$350,188
Role: Co-PI (other co-PIs: James Gardinier, Nicholas Reiter).

4. Agency: National Science Foundation (Division of Chemistry)
Title: “Collaborative Research: Mechanistic Studies on Fe-Type Nitrile Hydration Catalysts.”
Award Number: CHE-1900562
Inclusive Dates: 9/1/2022– 8/31/2025
Amount Awarded: \$391,121 (MU total); \$255,635 (MU direct costs)
Role: Co-PI (other PIs: Brian Bennett, Marquette University, Richard Holz, Colorado School of Mines).

3. Agency: National Science Foundation (Division of Chemistry)
Title: “Investigating the Dioxygen Activation Mechanisms of Biologically Relevant Nonheme Iron Complexes”
Award Number: CHE-1900562
Inclusive Dates: 9/1/2019 – 8/31/2023
Amount Awarded: \$455,279 (total); \$309,453 (direct costs)
Role: PI

2. Agency: National Institutes of Health (NIGMS)
Title: “Synthetic, Spectroscopic, and Computational Investigations of Thiol Oxidation by Nonheme Iron Enzymes”
Award Number: 1R15GM126522-01
Inclusive Dates: 9/10/2017 – 8/31/2021
Amount Awarded: \$442,528 (total); \$300,000 (direct costs)
Role: PI

1. Agency: National Science Foundation (Division of Chemistry)
Title: “CAREER: Biomimetic Chemistry Relevant to Nonheme Iron Dioxygenases Involved in Bioremediation Processes”
Award Number: CHE-1056845
Inclusive Dates: 3/1/2011 – 2/28/2017
Amount Awarded: \$590,000 (total); \$417,196 (direct costs)
Role: PI

Papers Presented at Scientific Meetings (only includes those instances when Adam Fiedler was the presenting author)

Conference Papers from Research Performed at Marquette University

12. Fiedler, A.T.; Devkota, L.; Kumar, P.; Santalucia, D.J.; Ozerov, M.; Lindeman, S.V. “Dioxygen Activation by Bioinspired Fe and Co Complexes with Noninnocent Ligands.” Gordon Research Conference on Metals in Biology, Ventura, CA, United States, January **2023**.
11. Fiedler, A.T.; Kumar, P.; Lindeman, S.V. “Metal-Ligand Cooperativity in the O₂ Reactivity of Bioinspired Iron and Cobalt Complexes.” 264th ACS National Meeting, Chicago, Illinois, United States, August **2022**.
10. Fiedler, A.T.; Kumar, P.; Lindeman, S.V. “Probing the dioxygen reactivity of biologically-relevant iron and cobalt complexes with redox-active ligands.” 261st ACS National Meeting (Virtual Format), April **2021**.
9. Fiedler, A.T.; Ekanayake, D.M.; Lindeman, S.V. “Nonheme Iron-Thiolate Complexes of Relevance to Sulfoxide Synthases.” Gordon Research Conference on Metals in Biology, Ventura, CA, United States, January **2020**.
8. Fiedler, A.T.; Fischer, A.A.; Kumar, P.; Popescu, C.V.; Lindeman, S.V. “Mechanistic Studies of Nonheme Iron Dioxygenase Models.” Gordon Research Conference on Inorganic Reaction Mechanisms, Galveston, TX, United States, March **2019**.
7. Fiedler, A.T.; Fischer, A.A.; Lindeman, S.V. “Detection and Characterization of Short-Lived Intermediates in the Reaction of Synthetic Dioxygenase Models with Dioxygen.” Gordon Research Conference on Metals in Biology, Ventura, CA, United States, January **2018**.
6. Fiedler, A.T.; Fischer, A.A.; Lindeman, S.V. “Relationship between Electronic Structure and Reactivity in Nonheme Dioxygenase Models.” 253rd ACS National Meeting & Exposition, San Francisco, CA, United States, April **2017**.
5. Fiedler, A.T.; Fischer, A.A.; Lindeman, S.V. “Modeling Catalytic Intermediates of the Thiol Dioxygenases.” 251st ACS National Meeting & Exposition, San Diego, CA, United States, March **2016**. (Invited presentation in the “*Metal-Oxygen Oxidants in Synthesis & Biology: Beyond Metal- Oxo Species*” symposium).
4. Fiedler, A.T.; Bittner, M.M.; Baum, A.E.; Lindeman, S.V.; Popescu, C.V. “Biologically relevant Fe(II) complexes featuring noninnocent ligands.” 248th ACS National Meeting & Exposition, San Francisco, CA, United States, August **2014**. (Invited presentation in the “*Inorganic Chemistry of Neurobiology, Immunology and Bioenergy: New Faces*” symposium).
3. Fiedler, A.T.; Bittner, M.M.; Baum, A.E.; Lindeman, S.V. “Nonheme iron dioxygenase models with redox active ligands.” 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April **2013**.

