CURRICULUM VITAE

Brian Bennett D. PHIL. (PH. D)

CURRENT POSITION:

Chair and Professor, Physics Department, Marquette University

OFFICE ADDRESS:

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EDUCATION:

1987: B.A.(Hons), M.A., Natural Sciences, University of Cambridge, U.K.
1994: D.Phil., Biochemistry, University of Sussex, U.K.

POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS (1989 - 2001):

12/1989 - 8/1993: Research Officer (full-time), School of Chemical & Molecular Sciences, University of Sussex, Falmer, Brighton, U.K.
12/1993 - 9/1995: Senior Postdoctoral Research Associate, Centre for Metalloprotein Spectroscopy and Biology, School of Chemical Sciences, University of East Anglia, Norwich, U.K.
10/1995 - 2/1998: Postdoctoral Research Associate, Department of Chemistry and Biochemistry, Utah State University, Logan, UT.
2/1998 - 2/2000: U.K. Scientific Civil Service Band 5 Researcher, Synchrotron Radiation Source, CCLRC Daresbury Laboratory, Daresbury, Warrington, U.K.
6/2000 - 3/2001: European Union Postdoctoral Research Fellow, Fachrichtung Biophysik, Universität des Saarlandes, Homburg/Saar, Germany.

FACULTY APPOINTMENTS (2001 - present):

5/2001 - 6/2006: Assistant Professor, Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI.
6/2006 - 6/2014: Associate Professor, Department of Biophysics, Medical College of Wisconsin, Milwaukee, WI.
7/2014 - present: Professor and Chair, Physics Department, Marquette University, Milwaukee, WI.

ADMINISTRATIVE APPOINTMENTS:

Medical College of Wisconsin, 05/2001 - 06/2014.

07/2002 - 06/2013: Medical College of Wisconsin (MCW) Medical School Admissions Committee (Elected 2002, Extended 2005, Dean's Appointment 2007, 2010).

06/2003 - 06/2014: Associate Director & Service Director, National Biomedical Electron Paramagnetic Resonance (EPR) Center, MCW, Milwaukee, WI.
07/2003 - 06/2005: MCW Graduate School Awards Committee.
07/2005 - 07/2007: MCW Graduate School Admissions and Welfare Committee.
01/2006 - 11/2006: HLC-NCA Academic Accreditation Criterion Four (Acquisition, Discovery and Application of Knowledge) Self-Study Group, MCW.
03/2007 - 10/2007: MCW Graduate School Curriculums and Programs Committee.
10/2007 - 09/2010: **Chair**, MCW Graduate School Course Evaluations Committee.
10/2007 - 09/2010: MCW Graduate School Council.
1/2008 - 09/2008: MCW Graduate School Recruitment Committee.
1/2008 - 09/2010: MCW Assessment Oversight Committee.
11/2009 - 09/2013: MCW Graduate School Admissions Committee.
03/2010: LCME Accreditation Self-Study Break-Out Group 3 (MCW Graduate Program).
07/2011 - 06/2013: MCW Faculty Credentials Committee.
07/2013 - 06/2014: **Chair**, MCW Faculty Credentials Committee.

Marquette University, 07/2014 - present.
7/2014 - present: Physics Department Chair, Marquette University (MU).
7/2014 - present: MU College of Arts & Sciences Dean's Advisory Committee.
8/2015 - 6/2018: MU Sabbatical Review Committee.
1/2017 - 1/2018: MU Klingler College of Arts & Sciences Mellon Grant Committee.
8/2017 - 1/2018: MU President's Task Force on Corporate Engagement, Technology Transfer group.
6/2018 - 6/2019: Clinical and Translational Science Institute of Southeastern Wisconsin Proposal Review Board.

AWARDS AND HONORS:
1993: Young Biochemist of the Year, The Biochemical Society (Southern Region, U.K.)
12/1998 - 1/1999: CCLRC Study Award to visit the University of Queensland (UQ) and the UQ Center for Magnetic Resonance, Brisbane, Australia.
7/1999 - 9/1999: Royal Society, U.K., Conference and Travel Award to present at the Gordon Research Conference on Molybdenum and Tungsten (Plymouth, NH) and 9th International Conference on Bioinorganic Chemistry, (Minneapolis, MN).
7/31/2007 - 7/31/2008: Organizing Committee Member and Session Chair, 31st International EPR Symposium, Breckenridge, CO, 27 - 31 July
5/8/2008: Awards Day Keynote Speaker, Department of Chemistry, University of Wisconsin-Milwaukee
2010: Outstanding Faculty Service Award, Medical College of Wisconsin.
6/2014: Adjunct Professor of Biophysics, Medical College of Wisconsin.
6/2015 - 6/2018: Wehr Distinguished Professor in Physics, Marquette University.
9/26/2016: Outstanding Graduate School Teaching Award, Medical College of Wisconsin, for Special Seminar Series, "Biophysical Techniques in Biochemistry."

MEMBERSHIPS IN HONORARY AND PROFESSIONAL SOCIETIES:

1/1990 - 12/2000: The Biochemical Society (U.K.).
1/1990 - Present: The Inorganic Biochemistry Discussion Group (Affiliated with the Royal Society of Chemistry and the British Biophysical Society).
2/1998 - Present: The Royal Society of Chemistry ESR Group.
5/2001 - Present: The International EPR (ESR) Society.
10/2002 - Present: The Biophysical Society.
11/2003 - Present: The American Chemical Society.
5/2005 - Present: The Society for Bioinorganic Chemistry.
06/2016 - Present: ΣΠΣ (member)/SPS (honorary member).

JOURNAL REVIEWER/EDITOR:

2004 - Present: Reviewer, RSC Dalton Transactions
2005 - Present: Reviewer, Journal of Inorganic Biochemistry
2006 - Present: Reviewer, Journal of the American Chemical Society
2006 - Present: Reviewer, Journal of Biological Inorganic Chemistry
2006 - Present: Reviewer, Inorganic Chemistry
2006 - Present: Reviewer, Journal of Physical Chemistry
2006 - Present: Reviewer, Physical Chemistry & Chemical Physics
2007 - Present: Reviewer, Chemical Society Reviews
2007 - Present: Reviewer, Biochemistry
2008 - Present: Reviewer, Journal of Atomic and Analytical Spectroscopy
2008 - Present: Reviewer, Wiley Encyclopedia of Chemical Biology
2008 - Present: Reviewer, Metallomics
2008 - Present: Reviewer, RSC Chemical Communications
2008 - Present: Reviewer, Journal of Biological Chemistry
2008 - Present: Reviewer, Biochimie
2008 - Present: Reviewer, Biophysical Journal
2009 - Present: Reviewer, Applied Microbiology and Biotechnology
2009 - Present: Reviewer, Biochemical Journal
2010 - Present: Reviewer, Bioinorganic Chemistry and Applications
2010 - Present: Reviewer, Molecular Biosystems
2011 - Present: Reviewer, Process Biochemistry
2011 - Present: Reviewer, Biochemical Sciences
2012 - Present: Reviewer, FEMS Microbiology Letters
2012 - Present: Reviewer, Bioorganic & Medicinal Chemistry Letters
2012 - Present: Reviewer, Bioorganic Chemistry
2012 - Present: Reviewer, RSC Photochemical & Photobiological Sciences
2013 - Present: Reviewer, Thermochimica Acta
2015 - Present: Associate Editor, Austin Biology
2018 - Present: Associate Editor, International Journal of Molecular Sciences

GRANT PROPOSAL REVIEWING (EXTRAMURAL):

7/2001 - 7/2003: ACS Petroleum Research Fund
10/2004: NIH Metallobiochemistry (BMT).

2/2006: NIH Biological Chemistry and Macromolecular Biophysics Structure and Function (BCMB-Q).
3/2007 - 9/2007: US-Israel Binational Science Foundation
5/2008: Grant proposal reviewer, Research Corporation.
3/2011: NSF Chemistry of Life Sciences Program.
4/2011 - Present: Pacific Northwest National Laboratory Environmental Molecular Sciences Laboratory Review Panel.
6/2011: Stanford Synchrotron Radiation Lightsource Beamtime Proposal Review Panel.
10/2013: North Carolina Biotechnology Center Institutional Development Grant Program.
6/2018 - 6/2019: NIH Clinical and Translational Science Institute of Southeastern Wisconsin Proposal Review Board.

GRANT PROPOSAL REVIEWING (INTRAMURAL):

8/2006 - 10/2009: American Cancer Society Institutional Research Grant Review Committee.
8/2006 - 10/2009: MCW Research Affairs Committee / Advancing a Healthier Wisconsin Foundation.
8/2015 - 6/2018: MU Sabbatical Review Committee.
1/2017 - 1/2018: MU Klingler College of Arts & Sciences Mellon Grant Committee.

RESEARCH GRANTS:

Title: Mechanistic Studies on Fe-Type Nitrile Hydration Catalysts
Source: NSF (Chemistry of Life Sciences)
Role: Co-P.I. with R. C. Holz
Dates: 08/2018 - 07/2021
Direct Funds: $346,611

Title: Is ROS formation increased during tumor growth? Low-temperature EPR and bioluminescence imaging studies.
Source: MCW Cancer Center
Role: Co-P.I. with B. Kalyanaraman
Dates: 03/2018 - 02/2019
Direct Funds: $40,000

Title: Wehr Science Center for Promotion of Research in Physics.
Source: Wehr Foundation
Role: P.I.
Dates: 11/2015 - 07/2018
Direct Funds: $10,000 + $10,000 + $10,000

Title: EPR Spectroscopy as a Diagnostic Tool for Mitochondrial Disease.

Source: NIH Clinical and Translational Science Institute of Southeast Wisconsin
Role: Co-P.I. with M. W. Lawlor
Dates: 04/01/2016 - 03/31/2017
Direct Funds: $50,000

Title: Mechanistic Comparison of Mitochondrial Disease Models.
Source: Children's Research Institute of Children's Hospital and Health System of Wisconsin.
Role: Co-P.I. with M. W. Lawlor
Dates: 01/01/2016 - 12/31/2016
Direct Funds: $75,000

Title: MRI: Upgrade of an EPR Spectrometer to Serve Marquette University and the Greater Milwaukee Region.
Source: NSF-CHE
Role: P.I. (Co-P.I. R. C. Holz)
Dates: 09/01/2015 - 08/31/2018
Direct Funds: $162,803

Title: Mechanistic Studies on Fe-Type Nitrile Hydration Catalysts
Source: NSF (Chemistry of Life Sciences)
Role: P.I.
Dates: 06/2014 - 05/2017
Direct Funds: $67,000

Title: National Biomedical EPR Center
Source: NIH (NIBIB)
Role: Co-Investigator, Associate Director, Service Director (P.I. J. S. Hyde & C. S. Klug)
Dates: 04/2013 - 03/2018
Direct Funds: $3,600,000

Title: Mechanistic Studies on Fe-Type Nitrile Hydration Catalysts
Source: NSF (Chemistry of Life Sciences)
Role: P.I.
Dates: 06/2011 - 05/2014
Direct Funds: $90,000

Title: Time-Dependent Structural Studies on Dinuclear Metal-Containing Enzymes
Source: NIH (NIGMS)
Role: Consortium (P.I. M. W. Crowder)
Dates: 06/2010 - 05/2015
Direct Funds: $850,000

Title: Q-band Upgrade of a Bruker E580 Pulse EPR Spectrometer
Source: NIH (NCRR)
Role: Major User (P.I. C. S. Klug)
Dates: 06/2011
Direct Funds: $380,000

Title: National Biomedical EPR Center
Source: NIH (NIBIB)
Role: Co-Investigator, Associate Director, Service Director (P.I. J. S. Hyde)
Dates: 4/2008 - 3/2013
Direct Funds: $3,600,000

Title: Could an *in Vitro* Spectrokinetic Prion-Copper Binding Assay Predict Neurodegeneration?
Source: Advancing a Healthier Wisconsin Foundation
Role: P.I.
Dates: 5/2009 - 4/2010
Direct Funds: $75,000

Title: National Biomedical EPR Center
Source: NIH (NIBIB)
Role: Co-Investigator, Associate Director (P.I. J. S. Hyde)
Dates: 4/2003 - 3/2008
Direct Funds: $3,600,000

Title: Acquisition of a Bruker E580 Pulse EPR Spectrometer
Source: NIH (NCRR)
Role: Major User (P.I. C. S. Klug)
Dates: 2/2008
Direct Funds: $500,000

Title: Substrate & Inhibitor Binding in Leucine Aminopeptidase
Source: NIH (NIAID)
Role: P.I.
Dates: 9/2003 - 1/2008
Direct Funds: $725,000

Title: Towards Anti-HIV and Anticancer Drugs with Higher Molecular Target Specificity
Source: Medical College of Wisconsin Research Affairs Committee
Role: P.I.
Dates: 1/2002 - 6/2003
Direct Funds: $12,500

Title: Metalloporphyrins and Cardiomyopathy due to Doxorubicin
Source: American Cancer Society

Role: P.I.
Dates: 10/2001 - 9/2002
Direct Funds: $15,000

TEACHING AND MENTORING:1.
Graduate Education (Teaching), MCW, 2001 - 2016.

