

## CURRICULUM VITAE

**John L. McCracken*****Personal Information***

Date of birth: 15 September 1956  
 Place of birth: Decatur, Illinois  
 Marital Status: Married, 4 children

Work Address: Department of Chemistry  
 Michigan State University  
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***Education***

B. S. in Chemistry, University of Illinois; Urbana, Illinois 1978  
 Ph.D. in Chemistry, University of California; Berkeley, California 1983

***Professional Experience***

Professor of Chemistry, Michigan State University 2000-present  
 Chair, Department of Chemistry 2002-2010  
 Associate Chair for the Graduate Program, MSU 2000-2002  
 Associate Professor of Chemistry, Michigan State University 1995-2000  
 Assistant Professor of Chemistry, Michigan State University 1990-1995  
 Lecturer in Biophysics, Albert Einstein College of Medicine 1988-1990  
 Associate Director, NIH Pulsed EPR Research Resource  
 Albert Einstein College of Medicine, New York 1985-1990  
 Postdoctoral Fellow, Albert Einstein College of Medicine, New York 1983-1985  
 Graduate Student Research Assistant, University of California 1978-1983

***Educational Awards and Honors***

Edmund James Scholar, University of Illinois 1974-1978  
 Bachelor of Science with Highest Distinction in Chemistry,  
 University of Illinois 1978  
 Chancellor's Fellow in Chemistry, University of California 1981  
 Michigan State University, College of Natural Sciences  
 Teacher-Scholar Award 1995  
 Michigan State University Teacher-Scholar Award 1997  
 Michigan State University CNS Distinguished Faculty Award 2012

***Professional Society Memberships***

American Chemical Society  
 International EPR Society

**Professional Service**

NIH National Pulsed EPR Research Resource Governing Board	1985-1999
Member, NIH Special Study Sections	1990-91, 1995-6, 2000-present
Member, NIH Metallobiochemistry Study Section	1996-2000
Officer, MSU Local Section of the ACS	1992-5
Member, Organizing Committee, International EPR Symposium	2013-present
Chair, 59 <sup>th</sup> Annual Rocky Mountain Conference on Magnetic Resonance, Quebec City, Quebec, Canada, July 23-28, 2017 (joint w/ISMAR2017)	2017
Member, NSF MRI Review Panels	2014, 2018
Member, NSF Special Review Panels	2019

**Publications (all are peer-reviewed)**

1. Friesner, R.; McCracken, J.; and Sauer, K. Transient solutions to the Bloch equations for inhomogenously broadened lines. *J. Magn. Reson.* **43**, 343-356 (1981).
2. McCracken, J.; Frank, H.; and Sauer, K. Radical pair interactions in spinach chloroplasts. *Biochim. Biophys. Acta* **679**, 156-168 (1982).
3. McCracken, J. and Sauer, K. Orientation dependence of radical pair interactions in spinach chloroplasts. *Biochim. Biophys. Acta* **724**, 83-93 (1983).
4. McCracken, J. and Sauer, K. Electron paramagnetic resonance studies of the primary electron acceptors of photosystem I. In: *Proceedings of the 6th International Congress on Photosynthesis*, Brussels, Belgium (1983).
5. Malikayil, J. A.; Sweeney, W. V.; McCracken, J.; and Peisach, J. The lack of a solvent accessible hydroxide or water ligand to iron at the 3Fe center of Azotobacter Vinelandii ferredoxin I. *Biochem. Biophys. Res. Commun.* **133**, 1119-1124 (1985).
6. McCracken, J.; Peisach, J.; and Dooley, D. M. Cu(II) coordination chemistry of amine oxidases: Pulsed EPR studies of histidine imidazole, water, and exogenous ligand coordination. *J. Am. Chem. Soc.* **109**, 4064-4072 (1987).
7. Dooley, D. M.; McGuirl, M. A.; Peisach, J.; and McCracken, J. The generation of an organic free radical in substrate-reduced pig kidney diamine oxidase-cyanide. *FEBS Lett.* **214**, 274-278 (1987).
8. Magliozzo, R. S.; McCracken, J.; and Peisach, J. Electron-nuclear coupling in nitrosyl heme proteins and in nitrosyl ferrous and oxy cobaltous tetraphenylporphyrin complexes. *Biochemistry* **26**, 7923-7931 (1987).
9. Mondovi, B.; Morpurgo, L.; Agostinelli, E.; Befani, O.; McCracken, J.; and Peisach, J. A comparison of the local environment of Cu(II) in holo and half Cu-depleted bovine serum amine oxidase. *Eur. J. Biochem.* **168**, 503-507 (1987).
10. McCracken, J.; Pember, S.; Benkovic, S. J.; Villafranca, J. J.; Miller, R.; and Peisach, J. Electron spin echo studies of the Cu(II) site in phenylalanine hydroxylase from Chromobacterium violaceum. *J. Am Chem. Soc.* **110**, 1069-1074 (1988).
11. Doi, K.; McCracken, J.; Peisach, J.; and Aisen, P. The binding of molybdate to uteroferrin: hyperfine interactions of the binuclear center with <sup>95</sup>Mo, <sup>1</sup>H, and <sup>2</sup>H. *J. Biol. Chem.* **263**, 5757-5763 (1988).