2. Fiedler, A.T.; Bittner, M.M.; Baum, A.E.; Lindeman, S.V. “Iron centers bound to substrate radicals: Mechanistic implications for nonheme Fe dioxygenases.” Gordon Research Conference on Metals in Biology, Ventura, CA, United States, January **2013**.
1. Fiedler, A.T.; Park, H.; Baus, J.S.; Lindeman, S.V. “Biomimetic studies of nonheme iron dioxygenases with unusual substrates and coordination environments.” 15th International Conference of Biological Inorganic Chemistry, Vancouver, Canada, August **2011**.

Conference Papers from Work Completed Prior to Joining Marquette University

5. Fiedler, A.T.; Que, L; Brunold, T.C. “Synthetic, spectroscopic, and computational approaches to the study of Fe- and Ni-containing enzymes.” 236th ACS National Meeting & Exposition, Philadelphia, PA, United States, August **2008**.
4. Fiedler, A.T.; Que, L. “Pathways to high-valent nonheme iron intermediates: Oxo- and alkylperoxo-iron(IV) species from a common precursor.” 235th ACS National Meeting & Exposition, New Orleans, LA, United States, April **2008**.
3. Fiedler, A.T.; Que, L. “The effect of protonation state on the reactivity of ferryl units: Studies of synthetic Fe^{IV}-O(H) complexes.” 13th International Conference of Biological Inorganic Chemistry, Vienna, Austria, August **2007**.
2. Fiedler, A.T.; Bryngelson, P.A.; Maroney, M.J.; Brunold T.C. “Ni superoxide dismutase: Insights into electronic structure and catalytic mechanism obtained using a combined spectroscopic/computational approach.” 12th International Conference on Biological Inorganic Chemistry, Ann Arbor, MI, United States, August **2005**.
1. Fiedler, A.T.; Bryngelson, P.A.; Maroney, M.J.; Brunold T.C. “Spectroscopic and computational studies of Ni superoxide dismutase: Insights into electronic structure and catalytic mechanism.” Gordon Research Conference Graduate Research Seminar on Bioinorganic Chemistry, Ventura, CA, United States, January **2005**.

Invited Lectures (*All delivered since joining Marquette University*)

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| 23. Carnegie Mellon University
Department of Chemistry | November 10, 2023 |
| 22. University of Alabama – Birmingham
Department of Chemistry | October 27, 2022 |
| 21. University of Wisconsin – Milwaukee
Department of Chemistry & Biochemistry | March 18, 2022 |
| 20. University of Wisconsin – Oshkosh
Department of Chemistry | March 11, 2022 |

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| 19. Ursinus College (Collegetown, PA)
Department of Chemistry | November 22, 2021 |
| 18. St. Thomas University (St. Paul, MN)
Department of Chemistry | November 16, 2018 |
| 17. University of Montana
Department of Chemistry & Biochemistry | November 5, 2018 |
| 16. College of St. Benedict & St. John's University
Department of Chemistry | April 20, 2018 |
| 15. Knox College
Department of Chemistry | February 8, 2018 |
| 14. New Mexico State University
Department of Chemistry & Biochemistry | October 18, 2017 |
| 13. University of Minnesota
Department of Chemistry | May 10, 2016 |
| 12. University of Wisconsin – La Crosse
Department of Chemistry and Biochemistry | April 22, 2016 |
| 11. Northern Michigan University
Department of Chemistry | April 17, 2015 |
| 10. University of Wisconsin – Eau Claire
Department of Chemistry | October 17, 2014 |
| 9. University of Wisconsin – Madison
Department of Chemistry | April 9, 2014 |
| 8. North Dakota State University
Department of Chemistry and Biochemistry | March 13, 2014 |
| 7. University of Miami
Department of Chemistry | February 28, 2014 |
| 6. University of Kansas
Department of Chemistry | November 15, 2013 |
| 5. Marquette University
Department of Biological Sciences | November 8, 2013 |
| 4. Ohio University
Department of Chemistry and Biochemistry | October 21, 2013 |
| 3. Indiana University Purdue University – Fort Wayne
Department of Chemistry | March 1, 2013 |
| 2. Roosevelt University
Biological, Chemical, and Physical Sciences | February 28, 2011 |
| 1. Medical College of Wisconsin
Department of Biophysics | December 10, 2010 |