09/2001 - 06/2014: EPR Journal Club for graduate students (Course # 03298A), rotating Course Director and Preceptor.
1/2002 - 06/2014: Introduction to Magnetic Resonance: Electron Paramagnetic Resonance Spectroscopy (Course # 03220), Course Director, Lecturer and Curriculum Contributor.
11/2002 - present: Department of Biochemistry Graduate Seminar Series (Course # 02301A), Occasional Speaker.
01/2003 - present: Biophysical Techniques in Biochemistry (Course # 03222A), Lecturer and Curriculum Contributor, and Special Lecturer.
02/2003 - 06/2014: Department of Biophysics Graduate Seminar Series (Course # 03300A), Regular Speaker.
08/2004 - 06/2014: Interdisciplinary Program in Biomedical Sciences Biochemistry of the Cell (Course # 16201), Lecturer in Enzyme Mechanisms.
08/25/2005: MCW Cell Signaling Group Lecture.
01/2007 - 06/2014: Advanced Enzyme Kinetics (Course # 02227A), Lecturer and Curriculum Contributor.
03/2010: Interdisciplinary Program in Biomedical Sciences Seminar (Course # 16300), Preceptor.
12/26/2012: Neuroscience Research Center "Research in Progress" Series Lecture.
03/2016: Graduate Special Seminar Series, "Biophysical Techniques in Biochemistry."

TEACHING AND MENTORING: 2.
Training on behalf of the National Biomedical EPR Center, MCW, 2003-2012.

04-05/2003 Alicja Copik, Utah State University (EPR).
02/2004 Admira Bosjanovich, Detroit Mercy University (ENDOR).
02/2004 Robert Igarashi, Utah State University (RFQ-EPR).
03/2004 James Garritty, Miami University, OH (RFQ-EPR).
05/2004 Vincent Morrissette, University of Missouri at Kansas City (EPR).
05/13/2004 - 05/14/2004: Co-organized and co-taught Principles of EPR Training Workshop, National Biomedical EPR Center Training Program.
12/2004 Prof. Alejandro Vila, Rosario University, Argentina, (EPR).
03-04/2005 Frank Golich, Miami University, OH (RFQ-EPR).
08/2005 Prof. Graeme R. Hanson, U. of Queensland, Australia (W-band EPR).
08-09/2005 Mariana Tioni and Leticia Llarrull, Rosario U., Argentina (RFQ-EPR).
10/2005 Srimevan Wanduragala, University of Nebraska (EPR).
11/2005 Vincent Purpero and Prof. Graham Moran, University of Wisconsin, Milwaukee (EPR and Computer Simulations).
05/2006 Dr. Christian Doonan, University of Saskatchewan, (ENDOR and S-band).

12/2006 Prof. Graham N. George and Dr. Christian Doonan, University of Saskatchewn (S-band EPR).
03/2007 Martin O'Toole, University of Louisville (EPR).
07/2007 Narayanan Sharma, Miami University, OH (RFQ-EPR).
09/2007 Saroja Rao, Loyola University, Chicago, IL (EPR)..
06 - 07/2008 Brendan Little and Tyler Morin, Marquette University (EPR).
11/2010 Prof. Adam Fiedler, Marquette University (EPR).
04/2011 Dr. Franziska Seifert, University of Halle, Germany (RFQ-EPR).
07/2012 Natalia Stein, University of Wisconsin-Milwaukee, (EPR).
12/2012 Natalia Gumataotao, Loyola and Marquette Universities (EPR).

TEACHING AND MENTORING: 3.
Medical Student and Resident Education (Teaching), MCW, 2003 - 2009.
8/2003 - 12/2009: M1 Medical Biochemistry: Case-Based Discussions, Preceptor.

TEACHING AND MENTORING: 4.
Undergraduate Education (Teaching), Marquette U., 2015 - present.
S-2015: Introduction to Optics (PHYS 4024)
F-2015 - present: Undergraduate Research in Physics (PHYS 3995) and Independent Study in Physics (PHYS 4995)
S-2016: Experimental Methods in Biophysics (PHYS 4065)
F-2016: Introductory Physics with Algebra (PHYS 1001)
S-2017: Introductory Physics with Algebra (PHYS 1002)
F-2017: The Physical Basis of Biological Structure and Function (PHYS 4046)
S-2018: Experimental Methods in Biophysics (PHYS 4065)
F-2018: Atomic Physics (PHYS 4071)
S-2019: Quantum Mechanics (PHYS 4012)

TEACHING AND MENTORING: 5.
Undergraduate Research Advising, MCW 2002 - 2006 & Marquette U., 2015 - present.
06 - 08/2002: MCW: Katie Tripi (Aminopeptidase spin-labeling EPR, Summer Program for Undergraduate Research (***SPUR***).
06 - 08/2003: MCW: Katie Westfahl (Aminopeptidase Inhibition, ***SPUR***).
06 - 08/2006: MCW: Patrick Phillips (ENDOR of Cu(II) Complexes, ***SPUR***).
06 - 08/2015: MU: Ryan Howell (Nitrile Hydratase, ***NSF***)
06 - 08/2016: Thomas Dietz (SAD-phased Protein Crystallography)
06 - 12/2016: Alex Garces (Nitrile Hydratase Kinetics, ***NSF***)
06 - 12/2016: Antony Francisco (*ex-vivo* Electron Paramagnetic Resonance [EPR] and Mitochondrial Diseases, (***Children's Research Institute***)
09 - 12/2016: Shaimaa Mahmoud (Bactericidal Applications of UV-C, ***Surfacide LLC***)
09 - 12/2016: Patricia Hunt (Bactericidal Applications of UV-C, ***Surfacide LLC***)
05 - 08/2017: Antony Francisco (*ex-vivo* EPR and Mitochondrial Diseases, ***Children's Research Institute***)
05 - 08/2017: Alex Garces (*ex-vivo* EPR and Cancer, ***Wehr Foundation***)
05 - 08/2017: Luiz Gabriel Dias Duarte Machado (*ex-vivo* EPR and Cancer, ***Wehr Foundation***)

01 - 05/2018: Austin Stellpflug, Research Advisor (Toward a Virtual Mitochondrion in Simulink)
05-08/2018: Alex Garces (*ex-vivo* EPR and Cancer, ***MCW Cancer Center***)
05-08/2018: Luiz Gabriel Dias Duarte Machado (*ex-vivo* EPR and Cancer, ***MCW Cancer Center***)
05 - 12/2018: Lili DeCzito (ex-vivo EPR and Cancer, ***MCW Cancer Center***)
08 - 12/2018: Alex Garces (Compromising Metabolic Potential in Yeast Infection, ***NASA/Wisconsin Space Grant Consortium***).

TEACHING AND MENTORING: 6.
Graduate and Postdoctoral Student Advising and Mentoring,
MCW, Marquette U., and University of Wisconsin-Milwaukee (UWM), 2001 - present.

10/2001 - 1/2006: Amit Kumar, MCW Biophysics, **PhD Advisor.**
08 -11/2002: Brajesh Kumar, MCW Biochemistry, Mock Proposal/Qual. Exam Cttee.
08 - 11/2003: Ryan McAndrew, Structural Biology, MCW Biochemistry, Mock Proposal/Qual. Exam Cttee.
08 - 12/2003: Thomas Rummel, MCW Biophysics, Research Rotation Advisor.
01/2004 - 05/2008: Derek Francis, MCW Biophysics, PhD Dissertation Committee.
03/2004 - 07/2010: Jason Kowalski, MCW Biophysics, **PhD Advisor.**
09/2004 - 08/2006: Raj Gopal Periyannan, MCW Biophysics. **Postdoc Advisor.**
03 - 06/2005: Tayyibe Khan, MCW Biophysics, Research Rotation Advisor.
10/2005 - 01/2006: Nicholas Cartwright, MCW Biophysics, Research Rotation Advisor.
01 - 03/2006: Jonathan Van Dyke, MCW Biophysics, Research Rotation Advisor.
01/2006 - 04/2010: Mariam Hartley, MCW Biophysics, **PhD Advisor.**
09/2006 - 03/2010: Eryn Hassemer, MCW Cell Biology, PhD, Diss. Cttee.
07 - 10/2006: Aaron Kittell, MCW Biophysics, Research Rotation Advisor.
08 - 11/2006: Katie Westfahl, MCW Biophysics, Mock Proposal/Qual. Exam Cttee.
01 - 03/2007: Heather Kaminski, MCW Biophysics, Research Rotation Advisor.
09/2007 - 4/2010: Wei Yong, Structural Biology, MCW Biochem., MS Thesis Cttee.
09 - 12/2010: Subarna Bhattacharya, MCW Biophysics, Research Rotation Advisor.
01 - 04/2011: Jacob Metallo, MCW Biophysics, Research Rotation Advisor.
09/2013 - present: Md Mabbhat Ali, UWM Chem. & Biochem., PhD, Diss. Cttee.
08/2014 - 09/2016: Natalia Stein, MU Physics, **Postdoc Advisor**.
09/2015 - present: Elliot Corless, MU Biol. Sci., PhD Dissertation Committee.
09/2016 - 07/2018: Amber Bakkum, MCW Cell Biology, PhD, Diss. Cttee.

PRESENTATIONS: 1. International and National Meetings, 1990 - present.