12. McCracken, J.; Desai, P. R.; Papadopoulos, N. J.; Villafranca, J. J.; and Peisach, J. Electron spin-echo studies of the copper(II) binding sites in dopamine B-hydroxylase. *Biochemistry* **27**, 4133-4137 (1988).
13. Traylor, T. G.; Hill, K. W.; Tian, Z.; Rheingold, A. L.; McCracken, J.; and Peisach, J. Ene diimidazoles: Metal ligands for biomimetic chemistry. *J. Am. Chem. Soc.* **110**, 5571-5573 (1988).
14. Cammack, R.; Chapman, A.; McCracken, J.; Cornelius, J. B.; Peisach, J.; and Weiner, J. H. Electron spin-echo spectroscopic studies of *E. coli* fumarate reductase. *Biochim. Biophys. Acta* **956**, 307-312 (1988).
15. Serpersu, E. H.; McCracken, J.; Peisach, J.; and Mildvan, A. S. Electron spin-echo envelope modulation and nuclear relaxation studies of staphylococcal nuclease and its metal-coordinating mutants. *Biochemistry* **27**, 8034-8044 (1988).
16. Chapman, A.; Cammack, R.; Hatchikian, C. E.; McCracken, J.; and Peisach, J. A pulsed EPR study of redox-dependent hyperfine interactions for the nickel centre of *Desulfovibrio gigas* hydrogenase. *FEBS Lett.* **242**, 134-138 (1988).
17. Chasteen, N. D.; Snetsinger, P. A.; Swope, S. K.; van Willigen, H.; Cornelius, J. B.; and McCracken, J. The structure of mixed-ligand cyano complexes of transferrin. In: *UCLA Symposia on Molecular and Cellular Biology*, Vol. 98 (Winge, D. and Hamer, D., eds.) Alan R. Liss, Inc., pp. 161-168 (1988).
18. McCracken, J.; Cornelius, J. B.; and Peisach, J. Quantitative aspects of nitrogen-14 electron spin-echo envelope modulation in Cu(II)-proteins. In: *Pulsed EPR: A New Field of Applications*, (C. P. Keijzers, E. J. Riejerse, and J. Schmidt, Eds.) North Holland Publ., Amsterdam, pp. 155-161 (1989).
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20. Cammack, R.; Kovacs, K.; McCracken, J.; and Peisach, J. Spectroscopic characterization of the nickel and iron-sulfur clusters of hydrogenase from the purple photosynthetic bacterium *Thiocapsa roseopersicina*. *Eur. J. Biochem.* **182**, 363-366 (1989).
21. Cunningham, R. P.; Asahara, H.; Bank, J. F.; Scholes, C. P.; Salerno, J. C.; Surerus, K.; Munck, E.; McCracken, J.; Peisach, J.; and Emptage, M. H. Endonuclease III is an iron-sulfur protein. *Biochemistry* **28**, 4450-4455 (1989).
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23. Cornelius, J. B.; McCracken, J.; Clarkson, P. B.; Belford, R. L.; and Peisach, J. ESEEM Angle Selection Studies of Axial Pyridine Coordination to Cu(II) Benzoylacetate. *J. Phys. Chem.* **94**, 6977-6982 (1990).
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27. McCracken, J.; Shin, D.-H.; Dye, J. L. Characterization of Electron Trapping Sites in Cesium Hexamethyl Hexacyclen Sodide. *Applied Magnetic Resonance* **3**, 305-316 (1992).
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87. McCracken, J.; "Structural Characterization of the Catalytic Sites of Mononuclear Non-Heme Iron Hydroxylases Using <sup>2</sup>H-ESEEM," in Peter Qin, Kurt Warncke, editors: *Electron Paramagnetic Resonance Investigations of Biological Systems by Using Spin Labels, Spin Probes, and Intrinsic Metal Ions, Part A, Vol 563, MIE, UK: Academic Press, 2015, pp. 285-309.*
88. Proshlyakov, D.A.; McCracken, J.; Hausinger, R.P.; "Spectroscopic analysis of 2-oxoglutarate-dependent oxygenases: TauD a case study," *J. Biol. Inorg. Chem.*, **22**, 367 – 379, 2017.
89. Rankin, J.A.; Mauban, R.C.; Fellner, M.; Desguin, B.; McCracken, J.; Hu, J.; Varganov, S.A.; Hausinger, R.P.; "The Lactate Racemase Nickel-Pincer Cofactor Operates by a Proton-Coupled Hydride Transfer Mechanism," *Biochemistry*, **57**, 3244-3251, 2018.
90. Costanzo, T.; McCracken, J.; Caruntu, G.; Rotaru, A.; "Quasi-Monodisperse Transition Metal-Doped BaTiO<sub>3</sub> (M=Cr, Mn, Fe, Co) Colloidal Nanocrystals with Multiferroic Properties" *ACS Applied Nano Materials*, 2018, **1**, 4863-4874.
91. Billow, B.; Livesay, B.N.; Mokhtarzadeh, C.G., McCracken, J.; Shores, M.P.; Boncella, J.M.; Odom, A.L.; "Synthesis and Characterization of a neutral U(II) Arene Sandwich Complex," *J. Am. Chem. Soc.*, **140**, 17369 – 17373, 2018.