Teaching Experience *(All courses were taught at Marquette University)*

Course Number	Course Title	Credits	Sem/Year	Number of Students
CHEM 1002	General Chemistry 2	4 cr.	Fall 2023	39
CHEM 1013(H)	General Chemistry 1 for Majors (and Honors Students)	4 cr.	Fall 2022	23
CHEM 1014(H)	General Chemistry 2 for Majors (and Honors Students)	4 cr.	Spring 2022	23
CHEM 1013(H)	General Chemistry 1 for Majors (and Honors Students)	4 cr.	Fall 2021	22
CHEM 1002H	Honors General Chemistry 2	4 cr.	Spring 2021	43
CHEM 1001	General Chemistry 1	4 cr.	Fall 2020	99
CHEM 6301	Advanced Inorganic Chemistry	3 cr.	Spring 2020	7
CHEM 1013	General Chemistry 1 for Majors (and Honors Students)	4 cr.	Fall 2019	24
CHEM 1001	General Chemistry 1	4 cr.	Spring 2019	85
CHEM 4931	Topics in Chemistry	1 cr.	Fall 2018	6
CHEM 1013(H)	General Chemistry 1 for Majors (and Honors Students)	4 cr.	Fall 2018	24
CHEM 6301	Advanced Inorganic Chemistry	3 cr.	Spring 2018	11
CHEM 1013(H)	General Chemistry 1 for Majors (and Honors Students)	4 cr.	Fall 2017	24
CHEM 1013(H)	General Chemistry 1 for Majors (and Honors Students)	4 cr.	Fall 2016	16
CHEM 1001	General Chemistry 1	4 cr.	Spring 2016	87
CHEM 1013(H)	General Chemistry 1 for Majors (and Honors Students)	4 cr.	Fall 2015	24
CHEM 1001	General Chemistry 1	4 cr.	Spring 2015	64
CHEM 4430 / 5330	Inorganic Chemistry (Undergraduate / Graduate)	3 cr.	Fall 2014	12
CHEM 1001	General Chemistry 1	4 cr.	Spring 2014	92
CHEM 6931	Topics in Chemistry: Biological Inorganic Chemistry	3 cr.	Fall 2013	7
CHEM 1001	General Chemistry 1	4 cr.	Fall 2012	262
CHEM 1001	General Chemistry 1	4 cr.	Spring 2012	94
CHEM 6931	Topics in Chemistry: Biological Inorganic Chemistry	3 cr.	Fall 2011	7
BIOL 4931	Topics in Biochemistry	1 cr.	Fall 2011	4

CHEM 6301	Advanced Inorganic Chemistry	3 cr.	Spring 2011	8
CHEM 4430 / 5330	Inorganic Chemistry (Undergraduate / Graduate)	3 cr.	Fall 2010	18
CHEM 6931	Topics in Chemistry: Biological Inorganic Chemistry	3 cr.	Spring 2010	6
CHEM 4430 / 5330	Inorganic Chemistry (Undergraduate / Graduate)	3 cr.	Fall 2009	10
CHEM 3320	Inorganic Synthesis	2 cr.	Fall 2009	5

Teaching and Mentoring in Research

Postdoctoral Researchers

Danushka Ekanayake, February 2019 – August 2022; (Ph.D. Department of Chemistry, Wayne State University, Detroit, MI).

Heaweon Park, January 2010 – January 2012; (Ph.D. Department of Chemistry, University of Iowa, Iowa City, IA).

Graduate Students Advisees

Aneesha Abraham October 2023 – present

Delanie Huntoon October 2022 – present

Patrick Sheridan October 2021 – present

Laxmi Devkota August 2019 – present

Praveen Kumar Ph.D. in May 2022; Doctoral Dissertation: *“Synthesis and Characterization of Biomimetic Co and Fe Complexes with Trispyrazolylborate Ligands.”*

Hayden Holland November 2018 – May 2019

Anne A. Fischer Ph.D. in April 2018; Doctoral Dissertation: *“Synthesis and Characterization of Biomimetic Models of Mononuclear Nonheme Iron Dioxygenases and their Reactive Intermediates.”*

Timothy Schluechtermann November 2014 – May 2016

Amanda E. Baum Ph.D. in March 2016; Doctoral Dissertation: *“Synthesis and Characterization of Biologically Relevant Fe(II) Complexes Containing Redox-Active (Hydro)quinone Ligands.”*

Denan Wang Ph.D. in November 2015; Doctoral Dissertation: *“Ligand Frameworks for Transition-Metal Complexes that Model Metalloenzyme Active Sites.”*

