

Julia A. Kovacs

Address:

Department of Chemistry, Campus Box 351700
University of Washington
Seattle, WA 98195 USA
Office: (206)543-0713; Fax: (206)685-8665
Email: kovacs@uw.edu
Web page: <http://faculty.washington.edu/~kovacs/>

Present Rank: Professor

Educational Background:

<u>Institution</u>	<u>Degree</u>	<u>Dates</u>
Michigan State University	BS	9/77-6/81
Harvard University	Ph.D.	9/81-8/86

Employment Record:

University of Washington	Professor	9/01–present
University of Washington	Associate Professor	9/94–9/01
University of Washington	Assistant Professor	9/88-9/94
University of California, Berkeley	Postdoctoral Research Associate (Robert Bergman)	9/86-8/88
Harvard University	Teaching Asst./Research Asst. (Richard H. Holm)	9/81-8/86
Ball Corporation	Summer Intern, Chemist	6/80-8/80
Michigan State University	Research Assistant (Bruce Averill)	6/78-5/80, 9/80-8/81

Professional or Governmental Service Activities

Guest Editor, Holm memorial issue of *J. Inorg. Biochem.*
Chair ACS Division of Inorganic Chemistry (2020)
ACS Inorganic Chemistry Lectureship Selection Committee (2019-2020)
Chair-Elect ACS Division of Inorganic Chemistry (2019)
Series Editor for the Royal Society of Chemistry's Metallobiology Series, (2017-present)
Ad Hoc committee member, advisory to the Provost of Harvard University (5/2014)
Member of SSRL Review Panel, Palo Alto, CA, (2014-present)
Member of NIH Special Study Section (May 2013)
Plenary speaker, BC Inorganic Discussion Group, Squamish, BC (May 2012)
Plenary speaker, International Conference on Biological Inorganic Chemistry (2011)
Saunders Endowed Lectureship (2011)
Elected Executive Committee Member at Large, ACS Division of Inorg. Chemistry (2012-2015)
Editorial Board of "BioInorganic Reaction Mechanisms" (11/10– 12/13)
Editorial Advisory Board of "Inorganic Chemistry" (1/1/09–12/31/12)
Elected Council member of the Society for Biological Inorganic Chemistry (7/08-7/12)
Chair of the "Metals in Biology" Gordon Research Conference (2008)
Chair of the Bioinorganic subdivision of the ACS Division of Inorganic Chemistry (2007)
Vice-Chair of the "Metals in Biology" Gordon Research Conference (2007)
Member of the organizing committee, 15th International Conference on Biological Inorganic Chemistry (ICBIC), Vancouver, B. C. (2011)
Vice-Chair–Elect for the "Metals in Biology" Gordon Research Conference (2006)

Professional or Governmental Service Activities (cont.)

Ad Hoc Member of NIH Macromolecular Structure and Function (MSF-A) Study Section (Feb, 2005)

Organizer and Chair of the "Non-heme Iron Chemistry in Biology" symposium at the 227th ACS Meeting in Anaheim, March 2004.

Editorial Advisory Board of "Journal of Biological Inorganic Chemistry" (1/1/04–12/31/07)

Session Chair for "Nitrogenase Mimetic Chemistry" session at the "Metal Ions in Biology" Gordon Conference, Ventura, CA (Jan, 2004)

Ad Hoc Member of NIH Metallobiochemistry (BMT) Study Section (Oct, 2003)

Organizer of the first Ronald Breslow Award Symposium, held at the 225th ACS meeting in New Orleans, March 2003

Ad Hoc Member of NIH Metallobiochemistry (BMT) Study Section (Oct, 2002)

Elected Councilor of the American Chemical Society's Division of Inorganic Chemistry (02–04)

Discussion Leader for the "Model Compounds and Metalloenzyme Mimics" Session at the Gordon Research Conference, Graduate Research Seminar in Bioinorganic Chemistry, January, 2000

Member of the Board of "Expert Analysts" for *ChemTracts–Inorganic Chemistry* (98– 01).

Member of the Board of Editors for *Inorganic Chemistry* (1/97- 1/00).

Member of NIH Metallobiochemistry (BMT) Study Section (10/96–9/99)

Ad Hoc Member of NIH Metallobiochemistry (BMT) Study Section (Oct, 1995).

Alternate member of Hanford Advisory Board (6/94–12/94).

American Chemical Society, Divisions of Inorganic Chemistry and Bioinorganic Chemistry.

Reviewer for ACS Journals (JACS, Science, Nature, Inorganic Chemistry, Polyhedron, Chem. Rev., J. Inorg. Biochem.)

Organizer/Moderator of 1990 Pauling Award Symposium

Member of the ACS, Inorganic Division, Nominations and Symposia Planning Committee (1991/1992)

Chairman of Inorganic Chemistry for the 47th Northwest Regional ACS Meeting in Missoula, Montana, June, 1992.

Honors (selected recent)

2023 Recipient of the Franklin Award, Stony Brook University

2022 Elected Fellow of the American Academy of Sciences

2022 Faraday Discussions Invited Speaker, Indian Institute of Technology (IIT), Kanpur, India

2021 Manuscript (*JACS* **2021**, 143, ASAP) *highlighted in "JACS Select" as a "recent significant publication"*

2021 Plenary Speaker, 14th International Symposium on Activation of Dioxygen and Homogeneous, Oxidation Catalysis (ADHOC2021), Girona, Spain.

2020 Invited Speaker, Metals in Biology Gordon Research Conference, Ventura CA.

2014 DAAD scholarship for Julian Rees (Kovacs grad student) to work with Collaborators at the Max Planck Institute for Energy Conversion.

