

JOAN BLANCHETTE BRODERICK

Department of Chemistry and Biochemistry
Montana State University
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EDUCATION

Massachusetts Institute of Technology, Postdoctoral Fellow	1993
Northwestern University, Ph.D. in Inorganic Chemistry	1992
Washington State University, B.S. in Chemistry, <i>summa cum laude</i>	1987

POSITIONS HELD

2005-present	Professor of Chemistry and Biochemistry	<i>Montana State University</i>
2004-2005	Professor of Chemistry	<i>Michigan State University</i>
2002-2004	Associate Professor of Chemistry	<i>Michigan State University</i>
1998-2002	Assistant Professor of Chemistry	<i>Michigan State University</i>
1993-1998	Assistant Professor of Chemistry	<i>Amherst College</i>
1992-1993	American Cancer Society Postdoctoral Fellow	<i>Massachusetts Institute of Technology</i>
1987-1992	NSF Predoctoral Fellow	<i>Northwestern University</i>

HONORS AND AWARDS

Charles and Norah L. Wiley Award for Meritorious Research and Creativity, 2007
Saltman Lecturer, Metals in Biology Gordon Research Conference, 2002
Trustee-Faculty Fellowship, Amherst College
American Cancer Society Postdoctoral Fellowship
National Science Foundation Predoctoral Fellowship
First Place, Meeting-in-Miniature Seminar Competition, Northwestern U. Chemistry Department Distinguished Achievement Award, Washington State University College of Arts and Sciences
Director's Award, Washington State University Honors Program
S. Towne Stephenson Scholar, Washington State University Honors Program
First Place, Research Paper Competition, Sigma Xi Research Society
Research Paper Award, Washington State University Association of Research Professors
Phi Beta Kappa Scholarship
Harry H. Batey Scholarship, Washington State University Chemistry Department
Washington State Scholar
National Merit Scholar

TEACHING ACTIVITIES*Amherst College:*

Fall 1993	Chemistry 35	Inorganic Chemistry Lecture and Lab
Spring 1994	Chemistry 11	Introductory Chemistry Lecture and Lab
	Chemistry 30	Biochemistry Lab
Fall 1994	Chemistry 35	Inorganic Chemistry Lecture and Lab
Spring 1995	Chemistry 11	Introductory Chemistry Lecture and Lab
	Chemistry 57	Advanced Topics in Chemistry
Fall 1995	Chemistry 35	Inorganic Chemistry Lecture and Lab
Spring 1996	Chemistry 11	Introductory Chemistry Lecture and Lab
Fall 1997	Chemistry 35	Inorganic Chemistry Lecture and Lab
	ILS 10	First-Year Seminar: Evolution and Intellectual Revolution
Spring 1998	Chemistry 11	Introductory Chemistry Lecture and Lab
	Chemistry 650	Metals in Biology (At U. of Massachusetts)

Michigan State University:

Fall 1998	Chemistry 913	Bioinorganic Chemistry
Fall 1999	Chemistry 141	General Chemistry
Spring 2000	Chemistry 415	Advanced Synthesis Laboratory
Spring 2001	Chemistry 812	Advanced Inorganic Chemistry
Spring 2002	Chemistry 812	Advanced Inorganic Chemistry
Fall 2002	Chemistry 913	Metals in Biology
Fall 2003	Chemistry 142	General Chemistry
Fall 2004	Chemistry 151	General and Inorganic Chemistry
Spring 2005	Chemistry 913	Bioinorganic Chemistry

Montana State University

Spring 2006	Chem/Behm 580	Special Topics: Bioinorganic Chemistry
Fall 2006	Behm 340	General Biochemistry
Spring 2007	Chem 142	Honors General Chemistry II
Fall 2007	Behm 547	Bioinorganic Chemistry
Spring 2008	Chem 142	Honors General Chemistry II
Fall 2008	Behm 340	General Biochemistry
Spring 2009	Chem 142	Honors General Chemistry II

PROFESSIONAL SERVICE*National and International*Conference Organization

- ICBIC International Organizing Committee, Member 2003 – present
- Gordon Research Conference on Protein-Derived Cofactors, Radicals, and Quinones, Vice-Chair (2006), Chair (2008)
- Gordon Research Conferences, GRC Council Member-at-Large, 2008 - 2011
- Twelfth International Conference on Bioinorganic Chemistry (ICBIC-12), Co-Chair, 2005
- ICBIC-12 Program Committee Chair, 2005

Study Section Service

- NIH Ad-hoc reviewer, MSFE, October 2009
- NIH Special Emphasis Panel ZRG1 OBT-D (90) S, Chair, July 2009

NIH Special Emphasis Panel ZRG1 BCMB-B (02) M, Chair, Feb 2009
 NIH Special Emphasis Panel BMB-B 90, Chair, July-August 2008
 NIH Mail Reviewer, 2001 – present
 NIH MSFA Study Section, Member and Chair, 01/05 – 10/06
 NIH Metallobiochemistry Study Section, Member, 06/02 – 10/04 (Chair, 10/03-10/04)
 NIH Physical Biochemistry Study Section, Ad hoc member, 06/00
 NIH Biochemistry Study Section, Ad hoc member, 10/99
 NIH Metallobiochemistry Study Section, outside reviewer, 06/99

American Chemical Society

ACS-Division of Inorganic Chemistry, Chair of Bioinorganic Subdivision, 2006
 ACS-Division of Inorganic Chemistry, Alternate Councilor, 2002-2005

Editorial Service

Editorial Advisory Board, *J. Inorg. Biochem.*, 2009-present
 Editorial Advisory Board, *Inorganic Chemistry*, 2005-2007
 Editorial Advisory Board, *J. Biol. Inorg. Chem.* 2003-2005
 Editor, Current Opinion in Chemical Biology, 2003 Bioinorganic Issue

Service in Review of Proposals, Manuscripts, and Books

Manuscript Reviewer, *J. Am. Chem. Soc.*, 2001-present
 Manuscript Reviewer, *Angew. Chemie.*, 2004-present
 Manuscript Reviewer, *Biochemistry*, 1997-present
 Manuscript Reviewer, *Proc. Natl. Acad. Sci. U.S.A.*, 2003-present
 Manuscript Reviewer, *Nature Chemical Biology*, 2007 – present
 Manuscript Reviewer, *J. Biol. Inorg. Chem.*, 2001-present
 Manuscript Reviewer, *Arch. Bioch. Biophys.*, 2002-present
 Proposal Reviewer, National Science Foundation, 2000-present
 Proposal Reviewer, Petroleum Research Fund, 1998-present
 Proposal Reviewer, Research Corporation, 1997-present
 Reviewer, Cambridge University Press

Consultation

Swedish Natural Science Research Council, Evaluated candidates for senior research position in bioinorganic chemistry, 10/00
 Opponent, Ph.D. Thesis Defense, University of Turku, Finland 10/99

Department and University Service (at Montana State University)

2005-2006

Chemistry Long-Range Planning Committee
 Molecular Biosciences Program Advisory Board

2006-2007

Chemistry Department Long-Range Planning Committee
 Molecular Biosciences Program Advisory Board
 Chemistry Department Promotion and Tenure Committee
 Physics Department Promotion and Tenure Committee
 Chemistry Department Undergraduate Curriculum Committee

