Julia A. Kovacs

updated: 3/12/12

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Present Rank: Professor

Educational Background:

Institution	Degree	Dates
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

Plenary speaker, International Conference on Biological Inorganic Chemistry, 2011
Saunders Endowed Lectureship, 2011
Elected Executive Committee Member at Large, ACS Division of Inorg. Chemistry (1/1/12–)
Editorial Board of "BioInorganic Reaction Mechanisms" (11/10–)
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 for the 15th International Conference on Biological Inorganic Chemistry (ICBIC), Vancouver, B. C. (August, 2011)
Vice-Chair–Elect for the "Metals in Biology" Gordon Research Conference (2006)
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 17-19, 1992.

Research Grants or Contracts:

Present:

National Institutes of Health (8/1/11- 7/31/15) $995,419/4 years
(# RO1 GM45881-19)
"Structure's Influence on Reactivity in Metalloenzymes"

Past:

UW Bridge Funds
(Provosts office) (1/4/11- 8/1/11) $100,000/8 mo.

NIH NIGMS ARRA SIRM Supplement (4/15/10- 3/31/11) $137,980/1 year
(#RO1GM45881-18S1)

National Institutes of Health (4/1/06- 3/31/10) $1,297,875/4 years
(# RO1 GM45881-18)
"Structure's Influence on Reactivity in Metalloenzymes"

NIH Shared Instrumentation Grant (5/1/08- 4/30/09) $273,281 /1 year
(# S10 RR023656-01)
"A High Field Mossbauer Instrument"
co-PI with Steve Cramer, UC Davis (PI)

NIH High End Instrumentation Grant Program (4/1/07- 3/31/08) $1,040,735/1 year
(#S10 RR023065-01) Co-PI with Robinson (PI)
"Electron Paramagnetic Resonance (EPR)/Q-Band ENDOR Spectrometer"

NIH (# RO1 GM45881-16-S1) (8/9/07) $23,230/1 year
"Supplement to Purchase Vac Atmospheres Dry Box"

National Institutes of Health (4/1/06- 3/31/07) $51,221/1 year
(# RO1 GM45881-15–S2)
supplement to"Structure's Influence on Reactivity in Metalloenzymes;" minority student Alokolaro

National Institutes of Health (10/1/04- 9/30/06) $63,666/2 years

(# F31 GM73583-01) (direct)
Fellowship for Priscilla Lugo-Mas "Synthetic Analogues of Cysteinate-Ligated Metalloenzymes"

National Institutes of Health (4/1/04- 3/31/06) $102,442/2 years
(# RO1 GM45881-14–S2)
supplement to"Structure's Influence on Reactivity in Metalloenzymes;" minority student Alokolaro

National Institutes of Health (10/1/03- 3/31/04) $20,813
(# RO1 GM45881-12–S1)
supplement to"Structure's Influence on Reactivity in Metalloenzymes;" minority student Lugo-Mas

National Institutes of Health (4/1/02- 3/31/06) $1,183,037/4 years
(# RO1 GM45881-14)
"Structure's Influence on Reactivity in Metalloenzymes"

National Institutes of Health (4/1/98- 3/31/02) $921,472/4 years
(# RO1 GM45881-11)
"Structure's Influence on Reactivity in Metalloenzymes"

Environmental Protection Agency
fellowship for grad student Jason Shearer (1/1/01-6/30/02) $17,000

National Institutes of Health (6/95–6/98) $447,044/3 years
(#1 RO1 GM45881-05)
"H^+ Transfer and CH_4 Formation in Metalloenzyme Models"

National Institutes of Health (2/92–2/95) $305,799/3 years
(#1 RO1 GM45881-01A1)
"Modeling the Structure and Reactivity of Ni-Hydrogenases"

University of Washington GSRF (3/89) $10,596/1 year

Petroleum Research Fund (#22562-G5) (3/90) $18,000/2 years

Research publications:

60. 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*, 0000 (in press).

59. 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.

58. 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.