### Book Chapters and Reviews (peer-reviewed)

1. McCracken, J. Electron Spin Echo Envelope Modulation, *Handbook of Electron Spin Resonance, Volume II*, C.P. Poole and H.A. Farach, eds., Springer-Verlag, New York, 1999, Chapter V.
2. McCracken, J., "Electron Spin Echo Envelope Modulation (ESEEM) Spectroscopy" in *Encyclopedia of Inorganic Chemistry*, ed R. H. Crabtree, John Wiley: Chichester. DOI: 10.1002/0470862106.ia337. Published 15 March 2008.



***Invited Talks***

1. "Radical Pair Interactions in Spinach Chloroplasts," Procter and Gamble Co., Cincinnati, Ohio, February 1983.
2. "Time-Resolved EPR Studies of Photosynthetic Electron Transport," Medical College of Wisconsin, Milwaukee, Wisconsin, February 1983.
3. "Time-Resolved EPR Studies of Photosynthetic Electron Transport," IBM Instruments, Danbury, Connecticut, February 1983.
4. "Orientation Dependence of Radical Pair Interactions in Photosystem I," Bell Telephone Laboratories, Murray Hill, New Jersey, February 1983.
5. "Pulsed EPR Studies of the Cu(II) Binding Site in Amine Oxidases," 29th Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado, August 1986.
6. "Pulsed EPR Studies of the 2Fe-2S Cofactor in Fumarate Reductase," XIII International Conference on Magnetic Resonance in Biological Systems, Madison, Wisconsin, August 1988.
7. "Pulsed EPR Studies of the Nickel Site in *D. Gigas* Hydrogenase," Department of Chemistry, University of New Mexico, Albuquerque, New Mexico, December 1988.
8. "Pulsed EPR Studies of the Nickel Site in *D. Gigas* Hydrogenase," Department of Chemistry, Michigan State University, February 1989.
9. "Pulsed EPR Studies of the Nickel Site in *D. Gigas* Hydrogenase," Department of Chemistry, University of Oklahoma, February 1989.
10. "Pulsed EPR Studies of the Nickel Site in *D. Gigas* Hydrogenase," Department of Chemistry, Arizona State University, March 1989.
11. "Electron Spin Echo Studies of Ni-Fe Hydrogenases," Fourth International Conference on Bioinorganic Chemistry, Cambridge, Massachusetts, July 1989.
12. "Electron Spin Echo Studies of Ni-Fe Hydrogenases," XIV International Conference on Magnetic Resonance in Biological Systems, Warwick, U. K., September 1990.
13. "Pulsed EPR Studies of Nickel Model Complexes," MSU Foundation Annual Meeting, December 1990.
14. "Pulsed EPR Studies of Amine Oxidase," Wellcome Lectureship Symposium, MSU Biochemistry Department, February 1991.
15. "Electron Spin Echo Envelope Modulation Studies of Ni(III) Model Complexes," 33rd Rocky Mountain Conference on Analytical Chemistry, August 1991.
16. "Pulsed EPR Studies of the Cu(I)-Semiquinone State of Amine Oxidases," Department of Chemistry, Bryn Mawr College, Bryn Mawr, Pennsylvania, February 1992.
17. "Pulsed EPR Studies of Nickel Model Complexes," Gordon Conference on Magnetic Resonance, Tilton School, July 1992.