2007-2008

Chemistry Department Long-Range Planning Committee
 Molecular Biosciences Program Advisory Board
 Chemistry Department Search Committee
 College of Letters and Sciences Promotion and Tenure Committee
 Chemistry Department Educational Policies Committee

2007-2008

Chemistry Department Long-Range Planning Committee
 Molecular Biosciences Program Advisory Board
 Chemistry Department Search Committee

College of Letters and Sciences Promotion and Tenure Committee
Chemistry Department Educational Policies Committee

2008-2009

Chemistry & Biochemistry Department Long-Range Planning Committee
Molecular Biosciences Program Advisory Board
College of Letters and Sciences Promotion and Tenure Committee
Chemistry & Biochemistry Department Educational Policies Committee

2009-2010

Chemistry & Biochemistry Department Long-Range Planning Committee
Chemistry & Biochemistry Department Promotion and Tenure Committee, Chair
Chemistry & Biochemistry Department Educational Policies Committee

Department and University Service (at Michigan State University)

1998-1999

Recruiting Seminars Given: 3

1999-2000

Graduate Admissions Committee
Advisory Committee
Space Committee
Inorganic Search Committee
Departmental Administrator Search Committee
Recruiting Seminars Given: 6

2000-2001

Graduate Admissions Committee
Advisory Committee
Babcock Memorial Symposium Organizing Committee
Organic Search Committee
Recruiting Seminars Given: 3

2001-2002

Organic Search Committee
Graduate Advising Committee
Equipment Committee
Library Committee
Recruiting Seminars Given: 2

2002-2003

Colloquium Committee
Scientific Misconduct Inquiry Panel
Condensed Matter Physics Faculty Search Committee
Recruiting Seminars Given: 3

2003-2004

Analytical Faculty Search Committee
Department of Chemistry Advisory Committee
Chemistry Undergraduate Committee

2004-2005

Department of Chemistry Advisory Committee
Colloquium Committee, Chair of Committee

RESEARCH FUNDINGACTIVE

R01 GM54608-13 (P.I.)	6/1/2006 – 5/31/2010
National Institutes of Health	\$1,025,866/entire grant period
Title: <i>Iron-Sulfur Clusters in Biological Radical Generation</i>	
ARRA supplement to above (P.I.)	\$335,598/entire grant period
05 NAI05-19 (co-P.I. w/ John Peters and others)	8/1/2007-7/31/2012
NASA Astrobiology Institute	\$6,100,000/entire grant period
Title: <i>Astrobiology Biogeochemical Research Center</i>	
CHE-0947085 (co-P.I.)	3/1/2010 – 1/31/2012
National Science Foundation	\$240,965/entire grant period
Title: <i>Instrumentation for Complementary Inorganic, Organometallic, and Bioinorganic Spectroscopy</i>	
DE-FG02-10ER16194 (P.I.)	9/15/2010 – 9/14/2013
Department of Energy – BES	\$555,000/entire grant period
Title: <i>Role of HydF in Hydrogenase Maturation</i>	

PENDING

New application (P.I.)
National Science Foundation - MCB
Title: *Radical Mechanisms of Thymine Dimer Repair*

EXPIRED

DE-FG02-04ER63923 (co-P.I. w/ Jim Tiedje and others)	10/1/2004-9/30/2008
Department of Energy	\$1,108,994/entire grant period
Title: <i>Exploring the Genome and Proteome of Desulfitobacterium hafniense DCB-2 for its Protein Complexes involved in Metal Reduction and Dehalogenation</i>	
S10 RR 15880 (co-P.I.)	4/1/2001 – 3/31/2003
National Institutes of Health	\$500,000/entire grant period
Title: <i>94 GHz/9 GHz Continuous-wave and Pulsed EPR Spectrometer</i>	
F32 GM20315	9/1/2000 – 5/31/2002
National Institutes of Health Postdoctoral Fellowship (for Dr. Jennifer Cheek in my lab)	\$70,000/entire grant period
Title: <i>Mechanistic Studies of the Fe/S Enzyme SP Lyase</i>	
R29 GM54608 (P.I.)	8/1/1997 – 7/31/2002
National Institutes of Health FIRST Award (replaced by R01 GM54608 above)	\$492,340/entire grant period
Title: <i>Spectroscopic Studies of Pyruvate Formate-Lyase Activase</i>	
R55 GM/OD 54608-01 (P.I.)	9/30/1996 – 7/31/1998
National Institutes of Health Shannon Director's Award (replaced by R29 GM54608 above)	\$100,000/entire grant period
Title: <i>Spectroscopic Studies of Pyruvate Formate-Lyase Activase</i>	

REF-PSD (P.I.) 8/1/1999 – 6/1/2000
 MSU Center for Protein Structure, Function, and Design \$10,000/entire grant period
 Title: *Characterization of the Metal Center of Spore Photoproduct Lyase, An Adenosylmethionine-dependent DNA Repair Enzyme*

CC4057 (P.I.) 12/1/1995 – 11/30/1997
 Research Corporation Cottrell College Science Award \$34,040/entire grant period
 Title: Pyruvate formate-lyase activating enzyme: Spectroscopic studies of the metal center

PRF 30673-GB3 (P.I.) 3/1/1996 – 8/31/1999
 Petroleum Research Fund of the American Chemical Society \$20,000/entire grant period
 Title: *Coordinately Unsaturated Fe(II) Complexes as Models for Oxygen Activation by Nonheme Iron Enzymes*

Amherst College Faculty Research Award 4/1/1994 – 9/30/1995
 \$6,885/entire grant period
 Title: *Pyruvate Formate-Lyase Activating Enzyme: Mechanism of Generation of a Catalytically Essential Glycyl Radical*

PUBLICATIONS

1. H.B. Krishnan, Joan T. Blanchette (Broderick), and T.W. Okita, "Wheat Invertases: Characterization of Cell Wall Bound and Soluble Forms," *Plant Physiol.* **1985**, 78, 241.
2. Joan T. Blanchette (Broderick) and R.D. Willett, "Magnetic and Structural Correlations in $[(C_5H_5N)NH_2]_2Cu_2Cl_6$ and $[(C_5H_5N)NH_2]_2Cu_2Br_6 \cdot H_2O$," *Inorg. Chem.* **1988**, 27, 843.
3. J.H. Cooley, E.J. Evain, R.D. Willett, and Joan T. Blanchette (Broderick), "Reactions of 1,1-Dimethyl-4-Substituted Semicarbazides with Phosgene," *J. Org. Chem.* **1989**, 54, 1048.
4. Joan B. Broderick and T.V. O'Halloran, "Overproduction, Purification, and Characterization of Chlorocatechol Dioxygenase, A Nonheme-Iron Dioxygenase with Broad Substrate Tolerance," *Biochemistry*, **1991**, 30, 7349-7358.
5. J. Stubbe, S. Booker, J. Broderick, S.S. Mao, M. Ator, G. Harris, G. Ashley, A.E. Linn, and G.X. Yu, "Ribonucleotide Reductases: Radical Enzymes with Suicidal Tendencies," *Nucleic Acids Symp. Ser.*, **1993**, 29, 107.
6. S. Booker, J. Broderick, and J. Stubbe, "Ribonucleotide Reductases: Radical Enzymes with Suicidal Tendencies," *Biochem. Soc. Trans.*, **1993**, 21, 727-730.
7. Joan B. Broderick, M.J. Natan, T.V. O'Halloran, and R.P. Van Duyne, "Surface-Enhanced Resonance Raman Spectroscopic Studies of an Active Non-Heme Iron Enzyme Adsorbed at a Ag Surface," *Biochemistry*, **1993**, 32, 13771-13776.
8. S. Booker, S. Licht, Joan Broderick, and J. Stubbe, "Coenzyme B₁₂-dependent Ribonucleotide Reductase: Evidence for the Participation of Five Cysteine Residues in Ribonucleotide Reduction," *Biochemistry*, **1994**, 33, 12676-12685.