1. Howes, B.D., BENNETT, B., Lowe, D.J. and Bray, R.C.: ENDOR studies of the molybdenum centre of xanthine oxidase. 10th International Symposium on Flavins and Flavoproteins, Como, Italy, 7/15/1990
2. Hughes, R.K., BENNETT, B., Doyle, W.A., Burke, J.F., Chovnick, A. and Bray R.C.: Roles of molybdenum, FAD and iron-sulphur domains in molybdenum-containing hydroxylases: molecular genetic, kinetic and spectroscopic studies. 638th Meeting of the Biochemical Society, 4/10/1991 - 4/12/1991

3. BENNETT, B. and Bray, R.C.: Redox-related activation and deactivation of E. coli nitrate reductase: kinetic and spectroscopic studies. 648th Meeting of the Biochemical Society, Belfast, U.K., 9/14/1993 - 9/17/1993
4. BENNETT, B. and Bray, R.C.: Further studies on redox-related activation and deactivation of E. coli nitrate reductase: a possible physiologically relevant role for the low potential [4Fe-4S] centers. , 650th Meeting of the Biochemical Society, Cardiff, U.K., 4/12/1994 - 4/14/1994
5. BENNETT, B., Benson, N., McEwan, A.G. and Bray, R.C.: E.P.R. characterization of the molybdenum centre of Rhodobacter capsulatus dimethylsulphoxide reductase: new signals on reduction with Na2S2O4. 650th Meeting of the Biochemical Society, Cardiff UK, 4/12/1994 - 4/14/1994
6. Berks, B.C., BENNETT, B., Breton, J., Reilly, A., Willis, A.C., Ferguson, S.J., Thomson, A.J. and Richardson, D.J.: The Periplasmic Nitrate Reductase of Thiosphaera pantotropha. 7th International Conference on Bioinorganic Chemistry, Lübeck, Germany, 9/3/1995 - 9/8/1995
7. BENNETT, B. and Holz, R.C.: Structural and Mechanistic Information on Dinuclear Metalloaminopeptidases from EPR. ***Invited Speaker***, Gordon Research Conferences Graduate Research Seminar on Bioinorganic Chemistry, Ventura, CA, 7/24/1998
8. Holz, R.C., BENNETT, B., DePaola, C., Bienvenue, D., Ringe, D. and Petsko, G.A.: Invited Presentation, Metal-Mediated N-Terminal Peptide Hydrolysis. 9th International Conference on Bioinorganic Chemistry, Minneapolis, MN, 7/11/1999 - 7/17/1999
9. BENNETT, B., Stewart, L.J., Bailey, S., Charnock, J.M. and Garner, C.D.: Dimethylsulfoxide Reductase: Insight into the Mechanisms of the Catalytic Reactions from Structural and Spectroscopic Studies. 9th International Conference on Biological Inorganic Chemistry, Minneapolis, MN, 7/11/1999 - 7/17/1999
10. Holz, R. C., D'souza, V. M. and BENNETT, B., Kinetic and spectroscopic studies on the methionine aminopeptidase from Escherichia coli: Insight into the binding of the anti-angiogenesis agent fumagillin, 219th American Chemical Society Annual Meeting, San Francisco, CA, 3/21/2000 - 3/25/2000
11. Holz, R.C., D'souza, V. M., Rebush, S., Copik, A.J. and BENNETT, B.: Divalent Metal Binding and Mechanism of Action of the Methionine Aminopeptidases from Escherichia coli and Pyrococcus furiosus. 5th European Conference on Biological Inorganic Chemistry, Toulouse, France, 7/17/2000 - 7/20/2000
12. BENNETT, B., Kappl, R., Canne, C., Hüttermann, J., Lowe, D.J. and Fetzner, S.: Invited Speaker, EPR and ENDOR Analyses of the Bacterial Molybdenum-Containing Hydroxylase Quinoline Oxidoreductase from Pseudomonas putida 86. 43rd Rocky Mountain Conference on Analytical Chemistry, Denver, CO, 7/29/2001 - 8/2/2001
13. BENNETT, B.: Dinuclear Metalloaminopeptidases: Substituted Metal Ions as Structural and Mechanistic Probes. ***Invited Speaker***, 5th Workshop on EPR Applications in Biology and Medicine. Kraków, Poland, 10/2/2001
14. Kalyanaraman, B., Joseph, J., BENNETT, B., Konorev, E. A. Inhibition of Doxorubicin-InducedCardiomyocyte Apoptosis by Metalloporphyrins: Is It Due to ROS Scavenging or Hsp Induction? 8th Annual Meeting of the Oxygen Society, Research Triangle Park, NC, 11/16/2001 - 11/19/2001
15. BENNETT, B., Kumar, A., Kalyanaraman, B., Kotamraju, S. and Joseph, J.: Metalloporphyrins as Antioxidants Against Apoptosis Induced by the Anti-Cancer Drug

Doxorubicin. Gordon Research Conference on Metals in Biology, Ventura, CA, 1/20/2002 - 1/25/2002

16. BENNETT, B., Antholine, W.A., D'souza, V.M., Chen, G., Ustynyuk, L. and Holz, R.C.: , Information on the Determinants of Activity in Aminopeptidases from EPR Spectroscopy of the Hyperactive Copper-Substituted Aminopeptidase from Aeromonas proteolytica. 44th Rocky Mountain Conference, Denver, CO, 7/30/2002
17. Kuhnle, G.G.C., BENNETT, B., Kalyanaraman, B., Rice-Evans, C.A.: Binding Modes of Flavonoids and Transition Metals. 9th Annual Meeting of the Oxygen Society, San Antonio, TX, 11/20/2002 - 11/24/2002
18. Kumar, A., Feix, J.B., Bhargava, K., Klug, C.S., Antholine, W.E., Holz, R.C. and BENNETT, B.: Information from Spin-Spin Interactions in a Metalloaminopeptidase, VpAP, from Vibrio proteolyticus. Gordon Research Conference on Metals in Biology, Ventura, CA, 2/2/2003 - 2/7/2003
19. Kumar, A., Bhargava, K., Funk, A.L., Klug, C.S., Feix, J.B. and BENNETT, B.: , Characterization of substrate binding region in Metalloaminopeptidase from Vibrio Proteolyticus: EPR and Computational studies. , Gordon Research Conference Graduate Research Seminar in Bioinorganic Chemistry, Ventura, CA, 2/6/2003 - 2/9/2003
20. Kumar, A., Bhargava, K., Feix, J.B., Klug, C.S. and BENNETT, B.: Structural Information on Vibrio proteolyticus Leucine Aminopeptidase from EPR Spectroscopy. Biophysical Society 47th Annual Meeting, San Antonio, TX, 3/1/2003 - 3/5/2003
21. Kelly, B. S., Antholine, W. E., BENNETT, B., Griffith, O. W. Temperature Dependent EPR of the Mn-Mn Site of gamma-GCS plus BSO. Biophysical Society 47th Annual Meeting, San Antonio, TX, 3/1/2003 - 3/5/2003
22. Antholine, W. E., Kelly, B. S., BENETT, B., Griffith, O. W. EPR of MonoMn-, MnMn-, ZnMn-, and FeFe-Sites in gamma-GCS Plus Substrates or Inhibitors. 11th International Conference on Biological Inorganic Chemistry, Cairns, Australia, 7/19/2003 - 7/23/2003
23. Kumar, A., Feix, J.B., Klug, C.S., Holz, R.C. and BENNETT, B.: Substrate and Inhibitor Binding in Leucine Aminopeptidase. Gordon Research Conference on Metals in Biology, Ventura, CA, 1/18/2004 - 1/23/2004
24. Kumar, A., Klug, C.S., Feix, J.B. and BENNETT, B.: Mapping the substrate binding site in leucine aminopeptidase: EPR and computer docking. Gordon Research Conference Graduate Research Seminar in Bioinorganic Chemistry, Ventura, CA, 1/22/2004 - 1/25/2004
25. Tubbs, K.J., Szajna, E., BENNETT, B., Arif, A.M., Watkins, R., Halfen, J.A. and Berreau, L.M.: Synthesis, Structural and Spectroscopic Studies of Mononuclear N_3S-ligated Co(II) Methoxide and Hydroxide Complexes. 227th American Chemical Society National Meeting, Anaheim, CA, 3/28/2004 - 4/1/2004
26. BENNETT, B.: A Physiological Role for the Low Potential Iron-Sulfur Clusters of E. coli Nitrate Reductase. ***Invited Speaker***, 59th Northwestern/18th Rocky Mountain American Chemical Society Regional Meeting, Logan, UT, 6/7/2004 - 6/8/2004
27. Holz, R.C., Copik, A.J., Waterson, S. and BENNETT, B.: Both Nucleophile and Substrate Bind to the Catalytic Fe(II)-Center in the Type-II Methionyl Aminopeptidase from Pyrococcus furiosus. 59th Northwestern/18th Rocky Mountain American Chemical Society, Logan, UT, 6/7/2004 - 6/8/2004

28. Tubbs, K.J., Szajna, E., BENNETT, B., Arif, A.M., Watkins, R. and Berreau, L.M.: Synthesis, Structural and Spectroscopic Studies of Mononuclear N_3S-ligated Co(II) Methoxide and Hydroxide Complexes. 59th Northwestern/18th Rocky Mountain American Chemical Society Regional Meeting, Logan, UT, 6/7/2004 - 6/8/2004
29. Kumar, A., Kowalski, J., Francis, D., Rummel, T. and BENNETT, B.: Information on the Catalytic Mechanism of a Zn(II)-dependent Aminopeptidase from Rapid-freeze-quench EPR Studies of Co(II)-Substituted Functional Forms. 46th RMCAC, 27th EPR Symposium, Denver, CO, 8/1/2004 - 8/5/2004
30. Kowalski, J., Antholine, W. E., BENNETT, B.: Low frequency EPR of Co(II). ***Invited Speaker***, 46th RMCAC, 27th EPR Symposium, Denver, CO, 8/1/2004 - 8/5/2004
31. Bosnjakovic, A., Schlick, S., BENNETT, B.: Chemical and Thermal Stability of Polymer Membranes Used in Fuel Cells: Nafion Studied by Multifrequency ESR, ENDOR and Spin Trapping. 46th RMCAC, 27th EPR Symposium, Denver, CO, 8/1/2004 - 8/5/2004
32. Kowalski, J., Antholine, W. E., BENNETT, B.: Low frequency EPR of Co(II). Gordon Research Conference on Metals in Biology, Ventura, CA, 1/23/2005 - 1/28/2005
33. Kumar, A. and BENNETT, B.: Mapping the substrate binding site in leucine aminopeptidase: EPR and Computer Docking. Invited Presentation, Gordon Research Conferences Graduate Research Seminar on Bioinorganic Chemistry, Ventura, CA, 1/27/2005 - 1/30/2005
34. Kowalski, J., Antholine, W. E., BENNETT, B.: Identification of Hyperfine Structure by Low Frequency EPR of Co(II). Gordon Research Conferences Graduate Research Seminar on Bioinorganic Chemistry, Ventura, CA, 1/27/2005 - 1/30/2005
35. Anthoilne, W. E., BENNETT, B., Karkheck, J., Phadnis, P., Subczynski, W. K. Multiexponential Fits of Saturation Recovery Curves Depend on the Degree of Axial Ligation. Biophysical Society 49th Annual Meeting, Long Beach, CA, 2/12/2005 - 2/16/2005
36. Sharma, N., Crawford, P. A., Chandrasekar, S., Tierney, D. L., Costello, A., Yang, K-W., BENNETT, B. and Crowder, M. W.: Kinetic and Structural Studies on Metallo-β-Lactamase ImiS. 12th International Conference on Biological Inorganic Chemistry, Ann Arbor, MI, 7/31/2005 - 8/5/2005 Periyannan, G., Kumar, M., BENNETT, B.: Mechanistic Studies on the Aminopeptidase from Vibrio proteolyticus. 12th International Conference on Biological Inorganic Chemistry, Ann Arbor, MI, 7/31/2005 - 8/5/2005
37. Kowalski, J., BENNETT, B.: Fulvic Acid Mineral Supplements: Science or Snake Oil? 12th International Conference on Biological Inorganic Chemistry, Ann Arbor, MI, 7/31/2005 - 8/5/2005
38. Crowder, M. W., Matthews, M. L., Breece, R. M., Costello, A., BENNETT, B., Sigdel, T. K. and Tierney, D. L.: Probing the Reaction Mechanism of Co(II)-Substituted VanX. 12th International Conference on Biological Inorganic Chemistry, Ann Arbor, MI, 7/31/2005 - 8/5/2005
39. Kumar, A., Narayanan, B., Funk, A., Bzymek, K. P., Holz, R. C. Kim, J-J. and BENNETT, B: Determinants of Substrate Binding in Leucine Aminopeptidase. Gordon Research Conference on Metals in Biology, Ventura, CA, 1/29/2006 - 2/3/2006
40. Kumar, A., Narayanan, B., Periyannan, G., Kowalski, J., Francis, D., Kim, J-J. and BENNETT, B: A Novel Proteolytic Mechanism for Vibrio proteolyticus Aminopeptidase. Gordon Research Conference on Metals in Biology, Ventura, CA, 1/29/2006 - 2/3/2006