2013 Manuscript (*JACS*. **2013** 135, 5631-5640) *highlighted in a JACS/IC virtual issue as "a significant recent publication"*

2012 Plenary speaker, BC Inorganic Discussion Group, Squamish, BC

2011 Saunders Endowed Lecturer, Texas Christian University, Fort Worth, TX

2011 Plenary speaker, 15th International Conference on Biological Inorganic Chemistry (ICBIC), Vancouver, BC

2011 Manuscript (*JACS* **2011**, 133, 1419-1427) *highlighted in "JACS Select" as a "recent significant publication"*

Research Grants or Contracts:**Present:**

National Institutes of Health (PI) (RO1 GM123062)	(4/1/22- 3/31/26)	\$1,711,228 /4 years
"Understanding How Thiolates Promote Dioxygen Chemistry"		

Research Grants or Contracts: (cont.)**Present:**

National Science Foundation (PI) (CHE-1954387)	(5/15/20- 8/31/23)	\$ 449,516/3 years
"Understanding the Mechanism of Mn-Promoted H ₂ O Oxidation"		

Proposals Withdrawn Due to Procurement of Funds Elsewhere:

National Institutes of Health (PI) (R01 GM125792)	(9/5/17- 9/4/21)	\$1,191,343//4 years
"Small Molecule Chemistry Aimed at Understanding the Mechanism of Photosynthetic H ₂ O Oxidation"—large overlap with NSF-funded		

Past Funded:

National Institutes of Health (PI) (RO1 GM123062)	(4/1/18- 3/31/22)	\$1,674,000 /4 years
"Understanding How Thiolates Promote Dioxygen Chemistry"		
National Science Foundation (PI) (CHE-1664682)	(7/15/17- 6/30/20)	\$ 449,841/3 years
"Understanding the Mechanism of Mn-Promoted H ₂ O Oxidation"		
National Institutes of Health (PI) (RO1 GM123062-01-S1)	(6/15/18- 6/14/19)	\$ 89,800 /1 year
"Admin Supplement to purchase a Low Temperature Stopped-Flow Instrument"		
UW Bridge Funds (Provosts + Dean's office)	(6/4/15-4/30/16)	\$100,000
UW Transitional Support Program (ADVANCE + Chem Dept Chair matching)	(1/1/16-6/14/16)	\$40,000
National Institutes of Health (PI) (RO1 GM45881-22S1)	(6/25/15- 7/31/16)	\$81,495
National Institutes of Health (PI) (RO1 GM45881-22)	(8/1/11- 7/31/15)	\$995,419/4 years
"Structure's Influence on Reactivity in Metalloenzymes"		
DAAD Graduate Study Scholarship for grad student Julian Rees to work with collaborator, Serena DeBeer, Max Planck Institute for Energy	(10/1/14-9/30/15)	\$14,000/1 year
UW Bridge Funds (Provosts office)	(1/4/11-8/1/11)	\$100,000/8 mo.
NIH NIGMS ARRA SIRM Supplement (RO1GM45881-18S1)	(4/15/10- 3/31/11)	\$137,980/1 year
National Institutes of Health (PI) (RO1 GM45881-18)	(4/1/06- 3/31/10)	\$1,297,875/4 years
"Structure's Influence on Reactivity in Metalloenzymes"		
NSF (co-PI) (CHE-0840520)	(11/09)	\$290,000/1 year
"Purchase of an X-ray diffractometer"		
NIH Shared Instrumentation Grant (co-PI) (S10 RR023656-01)	(5/1/08- 4/30/09)	\$273,281 /1 year
"A High Field Mossbauer Instrument"		
NIH High End Instrumentation Grant Program (#S10 RR023065-01) (Co-PI, Robinson (PI))	(4/1/07- 3/31/08)	\$1,040,735/1 year
"Electron Paramagnetic Resonance (EPR)/Q-Band ENDOR Spectrometer"		
National Institutes of Health (PI) (#RO1 GM45881-16-S1)	(8/9/07)	\$23,230/1 year

"Supplement to Purchase Vac Atmospheres Dry Box"		
National Institutes of Health (PI) (# RO1 GM45881-15-S2) supplement to "Structure's Influence on Reactivity in Metalloenzymes;" minority student Alokolaro	(4/1/06- 3/31/07)	\$51,221/1 year
National Institutes of Health (# F31 GM73583-01) Fellowship for Priscilla Lugo-Mas"	(10/1/04- 9/30/06)	\$63,666/2 years
National Institutes of Health (# RO1 GM45881-14-S2) supplement for minority student Alokolaro	(4/1/04- 3/31/06)	\$102,442/2 years
National Institutes of Health (# RO1 GM45881-12-S1) supplement for minority student Lugo-Mas	(10/1/03- 3/31/04)	\$20,813
National Institutes of Health (PI) (# RO1 GM45881-14) "Structure's Influence on Reactivity in Metalloenzymes"	(4/1/02- 3/31/06)	\$1,183,037/4 years
National Institutes of Health (PI) (# RO1 GM45881-11) "Structure's Influence on Reactivity in Metalloenzymes"	(4/1/98- 3/31/02)	\$921,472/4 years
Environmental Protection Agency fellowship for grad student Jason Shearer	(1/1/01-6/30/02)	\$17,000
National Institutes of Health (PI) (RO1 GM45881-05) "H ⁺ Transfer and CH ₄ Formation in Metalloenzyme Models"	(6/95-6/98)	\$447,044/3 years
National Institutes of Health (PI) (RO1 GM45881-01A1) "Modeling the Structure and Reactivity of Ni-Hydrogenases"	(2/92-2/95)	\$305,799/3 years
University of Washington GSRF	(3/89)	\$10,596/1 year
Petroleum Research Fund (#22562-G5)	(3/90)	\$18,000/2 years
Past Attempts:		
NSF MRI (PI)	(9/1/18- 8/31/19)	\$476,970/1 year
National Institutes of Health (PI) (RO1 GM123062) "Understanding How Thiolates Promote Dioxygen Chemistry"	(4/1/17- 3/31/22)	\$2,433,478/5 years
National Institutes of Health (PI) (RO1 GM45881-23) "Structure's Influence on Reactivity in Metalloenzymes"	(4/1/16- 3/31/21)	\$2,451,485/5 years
NSF fellowship graduate student Alexandra Downing	(9/1/18 -8/31/21)	\$138, 000/3 years
DOD NDSEG fellowship graduate student Alexandra Downing	(9/1/18- 8/31/22)	\$329,227/4 years
National Institutes of Health (PI) (RO1 GM45881-23) "Structure's Influence on Reactivity in Metalloenzymes"	(8/1/15- 7/31/20)	\$2,328,942/5 years