9. Joan B. Broderick, R.A. Duderstadt, D.C. Fernandez, Kristi Wojtuszewski, Timothy F. Henshaw, and Michael K. Johnson, "Pyruvate Formate-Lyase Activating Enzyme is an Iron-Sulfur Protein," *J. Am. Chem. Soc.*, **1997**, *31*, 7396-7397.
10. Joan B. Broderick, "Catechol Dioxygenases," *Essays Biochem.*, **1999**, *34*, 173-189.
11. J. B. Broderick, Coenzymes and Cofactors, In: Encyclopedia of Life Sciences, Nature Publishing Group: London, www.els.net (2000).
12. J.B. Broderick, T.F. Henshaw, J. Cheek, K. Wojtuszewski, S.R. Smith, M.R. Trojan, R.M. McGhan, A. Kopf, M. Kibbey, and W.E. Broderick "Pyruvate formate-lyase activating enzyme: Strictly anaerobic isolation yields active enzyme containing a [3Fe-4S]⁺ cluster," *Biochem. Biophys. Res. Commun.*, **2000**, *269*, 451-456.
13. T.F. Henshaw, J. Cheek, and J.B. Broderick, "The [4Fe-4S]¹⁺ of Pyruvate Formate-Lyase Activating Enzyme Generates the Glycyl Radical on Pyruvate Formate-Lyase: EPR-Detected Single Turnover," *J. Am. Chem. Soc.* **2000**, *122*, 8331-8332.
14. J. R. Miller, R.W. Busby, S.W. Jordan, J. Cheek, T.F. Henshaw, Gary A. Ashley, J.B. Broderick, John E. Cronan, Jr., and M.A. Marletta, "*Escherichia coli* LipA is a Lipoyl Synthase: *In vitro* Biosynthesis of Lipoylated Pyruvate Dehydrogenase Complex from Octanoyl-Acyl Carrier Protein," *Biochemistry*, **2000**, *39*, 15166-15178.
15. C. Krebs, T.F. Henshaw, J. Cheek, B.-H. Huynh, and J.B. Broderick, "Conversion of 3Fe-4S to 4Fe-4S Clusters in Native Pyruvate Formate-Lyase Activating Enzyme: Mössbauer Characterization and Implications for Mechanism," *J. Am. Chem. Soc.*, **2000** *122*, 12497-12506.
16. J. Cheek and J.B. Broderick, "Adenosylmethionine-Dependent Iron-Sulfur Enzymes: Versatile Clusters in a Radical New Role," *J. Biol. Inorg. Chem*, **2001** *6*, 209-226.
17. C. Walsby, W. Hong, W.E. Broderick, D. Ortillo, J.B. Broderick, and B.M. Hoffman, "Electron-Nuclear Double Resonance Spectroscopic Evidence that S-Adenosylmethionine Binds in Contact With the Catalytically Active [4Fe-4S]⁺ Cluster of Pyruvate Formate-Lyase Activating Enzyme," *J. Am. Chem. Soc.* **2002**, *124*, 3143-3151.
18. Carsten Krebs, William E. Broderick, Timothy F. Henshaw, Joan B. Broderick, and Boi Hanh Huynh, "Coordination of Adenosylmethionine to a Unique Iron Site of the [4Fe-4S] of Pyruvate Formate-Lyase Activating Enzyme: A Mössbauer Spectroscopic Study," *J. Am. Chem. Soc.* **2002**, *124*, 912-913.
19. J. Cheek and J. B. Broderick, "Direct H atom Abstraction from Spore Photoproduct C-6 Initiates DNA Repair in the Reaction Catalyzed by Spore Photoproduct Lyase: Evidence for a Reversibly Generated Adenosyl Radical Intermediate," *J. Am. Chem. Soc.* **2002**, *124*, 2860-2861.
20. Charles J. Walsby, Danilo Ortillo, William E. Broderick, Joan B. Broderick, Brian M. Hoffman, "An Anchoring Role for FeS Clusters: Chelation of the Amino Acid Moiety of S-Adenosylmethionine to the Unique Iron Site of the [4Fe-4S] Cluster of Pyruvate Formate-Lyase Activating Enzyme," *J. Am. Chem. Soc.* **2002**, *124*, 11270-11271.
21. Joan B. Broderick, "Iron-Sulfur Clusters in Enzyme Catalysis." Invited contribution to *Comprehensive Coordination Chemistry II: From Biology to Nanotechnology, Volume 8*, L. Que and W. B. Tolman, Volume Eds., J. McCleverty and T. Meyer, Eds., Elsevier Science, **2003**.
22. Joan B. Broderick, Charles Walsby, William E. Broderick, Carsten Krebs, Wei Hong, Danilo Ortillo, Jennifer Cheek, Vincent Huynh, and Brian M. Hoffman, "Paramagnetic Resonance in Mechanistic Studies of Fe-S/Radical Enzymes," in *ACS Symposium Series 858: Paramagnetic Resonance of Metallobiomolecules*, J. Telser, Ed., American Chemical Society: Washington, DC, **2003**.