41. BENNETT, B.: A New Paradigm for Metalloenzyme-Catalyzed Peptide Hydrolysis: Rapid-Freeze-Quench-EPR Studies of Leucine Aminopeptidase. ***Invited Speaker***, 48th Rocky Mountain Conference on Analytical Chemistry, Breckenridge, CO, 7/27/2006
42. BENNETT, B.: Rapid-freeze-quench and EPR of S = 3/2 Co(II): Applications to metalloenzyme mechanisms. ***Invited Speaker***, Gordon Research Conference on Metals in Biology, Ventura, CA, 1/31/2007
43. Kowalski, J., Fernandez, C. O. and BENNETT, B.: Metal binding sites in α-synuclein. Invited Presentation, Gordon Research Conferences Graduate Research Seminar on Bioinorganic Chemistry, Ventura, CA, 2/3/2007
44. Hartley, M., BENNETT, B. The expression of prostate specific membrane antigen. Invited Presentation, A Joint Conference of 12th In Vivo EPR Spectroscopy and Imaging and 9th International EPR Spin Trapping/Spin Labeling, Chicago, IL, 4/29/2007 - 5/3/2007
45. Kowalski, J., Fernandez, C.O., BENNETT, B. Metal binding sites in α-synuclein. Invited Presentation, A Joint Conference of 12th In Vivo EPR Spectroscopy and Imaging and 9th International EPR Spin Trapping/Spin Labeling, Chicago, IL, 4/29/2007 - 5/3/2007
46. Hyde, J.S., BENNETT, B., Sidabras, J.W., Antholine, W.E. EPR Spectra at 2 GHz for Fragments of Prion Protein Bound to Cu2+: Determination of the Number of Bound Nitrogens. Invited Presentation, 30th International EPR Symposium/49th Rocky Mountain Conference on Analytical Chemistry, Breckenridge, CO, 7/22/2007 - 7/26/2007
47. Mitra, S., Job, K.M., BENNETT, B., Holz, R.C. Insight into the catalytic role of aspartate-97 in the type-I methionine aminopeptidase from Escherichia coli. Invited Presentation, 234th American Chemical Society National Meeting, Boston, MA, 8/19/2007 - 8/23/2007
48. Limphong, P., Crowder, M. W., BENNETT, B., Makaroff, C. A. Spectroscopic characterization of a metal bound by Arginine: Glyoxalase 2-1 from Arabidopsis thaliana. 235th American Chemical Society National Meeting, New Orleans, LA, 4/6/2008 - 4/10/2008
49. Crowder, M. W., BENNETT, B. Using EPR spectroscopy to probe the reaction mechanism of metallo-β-lactamases. ***Invited Speaker, Session Chair, Member of the Organizing Committee***, 31st International EPR Symposium & 50th Annual Rocky Mountain Conference on Analytical Chemistry, Breckenridge, CO, 7/27/2008 - 7/31/2008
50. BENNETT, B. Rapid Freeze Quench: What, Why and How? ***Invited Speaker***, 14th in vivo EPR Spectroscopy & Imaging and 11th International EPR Spin Trapping/Spin Labeling Meeting, San Juan, Puerto Rico, 9/2/2010 - 9/6/2010
51. BENNETT, B., Kowalski, J.M., Kittell, A.W., Kalyanaraman, B., Sidabras, J.W., Camenish, T.C., Ratke, J.J., Hyde, J.S. , EPR Approaches for Biomedicine at the National Biomedical EPR Center. ***Invited Speaker***, 40th Southeastern Magnetic Resonance Conference, Atlanta, GA, 11/4/2011 - 11/6/2011
52. BENNETT, B. Using EPR to Probe Zinc Enzyme Mechanisms: Old Tricks and New Horizons. ***Invited Speaker***, Trends in Enzymology, Göttingen, Germany, 2012, 6/3/2012 - 6/6/2012
53. Kittell AW, Sidabras JW, Bennett B, Hyde JS. Segmental Non-Adiabatic Rapid Sweep Collection of Cu(II). 54th Rocky Mountain Conference on Analytical Chemistry, Copper Mountain, Colorado, July, 2012.

54. Koto T, Bennett B, Dranka B, Kalyanaraman B. Low-Temperature CW-EPR Spectroscopic Studies for Parkinson's Disease Model. 54th Rocky Mountain Conference on Analytical Chemistry, Copper Mountain, Colorado, July, 2012.
55. Swarts SG, Bennett B, Demidenkoa E, et al. Ex-vivo nail dosimetry for triage after a radiation event involving large population. 41st Annual ISOTT / EPR 2013 Conference, Hanover, New Hampshire, June 22-29, 2013.
56. Swarts SG, Sidabras JW, Bennett B, Kittell A, Wilcox D, Tipikin D, Swartz HM. The use of multifrequency EPR in the analysis of MIS and RIS spectral components. 41st Annual ISOTT / EPR 2013 Conference, Hanover, New Hampshire, June 22-29, 2013.
57. BENNETT, B. EPR Spinomics for Diagnostic and Mechanistic Studies of Mitochondria in Disease. ***Invited Speaker***, 41st Meeting of the International Society on Oxygen Transport to Tissue and 2013 International EPR Conference, Hannover, NH, 6/24/2013 - 6/28/2013.
58. BENNETT, B. Electron Paramagnetic Resonance (EPR) spectroscopy for diagnosis and mechanistic characterization of mitochondrial diseases. ***Invited speaker, session chair, and Organizing Committee member***, 12th International Conference on Pediatric Pathology and Laboratory Medicine, London, U.K., 03/15/2017 - 03/16/2017.

PRESENTATIONS: 2.
Local Meetings, Invited Lectures, and Workshops, 2002 - present.

59. BENNETT, B.: Information on the Determinants of Activity in Aminopeptidases from EPR Spectroscopy of the Hyperactive Copper-Substituted Aminopeptidase from *Aeromonas proteolytica*. Midwest Metals Meeting, Chicago, IL, 05/12/2002
60. BENNETT, B., Antholine, W.E. and Hyde, J.S.: W-Band Parallel-Mode EPR. Speaker, NIH Reverse Site Visit, Washington, D.C., 07/2002
61. BENNETT, B.: *Clostridium pasteurianum* Hydrogenase CpI. Speaker, NIH Reverse Site Visit, Washington, D.C., 07/2002
62. BENNETT, B.: Enzyme-Substrate Interactions in Metalloaminopeptidase from *Vibrio proteolyticus*. Invited Lecture, Department of Chemistry and Biochemistry, Montana State University, Bozeman, MT, 01/22/2003
63. BENNETT, B.: Biophysics at the Medical College of Wisconsin. Invited Lecture, Chemistry Department, Wartburg College, Waverly, IA, 02/12/2003
64. BENNETT, B.: Enzyme-substrate interactions in the aminopeptidase from *Vibrio proteolyticus*: Information from EPR spectroscopy. Department of Chemistry, University of Wisconsin, Milwaukee, WI, 03/10/2003
65. BENNETT, B.: Infection, Cancer, AIDS and Electron Paramagnetic Resonance Spectroscopy. Invited Lecture, Department of Physics, Grinnell College, Grinnell, IA, 03/02/2004
66. BENNETT, B.: Substrate & Inhibitor Binding in Leucine Aminopeptidase. Invited Lecture, Department of Chemistry and Biochemistry, Miami University, Oxford, OH, 04/08/2004
67. BENNETT, B.: Substrate Binding by the Aminopeptidase from *Vibrio proteolyticus*. Invited Lecture, Department of Chemistry, University of New Mexico, Albuquerque, NM, 10/07/2005
68. BENNETT, B.: From *Vibrio proteolyticus* Aminopeptidase to Prostate Cancer. Invited Lecture, Department of Chemistry, University of Alabama, Tuscaloosa, AL, 11/04/2005

69. B. BENNETT and C. S. Klug, Organizers and Instructors, 1st Principles of Electron Paramagnetic Resonance Training Workshop, National Biomedical EPR Center, Milwaukee, WI, 08/17/2006 - 08/19/2006
70. BENNETT, B.: Mechanistic Insights into the Dizinc Leucine Aminopeptidase from *Vibrio*. Invited Lecture, Department of Chemistry, University of Wisconsin, Madison, WI, 10/10/2007
71. BENNETT, B.: Zn(II)-Enzymes and Electron Paramagnetic Resonance...? Invited Lecture, Department of Chemistry, University of Wisconsin-Milwaukee, Milwaukee, WI, 05/08/2008
72. B. BENNETT and C. S. Klug, Organizers and Instructors, 2nd Principles of Electron Paramagnetic Resonance Training Workshop, National Biomedical EPR Center, Milwaukee, WI, 08/19/2009 - 08/21/2009
73. BENNETT, B.: Mechanistic Determinants in a Metalloaminopeptidase from *Vibrio* and Related Bacterial Enzymes. Invited Lecture, Department of Chemistry, Loyola University, Chicago, IL, 10/22/2009
74. Kowalski, J. and BENNETT, B. Revisiting Copper EPR Spectroscopy: It's Good to Go Down. Invited Presentation, Cutting-Edge Biomedical EPR Methods: National Biomedical EPR Center EPR Workshop 2010, Milwaukee, WI, 08/20/2010 - 08/21/2010
75. BENNETT, B.: Electron Paramagnetic Resonance of Metal Ions: Towards *in Vivo* Structural Biology. Invited Lecture, Department of Chemistry, Marquette University, Milwaukee, WI, 04/08/2011
76. BENNETT, B.: Electron Paramagnetic (Spin) Resonance in Biological Environments. Invited Lecture, Department of Biological Sciences, University of Wisconsin-Parkside, Kenosha, WI, 04/22/2011
77. BENNETT, B.: Biological EPR: Old Tricks and New Horizons. Invited Lecture, Montana State University, Bozeman, MT, 03/06/2012
78. BENNETT, B., Biological EPR: Old Tricks and New Horizons. Invited Lecture, University of Montana, Missoula, MT, 03/08/2012
79. BENNETT, B. New Biophysical Tools for Monitoring the Progression of Neurodegeneration. Invited Lecture, Leading the Way: A Joint Conference of the Advancing a Healthier Wisconsin Foundation and the Wisconsin Partnership Program, Milwaukee, WI, 09/27/2012
80. BENNETT, B.: Electron Paramagnetic Resonance for Biophysical Investigations. Invited Lecture, Physics Department, Marquette University, Milwaukee, WI, 02/13/2014
81. BENNETT, B.: Computational Aspects of Biomedical Electron Paramagnetic (Spin) Resonance. Invited Lecture, Milwaukee Computational Symposium, Marquette University, Milwaukee, WI, 05/21/2015
82. BENNETT, B.: Yes, We Have No Antibiotics! Biophysical Studies on Antibacterial Target Proteins. Invited Lecture, Graduate Seminar Series in Biophysics, Medical College of Wisconsin, Milwaukee, WI, 05/24/2015
83. BENNETT, B.: Cryogenic EPR for Diagnosis and Mechanistic Characterization of Mitochondrial Dysfunction and Disease. Invited Lecture, Symposium on Improving Drug Development Through Biophysics, Milwaukee School of Engineering, Milwaukee, WI, 03/12/2016