Research publications:

85. Dedushko, M. A.; Greiner, M. B.; Downing, A. N.; Coggins, M. K.; *Kovacs, J. A. "Electronic Structure and Reactivity of Dioxygen-Derived Aliphatic Thiolate-Ligated Fe-Peroxo and Fe(IV) Oxo Compounds." *J. Am. Chem. Soc.* **2022**, *144*, 8515-8528. <https://pubs.acs.org/doi/10.1021/jacs.1c07656>
84. Downing, A. N.; Poon, P. C. Y.; Coggins, M. K.; *Kovacs, J. A. "Influence of Thiolate versus Alkoxide Ligands on the Stability of Crystallographically Characterized Mn(III)-Alkylperoxo Complexes." *J. Am. Chem. Soc.* **2021**, *143*, 6104-6113. <https://pubs.acs.org/doi/10.1021/jacs.0c13001> (featured in JACS Select)
- Spotlight on Recent JACS Publications.** "Understanding the Manganese Metalloenzyme Primary Coordination Sphere" *J. Am. Chem. Soc.* **2021**, *143*, 6023-6024. <https://doi.org/10.1021/jacs.1c04032> in the top 10% of all research outputs ever tracked by Altmetric
83. Dedushko, M.; Pikul, J.; *Kovacs, J. A. "Superoxide Oxidation by a Thiolate-Ligated Iron Complex and Anion Inhibition" *Inorg. Chem.* **2021**, *60*, 7250-7261. <https://pubs.acs.org/doi/10.1021/acs.inorgchem.1c00336>
82. Toledo, S.; Poon, P. C. Y.; Gleaves, M.; Rees, J. A.; Kaminsky, W.; *Kovacs, J. A. "Increasing Reactivity by Incorporating π -Acceptor Ligands into Coordinatively Unsaturated Thiolate-Ligated Iron(II) Complexes" *Inorg. Chim. Acta.* **2021**, *524*, 120422. <https://doi.org/10.1016/j.ica.2021.120422>.
81. Rogers, D. M.; Dedushko, M.; Kaminsky, W.; *Kovacs, J. A. "Synthetic Heterometallic "Open" NaMn₃O₄ Cubane Clusters Containing an Exchangeable Exogenous Hydroxide Ligand." **2021**, *Inorg. Chem.* Undergoing revision (# ic-2020-03594p).
80. Coggins, M. K.; Downing, A. N.; Kaminsky, W.; Kovacs, J. A. "Comparison of Two Mn^{IV}Mn^{IV}-bis-oxo complexes. *Acta. Cryst. E76.* **2020**, *E76*, 1042-1046. <https://doi.org/10.1107/S2056989020004557>
79. Dedushko, M. A.; Downing, A. N.; Coggins, M. K.; Kovacs, J. A. "Dioxygen-Derived Thiolate-Ligated Fe-Peroxo and Fe(IV) Oxo Compounds and Their Reactivity" *Manuscript in preparation*
78. Gannon, P. M.; Greiner, M. B.; Swartz, R. D.; Blakely, M. N.; *Kovacs, J. A. "Stability of a Higher Valent Fe(II) Complex Containing π -Accepting Carbonyl Ligands and a π -Donating Alkyl Thiolate. Insight Into [FeFe]-Hydrogenase Active Site Assembly, and H₂ Oxidation." *Manuscript in preparation*.
77. Blakely, M. N.; Greiner, M. B.; Downing, A. N.; Piquette, M. C.; *Kovacs, J. A. "Cryogenic Stopped-Flow Kinetic Studies Involving the Formation of a Thiolate-Ligated Fe^{III}-Superoxo." *Manuscript in preparation*.
76. Leipzig, B. K.; Gannon, P. M.; *Kovacs, J. A. "Synthesis of a Thiazolidine-Ligated Ferrous Pincer Complex." *Manuscript in preparation*.
75. Downing, A. N.; Greiner, M.; Schweitzer, D.; Rogers, D. M.; Kaminsky, W.; *Kovacs, J. A. "Influence of Ligand Constraints on the Sulfur-Oxygenation Reactivity of Thiolate-Ligated Cobalt Complexes." *Manuscript in preparation*.
74. Toledo, S.; Kaminsky, W.; *Kovacs, J. A. "Synthesis and Structure of Thiolate-Ligated Fe Complexes Containing a Ligand Scaffold Derived from N₄Py and TPA." *Manuscript in preparation*.
73. Poon, P. C. Y.; Dedushko, M. A.; Sun, X.; Yang, G.; Toledo, S.; Hayes, E. C.; Johansen, A. L.; Piquette, M. C.; Rees, J. A.; Stoll, S.; *Rybak-Akimova, E.; *Kovacs, J. A. "How Metal Ion