18. "Pulsed EPR Studies of Radical Intermediates in Biological Reactions," Department of Chemistry, Columbia University, New York, NY, 24 September 1993.
19. "Pulsed EPR Studies of Radical Intermediates in Biological Reactions," Department of Chemistry, Oakland University, Rochester, MI, 29 September 1993.
20. "Pulsed EPR Studies of Radical Intermediates in Biological Reactions," Department of Chemistry, Northwestern University, Evanston, IL, 1 November 1993.
21. "<sup>2</sup>H Electron Spin Echo Envelope Modulation Spectroscopy of Strong  $\alpha$ -Hydrogen Hyperfine Coupling in Randomly-oriented Paramagnetic Systems", Depts. of Chemistry and Physics, Washington University, St. Louis, MO, 25 April 1994.
22. "<sup>2</sup>H Electron Spin Echo Envelope Modulation Spectroscopy of Strong  $\alpha$ -Hydrogen Hyperfine Coupling in Randomly-oriented Paramagnetic Systems", 17th International EPR Symposium, Denver, CO, August 1-4, 1994.
23. "<sup>2</sup>H Electron Spin Echo Envelope Modulation Spectroscopy of Strong  $\alpha$ -Hydrogen Hyperfine Coupling in Randomly-oriented Paramagnetic Systems", 26th Southeastern Magnetic Resonance Conference, October, 1994.
24. "Probing Radical Intermediates in Amine Oxidases", Dept. of Biochemistry, University of Nebraska, Lincoln, Nov.8, 1994.  
"Pulsed EPR Primer", Center for Metallobiochemistry Research, University of Nebraska, Lincoln, NE, Nov.9, 1994.
25. "Probing Radical Intermediates in Enzymes", Dept. of Chemistry, University of California, Davis, CA, February 16, 1995.
26. "Probing Radical Intermediates in Quinoproteins", Chemical Biodynamics Division, University of California, Berkeley, CA, February 17, 1995.
27. "Application of Advanced Electron Magnetic Resonance Methods to the Study of Radical Intermediates in Amine Oxidases" Gordon Conference on Quinone and Redox-Active Amino Acid Cofactors, Ventura, CA, February, 19-24, 1995.
28. "Probing Radical Intermediates in Quinoproteins", Biophysics Research Institute, Medical College of Wisconsin, March 17, 1995.
29. "Biological Applications of Advanced EPR Spectroscopy", Dept. of Chemistry, University of Michigan, Oct. 3, 1996.
30. "Advanced EPR Spectroscopy for Biochemistry", Dept. of Biochemistry, Michigan State University, January 10, 1997.
31. "Structure of Radical Intermediates in Electron Transfer Proteins and Enzymes", Gordon Conference on Magnetic Resonance in Biological Systems, Ventura, CA, January 27-31, 1997.
32. "Structure of Radical Intermediates in Electron Transfer Proteins and Enzymes", Dept. of Physics, Emory University, March 7, 1997.
33. "Biological Applications of Pulsed Electron Paramagnetic Resonance Spectroscopy", Dept. of Chemistry, SUNY-Geneseo, September 22, 1997.

34. "Structure of Radical Intermediates in Electron Transfer Proteins and Enzymes", Dept. of Chemistry, Rochester Institute of Technology, September 24, 1997.
35. "Recent Advances in ESEEM Spectroscopy", Illinois EPR Center, University of Illinois, Urbana, IL, November 6, 1997.
36. "Structure of Radical Intermediates in Electron Transfer Proteins and Enzymes", Dept. of Chemistry, Kalamazoo College, November 19, 1997.
37. "Orientational Distributions in the Z-Tyrosine, De-cloaking Signal II," Sauer-Klein Symposium, University of California, Berkeley, CA, January, 1998.
38. "Probing Radical Intermediates in Enzymes," Dept. of Chemistry, Indiana State University, March 3, 1998.
39. "Simplifying EPR Spectra Using an Electron Spin Echo Magnetic Field Jump Method," Illinois State University, Sept 11, 1998.
40. "Probing Radical Intermediates in Enzymes," Dept. of Chemistry, Boston University, March 3, 1999.
41. "Characterization of the metal binding site of an  $\alpha$ -ketoglutarate dependent iron dioxygenase," 41<sup>st</sup> Rocky Mountain Conference on Analytical Chemistry, Denver, CO, August 2, 1999.
42. "Characterization of the Tryptophan Tryptophyl-Semiquinone Catalytic Intermediate of Methylamine Dehydrogenase," 10<sup>th</sup> International Symposium on Vitamin B6 and Carbonyl Catalysis, Santa Fe, NM, October 31- November 5, 1999.
43. "Mechanistic Implications of water coordination to two redox active enzymes" XIX International Meeting on Magnetic Resonance in Biological Systems, Florence, Italy, August 20-25, 2000.
44. "Probing the membrane Binding Domain of COX-2 using Site-Directed Spin Labeling," XXth International Conference on Magnetic Resonance in Biological Systems, Toronto, CA, August 25-30, 2002.
45. "Studies of Structure-Function Relationships in Cytochrome Oxidase using Pulse EPR Spectroscopy," College of Charleston, Charleston, SC, October 17, 2002.
46. "Probing Product Release for Cytochrome Oxidase: a Freeze-Quench EPR Study," University of Iowa, Iowa City, IA, November 22, 2002.
47. "Probing Product Release for Cytochrome Oxidase: a Freeze-Quench EPR Study," University of California, Davis, CA, March 13, 2003.
48. "A Discrete Water Exit Pathway in Cytochrome c Oxidase," 26<sup>th</sup> International EPR Symposium, Denver, CO, August 1-4, 2003.
49. "A Discrete Water Exit Pathway in Cytochrome c Oxidase," University of Michigan, Dearborn, MI November 11, 2003.
50. "Characterization of the Cu(II) Binding Sites of FET3p Using EPR Methods," International Society of Magnetic Resonance, 15<sup>th</sup> Meeting, Jacksonville, FL, October 24-30, 2004.