84. BENNETT, B.: Electron Paramagnetic Resonance and Mitochondrial Disease. Invited Lecture, Interdisciplinary Seminar Series, University of Wisconsin-Whitewater, Whitewater, WI, 10/21/2016
85. BENNETT, B.: Quantitative Information on Mitochondrial Status from EPR of Flash-Frozen Biological Material. Invited Lecture, Graduate Seminar Series in Biophysics, Medical College of Wisconsin, Milwaukee, WI, 01/13/2017
86. BENNETT, B.: Treatment-Induced Mitochondrial Stress Detected by Low-Temperature EPR. Invited Project Presentation, MU and MCW Cancer Center Symposium, Marquette University, Milwaukee, WI, 11/17/2017
87. BENNETT, B.: Low-Temperature EPR Training Workshop for Milwaukee Area Scientists, Marquette University, Milwaukee, WI, 05/29/2018 - 06/01/2018
88. BENNETT, B.: Clinical Applications of Electron Paramagnetic Resonance. Invited Lecture, Clinical and Translational Sciences Institute of Southeastern Wisconsin, 10/18/2018
89. BENNETT, B.: Biomedical, Translational, and Clinical Applications of Very-Low-Temperature EPR: What, Why, How, and Where Next? Invited Lecture, Graduate Seminar Series in Biophysics, Medical College of Wisconsin, Milwaukee, WI, 12/14/2018

PRESENTATIONS: 3.
Intramural Seminars, 2002 - present:

90. BENNETT, B.: Structural and Mechanistic Information from Electron Paramagnetic Resonance (EPR) Spectroscopy of Metalloenzymes: Studies of a Prototypical Aminopeptidase. Biochemistry Program Seminar, MCW, 11/20/2002
91. BENNETT, B.: A Clan MH Aminopeptidase from Vibrio proteolyticus. Biophysics Seminar Series, MCW, 2/21/2003
92. BENNETT, B. and Periyannan, G.: Prostate Specific Membrane Antigen (PSMA): Friend or Foe? MCW Cell Signaling Group, 8/25/2005
93. BENNETT, B.: Leucine Aminopeptidase from Vibrio proteolyticus: Beyond the Metals. Biophysics Seminar Series, MCW, 3/3/2006
94. BENNETT, B.: Zn(II)-Enzymes and Electron Paramagnetic Resonance. Biophysics Seminar Series, MCW, 9/26/2008
95. BENNETT, B.: EPR of Transition Metals in Biomedical Research at MCW: Contributions, Challenges and Opportunities. Biophysics Seminar Series, MCW, 2/11/2011
96. BENNETT, B. EPR Tools for Mitochondrial Dysfunction in Neurodegeneration. Neuroscience Research Center: Research in Progress Series, 11/26/2012
97. BENNETT, B. EPR of Biological Material: Old Tricks and New Horizons. Biophysics Seminar Series, MCW, 12/14/2012.
98. BENNETT, B.: EPR of Mitochondrial Insult Markers: A New Tool for Pulmonary Medicine Research. MCW Pulmonary and Critical Care Research Retreat, 04/10/2013
99. BENNETT, B.: Low-Temperature Electron Paramagnetic Resonance (EPR) of Native Biological Material: Principles, Practice, and Clinical Applications. Marquette University Physics Seminar Series, 09/13/2018

BIBLIOGRAPHY: 1.
Refereed Journal Publications: Original Papers, 1991 - present.
MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/1d1qzssUiun5h/bibliography/49002636/public/?sort=date&direction=ascending
ResearchGate: https://www.researchgate.net/profile/Brian_Bennett4
CTSI Faculty Collaboration Database: https://fcd.mcw.edu

1. Howes, B. D., Bennett, B., Koppenhöfer, A., Lowe, D. J. and Bray, R. C.: 31P-ENDOR studies of xanthine oxidase: coupling of phosphorus of the pterin cofactor to Mo(V). Biochemistry 30:3969-3975, 1991.

2. Hughes, R. K., Bennett, B. and Bray, R. C.: Xanthine dehydrogenase from *Drosophila melanogaster*: purification and properties of the wild-type enzyme and of a variant lacking iron-sulfur centers. Biochemistry 31:3073-3083, 1992.

3. Bertrand, P., More, C., Guigliarelli, B., Fournel, A., Bennett, B. and Howes, B. D.: Biological polynuclear clusters coupled by magnetic interactions: from the point dipole approximation to a local spin model. J. Am. Chem. Soc. 116:3078-3086, 1994.

4. Bennett, B., Benson, N., McEwan, A. G. and Bray, R. C.: Multiple states of the molybdenum centre of dimethylsulphoxide reductase from *Rhodobacter capsulatus* revealed by EPR spectroscopy. Eur. J. Biochem. 225:321-331, 1994.

5. Howes, B. D., Bennett, B., Bray, R. C., Richards, R. L. and Lowe, D. J.: 13C-ENDOR studies of the Inhibited species of xanthine oxidase: the first direct evidence for a molybdenum-carbon bond in a biological system. J. Am. Chem. Soc. 116:11624-11625, 1994. (Also reported in *Chemistry & Engineering News*, Dec. 19, 1994 Issue)

6. Bennett, B., Berks, B. C., Ferguson, S. J., Thomson, A. J. and Richardson, D. J.: Mo(V) electron paramagnetic resonance signals from the periplasmic nitrate reductase of *Thiosphaera pantotropha*. Eur. J. Biochem. 226:789-798, 1994.

7. Sears, H. J., Bennett, B., Spiro, S., Thomson, A. J. and Richardson, D. J.: Identification of periplasmic nitrate reductase Mo(V) electron paramagnetic resonance signals in intact cells of *Paracoccus denitrificans*. Biochem. J. 310:311-314, 1995.

8. Bennett, B., Gruer, M. J., Guest, J. R. and Thomson, A. J.: Spectroscopic characterisation of an aconitase (AcnA) of *Escherichia coli*. Eur. J. Biochem. 233:317-326, 1995.

9. Howes, B. D., Bray, R. C., Richards, R. L., Turner, N. A., Bennett, B. and Lowe, D. J.: Evidence favoring molybdenum-carbon bond formation in xanthine oxidase action: 17O- and 13C-ENDOR and kinetic studies. Biochemistry 35:1432-1443, 1996.

10. Green, J., Bennett, B., Jordan, P., Ralph, E. T., Thomson, A. J. and Guest, J. R.: Reconstitution of the [4Fe-4S] cluster in FNR and demonstration of the aerobic-anaerobic transcription switch in vitro. Biochem. J. 316:887-892, 1996.

11. Bennett, B., Charnock, J. M., Sears, H. J., Berks, B. C., Thomson, A. J., Ferguson, S. J., Garner, C. D. and Richardson, D. J.: Structural investigation of the molybdenum site of the periplasmic nitrate reductase from *Thiosphaera pantotropha* by X-ray absorption

spectroscopy. Biochem. J. 317:557-568, 1996.

12. Bennett, B. and Holz, R. C.: EPR studies on the mono- and dicobalt(II) substituted forms of the aminopeptidase from *Aeromonas proteolytica*. Insight into the catalytic mechanism of dinuclear hydrolases. J. Am. Chem. Soc. 119:1923-1933, 1997.

13. Bennett, B. and Holz, R. C.: Spectroscopically Distinct Cobalt(II) Sites in Heterodimetallic Forms of the Aminopeptidase from *Aeromonas proteolytica*: Characterization of Substrate Binding. Biochemistry 36:9837-9846, 1997.

14. Holz, R. C., Bradshaw, J. M. and Bennett, B.: Synthesis, Molecular Structure and Reactivity of Dinuclear Copper II Complexes with Carboxylate-Rich Coordination Environments. Inorg. Chem. 37:1219-1225, 1998.

15. Holz, R. C., Bennett, B., Chen, G. C. and Ming, L-J.: Proton NMR Spectroscopy as a Probe of Dinuclear Copper(II) Active Sites in Metalloproteins: Characterization of the Hyperactive Copper(II)-Substituted Aminopeptidase from *Aeromonas proteolytica*. J. Am. Chem. Soc. 120:6329-6335, 1998.

16. Bennett, B. and Holz, R. C.: Inhibition of the Aminopeptidase from *Aeromonas proteolytica* by L-Leucinephosphonic Acid, a Transition State Analogue of Peptide Hydrolysis. J. Am. Chem. Soc. 120:12139-12140, 1998.

17. Butler, C.S., Charnock, J.M., Bennett, B., Sears, H.J., Reilly, A.J., Ferguson, S.J., Garner, C.D., Lowe, D.J., Thomson, A.J., Berks, B.C. and Richardson, D.J.: Models for Molybdenum coordination during the catalytic cycle of periplasmic nitrate reductase from *Paracoccus denitrificans* derived from EPR and EXAFS spectroscopy. Biochemistry 38:9000-9012, 1999.

18. De Paola, C.C., Bennett, B., Holz, R.C., Ringe, D. and Petsko, G.A.: 1-Butaneboronic Acid Binding to *Aeromonas proteolytica* Aminopeptidase: A Case of Arrested Development. Biochemistry 38:9048-9053, 1999.

19. Ustynyuk, L., Bennett, B., Edwards, T. and Holz, R.C.: Inhibition of the aminopeptidase from *Aeromonas proteolytica* by aliphatic alcohols. Characterization of the hydrophobic substrate recognition site. Biochemistry 38:11433-11439, 1999.

20. Huntington, K.M., Bienvenue, D.L., Wei, Y., Bennett, B., Holz, R.C. and Pei, D.: Slow-binding inhibition of the aminopeptidase from *Aeromonas proteolytica* by peptide thiols: synthesis and spectroscopic characterization. Biochemistry 38:15587-15596, 1999.

21. Bienvenue, D.L., Bennett, B. and Holz, R.C.: Inhibition of the aminopeptidase from *Aeromonas proteolytica* by L-leucinethiol: kinetic and spectroscopic characterization of a slow, tight-binding inhibitor-enzyme complex. J. Inorg. Biochem. 78:43-54, 2000.

22. D'souza, V.M., Bennett, B., Copik, A.J. and Holz, R.C.: Divalent metal binding properties of the methionyl aminopeptidase from *Escherichia coli*. Biochemistry 39:3817-3826, 2000.

23. Kappler, U., Bennett, B., Rethmeier, J., Schwarz, G., Deutzmann, R., McEwan, A.G. and

Dahl, C.: Sulfite:Cytochrome c oxidoreductase from *Thiobacillus novellus*. Purification, characterization, and molecular biology of a heterodimeric member of the sulfite oxidase family. J. Biol. Chem. 275:13202-13212, 2000.