23. Michele M. Coper, Nathaniel J. Coper, Wei Hong, William E. Broderick, Jacob E. Shokes, Joan B. Broderick, Michael K. Johnson, and Robert A. Scott, "The Direct Interaction between the FeS Cluster and SAM is not a Universal Feature of Radical SAM Enzymes," *Protein Science* **2003**, *12*, 1573-1577.
24. Jeffrey M. Buis and Joan B. Broderick, "Pyruvate Formate-Lyase Activating Enzyme: Elucidation of a Novel Mechanism for Glycyl Radical Formation," *Arch. Bioch. Biophys.* **2005**, *433(1)*, 288-296.
25. Charles Walsby, Danilo Ortillo, Jian Yang, Mbako R. Nnyepi, William E. Broderick, Brian M. Hoffman, and Joan B. Broderick, "Spectroscopic Approaches to Elucidating Novel Iron-Sulfur Chemistry in the "Radical SAM" Protein Superfamily," *Inorg. Chem.* **2005**, *44*, 727-741.
26. Joan B. Broderick, "Fe/S Clusters in Radical Generation." Invited contribution to *Biological Inorganic Chemistry: Structure and Reactivity*, I. Bertini, H.B. Gray, and J.S. Valentine, Eds., University Science Books, **2006**.
27. J.M. Buis, J. Cheek, E. Kalliri, J.B. Broderick "Characterization of an Active Spore Photoproduct Lyase, an Enzyme in the Radical SAM Superfamily," *J. Biol. Chem.* **2006**, *381(36)*, 25994 - 26003.
28. Mbako R. Nnyepi, Yi Peng, and Joan B. Broderick, "On the Activation and Inactivation of Pyruvate Formate-Lyase: Role of AdhE and Small Molecules," *Arch. Bioch. Biophys.*, **2007**, *459*, 1 - 9.
29. Shawn E. McGlynn, Shane S. Ruebush, Anatoli Naumov, Lauren E. Nagy, Alexandra Dubini, Paul W. King, Joan B. Broderick, Matthew C. Posewitz, and John W. Peters "In vitro Activation of [FeFe] Hydrogenase: New Insights into Hydrogenase Maturation," *J. Biol. Inorg. Chem.*, **2007**, *12(4)*, 443 - 447.
30. Joan B. Broderick, "Assembling Iron-Sulfur Clusters in the Cytosol," *Nature Chemical Biology* **2007**, News & Views invited contribution, *3*, 243-244.
31. Shawn E. McGlynn, Eric M. Shepard, Mark A. Winslow, Anatoli V. Naumova, Kaitlin S. Duschene, Matthew C. Posewitz, William E. Broderick, Joan B. Broderick, and John W. Peters, "HydF as a Scaffold Protein in [FeFe] Hydrogenase H-cluster Biosynthesis," *FEBS Lett.*, **2008**, *582*, 2183-2187.
32. Jessica Vey, Jian Yang, Meng Li, William E. Broderick, Joan B. Broderick, and Catherine Drennan, "Structural Basis for Glycyl Radical Formation by Pyruvate Formate-lyase Activating Enzyme," *PNAS*, **2008**, *205(42)*, 16137-16141.
33. J. Martin Bollinger and Joan B. Broderick, "Frontiers in enzymatic C-H bond activation," *Curr. Op. Chem. Biol.* **2009**, *13*, 1-7.
34. Kaitlin S. Duschene, Susan E. Veneziano, Sunshine C. Silver, and Joan B. Broderick, "Control of radical chemistry in the AdoMet radical enzymes," *Curr. Op. Chem. Biol.*, **2009**, *13*, 74-83.
35. David W. Mulder, Danilo O. Ortillo, David J. Gardenghi, Anatoli V. Naumov, Shane S. Ruebush, Robert K. Szilagy, Boi Hanh Huynh, Joan B. Broderick, and John W. Peters, "Activation of HydA^{EFG} Requires a preformed [4Fe-4S] Cluster.," *Biochemistry*, **2009**, *48(26)*, 6240-6248.
36. Tilak Chandra, Sunshine C. Silver, Egidijus Zilinskas, Eric M. Shepard, William E. Broderick, and Joan B. Broderick, "Spore Photoproduct Lyase Catalyzes Specific Repair of the 5R but not the 5S Spore Photoproduct," *J. Am. Chem. Soc.* **2009**, *131*, 2420-2421.
37. Shawn E. McGlynn, David W. Mulder, Eric M. Shepard, Joan B. Broderick, and John W. Peters, "Hydrogenase cluster biosynthesis: organometallic chemistry nature's way," *Dalton Trans.* **2009**, 4274-4285.
38. Jian Yang, Sunil G. Naik, Danilo O. Ortillo, Ricardo Garcia-Serres, Meng Li, William E. Broderick, Boi Hanh Huynh, and Joan B. Broderick, "The Iron-Sulfur Cluster of Pyruvate Formate-Lyase Activating Enzyme in Whole Cells: Cluster Interconversion and a Valence-Localized [4Fe-4S]²⁺ State," *Biochemistry* **2009**, *48(39)*, 9234-9241.

39. Tilak Chandra, William E. Broderick, and Joan B. Broderick, "Chemoselective Deprotection of Triethylsilyl Ethers," *Nucleotides, Nucleosides, and Nucleic Acids*. **2009**, 28, 1016 – 1029.
40. Shawn E. McGlynn, Eric S. Boyd, Eric M. Shepard, Rachel Lange, Robin Gerlach, Joan B. Broderick, and John W. Peters, "Identification and characterization of a novel member of the radical AdoMet enzyme superfamily and implications for the biosynthesis of the Hmd hydrogenase active site cofactor," *J. Bacteriol.* **2010** 192, 595-598.
41. Rebecca C. Driesener, Martin R. Challand, Shawn E. McGlynn, Eric M. Shepard, Eric S. Boyd, Joan B. Broderick, John W. Peters, and Peter L. Roach, "[FeFe]-Hydrogenase Cyanide Ligands Derived from S-Adenosylmethionine-Dependent Cleavage of Tyrosine," *Angew. Chem. Intl. Ed.* **2010**, 49, 1687-1690.
42. Eric M. Shepard and Joan B. Broderick, "S-Adenosylmethionine and iron-sulfur clusters in biological radical reactions: The radical SAM superfamily." In *Comprehensive Natural Products Chemistry II Chemistry and Biology*; Mander, L., Lui, H.-W, Eds.; Elsevier: Oxford; Vol. 8, pp 625 - 661, **2010**.
43. Tilak Chandra, William E. Broderick, and Joan B. Broderick, "An Efficient Deprotection of N-trimethylsilylethoxymethyl (SEM) Groups from Dinucleosides and Dinucleotides," *Nucleotides, Nucleosides, and Nucleic Acids*. **2010** 29, 132-143.
44. Kaitlin S. Duschene and Joan B. Broderick, "The Antiviral Protein Viperin is a Radical SAM Enzyme," *FEBS Lett.* **2010** 584(6), 1263-1267.
45. David W. Mulder, Eric S. Boyd, Ranjana Sarma, Rachel K. Lange, James A. Endrizzi, Joan B. Broderick, and John W. Peters, "Stepwise [FeFe]-hydrogenase H-cluster assembly revealed in the structure of HydA^{EFG}," *Nature* **2010** 465, 248-251.
46. Eric M. Shepard, Shawn E. McGlynn, Alexandra L. Bueling, Celestine S. Grady-Smith, Simon J. George, Mark A. Winslow, Stephen P. Cramer, John W. Peters, and Joan B. Broderick, "Synthesis of the 2Fe subcluster of the [FeFe]-hydrogenase H cluster on the HydF scaffold," *Proc. Natl. Acad. Sci. U.S.A.* **2010**, 107(23), 10448-10453.
47. Joan B. Broderick, "A Radically Different Enzyme," *Nature* **2010** 465, 877-878.
48. Sunshine C. Silver, Tilak Chandra, Egidijus Zilinskas, Shourjo Ghose, William E. Broderick, and Joan B. Broderick, "Complete stereospecific repair of a synthetic dinucleoside spore photoproduct by spore photoproduct lyase," *J. Biol. Inorg. Chem.* **2010**, 15(6), 943-955.
49. Eric M. Shepard, Benjamin R. Duffus, Simon J. George, Shawn E. McGlynn, Martin R. Challand, Kevin D. Swanson, Peter L. Roach, Stephen P. Cramer, John W. Peters, and Joan B. Broderick, "[FeFe]-Hydrogenase Maturation: HydG-Catalyzed Synthesis of Carbon Monoxide," *J. Am. Chem. Soc.* **2010** 132(27), 9247-9249.
50. Yi Peng, Susan E. Veneziano, Gregory D. Gillispie, and Joan B. Broderick, "Pyruvate formate-lyase: Evidence for an open conformation favored in the presence of its activating enzyme," *J. Biol. Chem.* **2010** 285, 27224-27231.
51. Shawn E. McGlynn, Trevor E. Beard, Joan B. Broderick, and John W. Peters, "On the Potential for Radical Mediated Cyanide Production on the Early Earth," *J. Cosm.* **2010**, in press.