51. "Characterization of the Cu(II) Binding Sites of FET3p Using EPR Methods," Oakland University Chemistry Dept. Seminar, November 10, 2004.
52. "Elucidation of Ligand Hyperfine Couplings for Multi-Copper Oxidases Using Two-Dimensional ESEEM Spectroscopy," Southeastern Magnetic Resonance Conference, Atlanta, GA, November 12, 2005.
53. "Elucidation of Ligand Hyperfine Couplings for Multi-Copper Oxidases Using Two-Dimensional ESEEM Spectroscopy," University of Akron, Department of Chemistry, November 29, 2005.
54. "Coordination Chemistry at the Fe(II) Site of Fe(II)/2-Ketoglutarate Dependent Hydroxylases," Southeastern Magnetic Resonance Conference, Tuscaloosa, AL, November 10, 2007.
55. "The analysis of HYSCORE data from the Fe(II) binding site of Fe(II)/2-Ketoglutarate Dependent Hydroxylases," 32<sup>nd</sup> International EPR Symposium, Snowmass, CO, July 21, 2009.
56. "Exploring the Regulation of Catalytic Activity in Aromatic Amino Acid Hydroxylases using EPR Spectroscopy," 2010 Asia-Pacific International EPR Symposium, Jeju, Democratic Republic of Korea, October 10-14, 2010.
57. "Exploring Structure-Function Relationships at the Active Site of Tyrosine Hydroxylase," 34th International EPR Symposium, Snowmass, CO, July 25, 2011.
58. "Probing Coordination Chemistry at the Non-heme Iron Active Site of Tyrosine Hydroxylase," University of Maryland, Biophysics Colloquium, April 13, 2015.
59. "Probing Coordination Chemistry at the Non-heme Iron Active Site of Tyrosine Hydroxylase," Central Michigan University, September 22, 2015.
60. "Probing Coordination Chemistry at the Non-heme Iron Active Site of Tyrosine Hydroxylase," Merck Research Laboratories, Rahway, NJ, February 17, 2016.
61. "Phenylalanine Hydroxylase: Providing Details of a Catalytic Cycle with EPR Spectroscopy," 58<sup>th</sup> Rocky Mountain Conference on Magnetic Resonance, Breckenridge, CO, July 17 – 21, 2016.
62. "Using EPR Spectroscopy As A Structural Tool," 252<sup>nd</sup> American Chemical Society National Meeting and Exposition, Philadelphia, PA, August 21 – 25, 2016.
63. "Aromatic amino acid hydroxylases: Providing Details of a Catalytic Cycle with EPR Spectroscopy," SPP 1601 Annual Meeting, Hirschegg, Austria, October 4 – 8, 2016.
64. "Aromatic amino acid hydroxylases: Providing Details of a Catalytic Cycle with EPR Spectroscopy," 45<sup>th</sup> Southeast Magnetic Resonance Conference, Atlanta, GA, October 14 - 16, 2016.
65. "Aromatic Amino Acid Hydroxylases: Exploring the Details of a Catalytic Cycle with EPR Spectroscopy," 253<sup>rd</sup> American Chemical Society National Meeting and Exposition, San Francisco, CA, April 2 – 6, 2017.

66. "Using EPR as a Structural Tool," EPR Symposium and Workshop, McGill University, Montreal, Quebec, Canada, July 21, 2017.

*Presentations at Meetings*

1. McCracken, J. and Sauer, K., Orientation Dependence of Radical Pair Interactions in Spinach Chloroplasts. Xth International Conference on Magnetic Resonance in Biological Systems, Stanford University, Stanford, California, August 1982.
2. McCracken, J.; Magliozzo, R. S.; and Peisach, J., ESEEM Studies of Axial Ligation to Iron (III) Tetraphenylporphyrin Compounds. 8th International Symposium on Electron Paramagnetic Resonance, Denver, Colorado, August 1985.
3. McCracken, J.; Dooley, D.; and Peisach, J., Pulsed electron paramagnetic resonance studies of copper binding sites in amine oxidases. ASBC/ACS Meeting, Washington, D. C., June 1986.
4. Peisach, J.; Alviggi, M.; and McCracken, J., The displacement of Cu(II)-bound water by cyanide in bovine superoxide dismutase. Conference on Genetic Physico-Chemical Approaches for Analysis of Biological Catalysts, Florence, Italy, June 1986.
5. McCracken, J.; Dooley, D.; and Peisach, J., Pulsed electron paramagnetic resonance studies of copper binding sites in amine oxidases. 28th Rocky Mountain Conference; 9th International Symposium on Electron Paramagnetic Resonance, Denver, Colorado, August 1986.
6. Crowder, M.; McCracken, J.; Peisach, J.; and Kubota, S., CW and pulsed EPR studies of cyclic dipeptide Cu(II) complexes. 28th Rocky Mountain Conference; 9th International Symposium on Electron Paramagnetic Resonance, Denver, Colorado, August 1986.
7. McCracken, J.; Pember, S.; Benkovic, S.; Villafranca, J.; and Peisach, J., Pulsed EPR studies of Cu(II)-imidazole interactions in phenylalanine hydroxylase. Amer. Phys. Soc., New York City, March 1987.
8. Banerjee, A.; McCracken, J. L.; Peisach, J.; and Cooperman, B. S., Divalent metal ion: phosphoryl ligand interaction in yeast inorganic pyrophosphatase. Enzyme Mechanism Conf., Asilomar, Calif., January 1987.
9. Banerjee, A.; McCracken, J. L.; Peisach, J.; and Cooperman, B. S., Divalent metal ion: phosphoryl ligand interaction in yeast inorganic pyrophosphatase. ASBC Meeting, Philadelphia, Pennsylvania, June 1987.
10. Peisach, J. and McCracken, J., Pulsed EPR in bioinorganic chemistry. 3rd International Conference on Bioinorganic Chemistry, Noordwijkerhout, The Netherlands, July 1987.
11. Magliozzo, R.; McCracken, J.; and Peisach, J., Electron-nuclear coupling in nitrosyl heme proteins and in nitrosyl Fe(II) and oxy Co(II) tetraphenylporphyrin complexes. 3rd International Conference on Bioinorganic Chemistry, Noordwijkerhout, The Netherlands, July 1987.
12. McCracken, J.; Serpersu, E. H.; Peisach, J.; and Mildvan, A. S., Pulsed EPR and proton relaxation studies of staphylococcal nuclease (SN) and its metal-coordination mutants: Counting the water ligands on Mn(II). FASEB Meeting, Las Vegas, Nevada, May 1988.
13. Serpersu, E. H.; McCracken, J.; Peisach, J.; and Mildvan, A. S., Pulsed EPR and phosphorus relaxation studies of staphylococcal nuclease (SN) and its metal coordinating mutants: Detection of phosphoryl ligands of the metal. FASEB Meeting, Las Vegas, Nevada, May 1988.