57. 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 O_2^- Binding Site of a Biomimetic SOR Analogue, and Examining the Proton-Dependent Reduction of Nitrite," *J. Am. Chem. Soc.* **2011**, *133*, 1419-1427. *Highlighted on "JACS Select" website as a "recent significant publication."*

56. 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 $\{FeO_2\}^8$," *Inorg. Chem.* **2011**, *50*, 427-436.

55. 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.

54. 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.

53. 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*).

52. 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 $[M^{II}(S^{Me2}N_4(tren))]^+$ (M = Mn, Fe, Co, Ni, Cu, Zn) Complexes, Including a Rare Example of a Cu(II)-Thiolate" *Inorg. Chem.* **2007**, *46*, 9267-9277.

51. *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.

50. Brines, L. M.; *Kovacs, J. A. "Understanding the Mechanism of Superoxide Reductase (SOR)," *Eur. J. Inorg. Chem.* **2007**, 29-38. (*invited "Microreview"*).

49. Brines, L. M.; Kaminsky, W.; Kirk, M. L.; *Kovacs, J. A. "Synthesis and Characterization of Unsupported μ-O(H) Non-Heme Ferric Dimers Isolated from Oxidation of a Water-Bound Lipoxygenase Model," manuscript in preparation.

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.

45. Kennepohl, P.; Neese, F.; Schweitzer, D.; Jackson, H. L.; *Kovacs, J. A; *Solomon, E. I. "Spectroscopy of Non-Heme Iron Thiolate Complexes: Insight into the Electronic Structure of the Low-Spin Active Site of Nitrile Hydratase " *Inorg. Chem.* **2005**, *44*, 1826-1836.

44. Theisen, R. M.; *Kovacs, J. A. "The Role of Protons in Superoxide Reduction by a Superoxide Reductase Analogue. " *Inorg. Chem.* **2005**, *44*, 1169-1171.

43. Theisen, R. M.; Shearer, J.; Kaminsky W.; *Kovacs, J. A. "Steric and Electronic Control Over the Reactivity of a Thiolate–Ligated Fe(II) Complex with Dioxygen and Superoxide. Reversible μ-oxo Dimer Formation " *Inorg. Chem.* **2004**, *43*, 7682–7690.

42. Chohan, B. S.; Shoner, S. C.; Kovacs, J. A.; Day, R. O.; *Maroney, M. J. "Ligand Oxidations in High–Spin Nickel Thiolate Complexes and Zinc Analogues," *Inorg. Chem.* **2004**, *43*, 7726–7734.

41. Kovacs*, J. A "Synthetic Analogues of Cysteinate–Ligated Non–Heme Iron, and Non–Corrinoid Cobalt Enzymes" *Chem. Rev.* **2004**, *104*, 825-848. (*special thematic issue on Biomimetic Inorganic Chemistry*)

40. Sarah Fitch, Rose Theisen, Jason Shearer, Terry Kitagawa, *Robert Scarrow, and *Julie A. Kovacs "Understanding the Mechanism of Superoxide Reduction by the Non–Heme Iron Enzyme Superoxide Reductase (SOR) using a Synthetic Analogue Approach" *J. Inorg. Biochem*, **2003**, *96*, 23 (*Proceedings of the 11th International Conf. on Bioinorganic Chemistry*).

39. Shearer, J.; Kaminsky, W.; Kovacs,* J. A. "Chloride Contained in a Cobalt "Claw": $[Co_3^{II}(DADIT)_3](Cl)(PF_6)_2$," *Acta. Cryst., C59*, **2003**, m379-m380.

38. *Kovacs, J. A. "Dioxygen Activation by Non–Heme Fe–Enzymes"; *Science*, **2003**, *299*, 1024–1025 (invited "Perspective").

37. Shearer, J.; Fitch, S. B.; Kaminsky, W.; Scarrow, R. C.; *Kovacs, J. A. "How Does Cyanide Inhibit Superoxide Reductase? Insight from Synthetic $Fe^{III}N_4S$ Model Complexes"; *Proc. Natl. Acad. of Sci. U.S.A.*, **2003**, *100*, 3671–3676 (special feature issue on Bioinorganic Chemistry).