INVITED LECTURES at Scientific Meetings

1. "Mechanistic Studies of an Adenosylcobalamin-Dependent Ribonucleotide Reductase," (w/ JoAnne Stubbe) Symposium on Mechanistic Bioinorganic Chemistry, 205th National Meeting of the American Chemical Society, Denver, CO, **1993**.
2. "Pyruvate Formate Lyase Activase: Radical Generation by an Fe-S Protein," Gordon Research Conference on Metals in Biology, Ventura, CA, January **1998**.

3. "Iron-Sulfur Clusters in Biological Radical Generation," Central Regional ACS Meeting, Columbus, OH, June **1999**.
4. "Iron-Sulfur Clusters in Biological Radical Generation," Gordon Research Conference on Inorganic Chemistry, Newport, RI, July **1999**.
5. "Pyruvate Formate-Lyase Activating Enzyme: Role of the Fe/S Cluster in Radical Generation," International Conference on Bioinorganic Chemistry (ICBIC9), Minneapolis, MN, July **1999**.
6. "Pyruvate Formate-Lyase Activating Enzyme: A Radical Role for an Fe-S Cluster," Gordon Research Conference on Free Radical Chemistry, Plymouth, NH, July **2001**.
7. "Pyruvate Formate-Lyase Activating Enzyme: A Radical Role for an Fe-S Cluster," Gordon Research Conference on Enzymes, Coenzymes, and Metabolic Pathways, Meriden, NH, July **2001**.
8. "Pyruvate Formate-Lyase Activating Enzyme: A Radical Role for an Fe-S Cluster," Midwest Enzyme Chemistry Conference, Chicago, IL, October **2001**.
9. "Radical Roles for Fe-S Clusters," Saltman Lecture presented at the Gordon Research Conference on Metals in Biology, Ventura, CA, January **2002**.
10. "Paramagnetic Resonance in Mechanistic Studies of Fe-S/Radical Enzymes," 223rd National Meeting of the American Chemical Society, Symposium on Paramagnetic Resonance in Metallobiomolecules, Orlando, FL, **2002**.
11. "Radical Generation by Fe-S/Adenosylmethionine Enzymes," Gordon Research Conference on Inorganic Reaction Mechanisms, Ventura, CA, February **2003**.
12. "Generation and Quenching of Catalytically Essential Radicals", Gordon Research Conference on Protein Derived Cofactors, Radicals, and Quinones, Ventura, CA, January **2004**.
13. "Iron-Sulfur Clusters in AdoMet-Mediated Radical Chemistry," Steenbock Symposium on Fe-S proteins, Madison, WI, May **2005**.
14. "Radical Mechanisms of Protein Radical Generation and DNA Repair," Symposium on Activating and Reactivating Proteins for B12 and Radical Enzymes, Pacificchem, Honolulu, Hawaii, December **2005**.
15. "Unusual Properties of the [4Fe-4S] Cluster of a Radical SAM Enzyme: Implications for Mechanism," Gordon Research Conference on Protein Derived Cofactors, Radicals, and Quinones, Ventura, CA, January **2006**.
16. "Radical Generation in the Radical SAM Superfamily: Mechanistic Studies of Pyruvate Formate-Lyase Activating Enzyme," German Research Foundation (DRG) Conference on Radicals in Enzymatic Catalysis, Rauschholzhausen, Germany, March **2006**.
17. "Radical Catalysis in the Radical SAM Superfamily," Gordon Research Conference on Iron-Sulfur Enzymes, New Hampshire, June **2006**.
18. "Structural Basis of a Radical SAM Activation," 13th International Conference on Biological Inorganic Chemistry (ICBIC-13), Vienna, Austria, July **2007**.
19. "Structural Insight into a [4Fe-4S] Cluster-Mediated Radical Reaction," Zing Coordination Chemistry Conference," Cancun, Mexico, March **2008**.
20. "Radical SAM Chemistry in DNA Repair," Symposium in honor of JoAnne Stubbe's 60th Birthday, MIT, July **2008**.
21. "Insights into H-cluster Assembly in the [FeFe]-Hydrogenase," International Conference on Biological Inorganic Chemistry (ICBIC-14), Nagoya, Japan, July **2009**.
22. "Novel Chemistry of Radical SAM Enzymes," Gordon Research Conference on Protein Cofactors, Radicals, and Quinones, Ventura, CA, January **2010**.
23. "Insights into the Assembly of the H-Cluster of [FeFe]-Hydrogenase," Frontiers in Metallobiochemistry, Penn State University, June **2010**.
24. "Unraveling the Mysteries of Hydrogenase H-Cluster Assembly - New Insights into the Roles of the Radical SAM Enzymes," Gordon Research Conference on Iron-Sulfur Proteins, New Hampshire, June **2010**.

25. "Insights into Maturation of the [FeFe]-Hydrogenase," National ACS Meeting, Goodman Symposium honoring JoAnne Stubbe, Boston, MA, August **2010**.
26. "Biosynthesis of the Catalytic Cluster of the World's Fastest Hydrogenase," Gordon Research Conference on Metals in Biology, Ventura, CA, January **2011**.

INVITED LECTURES at Academic Institutions

1992

University at Albany- SUNY

1994

Smith College

University of Massachusetts

1995

MIT Women in Chemistry Conference

Connecticut College

Wesleyan University

1996

Smith College, Women in Science Conference

1997

Massachusetts Institute of Technology

Johns Hopkins University

Michigan State University

Penn State University

Utah State University

Kansas State University

University of Maryland

1998

University of Pennsylvania

University of Washington

California Institute of Technology

University of Minnesota

University of St. Thomas

University of Wisconsin-Osh Kosh

1999

University of Michigan

Oakland University

University of Helsinki, Finland

Bemidjie State University

St. Olaf College

Gustavus Adolphus College

John Carroll University

2000

University of Wisconsin-Milwaukee
Emory University
Hope College
Calvin College
University of New Mexico
University of Wisconsin-Eau Claire

2001

University of Colorado
University of Utah
Colorado State University
Washington State University
University of Idaho
University of South Carolina
University of Georgia
Ohio State University
Stanford University
University of California at Santa Cruz
University of California at Davis
University of California at Berkeley
Miami University of Ohio
Yale University
University of California at Los Angeles
University of California at Irvine
University of California at San Diego
University of Wisconsin at Madison
Northwestern University
Johns Hopkins University
Princeton University
University of Houston
Texas A&M University
University of Illinois

2002

University of Minnesota – Duluth
University of Delaware
Kalamazoo College
Kenyon College
Purdue University-Indiana University at Fort Wayne

2003

Wayne State University (Biochemistry, Medical School)

Emory University
University of Washington
Boston University
University of Pennsylvania
Montana State University
Virginia Tech
Wayne State University (Chemistry)
University of Chicago

2004

University of California, Davis
University of Rochester
Duke University
University of Michigan

2005

University of Nebraska, Lincoln
Reed College
Massachusetts Institute of Technology