14. Tipton, P. A.; McCracken, J.; Cornelius, J.; and Peisach, J., Pulsed EPR studies of rabbit muscle pyruvate kinase. FASEB Meeting, Las Vegas, Nevada, May 1988.
15. De Francesco, R.; Edmondson, D. E.; McCracken, J.; and Peisach, J., Pulsed EPR studies of the FMN neutral semiquinone of azotobacter flavodoxin. FASEB Meeting, Las Vegas, Nevada, May 1988.
16. Cornelius, J. B.; McCracken, J.; Belford, R. L.; and Peisach, J., ESEEM studies of  $^{14}\text{N}$  and  $^{15}\text{N}$  pyridine weakly bound to copper benzac. 30th Rocky Mountain Conference, Denver, Colorado, July 1988.
17. Jiang, F.; McCracken, J.; and Peisach, J., Electron-nuclear coupling in Cu(II) proteins and in Cu(II) diethylenetriamine complexes with substituted imidazoles. XIII International Conference on Magnetic Resonance in Biological Systems, Madison, Wisconsin, August 1988.
18. McCracken, J.; Cammack, R.; Chapman, A.; Weiner, J. H.; Cornelius, J. B.; and Peisach, J., Electron spin-echo studies of *E. Coli* fumarate reductase. XIII International Conference on Magnetic Resonance in Biological Systems, Madison, Wisconsin, August 1988.
19. Edmonson, D. E.; De Francesco, R.; McCracken, J.; and Peisach, J., Pulsed EPR studies of the FMN neutral semiquinone of azotobacter flavodoxin. XIII International Conference on Magnetic Resonance in Biological Systems, Madison, Wisconsin, August 1988.
20. Serpersu, E. H.; McCracken, J.; Peisach, J.; and Mildvan, A. S., NMR and pulsed EPR studies of staphylococcal nuclease (SN). XIII International Conference on Magnetic Resonance in Biological Systems, Madison, Wisconsin, August 1988.
21. Tipton, P. A.; McCracken, J.; Cornelius, J.; and Peisach, J., Electron spin echo envelope modulation studies of kinase active sites. 22nd International Conference on ESR of Inorganic Radicals and Metal Ions in Inorganic and Biological Systems, Sheffield, England, 1989.
22. Magliozzo, R. S.; McCracken, J.; Cornelius, J.; Lu, J. F.; and Peisach, J., EPR and pulsed EPR studies of low-spin ferric porphyrin complexes. 4th International Conference on Bioinorganic Chemistry, Cambridge, Massachusetts, 1989.
23. McCracken, J.; Cornelius, J. B.; and Peisach, J., The study of transition metal ligation structures using electron spin echo envelope modulation. 4th International Conference on Bioinorganic Chemistry, Cambridge, Massachusetts, 1989.
24. McCracken, J.; Tipton, P. A.; and Peisach, J., Direct observation of Mn(II)- $^{17}\text{O}$  ligand hyperfine couplings using electron spin echo envelope modulation. 4th International Conference on Bioinorganic Chemistry, Cambridge, Massachusetts, 1989.
25. Peisach, J.; Tipton, P. A.; Cornelius, J. B.; and McCracken, J., Electron spin echo envelope modulation (ESEEM) studies of univalent metal coordination to pyruvate kinase. 4th International Conference on Bioinorganic Chemistry, Cambridge, Massachusetts, 1989.
26. McCracken, J.; Cornelius, J. B.; Cammack, R.; Hatchikian, C. E.; and Peisach, J., Electron spin echo envelope modulation studies of the nickel-binding site of *D. gigas*