- Lewis Acidity and Steric Properties Influence the Barrier to Dioxygen Binding, Peroxo O-O Bond Cleavage, and Reactivity." *J. Am. Chem. Soc.* **2019**, *141*, 15046-15057. <https://pubs.acs.org/doi/10.1021/jacs.9b04729> .
72. Dedushko, M.; Schweitzer, D.; Blakely, M. N.; Swartz, R. D.; Kaminsky, W.; *Kovacs, J. A. "Geometric and Electronic Structure of a Crystallographically Characterized Thiolate-Ligated Binuclear Peroxo-Bridged Cobalt(III) Complex" *J. Biol. Inorg. Chem.* **2019**, *24*, 919-926. <https://doi.org/10.1007/s00775-019-01686-x> .
71. Blakely, M. N.; Dedushko, M.; Poon, P. C. Y.; Villar-Acevedo, G.; *Kovacs, J. A. "Formation of a Reactive, Alkyl Thiolate-Ligated Fe^{III}-Superoxo Intermediate Derived from Dioxygen." *J. Am. Chem. Soc.* **2019**, *141*, 1867-1870. <https://pubs.acs.org/doi/10.1021/jacs.8b12670>
70. Leipzig, B. K.; Rees, J.; Kawalska, J. K.; Theisen, R. M.; Kavcic, Matjaz; Chaaun Yan Poon, P.; Kaminsky, W.; DeBeer, S.; Bill, E.; *Kovacs, J. A. "How Do Ring Size and π -Donating Thiolate Ligands Affect Redox-Active, α -Imino-N-heterocycle Ligand Activation?" *Inorg. Chem.* **2018**, *57*, 1935-1949. <https://pubs.acs.org/doi/10.1021/acs.inorgchem.7b02748>
69. Acevedo-Villar, G.; Lugo-Mas, P.; Blakely, M. N.; Rees, J. A.; Ganas, A. S.; Hanada, E. M.; Kaminsky, W.; *Kovacs, J. A. "Metal-Assisted Oxygen Atom Addition to an Fe(III)-Thiolate" *J. Am. Chem. Soc.* **2017**, *139*, 119-129. <http://pubs.acs.org/doi/abs/10.1021/jacs.6b03512>
68. Rees, J. A.; Bjornsson, R.; Kawalska, J. K.; Lima, F. A.; Schlesier, J.; Sippel, D.; Weyhermuller, T.; *Einsle, O.; *Kovacs, J. A.; *DeBeer, S. "Comparative Electronic Structures of Nitrogenase FeMoco and FeVco" *Dalton. Trans.* **2017**, *46*, 2445-2455. <http://pubs.rsc.org/en/content/articlepdf/2017/dt/c7dt00128b>
67. Kowalska, J. K.; Nayyar, B.; Rees, J. A.; Schiewer, C. E.; Lee, S. C.; Kovacs, J. A.; Meyer, F.; Weyhermuller, T.; Otero, E.; DeBeer, S. "Iron L-edge X-ray Absorption and Magnetic Circular Dichroism Studies of Molecular Iron Complexes with Relevance to the FeMoco and FeVco Active Sites of Nitrogenase" *Inorg. Chem.* **2017**, *56*, 8147-8158. <http://pubs.acs.org/doi/abs/10.1021/acs.inorgchem.7b00852>
66. *Kovacs, J. A. "Tuning the Relative Stability and Reactivity of Manganese Dioxygen and Peroxo Intermediates via Systematic Ligand Modification" *Acc. Chem. Res.* **2015**, *48*, 2744-2753. <http://pubs.acs.org/doi/abs/10.1021/acs.accounts.5b00260>
65. Rees, J. A.; Martin-Diaconescu, V.; *Kovacs, J. A.; *DeBeer, S. "X-ray Absorption and Emission Study of Dioxygen Activation by a Small-Molecule Manganese Complex" *Inorg. Chem.* **2015**, *54*, 6410-6422. <http://pubs.acs.org/doi/abs/10.1021/acs.inorgchem.5b00699>
64. Brines, L. M.; Coggins, M. K.; Poon, P. C. Y.; Toledo, S.; Kaminsky, W.; Kirk, M. L.; *Kovacs, J. A. "A Water-Soluble Fe(II)-H₂O Complex with a Weak O-H Bond Transfers a Hydrogen Atom via an Observable Monomeric Fe(III)-OH." *J. Am. Chem. Soc.* **2015**, *137*, 2253-2264. <http://dx.doi.org/10.1021/ja5068405>
63. Coggins, M. K.; Brines, L. M.; *Kovacs, J. A. "Synthesis and Structural Characterization of a Series of Mn(III)-OR Complexes, Including a Water-Soluble Mn(III)-OH that Promotes Aerobic Hydrogen Atom Transfer." *Inorg. Chem.* **2013**, *52*, 12383-12393. <http://dx.doi.org/10.1021/ic401234t>
62. Coggins, M. K.; Toledo, S.; *Kovacs, J. A. "Isolation and Characterization of an Unsupported, Hydroxo-Bridged Iron(III,III)(μ -OH)₂ Diamond Core Derived from Dioxygen," *Inorg. Chem.* **2013**, *52*, 13325-13331. <http://dx.doi.org/10.1021/ic4010906>.
61. Coggins, M. K.; Sun, X.; Kwak, Y.; *Solomon, E. I.; *Rybak-Akimova, E.; *Kovacs, J. A. "Characterization of Metastable Intermediates Formed in the Reaction Between a Mn(II) Complex and Dioxygen, Including a Crystallographic Structure of a Binuclear Mn(III)-Peroxo Species," *J. Am. Chem. Soc.* **2013**, *135*, 5631-5640