2007

Washington State University
University of Montana
Montana Tech
Montana State University Veterinary and Molecular Biology Department

2009

Utah State University
Okayama University

2010

Texas A&M
University of South Carolina

PAPERS PRESENTED AT PROFESSIONAL MEETINGS

1. Joan T. Blanchette and T.V. O'Halloran, "Overproduction, Purification, and Characterization of a Catechol Dioxygenase with Broad Substrate Specificity," presented at the Fourth International Conference on Bioinorganic Chemistry, Boston, July **1989**.
2. Joan T. Blanchette and T.V. O'Halloran, "Broad Substrate Specificity of Chlorocatechol Dioxygenase from *Pseudomonas putida*," presented at the Ninth Annual Midwest Enzyme Chemistry Conference, Evanston, IL, October **1989**.
3. Joan B. Broderick, E.P. Day, and T.V. O'Halloran, "Spectroscopic Studies of Chlorocatechol Dioxygenase from *Pseudomonas putida*," presented at the Tenth Annual Midwest Enzyme Chemistry Conference, Chicago, IL, October **1990**.

4. Joan B. Broderick, S. Booker, and J. Stubbe, "Ribonucleotide Triphosphate Reductase from *Lactobacillus leichmannii*: Role of the Cysteine Residues in the Catalytic Mechanism" poster presented at the International Symposium on Recent Advances on Enzymes in Deoxyribonucleotide Synthesis, Saint-Sauveur-des-Monts, Québec, May, **1993**.
5. Sean J. Elliott, Jyllian N. Kemsley, Amy K. Barczak, William E. Broderick, and Joan B. Broderick, "A Ligand System for Distorted 4/5-Coordinate Metal Complexes: Modelling the Structural and chemical Properties of the Fe(II) Site in Lipoxxygenase" poster, 208th National Meeting of the American Chemical Society, Washington, D.C., August, **1994**.
6. Joan B. Broderick, Kristi Wojtuszewski, and Ryan M. McGhan, "Preliminary Identification of an Iron-Sulfur Cluster in Pyruvate Formate-Lyase Activating Enzyme," poster, Gordon Research Conference on Metals in Biology, Ventura, CA, January **1996**.
7. Joan B. Broderick, R.A. Duderstadt, D.C. Fernandez, Kristi Wojtuszewski, Timothy F. Henshaw, and Michael K. Johnson, "Pyruvate Formate-Lyase Activating Enzyme is an Iron-Sulfur Protein," poster, Gordon Conference on Quinone and Redox-Active Amino Acid Cofactors, Barga, Italy, May **1997**
8. Joan B. Broderick, Sheila Smith, Timothy Henshaw, "Spectroscopic Characterization of Pyruvate Formate-Lyase," poster, Gordon Conference on Metals in Biology, Ventura, CA, January **1999**.
9. Joan B. Broderick, T.F. Henshaw, and J.C. Cheek, "Fe-S Cluster Interconversions in Pyruvate Formate-Lyase Activase," poster, Gordon Conference on Quinone and Redox-Active Amino Acid Cofactors, Meriden, NH, **1999**.
10. Timothy F. Henshaw, Sheila S. Smith, and Joan B. Broderick, "Spectroscopic and biophysical studies of pyruvate formate-lyase activating enzyme," Poster, International Conference on Bioinorganic Chemistry, Minneapolis, MN, July **1999**.
11. William E. Broderick, Joan B. Broderick, Lydia Finney, and Sean J. Elliott, "Production of a Borylperoxy-Fe(III) Complex via Dioxygen Activation," poster, International Conference on Bioinorganic Chemistry, Minneapolis, MN, **1999**.
12. William E. Broderick, Joan B. Broderick, Lydia Finney, and Sean J. Elliott, "Production of a Borylperoxy-Fe(III) Complex via Dioxygen Activation," poster, Gordon Research Conference on Inorganic Chemistry, Newport, RI, **1999**.
13. J. Cheek, T.F. Henshaw, and J.B. Broderick, "A Study of the Fe-S Cluster of Pyruvate Formate-Lyase Activating Enzyme and its Interactions with Substrate Analogues," Poster, Gordon Research Conferences Graduate Research Conference on Bioinorganic Chemistry, Ventura, CA, January **2000**.
14. T.F. Henshaw, J. Cheek, C. Krebs, B.-H. Huynh, J.B. Broderick, "Cluster Conversions and Redox Chemistry of PFL-AE," Poster, Gordon Research Conferences Graduate Research Conference on Bioinorganic Chemistry, Ventura, CA, January **2000**.
15. Joan B. Broderick, Timothy F. Henshaw, Jennifer Cheek, William E. Broderick, Wei Hong, Carsten Krebs, and Vincent Huynh, "Pyruvate Formate-Lyase Activating Enzyme: Properties of the Fe-S Cluster and Role of the Cluster in Radical Generation," Poster, Gordon Research Conference on Metals in Biology, Ventura, CA, January **2001**.
16. Joan B. Broderick, W. Hong, W. E. Broderick, T. F. Henshaw, J. Cheek, D. Ortillo, C. Krebs, B.-H. Huynh, C. Walsby, and B. M. Hoffman, "Pyruvate Formate-Lyase Activating Enzyme: A Radical Role for an Fe-S Cluster," Poster, Gordon Research Conference on Free Radical Chemistry, Plymouth, NH, July **2001**.
17. Joan B. Broderick, W. Hong, W. E. Broderick, T. F. Henshaw, J. Cheek, D. Ortillo, C. Krebs, B.-H. Huynh, C. Walsby, and B. M. Hoffman, "Pyruvate Formate-Lyase Activating Enzyme: A Radical Role for an Fe-S Cluster," Poster, Gordon Research Conference on Enzymes, Coenzymes, and Metabolic Pathways, Meriden, NH, July **2001**.
18. Joan B. Broderick, Carsten Krebs, Timothy F. Henshaw, William E. Broderick, and Boi Hanh Huynh "Pyruvate Formate-Lyase Activating Enzyme: Radical Generation by an Iron-Sulfur Cluster," Poster, 10th International Conference on Bioinorganic Chemistry, Florence, Italy, August **2001**.