24. Stewart, L.J., Bailey, S., Bennett, B., Charnock, J.M., Garner, C.D. and McAlpine, A.S.: Dimethylsulfoxide reductase: an enzyme capable of catalysis with either molybdenum or tungsten at the active site. J. Mol. Biol. 299:593-600, 2000.

25. Bennett, B., Lemon, B.J. and Peters, J.W.: Reversible carbon monoxide binding and inhibition at the active site of the Fe-only hydrogenase. Biochemistry 39:7455-7460, 2000.

26. Bray, R.C., Adams, B., Smith, A.T., Bennett, B. and Bailey, S.: Reversible dissociation of thiolate ligands from molybdenum in an enzyme of the dimethyl sulfoxide reductase family. Biochemistry 39:11258-11269, 2000.

27. Stamper, C., Bennett, B., Edwards, T., Holz, R.C., Ringe, D. and Petsko, G.: Inhibition of the aminopeptidase from *Aeromonas proteolytica* by L-leucinephosphonic acid. Spectroscopic and crystallographic characterization of the transition state of peptide hydrolysis. Biochemistry 40:7035-7046, 2001.

28. Bennett, B., Antholine, W.E., D'Souza, V.M., Chen, G., Ustinyuk, L., Holz, R.C.: Structurally distinct active sites in the copper(II)-substituted aminopeptidases from *Aeromonas proteolytica* and *Escherichia coli*. J. Am. Chem. Soc. 124:13025-13034, 2002

29. Bennett, B.: EPR of Co(II) as a structural and mechanistic probe of metalloprotein active sites: a review of studies on aminopeptidase. Curr. Topics Biophys. 26, 49-57, 2002.

30. Tubbs, K.J., Fuller, A.L., Bennett, B., Arif, A.M., Makowska-Grzyska, M.M., and Berreau, L.M.: Evaluation of the influence of a thioether substituent on the solid state and solution properties of N_3S-ligated copper(II) complexes. Dalton Trans. (15):3111-3116, 2003.

31. Tubbs, K.J., Fuller, A.L., Bennett, B. and Berreau, L.M. Mononuclear N_3S(thioether)-Ligated Copper(II) Methoxide Complexes: Synthesis, Characterization, and Hydrolytic Reactivity. Inorg. Chem. 42:4790-4791, 2003.

32. Bienvenue, D.L., Gilner, D.M., Davis, R.S., Bennett, B. and Holz, R.C. Substrate Specificity, Metal Binding Properties, and Spectroscopic Characterization of the DapE-Encoded *N*-Succinyl-L,L-Diaminopimelic Acid Desuccinylase from *Haemophilus influenzae*. Biochemistry 42:10756-10763, 2003.

33. Tubbs, K.J., Szajna, E., Bennett, B., Halfen, J.A., Watkins, R., Arif, A.M. and Berreau, L.M.: Mononuclear Nitrogen/Sulfur-Ligated Cobalt(II) Methoxide Complexes: Structural, EPR, Paramagnetic ^{1}H NMR, and Electrochemical Investigations. Dalton Trans. (16):2398-2399, 2004.

34. Stamper, C.C., Bienvenue, D.L., Bennett, B., Ringe, D., Petsko, G.A. and Holz, R.C.: Spectroscopic and X-ray Crystallographic Characterization of Bestatin Bound to the

Aminopeptidase from *Aeromonas (Vibrio) proteolytica*. Biochemistry 43:9620-9628, 2004.

35. Dinakarpandian, D., Morrissette, V., Chaudhary, S., Amini, K., Bennett, B. and Van Horn, J. D.: An informatics search for the low-molecular weight chromium-binding peptide. BMC Chem. Biol. 4:2, 2004.

36. D'souza, V.M., Brown, R.S., Bennett, B. and Holz, R.C.: Characterization of the active site and insight into the binding mode of the anti-angiogenesis agent fumagillin to the manganese(II)-loaded methionyl aminopeptidase from *Escherichia coli*. J. Biol. Inorg. Chem. 10:41-50, 2005.

37. Copik, A.J., Nocek, B.P., Swierczek, S.I., Ruebush, S., Jang, S.B., Meng, L., D'souza, V.M., Peters, J.W., Bennett, B. and Holz, R.C.: EPR and X-ray Crystallographic Characterization of the Product-Bound Form of the Mn^{II}-Loaded Methionyl Aminopeptidase from *Pyrococcus furiosus*. Biochemistry 44:121-129, 2005.

38. Garrity, J.D., Bennett, B. and Crowder, M.W.: Direct Evidence That the Reaction Intermediate of Metallo-beta-lactamase L1 is Metal Bound. Biochemistry 44:1078-1087, 2005.

39. Copik, A.J., Waterson, S., Swierczek, S.I., Bennett, B. and Holz, R.C.: Both Nucleophile and Substrate Bind to the Catalytic Fe(II)-Center in the Type-II Methionyl Aminopeptidase from *Pyrococcus furiosus*. Inorg. Chem. 44:1160-1162, 2005.

40. Crawford, P.A., Yang, K-W, Sharma, N., Bennett, B. and Crowder, M.W.: Spetroscopic Studies on Co(II)-Substituted Metallo-beta-lactamase ImiS from *Aeromonas veronii* bv. *sobria*. Biochemistry 44:5168-5176, 2005.

41. Breece, R.M., Costello, A., Bennett, B., Sigdel, T.K., Matthews, M.L., Tierney, D.L. and Crowder, M.W.: A five-coordinate metal center in Co(II)-substituted VanX. J. Biol. Chem. 280:11074-11081, 2005.

42. Chattopadhyay, M., Walter, E. D., Newell, D. J., Jackson, P. J., Aronoff-Spencer, E., Peisach, J., Gerfen, G. J., Bennett, B., Antholine, W. E., Millhauser, G. L.: The Octarepeat Domain of the Prion Protein Binds Cu(II) with Three Distinct Coordination Modes at pH 7.4. J. Am Chem. Soc. 127:12647-12656, 2005.

43. Bzymek, K. P., Moulin, A., Swierczek, S. I., Ringe, D., Petsko, G. A., Bennett, B., Holz, R. C.: Kinetic, Spectroscopic, and X-ray Crystallographic Characterization of the Functional E151H Aminopeptidase from *Aeromonas proteolytica*. Biochemistry 44:12030-12040, 2005.

44. McGregor, W. C., Swierczek, S. I., Bennett, B., Holz, R. C.: *argE*-Encoded N-Acetyl-L-Ornithine Deacetylase from *Escherichia coli* contains a Dinuclear Metallo-Active Site. J. Am. Chem. Soc. 127:14100-14107, 2005.

45. Bzymek, K. P., Swierczek, S. I., Bennett, B., Holz, R. C.: Spectroscopic and Thermodynamic Characterization of the E151D and E151A Altered Leucine Aminopeptidases from *Aeromonas proteolytica*. Inorg. Chem. 44:8574-8580, 2005.

46. Marasinghe, G. P. K., Sander, I. M., Bennett, B., Periyannan, G. P., Yang, K-W., Makaroff, C. A., Crowder, M. W.: Structural Studies on a Mitochondrial Glyoxylase II. J. Biol. Chem. 280:40668-40675, 2005.

47. Periyannan, G. R., Costello, A. L., Tierney, D. L., Yang, K-W., Bennett, B., Crowder, M. W.: Sequential Binding of Cobalt(II) to Metallo-β-lactamase CcrA. Biochemistry 45:1313-1320, 2006.

48. Davis, R., Bienvenue, D., Swierczek, S.I., Gilner, D.M., Rajagopal, L., Bennett, B. and Holz, R.C.: Kinetic and spectroscopic characterization of the E134A- and E134D-altered dapE-encoded N-succinyl-L,L-diaminopimelic acid desuccinylase from *Haemophilus influenzae*. J. Biol. Inorg. Chem. 11:206-216, 2006

49. Sharma, N. P., Hajdin, C., Chandrasekar, S., Bennett, B., Yang, K-W, Crowder, M. W.: Mechanistic Studies on the Mononuclear Zn^{II}-Containing Metallo--lactamase ImiS from *Aeromonas sobria*. Biochemistry 45:10729-10738, 2006

50. Matthews, M. L., Periyannan, G., Hajdin, C., Sidgel, T. K., Bennett, B. and Crowder, M. W. : Probing the Reaction Mechanism of the D-Ala-D-Ala Dipeptidase, VanX, by Using Stopped-Flow Kinetic and Rapid-Freeze Quench EPR Studies on the Co(II)-Substituted Enzyme. J. Am. Chem. Soc. 128: 13050-13051, 2006

51. Kumar, A.,: Periyannan, G. R.; Narayanan, B.; Kittell, A. W.; Kim, J-J.; Bennett, B.; Experimental evidence for a metallohydrolase mechanism in which the nucleophile is not delivered by a metal ion: EPR spectrokinetic and structural studies of aminopeptidase from *Vibrio proteolyticus*. Biochem. J. 403: 527-536, 2007

52. McGregor, W. C., Swierczek, S. I., Bennett, B., Holz, R. C.: Characterization of the catalytically active Mn(II)-loaded argE-encoded N-acetyl-L-ornithine deacetylase from *Escherichia coli*. J. Biol. Inorg. Chem. 12: 603-613, 2007

53. Llarrull, L. I., Fabiane, S. M., Kowalski, J. M., Bennett, B., Sutton, B., Vila, A. J.: Asp-120 Locates Zn2 for Optimal Metallo-β-Lactamase Activity. J. Biol. Chem. 282: 18276-18285, 2007

54. Morán-Barrio, J., González, J.M., Lisa, M. N., Costello, A. L., Peraro, M. D., Carloni, P., Bennett, B., Tierney D. L., Limansky A. S., Viale A. M., Vila, A. J..: The Metallo-β-Lactamase GOB is a Mono-Zn(II) Enzyme With a Novel Active Site. J. Biol. Chem. 282: 18286-18293, 2007

55. Doonan, C. J., Wilson, H. L., Rajagopalan, K. V., Garrett, R. M., Bennett B., Prince, R. C., George, G. N. Modified Active Site Coordination in a Clinical Mutant of Sulfite Oxidase. J. Am. Chem. Soc. 129: 9421-9428, 2007

56. Munih,, P., Moulin,, A., Stamper, C. C., Bennett, B., Ringe, D., Petsko, G. A., Holz, R. C.: X-ray crystallographic characterization of the Co(II)-substituted Tris-bound form of the

aminopeptidase from *Aeromonas proteolytica*. J. Inorg. Biochem. 101:1099-1107, 2007

57. Llarrull, L. I., Tioni, M. F., Kowalski, J., Bennett, B., Vila, A. J.: Evidence for a Dinuclear Active Site in the Metallo-β-Lactamase BcII with Substoichiometric Co(II): A New Model for Metal Uptake. J. Biol. Chem. 282: 30586-30595, 2007

58. Yatsunyk, L. A., Easton, J. A., Kim, L.R., Sugarbaker, S. A., Bennett, B., Breece, R. M., Vorontsov, I. I., Tierney, D. L., Crowder, M. W., Rosenzweig, A. C. Structure and metal binding properties of ZnuA, a periplasmic zinc transporter from *Escherichia coli*. J. Biol. Inorg. Chem. 13: 271-288, 2008

59. Doonan, C. J., Wilson, H. L., Bennett B., Prince, R. C., George, G. N. Mo(V) Electron Paramagnetic Resonance of Sulfite Oxidase Revisited: The Low-pH Chloride Signal. Inorg. Chem. 47: 2033-2038, 2008