- hydrogenase*. Gordon Conference on Magnetic Resonance, Plymouth, New Hampshire, 1989.
27. McCracken, J.; Dooley, D. M.; and Peisach, J., Pulsed EPR Studies of the Semiquinone State of Copper-Containing Amine Oxidases. Gordon Research Conference on Metals in Biology, January 1992.
  28. Warncke, K.; Dooley, D. M.; Babcock, G. T.; and McCracken, J. L., Pulsed EPR Spectroscopic Investigations of  $^2\text{H}$  and  $^1\text{H}$  Hyperfine Coupling in the Organic Radical Catalytic Intermediate of Methylamine Oxidase. 15th International Symposium on EPR, Denver, Colorado, August 2-6, 1992.
  29. Lee, Hong-In; Burgmayer, S. J. N.; and McCracken, J., Electron Spin Echo Envelope Modulation Studies of Cu(II)- and Mo(V)-Pterin Model Complexes. 15th International Symposium on EPR, Denver, Colorado, August 2-6, 1992.
  30. Mac, M.; Espe, M.; Babcock, G. T.; and McCracken, J., ESEEM and ENDOR Studies of the Multiline and 147 Gauss Radical of Photosystem II. 15th International Symposium on EPR, Denver, Colorado, August 2-6, 1992.
  31. Hoganson, C. W.; Espe, M.; Mac, M.; Bowlby, N.; McIntosh, L.; McCracken, J.; and Babcock, G. T., Recent Magnetic Resonance Studies of Photosystem II. 9th International Congress on Photosynthesis, August 1992.
  32. Warncke, K.; McCracken, J.; and Babcock, G. T., Pulsed EPR Spectroscopic Investigations of  $^2\text{H}$  and  $^1\text{H}$  Hyperfine Coupling Model and Photosystem II Tyrosine Radicals. 18th Annual Midwest Photosynthesis Conference, October 25-27, 1992.
  33. Espe, M.; Bowlby, N.; McCracken, J.; McIntosh, L.; and Babcock, G. T., Pulsed EPR Studies Show that the Source of the Hydrogen Bond to  $\text{Y}_D$  is a Nitrogen. 18th Annual Midwest Photosynthesis Conference, October 25-27, 1992.
  34. Mac, M.; Espe, M.; McCracken, J.; and Babcock, G. T., ESEEM Studies of the Multiline Signal from Photosystem II. 18th Annual Midwest Photosynthesis Conference, October 25-27, 1992.
  35. Espe, M. P.; Bowlby, N. R.; Mac, M.; McCracken, J. L.; McIntosh, L.; and Babcock, G. T., Spectroscopic Studies of Purified Photosystem II from a Photosystem I Inactivated Strain of *Synechocystis* 6803. 37th Annual Meeting of the Biophysical Society, February 14-18, 1993.
  36. Warncke, K.; Brooks, H.; Babcock, G. T.; Davidson, V. L.; and McCracken, J., Pulsed-EPR Spectroscopic Investigations of the Tryptophan-Tryptophylquinone-Derived Active Site Radical in Methylamine Dehydrogenase. 37th Annual Meeting of the Biophysical Society, February 14-18, 1993.
  37. Warncke, K.; Babcock, G. T.; and McCracken, J., Electron Spin Echo Envelope Modulation Spectroscopy of  $^1\text{H}$  and  $^2\text{H}$  Hyperfine Interactions in Organic Radicals. 37th Annual Meeting of the Biophysical Society, February 14-18, 1993.
  38. Reidy, K. A.; Shin, D. H.; McCracken, J. L.; and Dye, J. L., ESEEM Studies of Electron Trapping in Some Sodides, American Chemical Society Meeting, Denver, Colorado, March 29-April 1, 1993.

