# Robert A. Scott, Ph.D.

**Positions** Professor, Department of Chemistry, University of Georgia

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Athens, Georgia 30602

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**E-mail** rscott@uga.edu

**Administrative Focus**
I approach new initiatives from an analytical, evidence-based perspective, while embracing and managing change. I have a keen interest in the ability to integrate authoritative enterprise data to use in data-driven strategic decision-making. I balance strategic thinking with the attention to detail needed to "just get it done." I thrive on inclusiveness, transparency, and consensus-building. Current focus is on UGA Elements (elements.uga.edu), business process modeling in an academic department (Chemistry), and consulting for the Office of Research and the OneSource and OneUSG projects.

**Principal Research Interests**
My group applied biochemical and biophysical measurements and post-genomic approaches to the study of systems of importance in environmental sciences, biomedicine, and bioenergy. We used x-ray absorption spectroscopy (XAS) and extended x-ray absorption fine structure (EXAFS) in the elucidation of structural details of metalloprotein active sites. We studied regulatory transcription factors and their protein-protein and protein-DNA interactions, while applying proteomics and genomics technologies to the study of transcriptional regulatory networks in prokaryotes, most recently focusing on hydrogen production in prokaryotes as an alternative fuel.

**Professional Experience**

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| 2014-2016 | Director, Office of Research Personnel, University of Georgia, Athens, GA |
| 2012-2016 | Executive Director, Bioenergy Systems Research Institute, University of Georgia, Athens, GA |
| 2011-2012 | Interim Director, Bioenergy Systems Research Institute, University of Georgia, Athens, GA |
| 2011-2014 | Director, Office of Postdoctoral Affairs, University of Georgia, Athens, GA |
| 2007-2016 | Director, OVPR Internal Grants & Awards, University of Georgia, Athens, GA |
| 2007-2016 | Associate Vice President for Research, University of Georgia, Athens, GA |
| 2006-2007 | Associate Director, Institute of Bioinformatics, University of Georgia, Athens, GA |
| 2005-2006 | Visiting Faculty, Stanford Synchrotron Radiation Laboratory, Stanford, CA |
| 2003-2013 | Distinguished Research Professor, Department of Chemistry, Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA |
| 1996-2003 | Head, Department of Chemistry, University of Georgia, Athens, GA |
| 1993-1996 | Co-director, Center for Metalloenzyme Studies, University of Georgia, Athens, GA |
| 1991- | Professor of Chemistry and Biochemistry, University of Georgia, Athens, |

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1990-1993 Associate Director, Center for Metalloenzyme Studies, University of Georgia, Athens, GA

1987- Member, Center for Metalloenzyme Studies, University of Georgia, Athens, GA

1987-1991 Associate Professor of Chemistry and Biochemistry, University of Georgia, Athens, GA

1981-1987 Assistant Professor of Chemistry, University of Illinois, Urbana, IL

**Education**

1980-1981 National Institutes of Health NRSA Postdoctoral Fellow, Stanford University, Stanford, CA (with Keith O. Hodgson)

1975-1980 Ph.D., Chemistry, 1980, California Institute of Technology, Pasadena, CA (with Harry B. Gray); Dissertation title: "Metalloprotein Electron Transfer. Cytochrome $aa_3$ Reduction Kinetics and Theoretical Formulation of Distance Dependence"

1971-1975 B. S., Chemistry (*summa cum laude*), University of Illinois, Urbana, IL (with Gilbert P. Haight, Jr.); Thesis title: "Redox Catalysis of the Hydrolysis of Phosphoester and Phosphoanhydride Bonds"

**Awards and Honors**

Fellow, American Association for the Advancement of Science, 2013

Farrell W. Lytle Award, Stanford Synchrotron Radiation Lightsource, 2008

President, Society of Biological Inorganic Chemistry, 2006-2008

Visiting Professor, Stanford Synchrotron Radiation Laboratory, 2005-2006

Elected Vice-Chair, 2006, and Chair, 2007, *Metals in Biology* Gordon Research Conference

Distinguished Research Professorship, 2003-2013

Member, University of Georgia Teaching Academy, 2002-

Alfred P. Sloan Research Fellowship, 1986-1988

Beckman Fellow, Center for Advanced Study, University of Illinois, 1985-1986

Presidential Young Investigator Award, National Science Foundation, 1985-1990

Beckman Research Award, University of Illinois, 1981

National Institutes of Health Postdoctoral Fellowship, Stanford University, 1979-1981

National Institutes of Health Predoctoral Fellowship, California Institute of Technology, 1978-1979

National Science Foundation Predoctoral Fellowship, California Institute of Technology, 1975-1978

Bronze Tablet, University Honors (for graduation with highest distinction in the curriculum), University of Illinois, 1975