60. Sharma, N., Hu, Z., Crowder, M. W., Bennett, B. Conformational Changes in the Metallo-β-lactamase ImiS During the Catalytic Reaction: An EPR Spectrokinetic Study of Co(II)-Spin Label Interactions. J. Am. Chem. Soc.130: 8215-8222, 2008

61. Tioni, M. F., Llarrull,L. I., Poeylaut-Palena, A. A., Martí, M. A., Saggu, M., Periyannan, G. R., Mata, E. G., Bennett, B., Murgida, D. H., Vila, A. J. Trapping and Characterization of a Reaction Intermediate in Imipenem Hydrolysis by *B. cereus* Metallo-β-lactamase. J. Am. Chem. Soc. 130: 15852-15863, 2008

62. Hu, Z., Gunasekera, T. S., Spadafora, L., Bennett, B., Crowder, M. W. Metal content of metallo-β-lactamase L1 is determined by the bioavailability of metal ions. Biochemistry 47: 7947-7953, 2008

63. Morin, T. J., Bennett, B., Lindeman, S. V., Gardinier, J. R. First-Row Transition Metal Complexes of a New Pentadentate Ligand, α,α,α',α' Tetra(pyrazolyl)lutidine. Inorg Chem 47: 7468-7470, 2008

64. Holdorf, M. M., Bennett, B., Crowder, M. W., Makaroff, C. A. Spectroscopic studies on *Arabidopsis* ETHE1, a glyoxalase II-like protein. J Inorg Biochem 102: 1825-1830, 2008

65. Watterson, S., Mitra, S., Swierczek, S.I., Bennett, B., Holz, R.C. Kinetic and Spectroscopic Analysis of the Catalytic Role of H79 in the Methionine Aminopeptidase from *Escherichia coli*. Biochemistry 47: 11885-11893, 2008

66. Hu, Z., Periyannan, G., Bennett, B., Crowder, M.W. Role of the Zn1 and Zn2 sites in Metallo-beta-lactamase L1. J Am Chem Soc. 130: 14207-14216, 2008

67. Mitra, S., Job, K. M., Meng, L., Bennett, B., Holz, R. C. Analyzing the catalytic role of Asp97 in the methionine aminopeptidase from *Escherichia coli*. FEBS J. 275: 6248-6259, 2008

68. Gillner, D.M., Bienvenue, D.L., Nocek, B.P., Joachimiak, A., Zachary. V., Bennett, B., Holz, R.C. The dapE-encoded N-succinyl-L: ,L: -diaminopimelic acid desuccinylase from *Haemophilus influenzae* contains two active-site histidine residues. J Biol Inorg Chem 14: 1-10, 2009

69. Limphong, P., Crowder, M. W., Bennett, B., Makaroff, C. A. *Arabidopsis thaliana* GLX2-1 contains a dinuclear metal binding site but is not a glyoxalase 2. Biochem J 417: 323-330, 2009

70. Mitra, S., Bennett, B., Holz, R. C. Mutation of H63 and its catalytic affect on the methionine aminopeptidase from *Escherichia coli*. Biochim. Biophys. Acta 1794, 137-143, 2009

71. Mitra, S., Sheppard, G., Wang, J., Bennett, B., Holz, R. C. Analyzing the Binding of Co(II)-Specific Inhibitors to the Methionyl Aminopeptidases from *Escherichia coli* and *Pyrococcus furiosuss*. J. Biol. Inorg. Chem. 14, 573-585, 2009

72. O'Toole, M. G., Bennett, B., Mashuta, M. S., Grapperhaus, C. A. Substrate Binding Preferences and pK_a Determinations of a Nitrile Hydratase Model Complex: Variable Solvent Coordination to [(bmmp-TASN)Fe]OTf. Inorg. Chem. 48, 2300-2308, 2009

73. Hartley, M. and Bennett, B. Heterologous expression and purification of Vibrio proteolyticus (Aeromonas proteolytica) aminopeptidase: a rapid protocol. Prot. Purif. Expr. 66,: 91-101, 2009

74. Hyde, J. S., Bennett, B., Walter, E. D., Millhauser, G. L., Sidabras, J. W., Antholine, W. A. Prion Protein Constructs at 2.0 GHz: Using the g-Perpendicular Region to Characterize Nitrogen Ligation. Biophys. J. 96, 3354-3362, 2009

75. Hu, Z., Spadafora, L. J., Hajdin, C. E., Bennett, B., Crowder, M. W. Structure and Mechanism of Copper- and Nickel-Substituted Analogues of Metallo-beta-lactamase L1. Biochemistry 48: 2981-2989, 2009

76. Limphong, P., McKinney, R. M., Adams, N. E., Bennett, B., Makaroff, C. A., Gunasekera, T., Crowder, M. W. Human Glyoxalase II Contains an Fe(II)Zn(II) Center but is Active as a Mononuclear Zn(II) Enzyme. Biochemistry, 48: 5426-5434, 2009

77. Breece, R. M., Hu, Z., Bennett, B., Crowder, M. W., Tierney, D. L. Motion of the Zinc Ions in Catalysis by a Dizinc Metallo--Lactamase. J. Am. Chem. Soc. 131: 11642-11643, 2009

78. Hawk, M.J., Breece, R.M., Hajdin, C.E., Bender, K.M., Hu, Z., Costello, A.L., Bennett, B., Tierney, D.L., Crowder, M.W. Differential Binding of Co(II) and Zn(II) to Metallo--Lactamase Bla2 from Bacillus anthracis. J. Am Chem. Soc. 131: 10753-10762, 2009

79. Limphong, P., McKinney, R. M., Adams, N. E., Makaroff, C. A., Bennett, B., Crowder, M. W. The metal ion requirements of Arabidopsis thaliana Glx2-2 for catalytic activity. J. Biol.

Inorg. Chem. 15, 249-258, 2010

80. Bennett, B. EPR of Cobalt-Substituted Zinc Enzymes. In Metals in Biology: Applications of High Resolution EPR to Metalloenzymes. Biol. Magn. Reson. 29, 345-371, 2010

81. Wanniarachchi, S., Liddle, B. J., Toussaint, J., Lindeman, S. V., Bennett, B, Gardinier, J. R. Chemical switching behaviour of tricarbonylrhenium(I) complexes of a new redox active 'pincer' ligand. Dalton Trans. 39, 3167-3169, 2010

82. Yuan, X., Sheng, X., Horner, J. H., Bennett, B., Fung, L. W-M., Newcomb, M. Low Temperature Production of Chloroperoxidase Compound I by Photo-Oxidation of Compound II. J. Inorg. Biochem. 104, 1156-1163, 2010

83. Limphong, P., Adama, N. E., Rohier, M. F., McKinney, R. M., Naylor, M., Bennett, B., Makaroff, C. A., Crowder, M. W. Converting GLX2-1 into an active glyoxalase II. Biochemistry 49, 8228-8236, 2010

84. Kowalski, J. M. and Bennett, B. Spin Hamiltoinan Parameters for Cu(II)-Prion Pepetide Complexes from L-band Electron Paramagnetic Resonance Spectroscopy. J Am. Chem. Soc. 133, 1814-1823, 2011

85. Bennett, B. and Hill, B. C. Avoiding premature oxidation during the binding of Cu(II) to a dithiolate site in BsSCO. A rapid freeze-quench EPR study. FEBS Lett. 515, 861-864, 2011

86. Wanniarachchi, S., Liddle, B. J., Toussaint, J., Lindeman, S. V., Bennett, B., Gardinier, J. R. Using sterics to promote reactivity in fac-Re(CO)3 complexes of some 'non-innocent' NNN-pincer ligands. Dalton Trans. 40, 8776-8787, 2011

87. Morin, T. J., Wanniarachchi, S., Gwengo, C., Makura, V., Tatlock, H. M., Lindeman, S. V., Bennett, B., Long, G. J., Grandjean, F., Gardinier, J. R. Pyrazolyl methyls prescribe the electronic properties of iron(II) tetra(pyrazolyl)lutidine chloride complexes. Dalton Trans. 40, 8024-8034, 2011

88. Griffim, D. H., Richmond, T. K., Sanchez, C., Moller, A. J., Breece, R. M., Tierney, D. L., Bennett, B., Crowder, M. W. Structural and Kinetic Studies on Metallo-β-lactamase IMP-1. Biochemistry 50, 9125-9134, 2011

89. Pharr, C., Kopff, L., Bennett, B., Reid, S., McMahon, R. J. Photochemistry of Furyl- and Thienyldiazomethanes: Spectroscopic Characterization of Triplet 3-Thienylcarbene. J. Am. Chem. Soc. 134:6443-6454, 2012

90. Liddle, B.J., Wanniarachchi, S., Hewage, J. S. , Lindeman. S. V., Bennett, B., Gardinier, J. R. Electronic communication across diamagnetic metal bridges: a homoleptic gallium(III) complex of a redox-active diarylamido-based ligand and its oxidized derivatives. Inorg Chem. 51:12720-12728, 2012

91. Sharma, A., Gaidamakova, E. K., Matrosova, V. Y., Bennett, B., Daly, M. J., Hoffman, B. M. Responses of Mn2+ speciation in Deinococcus radiodurans and Escherichia coli to γ-radiation by advanced paramagnetic resonance methods. Proc Natl Acad Sci U S A. 110:5945-5950, 2013

92. Hyde, J. S., Bennett, B., Kittell, A. W., Kowalski, J. M., Sidabras, J. W. Moving difference (MDIFF) non-adiabatic rapid sweep (NARS) EPR of copper(II). J Magn Reson. 236:15-25, 2013

93. Youngblut M, Pauly DJ, Stein N, Walters D, Conrad JA, Moran GR, Bennett B, Pacheco AA. Shewanella oneidensis cytochrome c nitrite reductase (ccNiR) does not disproportionate hydroxylamine to ammonia and nitrite, despite a strongly favorable driving force. Biochemistry 53:2136-2144, 2014

94. Yang H, Aitha M, Marts AR, Hetrick A, Bennett B, Crowder MW, Tierney DL. Spectroscopic and mechanistic studies of heterodimetallic forms of metallo- β -lactamase NDM-1. J Am Chem Soc 136:7273-7285, 2014

95. Aitha M, Richmond TK, Hu Z, Hetrick A, Reese R, Gunther A, McCarrick R, Bennett B, Crowder MW. Dilution of dipolar interactions in a spin-labeled, multimeric metalloenzyme for DEER studies.J Inorg Biochem 130:40-46, 2014

96. Hewage, J.S., Wanniarachchi S, Morin TJ, Liddle BJ, Banaszynski M, Lindeman SV, Bennett B, Gardinier JR. Homoleptic Nickel(II) Complexes of Redox-Tunable Pincer-type Ligands. Inorg Chem 53:10070-10084, 2014

97. Aitha, M., Moritz, L., Sahu, I. .D, Sanyurah, O., Roche, Z., McCarrick, R., Lorigan, G. .A, Bennett, B., Crowder, M. W. Conformational dynamics of metallo- β -lactamase CcrA during catalysis investigated by using DEER spectroscopy. J. Biol. Inorg. Chem. 20, 585-594, 2015

98. Stein, N., Love, D., Judd, E. T., Elliott, S. J., Bennett, B., Pacheco, A. A. Correlations between the Electronic Properties of Shewanella oneidensis Cytochrome c Nitrite Reductase (ccNiR) and Its Structure: Effects of Heme Oxidation State and Active Site Ligation. Biochemisstry 54, 3749-3758, 2015

99. Starus, A., Nocek, B., Bennett, B., Larrabee, J. A., Shaw, D. L., Sae-Lee, W. , Russo, M. T., Gillner, D. M., Makowska-Grzyska, M., Joachimiak, A., Holz, R. C. Inhibition of the dapE-Encoded N-Succinyl-l,l-diaminopimelic Acid Desuccinylase from Neisseria meningitidis by l-Captopril. Biochemistry 54, 4834-4844, 2015.