39. Warncke, K.; Brooks, H. B.; Lee, H.-I.; Babcock, G. T.; Davidson, V. L.; and McCracken, J. L., Pulsed-EPR Spectroscopic Investigations of the Tryptophan Tryptophyl-Semiquinone Intermediate in Methylamine Dehydrogenase Catalysis, Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado, July 1993.
40. Lee, H.-I.; Bharwani, L.; Nieter Burgmayer, S. J.; McCracken, J. L., Electron Spin Echo Envelope Modulation Studies of Copper Pterin Complexes, Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado, July 1993.
41. Lee, H.-I.; Jang, S.-H.; Jackson, J. E.; McCracken, J. L., Electron Spin Echo Envelope Modulation of Ammonium Salts Bound to Tri-Arylmethyl Radicals, Rocky Mountain Conference on Analytical Chemistry, Denver, Colorado, July 1993.
42. Reidy, K. A.; Shin, D.-H.; McCracken, J. L.; Dye, J. L., ESEEM Studies of Electron Trapping in Some Crystalline Sodides: Mapping the Electron Density, 7th Annual CFMR/Industry Symposium, Michigan State University Kellogg Center, April 1993.
43. Lee, H.-I.; Jang, S.-H.; Jackson, J. E.; and McCracken, J. L., Electron Spin Echo Envelope Modulation of Ammonium Salts Bound to Tri-Arylmethyl Radicals, 7th Annual CFMR/Industry Symposium, Michigan State University Kellogg Center, April 1993.
44. Lee, Hong-In; Burgmeyer, S. J. N.; and McCracken, J., Pulsed EPR Studies of Copper Pterin Complexes, 6th International Conference on Bioinorganic Chemistry, LaJolla, CA, August 1993.
45. Warncke, K.; Babcock, G. T.; and McCracken, J., Characterization of the Structure of Tyrosine Radicals by  $^2\text{H}$  Electron Spin Echo Envelope Modulation Spectroscopy, 19th Annual Midwest Photosynthesis Conference, October 1993.
46. Mac, M.; Espe, M.; McCracken, J.; and Babcock, G. T., The Effect of  $\text{Sr}^{2+}$  Substitution on the OEC as Studied by ESEEM, 19th Annual Midwest Photosynthesis Conference, October 1993.
47. Warncke, K.; Harris, T.K.; Babcock, G.T.; Davidson, V.L.; McCracken, J. Structure of the Pyrolloquinoline Quinone-derived Radical in Methanol Dehydrogenase: Influence of  $\text{Sr}^{2+}$  Substitution, Ammonium and Cyanide, Annual Meeting of the Biophysical Society, March 1994.
48. Warncke, K.; Brooks, H.B.; Lee, H-I; Babcock, G.T.; Davidson, V.L.; McCracken, J. Structure of the Tryptophan Tryptophyl - Semiquinone Intermediate in Methylamine Dehydrogenase, Annual Meeting of the Biophysical Society, March 1994.
49. Mac, M.; Espe, M.P.; McCracken, J.; Babcock, G.T. The Effect of  $\text{Sr}^{2+}$  Substitution on the Oxygen Evolving Complex as Studied by ESEEM, Annual Meeting of the Biophysical Society, March 1994.
50. Hoganson, C.W.; Espe, M.P.; Warncke, K.; McCracken, J.; and Babcock, G.T., Structure and Unpaired Spin Density Distribution in the Stable  $\text{Y}_\text{D}$  Tyrosine Radical in Photosystem II, Annual Meeting of the Biophysical Society, March 1994.
51. Warncke, K.; Harris, T.K.; Babcock, G.T.; Davidson, V.L.; and McCracken, J. Structure of the Pyrolloquinoline Quinone-derived Radical in Methanol Dehydrogenase: Influence of  $\text{Sr}^{2+}$  Substitution, Ammonium and Cyanide, 1994 Joint Central Great Lakes Regional ACS Meeting, June 1994.

52. Mac, M.; Espe, M.P.; Babcock, G.T.; McCracken, J. A Pulsed EPR Study of the Effect of  $\text{Sr}^{2+}$  Substitution on the Oxygen Evolving Complex of Photosystem II, 1994 Joint Central Great Lakes Regional ACS Meeting, June 1994.
53. Reidy-Cedergren, K.A.; Dye, J.L.; McCracken, J. ESEEM Studies of a New Alkalide,  $\text{Cs}^+(\text{21C7})\text{Na}^-$ , 1994 Joint Central Great Lakes Regional ACS Meeting, June 1994.
54. Lee, Hong-In; McCracken, J. 4-Pulse Electron Spin Echo Envelope Modulation Studies of Water Bound to Tetracyanonickelate(III), 1994 Joint Central Great Lakes Regional ACS Meeting, June 1994.
55. Warncke, K. and McCracken, J. Characterization of Strong  $\langle$ -Hydrogen Hyperfine Coupling Using  $^2\text{H}$ -ESEEM, Gordon Conference on Magnetic resonance in Biology, July 1994.
56. Lee, Hong-In; McCracken, J. 4-Pulse Electron Spin Echo Envelope Modulation Studies of Water Bound to Tetracyanonickelate(III), 17th International EPR Symposium, Denver CO, August 1994.
57. Reidy-Cedergren, K.A.; Dye, J.L.; McCracken, J. ESEEM Studies of a New Alkalide,  $\text{Cs}^+(\text{21C7})\text{Na}^-$ , 17th International EPR Symposium, Denver CO, August 1994.
58. Mac, M.; Tang, X.; Diner, B.A.; Babcock, G.T. and McCracken, J. Multifrequency Pulsed EPR studies of the Primary Donor of Photosystem I Reveal a Histidine Ligand, 17th International EPR Symposium, Denver CO, August 1994.
59. Warncke, K.; Babcock, G.T. and McCracken, J. Structure of the Y<sub>D</sub> Tyrosine Radical in PSII as Revealed by ESEEM Spectroscopy, Gordon Conference on Photosynthesis, August 1994.
60. Tommos, C.; Tang, X-S.; Warncke, K.; Hoganson, C.W., Styring, S.; McCracken, J.; Babcock, G.T. and Diner, B.A, "Pulsed EPR Studies of the Redox-Active Tyrosine of Photosystem II," Gordon Conference on Photosynthesis, August 1994.
61. Mac, M.; Tang, X.; Diner, B.A.; Babcock, G.T. and McCracken, J., "Multifrequency Pulsed EPR studies of the Primary Donor of Photosystem I, ACS National Meeting, Washington, D.C., August 1994.
62. Mac, M.; Tang, X.; Diner, B.A.; McCracken, J. and Babcock, G.T.; "Characterization of the Electronic Structure of the Primary Donor of Photosystem I Using Multifrequency Pulsed-EPR," 20th Annual Midwest Photosynthesis Conference, October 1994.
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