36. Shearer, J.; *Kovacs, J. A. "Nitrile Hydratase: An Unusual Fe–Containing Hydrolytic Enzyme," in Encyclopedia of Catalysis; I. T. Horvath, Ed.; Wiley Interscience: NY, NY, **2003**; Vol. 5; pp 289-297.

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.

34. Shearer, S.; Lai, J.; Jacobs, D. L.; and Kovacs*, J. A. "Preparation and Properties of $[Ni^{II}(BEES)(Cl)](BPh_4)$: A Ni^{II} Complex in a Mixed Nitrogen/Thioether Coordination Environment" *Inorg. Chim. Acta.* **2002**, 336, 61-64.

33. Shearer, J.; Jackson, H. L.; Rittenberg, D.; Leavy, T.; *Scarrow, R. C.; *Kovacs, J. A. " The First Example of a Nitrile Hydratase Model Complex that Reversibly Binds Nitriles." *J. Am. Chem. Soc.* **2002**, *124*, 11417-11428.

32. Schweitzer, D.; Shearer, J.; Rittenberg, D.; Ellison, J. J.; Shoner, S. C.; Loloee, R.; Lovell, S. C.; Barnhart, D. *Kovacs, J. A. "Enhancing Reactivity via Structural Distortion," *Inorg. Chem.* **2002**, *41,* 3128–3136.

31. Shearer, J.; Jackson, H. L.; Schweitzer, D.; Leavy, T. M.; Kaminsky, W.; Scarrow, R. and *Kovacs, J. A. "Examining the Influence of Thiolate Sulfurs on the Reactvity Properties of Cysteinate-Ligated Non-Heme Iron Active Sites" *J. Inorg. Biochem*, **2001**, *86*, 64 (*Proceedings of the 10th International Conf. on Bioinorganic Chemistry*).

30. Shearer, J.; Nehring, J.; Kaminsky, W.; *Kovacs, J. A "Modeling the Reactivity Properties of Superoxide Reducing Metalloenzymes With a Nitrogen and Sulfur Coordinated Iron Complex." *Inorg. Chem.* **2001**, *40*, 5483-5484.

29. Jackson, H. L.; Shoner, S. L.; Cowen, J. A.; Lovell, S.; Barnhart, D.; *Kovacs, J. A. "Probing the Influence of Local Coordination Environment on the Properties of Fe–Type Nitrile Hydratase Model Complexes," *Inorg. Chem.*, **2001**, *40*, 1646–1653.

28. Shearer, J.; Kung, I. Y.; Lovell, S.; *Kovacs, J. A. "Why is There an "Inert" Metal Center in the Active–Site of Nitrile Hydratase? Reactivity and Ligand Dissociation From a Five Coordinate Co(III) Nitrile Hydratase Model." *J. Am. Chem. Soc.* **2001**, *123,* 463–468.

27. Wang, H.; Ralston, C. Y.; Patil, D. S.; Jones, R. M.; Gu, W.; Verhagen, M.; Adams, M.; Ge, P.; Riordan, C.; Marganian, C. A.; Mascharak, P.; Kovacs, J.; Miller, C. G.; Collins, T. J.; Brooker, S.; Croucher, P. D.; Wang, K.; Stiefel, E. I.; and Cramer*, S. P. "Nickel L-Edge Soft X-ray Spectroscopy of Nickel-Iron Hydrogenases and Model Compounds-Evidence for High-Spin Nickel(II) in the Active Enzyme." *J. Am. Chem. Soc.* **2000**, *122*, 10544 - 10552.

26. Shearer, J.; Kung, I. Y.; Lovell, S.; *Kovacs, J. A. "A Co(III) Complex in a Mixed Sulfur/Nitrogen Ligand Environment: Modeling the Substrate– and Product–Bound Forms of the Metalloenzyme Thiocyanate Hydrolase." *Inorg. Chem.*, **2000**, *39*, 4998–4999.