19. William E. Broderick, Wei Hong, Danilo Ortillo, Charles Walsby, Brian M. Hoffman, and Joan B. Broderick, "Pyruvate Formate-Lyase Activating Enzyme: Interaction of Adenosylmethionine with the Iron-Sulfur Cluster," Poster, 10th International Conference on Bioinorganic Chemistry, Florence, Italy, August **2001**.
20. Jennifer Cheek, Carsten Krebs, Boi Hanh Huynh, Joan B. Broderick, "DNA Repair by an Fe-S/AdoMet Enzyme: Characterization of Spore Photoproduct Lyase," Poster, 10th International Conference on Bioinorganic Chemistry, Florence, Italy, August **2001**.
16. W. Hong, C. Walsby, W. E. Broderick, B. M. Hoffman, and J. B. Broderick, "Interaction of S-adenosylmethionine with the Iron-sulfur Cluster of Pyruvate Formate-Lyase Activating Enzyme," Poster, American Chemical Society National Meeting, Chicago, IL, August **2001**.
17. Jennifer Cheek, Carsten Krebs, Boi Hanh Huynh, Joan B. Broderick, "DNA Repair by an Fe-S/AdoMet Enzyme: Characterization of Spore Photoproduct Lyase," Poster, Midwest Enzyme Chemistry Conference, Chicago, IL **2001**.
18. Danilo Ortillo, Wei Hong, Charles Walsby, William E. Broderick, Jennifer Cheek, Brian M. Hoffman, and Joan B. Broderick "Interaction of S-Adenosylmethionine With the Iron-Sulfur Cluster of Pyruvate Formate-Lyase Activating Enzyme," Poster, Midwest Enzyme Chemistry Conference, Chicago, IL **2001**.
19. Joan B. Broderick, Charles Walsby, William E. Broderick, Carsten Krebs, Wei Hong, Danilo Ortillo, Boi Hanh Huynh, Brian M. Hoffman, and Joan B. Broderick "[4Fe-4S] cluster of pyruvate formate-lyase activating enzyme and its interaction with S-adenosylmethionine," Invited Poster, 223rd National Meeting of the American Chemical Society, Orlando, FL **2002**.
20. Joan B. Broderick, Jennifer Cheek, and Vincent Huynh, "DNA Repair by a Novel Fe/S-Radical Mechanism: Spore Photoproduct Lyase," Gordon Research Conference on Metals in Medicine, New Hampshire, July **2002**.
21. Joan B. Broderick, Jennifer Cheek, and Vincent Huynh, "DNA Repair by a Novel Fe/S-Radical Mechanism: Spore Photoproduct Lyase," Gordon Research Conference on Metals in Biology, Ventura, CA, February **2003**.
22. Joan B. Broderick, Jennifer Cheek, and Vincent Huynh, "DNA Repair by a Novel Fe/S-Radical Mechanism: Spore Photoproduct Lyase," Eleventh International Conference on Bioinorganic Chemistry, Cairns, Australia, July **2003**.
23. Mbako R. Nnyepi and Joan B. Broderick, "Quenching the Glycyl Radical of Pyruvate Formate-Lyase: Is AdhE a PFL Deactivase?" Gordon Research Conference on Protein-Derived Cofactors, Radicals, and Quinones, Ventura, CA, January **2004**.
24. Joan B. Broderick, Mbako R. Nnyepi, Jeffrey M. Buis, and Jennifer Cheek, "Generation and Quenching of Catalytically Essential Radicals", Gordon Research Conference on Metals in Biology, Ventura, CA, January **2004**.
25. Ortillo, D.; Walsby, C.J.; Phelan, R.; Broderick, William E.; Hoffman, B.M.; Broderick, J.B., "Investigating the Interaction Between the [4Fe-4S] Cluster of Pyruvate Formate-Lyase-Activating Enzyme (PFL-AE), a Radical SAM Enzyme, with S-Adenosylmethionine via EPR and ENDOR Spectroscopic Studies", 12th International Conference on Bioinorganic Chemistry (ICBIC-12), Ann Arbor, MI, July **2005**.
26. Peng, Y.; Yang, J.; Broderick, Joan B. "Kinetic Studies of Pyruvate Formate-lyase and Activation of Pyruvate Formate-lyase Mutants", 12th International Conference on Bioinorganic Chemistry (ICBIC-12), Ann Arbor, MI, July **2005**.
27. Yang, Jian; Naik, Sunil; Huynh, Boi Hanh; Broderick Joan B. "In vivo States of the Iron Sulfur Cluster of Pyruvate Formate-Lyase-Activating Enzyme." Paper presented at ICBIC-12, Ann Arbor, MI, **2005**
28. Ortillo, D.; Walsby, C.J.; Broderick, W. E.; Hoffman, B.M.; Broderick, J.B., "Investigating the Interaction Between the [4Fe-4S] Cluster of Pyruvate Formate-Lyase-Activating Enzyme (PFL-AE), a Radical SAM Enzyme, with S-Adenosylmethionine via EPR and ENDOR Spectroscopic Studies", Gordon Research Conference on Protein Derived Cofactors, Radicals, and Quinones, Ventura, CA, January **2006**.

29. Ortillo, D.; Walsby, C.J.; Broderick, W.E.; Hoffman, B.M.; Broderick, J.B., "The Interaction of S-adenosylmethionine and Pyruvate Formate-Lyase-Activating Enzyme: A Radical Activation", Gordon Research Conference on Iron-Sulfur Enzymes, New London, New Hampshire, June **2006**.
30. Yang, Jian; Naik, Sunil; Broderick, William E.; Huynh, Boi Hanh; Broderick, Joan B. "Radical Generation in the Radical SAM Superfamily: Mechanistic Studies of Pyruvate Formate-Lyase Activating Enzyme." Gordon Research Conference on Iron-Sulfur Enzymes, New London, NH, **2006**.
31. Peng, Yi; Yang, Jian; Broderick, Joan B "Investigation on the First Step in Pyruvate Formate Lyase Catalysis." Gordon Research Conference on Iron-Sulfur Enzymes, New London, NH, **2006**
32. James M. Tiedje, John Davis, Sang-Hoon Kim, David Dewitt, Christina Harzman, Christi Hemming, Rachel Udelhoven, Kaitlin Duschene, Joan B. Broderick, and Terence L. Marsh, "Exploring the Genome and Proteome of *Desulfitobacterium hafniense* DCB-2 for its Protein Complexes Involved in the Reduction of Selenium and Iron," Genomes to Life Conference (DOE), Washington, D.C., **2007**.
33. Silver, Sunshine C; Buis, Jeffrey M; Broderick, Joan B "Investigations of Spore Photoproduct Lyase: DNA Repair in the Radical SAM Superfamily." Gordon Research Conference on Protein Cofactors, Radicals and Quinones, Ventura, CA, January, **2008**.
34. Veneziano, Susan E; Peng, Yi; Broderick, Joan B "Investigating the Activities of Pyruvate Formate Lyase and Its Activating Enzyme." Gordon Research Conference on Protein Cofactors, Radicals and Quinones, Ventura, CA, **2008**
35. Hutcheson, Rachel; Duschene, Kaitlin; Tigges, Michelle; Zilinskas, Egis; Broderick, Joan B.; Harzman, Christina; Hemming, Christi; Kim, Sang-Hoon; DeWitt, David; Tiedje, James M.; Marsh, Terence L.; Davis, John "*Desulfitobacterium hafniense* DCB-2: Protein Complexes Involved in the Reduction of Selenium." Gordon Research Conference on Protein Cofactors, Radicals and Quinones, Ventura, CA, **2008**
36. McGlynn, Shawn E; Shepard, Eric M; Winslow, Mark A; Naumov, Anatoli V; Duschene, Kaitlin S; Broderick, Joan B; Peters, John W "HydF as a Scaffold Protein in [FeFe] Hydrogenase H-cluster Biosynthesis." Gordon Research Conference on Protein Cofactors, Radicals, and Quinones, Ventura, CA, 2007
37. Chandra, T; Broderick, William E; Broderick, Joan B "Chemoselective deprotection of triethylsilyl ethers" Gordon Research Conference on Protein Cofactors, Radicals and Quinones, Ventura, CA, **2008**.
38. Chandra, T; Broderick, William E; Broderick, Joan B "Synthesis of Spore Photoproduct and its incorporation into oligonucleotides" Gordon Research Conference on Protein Cofactors, Radicals and Quinones, Ventura, CA, **2008**.
39. Joan B. Broderick, Sunshine C. Silver, Tilak Chandra, Egidijus Zilinskas, Eric M. Shepard, and William E. Broderick, "Stereoselectivity in a radical-AdoMet DNA repair reaction," Gordon Research Conference on Metals in Biology," Gordon Research Conference on Metals in Biology, Ventura, CA, **2009**.
40. Sunshine C. Silver, Tilak Chandra, Egidijus Zilinskas, Shourjo Ghose, Eric M. Shepard, William E. Broderick, Joan B. Broderick, "Stereospecific repair of the 5R Spore photoproduct by spore photoproduct lyase," International Conference on Bioinorganic Chemistry, Nagoya, Japan, **2009**.
41. Sunshine C. Silver, Tilak Chandra, Egidijus Zilinskas, Shourjo Ghose, Eric M. Shepard, William E. Broderick, Joan B. Broderick, "Stereospecific repair of the 5R Spore photoproduct by spore photoproduct lyase," Gordon Research Conference on Protein Cofactors, Radicals, and Quinones, Ventura, CA, **2010**.
42. Eric M. Shepard, Shawn E. McGlynn, Alexandra L. Bueling, Celestine S. Grady-Smith, Simon J. George, Mark Winslow, Stephen P. Cramer, John W. Peters, and Joan B. Broderick, "Synthesis of the 2Fe-subcluster of the [FeFe]-hydrogenase H-cluster on the HydF scaffold," Gordon Research Conference on Protein Cofactors, Radicals, and Quinones, Ventura, CA, **2010**.