- <http://dx.doi.org/10.1021/ja311166u> . Highlighted on a JACS/IC virtual issue as “a significant recent publication.”
60. Coggins, M. K.; Martin-Diaconescu, V.; DeBeer, S.; *Kovacs, J. A. “Correlation Between Structural, Spectroscopic, and Reactivity Properties Within a Series of Structurally Analogous Metastable Manganese(III)-Alkylperoxo Complexes,” *J. Am. Chem. Soc.* **2013**, *135*, 4260-4272. <http://dx.doi.org/10.1021/ja308915x>
 59. Coggins, M. K.; Toledo, S.; Shaffer, E.; Kaminsky, W.; Shearer, J.; *Kovacs, J. A. “Characterization and Dioxygen Reactivity of a New Series of Coordinatively Unsaturated Thiolate-Ligated Manganese(II) Complexes,” *Inorg. Chem.* **2012**, *51*, 6633-6644. <http://dx.doi.org/10.1021/ic300192q>
 58. Coggins, M. K.; *Kovacs, J. A. “Structural and Spectroscopic Characterization of Metastable Thiolate-Ligated Manganese(III)-Alkylperoxo Species,” *J. Am. Chem. Soc.* **2011**, *133*, 12470-12473. <http://dx.doi.org/10.1021/ja205520u> .
 57. Swartz, R. D.; Coggins, M. K.; Kaminsky, W.; *Kovacs, J. A. “Nitrile Hydration by Thiolate– and Alkoxide–Ligated Co-NHase Analogues. Isolation of Co(III)-Amidate and Co(III)-Iminol Intermediates,” *J. Am. Chem. Soc.* **2011**, *133*, 3954-3963. <http://dx.doi.org/10.1021/ja108749f>
 56. Villar-Acevedo, G.; Nam, E.; Fitch, S.; Benedict, J.; Freudenthal, J.; Kaminsky, W.; *Kovacs, J. A. “Influence of Thiolate Ligands on Reductive N–O Bond Activation. Probing the O₂[−] Binding Site of a Biomimetic SOR Analogue, and Examining the Proton-Dependent Reduction of Nitrite,” *J. Am. Chem. Soc.* **2011**, *133*, 1419-1427. <http://dx.doi.org/10.1021/ja107551u> . Highlighted on “JACS Select” website as a “recent significant publication.”
 55. Sun, N.; Dey, A.; Villar-Acevedo, G.; *Kovacs, J. A. *Darensbourg, M. Y.; *Hodgson, K. O.; *Hedman, B.; *Solomon, E. I. “S K-edge XAS and DFT Studies of High and Low Spin {FeNO}⁷ Thiolate Complexes: Exchange Stabilization of Electron Delocalization in {FeNO}⁷ and {FeO₂}⁸,” *Inorg. Chem.* **2011**, *50*, 427-436.
 54. Nam, E.; Alokolaro, P. E.; Swartz, R. D.; Gleaves, M. C.; Pikul, J. and *Kovacs, J. A. “An Investigation of the Mechanism of Formation of a Thiolate-Ligated Fe(III)-OOH,” *Inorg. Chem.* **2011**, *50*, 1592-1602. <http://dx.doi.org/10.1021/ic101776m>
 53. Lugo-Mas, P.; Taylor, W.; Schweitzer, W.; Theisen, R. M.; Xu, L.; Shearer, J.; Swartz, R. D.; Gleaves, M. C.; DiPasquale, A.; Kaminsky, W.; and *Kovacs, J. A. “Properties of Square-Pyramidal Alkyl-Thiolate Fe(III)-Complexes, Including an Analogue of the Unmodified Form of Nitrile Hydratase,” *Inorg. Chem.* **2008**, *47*, 11228 – 11236.
 52. Brines, L. M.; Villar-Acevedo, G.; Kitagawa, T.; Swartz, R. D.; Lugo-Mas, P.; Kaminsky, W.; Benedict, J. B.; and *Kovacs, J. A. “Comparison of Structurally-Related Alkoxide, Amine, and Thiolate–Ligated M^{II} (M= Fe, Co) Complexes: the Influence of Thiolates on the Properties of Biologically Relevant Metal Complexes,” *Inorg. Chim. Acta.* **2008** *361*, 1070-1078. (*special issue in honor of Ed Solomon*).
 51. Brines, L. M.; Shearer, J.; Fender, J. K.; Schweitzer, D.; Shoner, S. C.; Barnhart, D.; Kaminsky, W.; Lovell, S.; *Kovacs, J. A. “Periodic Trends within a Series of Five Coordinate, Thiolate–Ligated [M^{II}(S^{Me2}N₄(tren))]⁺ (M = Mn, Fe, Co, Ni, Cu, Zn) Complexes, Including a Rare Example of a Cu(II)-Thiolate” *Inorg. Chem.* **2007**, *46*, 9267-9277.
 50. *Kovacs, J. A.; Brines, L. M. “Understanding How the Cysteinate Contributes to the Function of the Non–Heme Iron Enzyme Superoxide Reductase” *Acc. Chem. Res.* **2007**, *40*, 501-509.
 49. Brines, L. M.; *Kovacs, J. A. “Understanding the Mechanism of Superoxide Reductase (SOR),” *Eur. J. Inorg. Chem.* **2007**, 29-38. (*invited “Microreview”*).

48. Kitagawa, T.; Dey, A.; Lugo-Mas, P.; *Solomon, E. I.; *Kovacs, J. A. "A Functional Model for the Cysteinate–Ligated Non-Heme Iron Enzyme Superoxide Reductase (SOR)," *J. Am. Chem. Soc.* **2006**, *128*, 14448-14449.
47. Lugo-Mas, P.; Dey, A.; Xu, L.; Davin, S. D.; Benedict, J.; Kaminsky, W.; *Hodgson, K. O.; *Hedman, B.; *Solomon, E. I.; *Kovacs, J. A. "How Does Single Oxygen Atom Addition Affect the Properties of an Fe-Nitrile Hydratase Analogue? The Compensatory Role of the Unmodified Thiolate," *J. Am. Chem. Soc.* **2006**, *128*, 11211-11221.
46. Dey, A.; Chow, M.; Taniguchi, K.; Lugo-Mas, P.; Davin, S. D.; Maeda, M.; *Kovacs, J. A.; *Odaka, M.; *Hedman, B.; *Hodgson, K. O.; *Solomon, E. I. "S K-edge XAS and DFT Calculations on Nitrile Hydratase: Geometric and Electronic Structure of the Non-Heme Iron Active Site," *J. Am. Chem. Soc.* **2006**, *128*, 533-541.
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35. Shearer, J.; Scarrow, R. C.; and Kovacs*, J. A. "Models For The Non-Heme Cysteinate-Ligated Iron Enzyme Superoxide Reductase: Observation and Structural Characterization By XAS of an Fe^{III}-OOH Intermediate" " *J. Am. Chem. Soc.* **2002**, *124*, 11709–11717.
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Invited Lectures:

Franklin Award lecture, Stony Brook University, 2023
Keynote Lecture, 10th Asian Biological Inorganic Chemistry Conference, Kobe, Japan, Nov 2022
Plenary Lecture, 14th International Symposium on Activation of Dioxygen and Homogeneous Oxidation Catalysis (ADHOC2021), Girona, Spain, September 2022.
Faraday Discussions, Indian Institute of Technology (IIT), Kanpur, India 2022
Metals in Biological Chemistry. C-H Activation by Metalloenzymes and Models Symposium, Pacificchem, December, 2021
University of Miami, November 2021
Colloquium Speaker, University of Rochester, September 2021
Oxford University, Oxford, England, June, 2021.
Trinity College, University of Dublin, Dublin, Ireland, May 2021.
Boston Regional Inorganic Colloquium (BRIC), May 2021.
"Ken Karlin ACS Distinguished Service in Inorganic Award" symposium, American Chemical Society Meeting, San Antonio, Texas, April, 2021.
Telluride Science Research Center (TSRC) Workshop, *Small Molecule Activation*, July 14- July 18, 2020
University of Minnesota, April 28, 2020
University of Virginia, April 15, 2020
"Creative Advances in Synthetic and Biological Coordination Chemistry" Symposium at the Philadelphia ACS Meeting, March 2020
Whitman College, January 30, 2020
Metals in Biology Gordon Research Conference, Ventura CA January 2020
University of Delaware, October 30, 2019
Johns Hopkins, October 29, 2019
MIT/Harvard, October 2-3, 2019
19th International Conference on Biological Inorganic Chemistry (ICBIC), Interlaken, Switzerland, August, 2019.
"Learning from Nature: Earth Abundant Metals for Oxidation Catalysis" Symposium at the American Chemical Society Meeting, San Diego, August, 2019.
"Bader Award Symposium in honor of Joan Broderick" at the American Chemical Society Meeting, Orlando, April, 2019.
"Memorial Symposium in honor of Elena Rybak-Akimova" at the American Chemical Society Meeting, Orlando, April, 2019.
European Biological Inorganic Chemistry Conference (EuroBIC), Birmingham, England, August 26-30, 2018
University of Tsukuba, Tsukuba, Japan, August 4-5, 2018
"Bioinspired Small Molecule Activation" symposium, 43rd International Conference on Coordination Chemistry (ICCC 2018), Sendai, Japan, July 31–Aug 2, 2018.
Korean Advanced Institute of Science and Technology (KAIST), July 29-30, 2018
Center for Biomimetic Systems, Ewha Women's University, Seoul, Korea, July 27-28, 2018.
Western Washington University, April 6, 2018.
ACS Inorganic Chemistry Award symposium in honor of Larry Que, at the 253rd American Chemical Society Meeting, San Francisco, CA, April, 2017.
Inorganic Reaction Mechanisms Gordon Conference, March, 2017
Telluride Science Research Center (TSRC) Workshop, *Small Molecule Activation*, June 20 – June 25, 2016, Telluride, CO
"Bader Award Symposium in honor of Edward Solomon" at the 251st American Chemical Society Meeting, San Diego, CA, March, 2016.
"Metal-Oxygen Oxidants in Synthesis and Biology: Beyond Metal-Oxo Species" symposium at the 251st American Chemical Society Meeting, San Diego, CA, March, 2016.
"Dioxygen Activation Chemistry of Metalloenzymes and Models," symposium at the International Chemical Congress of Pacific Basin Societies, Hawaii, December 16, 2015
Indiana University, February 20, 2015
University of Arizona, April 11, 2013

"Metal Ions in Biology" Gordon Conference, January, 2013
Plenary speaker, BC Inorganic Discussion Group, Squamish, BC (May 11-13, 2012)
Harvard University, April 3, 2012
Saunders Endowed Lecturer, Texas Christian University, Fort Worth, TX (Sept 15-16, 2011)
Plenary speaker at the 15th International Conference on Biological Inorganic Chemistry (ICBIC),
Vancouver, BC (August 7 -12, 2011)
University of California at Irvine, March 3, 2011
"Molecular Design in Bioinorganic Chemistry," symposium at the International Chemical
Congress of Pacific Basin Societies, Hawaii, December 10–15, 2010.
14th International Conference on Biological Inorganic Chemistry (ICBIC), Nagoya, Japan (July,
2009)
"Ken Karlin Cotton Award" symposium, 237th American Chemical Society Meeting, Salt Lake
City, Utah, March 22-26, 2009.
University of Connecticut, R.T. Major Lecture Series, Oct. 15, 16th, 2008
"International Symposium on Advanced Science and Biotechnology 2008", Osaka, Japan,
March 22-23, 2008
"Dioxygen Activation by Metalloenzymes and Models" symposium in Nagoya, Japan, March 19-
21, 2008
Tohoku University, Sendai, Japan, March 18, 2008
University of Oregon, February 22, 2008
National Taiwan University, December 17, 2007
International Chemical Conference in Taipei, Dec. 14-16, 2007
UC San Diego, November 9, 2007
Johns Hopkins, October 16, 2007
UC Santa Barbara, May 23, 2007
Texas A & M, April 11, 2007
University of New Mexico, Dec. 1, 2006
University of Nevada, November 17, 2006
University of Michigan, November 14, 2006
Michigan State U., Dean George Leroi symposium, Oct. 6, 2006
University of Rochester, September 18, 2006
University of Minnesota, March 2, 2006
University of Arkansas, February 13, 2006
University of Nebraska, January 17, 2006
"Dioxygen Activation Chemistry of Metalloenzymes and Models" symposium at the International
Chemical Congress of Pacific Basin Societies meeting, Hawaii, (December, 2005).
UC Berkeley, November 4, 2005
Columbia University, October 20, 2005
Wayne State University, September 22, 2005
12th International Conference on Biological Inorganic Chemistry (ICBIC), Ann Arbor, Michigan
(August, 2005)
Western Washington University, May 6 2005
Metal Ions in Biology Gordon Research Conference, January 2005
Purdue University, November 9, 2004
University of California at Davis, October 21, 2004
Inorganic Gordon Conference, July 18, 2004
"Metalloenzymes" symposium at the Joint Regional Meeting of the Northwest and Rocky
Mountain Sections of the American Chemical Society, Logan, Utah (June 7, 2004)
"Non-heme Iron Chemistry in Biology" symposium at the 227th American Chemical Society
Meeting in Anaheim, March 2004.
Stanford, February 10, 2004
Cal Tech, February 9, 2004
Montana State, November 7, 2003
MIT/Harvard, September 24, 2003
Brandeis, September 23, 2003