25. Kung, I.; Schweitzer, D.; Shearer, J.; Taylor, W. D.; Jackson, H. L.; Lovell, S.; *Kovacs, J. A. "How Do Oxidized Thiolate Ligands Affect the Electronic and Reactivity Properties of a Nitrile Hydratase Model Compound?" *J. Am. Chem. Soc.* **2000**, *122*, 8299–8300.

24. Schweitzer, D.; Taylor, W.; and *Kovacs, J. A. "Synthetic Models of the Active Site of Nitrile Hydratase," *J. Inorganic Biochemistry* **1999**, *74*, 291.

23. Shoner, S. C.; Nienstedt, A.; Ellison, J. J.; Kung, I.; Barnhart, D.; *Kovacs, J. A. "Structural Comparison of Thiolate–Ligated M^{II}= Fe^{II}, Co^{II}, Ni^{II}, and Zn^{II} Ions Wrapped in a Chiral Helical Ligand," *Inorg. Chem.*, **1998**, *37*, 5721–5726.

22. *Scarrow, R. C.; Strickler, B.; Ellison, J. J.; Shoner, S. C.; *Kovacs, J. A.; Cummings, J. G.; *Nelson, M. J., "X-ray Spectroscopy of Nitric Oxide Binding to Iron in Inactive Nitrile Hydratase and a Synthetic Model Compound." *J. Am. Chem. Soc.* **1998**, *120*, 9237–9245.

21. Schweitzer, D.; Ellison, J. J.; Shoner, S. C. ; Lovell, S. ; and *Kovacs, J. A. "A Synthetic Model for the NO–Inactivated Form of Nitrile Hydratase," *J. Am. Chem. Soc.* **1998**, 120, 10996–10997**.**

20. Ellison, J. J; Nienstedt, A.; Shoner, S. C.; Barnhart, D.; Cowen, J. A.; *Kovacs, J. A. "Reactivity of Five–Coordinate Models for the Thiolate-Ligated Fe Site of Nitrile Hydratase," *J. Am. Chem. Soc* **1998**, *120*, 5691–5700.

19. Cha, M.; Sletten, J.; Critchlow, S.C.; *Kovacs, J.A., "Synthesis and Structure of a Thiolate-Ligated Ni Cluster Which Contains an Unusual Thiolate Bridging Mode and an Exposed Ni Site." *Inorg. Chim. Acta.*, **1997**, *263*, 153–159.

18. Shoner, S.; Humphreys, K. J.; Barnhart, D.; *Kovacs, J.A., "A Model for the Interaction of Alcohol with the Zinc Thiolate Site of Alcohol Dehydrogenase," *Inorg. Chem.* **1995**, *34*, 5933-5934.

17. *Kovacs, J. A.; Shoner, S. C.; Ellison, J. J., "Metal-Carbon Bonds in Nature," *Science* **1995**, *270*, 587-588.

16. Shoner, S.; Barnhart, D.; *Kovacs, J.A., "A Model for the Low-Spin, Non-Heme, Thiolate-Ligated Fe Site of Nitrile Hydratase," *Inorg. Chem.* **1995**, *34*, 4517-4518.

15. Sletten, J.; Kovacs, J.A., "The Structure of a Toroidal, Neutral, Homoleptic Ni(II)-Complex with a Chelate Dithiolate Ligand, $Ni_6(SCH_2CH_2CH_2S)_6$" *Acta. Chem. Scand.* **1994**, *48*, 929-932.

14. Shoner, S. C.; Olmstead, M.; Kovacs, J.A. "Synthesis and Structure of a Water Soluble Five-Coordinate Nickel Alkyl Thiolate Complex," *Inorg. Chem.*, **1994,** *33*, 7-8.

13. "Understanding the Role of Ni in Ni-containing Enzymes," J. A. Kovacs Advances in Inorganic Biochem; G.L. Eichhorn and L.G. Marzilli, Eds.; Prentice-Hall: Englewood Cliffs, NJ, **1993**; vol. 9; Chapter 5, pp. 173-201.

12. Cha, M.; Critchlow, S.C.; Gatlin, C.L.; Kovacs, J.A., "Probing the Influence of Local Coordination Environment on Ligand Binding in Ni Hydrogenase Model Complexes" *Inorg. Chem.,* **1993**, *32*, 5868-5877.