100. Kowalski, J. M. and Bennett, B. EPR Methods for Biological Cu(II): L-Band CW and NARS. Methods Enzymol. 563, 341-361, 2015.

101. Bennett, B., Helbling, D., Meng, H., Jarzembowski, J., Geurts, A.M., Friederich, M.W., Van Hove, J.L., Lawlor, M.W., Dimmock. D.P. Potentially Diagnostic Electron Paramagnetic Resonance Spectra Elucidate the Underlying Mechanism of Mitochondrial Dysfunction in he Deoxyguanosine Kinase Deficient Rat Model of a Genetic Mitochondrial DNA Depletion Syndrome. Free Radic. Biol. Med. 92, 141-151, 2016.

102. Sethumadhavan S, Whitsett J, Bennett B, Ionova IA, Pieper GM, Vasquez-Vivar J. Increasing tetrahydrobiopterin in cardiomyocytes adversely affects cardiac redox state and mitochondrial function independently of changes in NO production. Free Radic. Biol. Med. 93, 1-11, 2016.

103. Martinez S, Yang X, Bennett B, Holz RC. A cobalt-containing eukaryotic nitrile hydratase. Biochim. Biophys. Acta, 1865, 107-112, 2017.

104. Stein N, Gumataotao N, Hajnas N, Wu R, Lankathilaka KPW, Bornscheuer UT, Liu D, Fiedler AT, Holz RC, Bennett B. Multiple States of Nitrile Hydratase from Rhodococcus equi TG328-2: Structural and Mechanistic Insights from Electron Paramagnetic Resonance and Density Functional Theory Studies. Biochemistry 56, 3066-77, 2017.

105. Gumataotao N, Lankathilaka KP, Bennett B, Holz RC. The iron-type nitrile hydratase activator protein is a GTPase. Biochem. J. 474, 247-258, 2017.

106. Langley M, Ghosh A, Charli A, Sarkar S, Ay M, Luo J, Zielonka J, Brenza T, Bennett B, Jin H, Ghaisas S, Schlichtmann B, Kim D, Anantharam V, Kanthasamy A, Narasimhan B, Kalyanaraman B, Kanthasamy AG. Mito-Apocynin Prevents Mitochondrial Dysfunction, Microglial Activation, Oxidative Damage, and Progressive Neurodegeneration in MitoPark Transgenic Mice. Antioxid. Redox Signal. 27, 1048-1066, 2017.

107. Tran CD, Makuvaza J, Munson E, Bennett B. Biocompatible Copper Oxide Nanoparticle Composites from Cellulose and Chitosan: Facile Synthesis, Unique Structure, and Antimicrobial Activity. ACS Appl. Mater. Interfaces 9, 42503-42515, 2017.

108. Kalyanaraman B, Cheng G, Hardy M, Ouari O, Bennett B, Zielonka J. Teaching the basics of reactive oxygen species and their relevance to cancer biology: Mitochondrial reactive oxygen species detection, redox signaling, and targeted therapies. Redox Biol. 15, 347-362, 2018.

109. Cheng G, Zielonka M, Dranka B, Kumar SN, Myers CR, Bennett B, Garces AM, Dias Duarte Machado LG, Thiebaut D, Ouari O, Hardy M, Zielonka J, Kalyanaraman B. Detection of mitochondria-generated reactive oxygen species in cells using multiple probes and methods: Potentials, pitfalls, and the future. J. Biol. Chem. 293, 10363-10380, 2018.

110. Siebers EM, Choi MJ, Tinklenberg JA, Beatka MJ, Ayres S, Meng H, Helbling DC, Takizawa A, Bennett B, Garces AM, Dias Duarte Machado LG, Dimmock D, Dwinell MR, Geurts AM, Lawlor MW. Sdha+/- Rats Display Minimal Muscle Pathology Without

Significant Behavioral or Biochemical Abnormalities. J. Neuropathol. Exp. Neurol. 77, 665-672, 2018.

111. Yang X, Bennett B, Holz RC. Analyzing the function of the insert region found between the α and β-subunits in the eukaryotic nitrile hydratase from *Monosiga brevicollis*. Arch. Biochem. Biophys. 657, 1 - 7, 2018.

112. Kalyanaraman B, Cheng G, Zielonka J, Bennett B. Low-Temperature EPR Spectroscopy as a Probe-Free Technique for Monitoring Oxidants Formed in Tumor Cells and Tissues: Implications in Drug Resistance and OXPHOS-Targeted Therapies. Cell. Biochem. Biophys. e-pub ahead of print: https://doi.org/10.1007/s12013-018-0858-1, 2018.

Reviews and Book Chapters.

1. Bray, R.C., Howes, B.D., Bennett, B. and Lowe, D.J.: Recent Studies on Molybdenum Centres in Enzymes, in *New Trends in Biological Chemistry* (Ozawa, T. ed.) Japan Sci. Soc. Press Tokyo/Springer-Verlag Heidelberg, pp. 47-58, 1991.

2. Bennett, B.: EPR of Co(II) as a structural and mechanistic probe of metalloprotein active sites: a review of studies on aminopeptidase. Curr. Topics Biophys. 26, 49-57, 2002.

3. Bennett, B.: EPR of Cobalt-Substituted Zinc Enzymes, in *Biological Magnetic Resonance Vol. 29. Metals in Biology: Applications of High Resolution EPR to Metalloenzymes* (Eds. G. R. Hanson and L. J. Berliner) pp. 345 - 371, Springer, New York, 2010.

4. Antholine, W. E., Bennett, B., Hanson, G. R. Multifrequency EPR of Cu(II). In *Multifrequency Electron Paramagnetic Resonance: Theory and Applications* (Ed. S. K. Misra) pp. 647-718, Wiley, Weinheim, 2011.

5. Kowalski, J. M. and Bennett, B. EPR Methods for Biological Cu(II): L-Band CW and NARS. In *Methods in Enzymology Volume 563 Part B. Electron Paramagnetic Resonance Investigations of Biological Systems by Using Spin Labels, Spin Probes, and Intrinsic Metal Ions.* (Eds. P. Z. Qin and K. Warncke), pp.341-361, Academic Press, Waltham MA, 2015.

Other Publications:

i. Bray, R.C., Howes, B.D., Bennett, B. and Lowe, D.J.: Recent Studies on Molybdenum Centres in Enzymes, in New Trends in Biological Chemistry (Ozawa, T. ed.) Japan Sci. Soc. Press Tokyo/Springer-Verlag Berlin, pp. 47-58, 1991.

ii. Howes, B.D., Bennett, B., Lowe, D.J. and Bray, R.C.: ENDOR studies of the molybdenum centre of xanthine oxidase, in Flavins and Flavoproteins *10* (Curti, B., Ronchi, S. and Zanetti, G. eds.) Walter de Gruyter, Berlin and New York, pp. 691-694, 1991.

iii. Bray, R. C., Bennett, B., Burke, J. F., Doyle, W. A., Hughes, R. K.: Defining the active sites of pterin molybdenum cofactor enzymes from spectroscopic and molecular genetic studies. Biofactors 3, 145, 1991

iv. Hughes, R.K., Bennett, B., Doyle, W.A., Burke, J.F., Chovnick, A. and Bray R.C.: Roles of molybdenum, FAD and iron-sulphur domains in molybdenum-containing hydroxylases: molecular genetic, kinetic and spectroscopic studies. Biochem. Soc. Trans. 19:260S, 1991.

v. Bennett, B. and Bray, R.C.: Redox-related activation and deactivation of *E. coli* nitrate reductase: kinetic and spectroscopic studies. Biochem. Soc. Trans. 22:78S, 1993.

vi. Bennett, B. and Bray, R.C.: Further studies on redox-related activation and deactivation of *E. coli* nitrate reductase: a possible physiologically relevant role for the low potential [4Fe-4S] centres. Biochem. Soc. Trans. 22:283S, 1994.

vii. Bennett, B., Benson, N., McEwan, A.G. and Bray, R.C.: E.P.R. characterisation of the molybdenum centre of *Rhodobacter capsulatus* dimethylsulphoxide reductase: new signals on reduction with $Na_2S_2O_4$. Biochem. Soc. Trans. 22:285S, 1994.

viii. Berks, B.C., Bennett, B., Breton, J., Reilly, A., Willis, A.C., Ferguson, S.J., Thomson, A.J. and Richardson, D.J.: The Periplasmic Nitrate Reductase of *Thiosphaera pantotropha*. J. Inorg. Biochem 59:728, 1995

ix. Bray, R.C., Bennett, B., Burke, J.F., Chovnick, A., Doyle, W.A., Howes, B.D., Lowe, D.J., Richards, R.L., Turner, N.A., Ventom, A. and Whittle, J.R.S.: Recent Studies on Xanthine Oxidase and Related Enzymes. Biochem. Soc. Trans. 24, 99-105, 1996.

x. Holz, R.C., Bennett, B., DePaola, C., Bienvenue, D., Ringe, D. and Petsko, G.A.: Metal-Mediated N-Terminal Peptide Hydrolysis. J. Inorg. Biochem 74:66, 1999.

xi. Bennett, B., Stewart, L.J., Bailey, S., Charnock, J.M. and Garner, C.D.: Dimethylsulfoxide Reductase: Insight into the Mechanisms of the Catalytic Reactions from Structural and Spectroscopic Studies. J. Inorg. Biochem 74: 76, 1999.

xii. Kalyanaraman, B., Joseph, J., Bennett, B., Konorev, E. A.: Inhibition of doxorubicin-induced cardiomyocyte apoptosis by metalloporphyrins: Is it due to ROS scavenging or Hsp induction? Free Radic. Biol. Med. 31:S19, 2001.

xiii. Kuhnle, G. G. C., Bennett, B., Kalyanaraman, B., Ride-Evans, C.: Binding Modes of Flavonoids and Transition Metals. Free Radic. Biol. Med. 33:S314-S315, 2002.

xiv. Kumar, A., Bhargava, K., Feix, J., Klug, C. S., Bennett, B.: Structural Information on Vibrio proteolyticus Aminopeptidase from EPR Spectroscopy. Biophys. J. 84:120A, 2003.

xv. Kelly, B. S., Antholine, W. E., Bennett, B., Griffiths, O. W.: Temperature-Dependent EPR of the Mn-Mn Site of γ-GCS plus BSO. Biophys. J. 84:119A, 2003.

xvi. Kelly, B. S., Antholine, W. E., Bennett, B., Griffiths, O. W.: EPR of MonoMn-, MnMn-, ZnMn-, and FeFe-Sites in γ-GCS plus Substrates and Inhibitors. J. Inorg. Biochem. 96:92, 2003.

xvii. Antholine, W. E., Bennett, B., Karkheck, J., Subczynski, W. K.: Multiexponential Fits of Saturation Recovery Curves depend on the Degree of Axial Ligation. Biophys. J. 88:158A, 2005.

xviii. Bennett, B.: Helmut Beinert - Reminiscences. International EPR (ESR) Society EPR

Newsletter 18 (1), 15, 2008.

xix. Bennett, B.: Sample Preparation for Service at the National Biomedical EPR Center. International EPR (ESR) Society EPR Newsletter 22 (3), 15, 2012.