Xixi Hong	M.S. in August 2014; Masters Thesis: “ <i>Synthesis, Characterization, and Reactivity Studies of Fe(II) Complexes with Relevance to the Radical SAM Enzymes.</i> ”
Michael M. Bittner	Ph.D. in August 2014; Doctoral Dissertation: “ <i>Investigations of Synthetic Models of Mononuclear Nonheme Iron Dioxygenases.</i> ”
Jacob S. Baus	M.S. in January 2012; Masters Thesis: “ <i>Synthesis and Characterization of Iron(II) Complexes Modeling the Active Site Structures of Nonheme Iron Dioxygenases</i> ”

Undergraduate research advisees

Ellie Balensiefen	Spring 2022 – present
Alex Pienkos	Summer 2021 – present
Mackenzie Culver	Spring 2022
Joshua Michel	Fall 2021
Max Casey	Spring 2020 – Spring 2021
Ellie McNeal	Fall 2018 – Fall 2019
Nicholas Ollison	Spring 2019
Alexandra Guzek	Fall 2016 – Spring 2018
Callie Troutfetter	Spring 2017
Maurice Sharpe	Summer 2012 – McNair Scholar, Fall 2012, Spring 2013
Jordon Sievers	Fall 2010, Spring 2011, Fall 2011
Robert Patek	Spring 2010
Alex Bissegegr	Spring 2010

Service Activities

Committee Service at Marquette University

Departmental:	Chair	July 2022 – present
	Assistant Chair	Summer 2021 – Summer 2022
	Graduate Committee	2017 – 2021
	(Chair)	Spring 2018
	GRAC	2010 – Summer 2022
	(Chair)	2014 – 2021
	Honors in Chemistry Director	2018 – 2022
	X-ray Oversight Committee	2010 – present
	(Chair)	2019 – present
	Faculty Search Committee	2011, 2012, 2016, 2018
	Director of 1 st -Year Labs Search Committee	2016
	Administrative Assistant Search Committee	2014
	Library Committee	2009 – 2012; 2013 – 2016
	SAACS Advisor	2009 – 2011

College: Natural Sciences Area P&T Committee September 2020 – present
(Chair) September 2021 – present
Honors Faculty Advisory Council September 2014 – May 2022
Poster Judge for Big East Research Symposium February 2022
Arts & Sciences Scholarship Competition February 2011

University: University P&T Committee September 2021 – May 2022

External Reviewing

Journals: ACS Journal, *Journal of the American Chemical Society*
ACS Journal, *Inorganic Chemistry* (Noteworthy reviewer; 2020-2021)
ACS Journal, *Journal of Physical Chemistry*
ACS Journal, *ACS Catalysis*
ACS Journal, *ACS Omega*
ACS Journal, *Journal of Agricultural and Food Chemistry*
Wiley Journal, *Chemistry – A European Journal*
Wiley Journal, *European Journal of Inorganic Chemistry*
Wiley Journal, *ChemCatChem*
Wiley Journal, *Zeitschrift für Anorganische und Allgemeine Chemie*
Royal Society of Chemistry Journal, *Chemical Science*
Royal Society of Chemistry Journal, *Chemical Communications*
Royal Society of Chemistry Journal, *Dalton Transactions*
Springer Journal, *Journal of Biological Inorganic Chemistry*
Elsevier Journal, *Journal of Inorganic Biochemistry*
Elsevier Journal, *Inorganica Chimica Acta*
Elsevier Journal, *Polyhedron*

Funding Agencies: National Science Foundation, Division of Chemistry
American Chemical Society – Petroleum Research Fund
Stanford Synchrotron Radiation Lightsource (SSRL)
National High Magnetic Field Laboratory (NHMFL)

Active Collaborations

1. Dr. Brian Bennett (Marquette University): assists in the collection and analysis of electron paramagnetic resonance (EPR) data.
2. Dr. Codrina Popescu (St. Thomas University): conducts Mössbauer experiments involving iron-containing complexes generated at Marquette University.
3. Dr. John Berry (University of Wisconsin – Madison): collects and analyzes magnetic susceptibility (SQUID) data on complexes generated at Marquette University.
4. Jurek Krzystek (National High Magnetic Field Laboratory): studies complexes generated at Marquette University with high-field and -frequency EPR (HF-ERP).
5. Mykhaylo Ozerov (National High Magnetic Field Laboratory): measures far-infrared magnetic spectroscopic (FIRMS) data on complexes generated at Marquette University.
6. Dr. Pinghua Liu (Boston University): provides samples of nonheme iron enzymes for spectroscopic and computational analysis in my laboratory.