11. Cha, M.; Shoner, S. C.; Kovacs, J.A., "Nickel-Promoted Reductive C-S Bond Cleavage: A Reactivity Model for the First Step in the Reaction Promoted by Methyl Coenzyme M Reductase," *Inorg. Chem.*, **1993**, *32*, 1860-1863.

10. Sletten, J.; Kovacs, J.A. "Structure of trans-[dichloro bis(triphenylphosphine)Nickel(II)]. $2CH_2Cl_2$," *J. Crystallographic and Spectroscopic Research*, **1993**, *23*, 239-241.

9. Lindahl, P.A.; Kovacs, J.A. "Reactivities and Biological Functions of Iron-Sulfur Clusters," *J. Cluster Sci*., **1990**, *1*, 29-73.

8. Kovacs, J. A.; Bergman, R. G., "Synthesis and Reactivity of the First Structurally Characterized Heterobimetallic Complex Containing an Unsupported Sulfur Atom Bridge," *J. Am. Chem. Soc*. **1989**, 111, 1131-1133.

7. Kovacs, J. A.; Bashkin, J. K.; Holm, R. H. "$[Fe_2S_2(CO)_6]^{2-}$ as a Cluster Precursor: Synthesis and Structure of $[MoFe_3S_6(CO)_6]^{2-}$ and Oxidative Decarbonylation to a Persulfide-Bridged $MoFe_3S_4$ Double Cubane," *Polyhedron* **1987**, *6*, 1145-1156.

6. Carney, M. J.; Kovacs, J. A.; Zhang, Y.-P.; Papaefthymiou, G. C.; Spartalian, K.; Frankel, R. B.; Holm, R. H., "Comparative Electronic Properties of Vanadium-Iron-Sulfur and Molybdenum Iron-Sulfur Clusters Containing Isoelectronic Cubane Type $[VFe_3S_4]^{2+}$ and $[MoFe_3S_4]^{3+}$ Cores," *Inorg. Chem*. **1987**, *26*, 719-724.

5. Kovacs, J. A., Holm, R. H., "Structural Chemistry of Vanadium-Iron-Sulfur Clusters Containing the Cubane-Type $[VFe_3S_4]^{2+}$ Core," *Inorg. Chem*. **1987**, 26, 711-718.

4. Kovacs, J. A.; Holm, R. H., "Heterometallic Clusters: Synthesis and Reactions of Vanadium-Iron-Sulfur Single- and Double-Cubane Clusters, and the Structure of $[V_2Fe_6S_8Cl_4(C_2H_4S_2)_2]^{4-}$," *Inorg. Chem*. **1987**, *26*, 702-711.

3. Kovacs, J. A.; Holm, R. H., "Assembly of Vanadium-Iron-Sulfur Cubane Clusters from Mononuclear and Linear Trinuclear Reactants," *J. Am. Chem. Soc*. **1986**, *108*, 340-341.

2. Bose, K. S.; Lamberty, P. E.; Kovacs, J. A.; Sinn, E.; Averill, B. A., "Synthesis of a New Class of Mo-Fe-S Clusters Containing the MoS_2Fe_2 Unit," Polyhedron **1986**, *5*, 393-398.

1. Kovacs, J. A.; Bashkin, J. K.; Holm, R. H., "Persulfide-Bridged Iron- Molybdenum-Sulfur Clusters of Biological Relevance: Two Synthetic Routes and the Structures of Intermediate and Product Clusters," *J. Am. Chem. Soc*. **1985**, *107*, 1784-1786.

Invited Lectures:

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
Invited Lectures: (cont.)
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

Invited Lectures: (cont.)

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:

UW Department of Biology Chair Search Committee (11/04-2/05)
Faculty Senate (1993-97)

Deparmental Service:

Initiated proposal to purchase departmental EPR/ENDOR spectrometer
Initiated proposal to purchase departmental CCD–equipped X-ray Diffractometer.
Contributed $10,000 towards the purchase of a Quantum Design SQUID Magnetometer.
Contributed $3,000, plus manpower, towards the upgrade of department/Kwirim's EPR instrument.