11th International Conference on Biological Inorganic Chemistry (ICBIC), Cairns, Australia (July, 2003)
University of Kansas, May 2, 2003
Michigan State University, March 13, 2003
"Women in Inorganic Chemistry" Symposium at the 223rd National Meeting of the American Chemical Society, Orlando (April, 2002)
10th International Conference on Bioinorganic Chemistry (ICBIC), Florence, Italy (August, 2001)
University of Wisconsin, March 2001
Metal Ions in Biology Gordon Conference, January, 2001
"Bioinspired Catalysis" Symposium at the 218th American Chemical Society Meeting, New Orleans, August, 1999.
University of California, Santa Cruz, March, 1998
University of Illinois, Sept 18, 1997
"International Conference on the Molecular Biology of Hydrogenases," France (July 1997; declined due to childcare)
Inorganic Gordon Conference, July 21, 1996
Metal Ions in Medicine Symposium at the International Chemical Congress of Pacific Basin Societies, Hawaii, December, 1995
University of California, Berkeley, September, 1995
Nexstar Corporation, Boulder, Colorado, June, 1995
Reed College, March 9, 1995
University of British Columbia, October, 1993
University of Minnesota, May 11, 1993
Indiana University, May 6, 1993
Michigan State University, May 4, 1993
University of Michigan, May 3, 1993
University of South Carolina, April 16, 1993
Emory University, April 15, 1993
University of Georgia, April 14, 1993
Georgia Tech, April 13, 1993
University of Massachusetts, Amherst, February 22, 1993
Johns Hopkins University, February 19, 1993
Harvard, February 18, 1993
Yale University, February 16, 1993
Washington State University, September 21, 1992
Inorganic Gordon Conference, July 27, 1992
Oregon Graduate Center, March 13, 1992
Los Alamos National Laboratory, Los Alamos, New Mexico, June 1991.
Third International Conference on Molecular Biology of Hydrogenases, Portugal, July, 1991
Pacific Conference on Chemistry and Spectroscopy; Bioinorganic Symposium, October, 1988.

University Committees:

Conflict Resolution Committee, special assistance to the Dean of the College of Arts and Sciences (2014)
UW Department of Biology Chair Search Committee (11/04-2/05)
Faculty Senate (1993-97)

Departmental Service:

Initiated proposal to purchase a departmental SQUID (2018)
Co-organizer, UW Bioinorganic Symposium (2013)
Initiated proposal to purchase departmental EPR/ENDOR spectrometer (2008)
Initiated proposal to purchase departmental CCD-equipped X-ray Diffractometer (2007)
Organizer UW mini-Bioinorganic Symposium (2008)

Contributed \$10,000 towards the purchase of a Quantum Design SQUID Magnetometer (2000)

Contributed \$3,000, plus manpower, towards the upgrade of department/Kwirim's EPR instrument. (1995)

Departmental Committees:

Safety committee (2022-present)
 Academic Personnel Committee (2018–2020)
 Space committee (2018-present)
 Chair, Faculty Search Committee (2016-2017)
 Graduate Student Advising (2010-2020)
 Chair, Research Services committee (2013-2015)
 Chair, Inorganic Search Committee; (2007-2008)
 Graduate Admissions Committee, 2007-2013
 Research Services committee (2008-2013)
 Space committee (2006-2015)
 Academic Personnel Committee (2004–2005)
 Chair's Advisory Committee (2004-2005)
 Departmental Colloquium Organizer (2004-2007)
 Space Committee (2003-2004)
 Awards committee (2003–2004)
 Research Services (2000–2004)
 Graduate Good Standing/Fellowships (2000–2003)
 Faculty Search Oversight Committee (2000–2001)
 Graduate Student Advising (2000)
 Inorganic Faculty Search Committee (1998–99)
 Inorganic Faculty Search Committee, chair (1997-98)
 Decennial Review Self-Study Working Group 3, chair (1997)
 Graduate Education Committee; Advising/Orientation (1996-99)
 Chair's Advisory Committee (1996–98)
 Undergraduate Education Committee; Instructional Services (1996)
 Faculty Search Committee, subcommittee chair (1995-96)
 Long Range Planning Committee (1995-1996)
 Undergraduate Education Committee (1993-1995)
 Pauling Award Committee (1990-91)
 Inorganic Search Committee (1989-91)
 Operations Faculty Supervisor, X-Ray Facility Committee (1989-97)
 Graduate Student Recruiting and Advising (1989- 1995)
 Graduate Program Committee (1989-1990)
 Departmental Services Committee (1988-1990)
 Undergraduate Program Committee (1988-1989)

Courses Taught

<u>Autumn 1988</u> Chem 416	<u>Winter 1989</u> Chem 581	<u>Spring 1989</u> Chem 510	<u>Summer 1989</u>
<u>Autumn 1989</u> Chem 416 Chem 581	<u>Winter 1990</u> Chem 150 C Chem 150 U	<u>Spring 1990</u> Chem 581	<u>Summer 1990</u>
<u>Autumn 1990</u> Chem 416 Chem 581	<u>Winter 1991</u> Chem 150 A Chem 150 C Chem 581	<u>Spring 1991</u> Chem 581	<u>Summer 1991</u> Chem 150 A

Courses Taught (cont.)