CONFERENCE SESSIONS CHAIRED

1. Gordon Research Conference on Quinone and Redox-Active Amino Acid Cofactors, Italy, May **1997** Session on Glycyl Radical Generation.
2. Gordon Research Conference on Quinone and Redox-Active Amino Acid Cofactors Meriden, NH, June **1999**

- Session on Glycyl Radical Enzymes.
- Gordon Research Conference on Free Radical Reactions, Holderness, NH, July **2001**
Session on Protein and Enzyme Radical Chemistry.
 - Gordon Research Conference on Protein Cofactors, Radicals, and Quinones, Ventura, CA, January **2002**
Session on Radicals in Catalysis/Biogenesis of Fe/S Cofactors.
 - American Chemical Society National Meeting, Symposium on Paramagnetic Resonance in Biological Molecules, In Honor of Brian M. Hoffman's 60th Birthday, Orlando, Florida, March **2002**
 - 11th International Conference on Bioinorganic Chemistry (ICBIC-11), Cairns, Australia, July **2003**
Final Plenary Session
 - Graduate Research Seminar in Bioinorganic Chemistry (GRC), Ventura, CA, January **2004**
Session on Metals, Proteins, and Nucleic Acids.
 - Gordon Research Conference on Iron-Sulfur Enzymes, New Hampshire, June **2008**
Session on Aconitase, Radical SAM, and DNA/RNA-Related Enzymes

CURRENT AND PAST TRAINEES

Current Trainees

	<u>Position in my lab</u>	<u>Previous Education</u>
Rachel Udelhoven	Graduate Student	B.S., Carroll College
Sunshine Silver	Graduate Student	B.S., St. Cloud State University
Adam Crain	Graduate Student	B.S., IUPUI
Shourjo Ghose	Graduate Student	M.S., St. Cloud State University
Ben Duffus	Graduate Student	B.S., Concordia University
Nicholas Boswell	Graduate Student	B.S., University of Michigan
Krista Shisler	Graduate Student	B.S., University of Wyoming
Amanda Byer	Research Associate	
Tilak Chandra	Postdoc	Ph.D., India
Eric Shephard	Postdoc	Ph.D., Montana State University
Kaitlin Duschene	Research Associate	M.S. in Chemistry

Past Research Students and Trainees

	<u>Degree Granted/Position in my lab</u>	<u>Subsequent or current position, if known</u>
Egidijus Zilinskus	Ph.D. 2010	Adjunct Professor, Montana State U.
Susan Veneziano	Postdoc	BioScience Labs, Bozeman, MT
Alexandra Bueling	M.S. 2009	Research Associate, MSU
Jian Yang	Ph.D. 2007	Postdoc, UCLA
Peng Yi	Ph.D. 2007	seeking faculty position in China
Jeffrey Buis	Ph.D. 2006	Postdoc, University of Michigan
Danilo Ortillo	Ph.D. 2005	Postdoc, Emory University
Magdalena Gryszka	Postdoctoral Associate	Postdoctoral Associate, Michigan State U.
Efthalia Kalliri	Graduate Student	
Meng Li	Graduate Student	
Liton Roy	Graduate Student	Graduate Student, Michigan State University
Ziyang Su	Graduate Student	Graduate Student, Purdue University
Shujuan Xu	Graduate Student	Graduate Student, Michigan State University
Emily McAllister	Undergraduate Student	
Christopher Austin	Undergraduate Student	Research Technician, Bay area

Mbako R. Nnyepi	Ph.D. 2004	Professor, University of Botswana
Timothy F. Henshaw	Ph.D. 2004	
Jim Ziegler	Postdoctoral Assoc.	
Jennifer Cheek	NIH Postdoc. Fellow	Senior Technical Specialist, Abbott Labs
Brian Facione	Undergraduate	
John Hunt	Undergraduate	
Wei Hong	M.S. 2001	Research Scientist, SynPep
Silvana Maritano	Postdoctoral Associate	
Dan Wood	CEM 186H lab project	
Kelly LeBoeuf	B.S. 2001	Research Assistant, Pfizer
Beverly Schad	NSF-REU student	
Jill Morris	NSF-REU student	
Chris Guyer	Undergraduate	
Amy Kopf	B.S. 2000	Ph.D. Program, Northwestern
Sheila R. Smith	Postdoctoral Associate	Associate Professor, UM-Dearborn
Dawn Wojcak	CEM 186H lab project	
Kristi Wojtuszewski	Research Technician	Ph.D. Program, Wesleyen U., CT
Art Klawender	NSF-REU student	
Patrick Long	NSF-REU student	
Benjamin Messmore	NSF-REU student	Ph.D. Program, Northwestern
Lydia Finney	NSF-REU student	Ph.D. Program, Northwestern
Meghan Kibbey	NSF-REU student	DMD/PhD Prog., Med.Coll. S. Carolina
Elizabeth Dell	B.A., 1998	
Daniel Fernandez	B.A., 1997	M.D. Student, U. So. Florida
Jeffrey Barnes	B.A., 1997	
Timothy Henshaw	B.A., 1997	Ph.D. Program, MSU
Paula Pinell-Salles	B.A., 1996	
Elena Karp	B.A., 1996	M.D. program, Washington University
Matthew Trojan	B.A., 1995	M.D. resident, Minnesota
Zachary Shriver	B.A., 1995	Ph.D. Program, MIT
Ryan McGhan	B.A., 1995	M.D. resident, California
Henry Gibbons	B.A., 1995	Ph.D. Program, Duke
Jyllian Kemsley	B.A., 1994	Ph.D. Program, Stanford
Sean Elliott	B.A., 1994	Asst. Prof., Boston University