Departmental Committees:

Inorganic Search Committee, 2010-2011
Chair, Inorganic Search Committee, 2007-2008
Graduate Recruiting Committee, 2007-present
Research Services committee (2008-present)
Space committee (2006-present)
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)
Bioinorganic 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

Autumn 1988	Winter 1989	Spring 1989	Summer 1989
Chem 416	Chem 581	Chem 510	
Autumn 1989	Winter 1990	Spring 1990	Summer 1990
Chem 416	Chem 150 C	Chem 581	
Chem 581	Chem 150 U		
Autumn 1990	Winter 1991	Spring 1991	Summer 1991
Chem 416	Chem 150 A	Chem 581	Chem 150 A
Chem 581	Chem 150 C		
	Chem 581		
Autumn 1991	Winter 1992	Spring 1992	Summer 1992
Chem 416	Chem 591	Chem 510	
Autumn 1992	Winter 1993	Spring 1993	Summer 1993
Chem 416	Chem 150 A	Chem 164 A	Chem 499A (var)
Autumn 1993	Winter 1994	Spring 1994	Summer 1994
Chem 416		Chem 151 A (5)	
Autumn 1994	Winter 1995	Spring 1995	Summer 1995
Chem 416	Chem 150 A	Chem 419	
Autumn 1995	Winter 1996	Spring 1996	Summer 1996
Chem 416	Chem 150 A	leave	
Autumn 1996	Winter 1997	Spring 1997	Summer 1997
Chem 416	sabbatical leave	Chem 419	
Autumn 1997	Winter 1998	Spring 1998	Summer 1998
Chem 416	sabbatical leave	Chem 419/510	
Autumn 1998	Winter 1999	Spring 1999	Summer 1999
Chem 312	sabbatical leave	leave	
Autumn 1999	Winter 2000	Spring 2000	Summer 2000
Chem 312	Chem 591	Chem 419	
Autumn 2000	Winter 2001	Spring 2001	Summer 2001
Chem 312	Chem 591	Chem 419	
Autumn 2001	Winter 2002	Spring 2002	Summer 2002

Chem 312	Chem 591	Chem 419	
Autumn 2002	Winter 2003	Spring 2003	Summer 2003
Chem 312	Chem 591	Chem 510	
Autumn 2003	Winter 2004	Spring 2004	Summer 2004
Chem 312	Chem 591	Chem 419	

Courses Taught (cont.)

Autumn 2004	Winter 2005	Spring 2005	Summer 2005
Chem 416	Chem 591	Chem 510	
Autumn 2005	Winter 2006	Spring 2006	Summer 2006
sabbatical leave	sabbatical leave	sabbatical leave	
Chem 590	Chem 590	Chem 590	
		Chem 499	
Autumn 2006	Winter 2007	Spring 2007	Summer 2007
Chem 591	Chem 312	Chem 162	Chem 399
Chem 590	Chem 590	Chem 590	
Chem 499	Chem 499	Chem 499	
Autumn 2007	Winter 2008	Spring 2008	Summer 2008
Chem 591	Chem 312	Chem 419/510	Chem 399
Chem 499	Chem 591	Chem 590	
	Chem 499	Chem 499	
Autumn 2008	Winter 2009	Spring 2009	Summer 2009
Chem 399	Chem 312	Chem 162	Chem 399
Chem 499	Chem 399	Chem 399	
Autumn 2009	Winter 2010	Spring 2010	Summer 2010
Chem 399	Chem 312	Chem 317	Chem 317
Chem 499	Chem 399	Chem 399	
Autumn 2010	Winter 2011	Spring 2011	Summer 2011
Chem 399	Chem 312	Chem 317	Chem 399
Chem 499	Chem 399	Chem 399	
Autumn 2011	Winter 2012	Spring 2012	Summer 2012
Chem 312	Chem 317	Chem 399	Chem 399
Chem 499	Chem 399		