<u>Autumn 1991</u> Chem 416	<u>Winter 1992</u> Chem 591	<u>Spring 1992</u> Chem 510	<u>Summer 1992</u>
<u>Autumn 1992</u> Chem 416	<u>Winter 1993</u> Chem 150 A	<u>Spring 1993</u> Chem 164 A	<u>Summer 1993</u> Chem 499A (var)
<u>Autumn 1993</u> Chem 416	<u>Winter 1994</u>	<u>Spring 1994</u> Chem 151 A (5)	<u>Summer 1994</u>
<u>Autumn 1994</u> Chem 416	<u>Winter 1995</u> Chem 150 A	<u>Spring 1995</u> Chem 419	<u>Summer 1995</u>
<u>Autumn 1995</u> Chem 416	<u>Winter 1996</u> Chem 150 A	<u>Spring 1996</u> leave	<u>Summer 1996</u>
<u>Autumn 1996</u> Chem 416	<u>Winter 1997</u> sabbatical leave	<u>Spring 1997</u> Chem 419	<u>Summer 1997</u>
<u>Autumn 1997</u> Chem 416	<u>Winter 1998</u> sabbatical leave	<u>Spring 1998</u> Chem 419/510	<u>Summer 1998</u>
<u>Autumn 1998</u> Chem 312	<u>Winter 1999</u> sabbatical leave	<u>Spring 1999</u> leave	<u>Summer 1999</u>
<u>Autumn 1999</u> Chem 312	<u>Winter 2000</u> Chem 591	<u>Spring 2000</u> Chem 419	<u>Summer 2000</u>
<u>Autumn 2000</u> Chem 312	<u>Winter 2001</u> Chem 591	<u>Spring 2001</u> Chem 419	<u>Summer 2001</u>
<u>Autumn 2001</u> Chem 312	<u>Winter 2002</u> Chem 591	<u>Spring 2002</u> Chem 419	<u>Summer 2002</u>
<u>Autumn 2002</u> Chem 312	<u>Winter 2003</u> Chem 591	<u>Spring 2003</u> Chem 510	<u>Summer 2003</u>
<u>Autumn 2003</u> Chem 312	<u>Winter 2004</u> Chem 591	<u>Spring 2004</u> Chem 419	<u>Summer 2004</u>
<u>Autumn 2004</u> Chem 416	<u>Winter 2005</u> Chem 591	<u>Spring 2005</u> Chem 510	<u>Summer 2005</u>
<u>Autumn 2005</u> sabbatical leave Chem 590	<u>Winter 2006</u> sabbatical leave Chem 590	<u>Spring 2006</u> sabbatical leave Chem 590 Chem 499	<u>Summer 2006</u>
<u>Autumn 2006</u> Chem 591 Chem 590 Chem 499	<u>Winter 2007</u> Chem 312 Chem 590 Chem 499	<u>Spring 2007</u> Chem 162 Chem 590 Chem 499	<u>Summer 2007</u> Chem 399
<u>Autumn 2007</u> Chem 591 Chem 499	<u>Winter 2008</u> Chem 312 Chem 591	<u>Spring 2008</u> Chem 419/510 Chem 590	<u>Summer 2008</u> Chem 399

Courses Taught (cont.)

	Chem 499	Chem 499	
<u>Autumn 2008</u>	<u>Winter 2009</u>	<u>Spring 2009</u>	<u>Summer 2009</u>
Chem 399	Chem 312	Chem 162	Chem 399
Chem 499	Chem 399	Chem 399	
<u>Autumn 2009</u>	<u>Winter 2010</u>	<u>Spring 2010</u>	<u>Summer 2010</u>
Chem 399	Chem 312	Chem 317	Chem 317
Chem 499	Chem 399	Chem 399	
<u>Autumn 2010</u>	<u>Winter 2011</u>	<u>Spring 2011</u>	<u>Summer 2011</u>
Chem 399	Chem 312	Chem 317	Chem 399
Chem 499	Chem 399	Chem 399	
<u>Autumn 2011</u>	<u>Winter 2012</u>	<u>Spring 2012</u>	<u>Summer 2012</u>
Chem 312	Chem 317	Chem 399	Chem 399
Chem 499	Chem 399		
<u>Autumn 2012</u>	<u>Winter 2013</u>	<u>Spring 2013</u>	<u>Summer 2013</u>
Chem 312	Chem 317	Chem 399	Chem 312
Chem 499	Chem 399		Chem 399
<u>Autumn 2013</u>	<u>Winter 2014</u>	<u>Spring 2014</u>	<u>Summer 2014</u>
Chem 499	Chem 162	Chem 317	Chem 399
	Chem 317	Chem 399	
	Chem 399		
<u>Autumn 2014</u>	<u>Winter 2015</u>	<u>Spring 2015</u>	<u>Summer 2015</u>
Chem 312	Chem 317	Chem 317	Chem 399
	Chem 399	Chem 399	
<u>Autumn 2015</u>	<u>Winter 2016</u>	<u>Spring 2016</u>	<u>Summer 2016</u>
Chem 416	sabbatical	sabbatical	Chem 399
	Chem 399	Chem 399	Chem 499
	Chem 499	Chem 499	
<u>Autumn 2016</u>	<u>Winter 2017</u>	<u>Spring 2017</u>	<u>Summer 2017</u>
Chem 416	Chem 317	Chem 317	Chem 312
	Chem 399	Chem 399	Chem 399
	Chem 499	Chem 499	Chem 499
<u>Autumn 2017</u>	<u>Winter 2018</u>	<u>Spring 2018</u>	<u>Summer 2018</u>
Chem 416	Chem 317	Chem 317	Chem 399
	Chem 399	Chem 399	Chem 499
	Chem 499	Chem 499	
<u>Autumn 2018</u>	<u>Winter 2019</u>	<u>Spring 2019</u>	<u>Summer 2019</u>
Chem 416	Chem 591	Chem 591	
<u>Autumn 2019</u>	<u>Winter 2020</u>	<u>Spring 2020</u>	<u>Summer 2019</u>
Chem 591	Chem 317	Chem 510	
		Chem 317	

Courses Taught (cont.)

Autumn 2020
Chem 591

Winter 2021
Chem 317

Spring 2021
Chem 510
Chem 317

Summer 2019

Autumn 2021
Chem 591

Winter 2022
Chem 317

Spring 2022
Chem 510

Summer 2022

Autumn 2022
Chem 591

Winter 2023
Chem 317

Spring 2023
Chem 510

Summer 2023