Edmund J. James Scholar, University of Illinois, 1974

Committee of Industrial Chemists Undergraduate Research Award, University of Illinois, 1974

R. C. Fuson Award, University of Illinois, 1974-1975

**Professional Service**

Session Chair, Asian Biological Inorganic Chemistry (AsBIC8) Conference, Auckland, NZ, 2016.12.05

Organizer, *Impact of the Southeast on the World's Renewable Energy Future*, SEC Symposium, Atlanta, GA, 2013.02.10-12

Member, Research Universities Futures Consortium Research Metrics Working Group, 2012.10 - 2014.12

Editor-in-Chief, *Encyclopedia of Inorganic and Bioinorganic Chemistry*, Wiley, 2011.01 -

Member, NIGMS/NCRR NSLS-II Life Sciences Review Panel, 2008.04

Member, Scientific Advisory Committee, Stanford Synchrotron Radiation Lightsource,

Stanford, CA, 2006.08-2009.07
Chair, NIH CSR Study Section BPC-B, 2004.11
Member, Review Panel, APS Sector Review, BioCAT Sector 18, Argonne National Laboratory, Argonne, IL, 2004.10.20
Member, Subcommittee of BERAC, Office of Biological and Environmental Research, US Department of Energy, 2004.10.11
Member, Structural Molecular Biology Advisory Committee, Stanford Synchrotron Radiation Lightsource, Stanford, CA, 2004.01 -
Member, Proposal Review Panel, Stanford Synchrotron Radiation Lightsource, Stanford, CA, 2004.01-2011.12
SSRL Summer School on Synchrotron Radiation and its Applications in Structural Molecular Biology, Stanford, CA, 2004.08,16-19
Chair, Metals in Biology Gordon Research Conference, Ventura, CA, 2007.02
SSRL Summer School on Synchrotron Radiation and its Applications in Structural Molecular Biology, Stanford, CA, 2003.09.16-19
Oak Ridge National Laboratory Genomes to Life Facility III Workshop, Atlanta, 2003.06
Chair, NIH CSR Study Section SSS-B, 2003.04
Section Editor (Bioinorganic), *Encyclopedia of Inorganic Chemistry*, 2nd Ed., Wiley, 2002.01 -
NIH Metallobiochemistry Study Section, 2001
NIH NCRR Special Study Sections, 2000-2005
Member, Biological Spectroscopy Review Panel, Daresbury Laboratory, 1999.06
Editorial Advisory Board, *Biochemistry*, 1999-2007
SSRL Users Organization Executive Committee, 1998-2001
Editor, *Journal of Biological Inorganic Chemistry*, 1997-2003
Associate Editor, *Journal of Biological Inorganic Chemistry*, 1995-1997
Board of Editors, *Journal of Inorganic Biochemistry*, 1991-1997
National Science Foundation, Member, Biophysics Advisory Panel, DMB, 1991-1997
Brookhaven National Laboratory National Synchrotron Light Source X-ray Proposal Study Panel, 1989-1991.

**Institutional Service**

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|---|---|
| 2016.07 – present | Business Process Modeling & Chief Operating Officer Steering Committee (Chair, Departmental) |
| 2016.01 – present | Data Management and Governance Committee (Institutional) |
| 2015.09 – 2016.06 | Research Data Management Working Group (Institutional) |
| 2015.09 – 2016.06 | Georgia Power Solar Demonstration Advisory Committee (Institutional) |
| 2014.10 – 2015.07 | Sales & Service Revenue Working Group (Chair, Institutional) |
| 2014.07 – present | UGA Elements Implementation Project Team (Institutional) |
| 2013.12 – 2015.08 | Sustainability Core Group (Chair, Institutional) |
| 2013.07 – 2013.12 | Reinvention of Space Management Task Force (Chair, Institutional) |
| 2013.06 – present | Graduate Student Tracking Database (Institutional) |
| 2012.08 – 2016.06 | CIRTL (Center for the Integration of Research, Teaching and Learning) Leadership Team (Institutional) |
| 2012.06 – 2013.06 | Elements Business Case Action Team (Chair, Institutional) |
| 2012.02 – 2013.05 | Phase II Space Utilization Initiative Working Group, University System of Georgia (State) |
| 2011.07 – 2012.01 | Academic Analytics Task Force (Chair, Institutional) |
| 2010.02 – 2011.01 | Interdisciplinary Work Group (Institutional) |
| 2009.07 – 2011.06 | Identity Management/SSN Replacement Steering Committee (Institutional) |
| 2009.01 – 2016.12 | Administrative Systems Advisory Committee (Institutional) |
| 2008.07 – 2011.04 | SACS Reaffirmation of Accreditation Document Review Panel (Institutional) |
| 2008.02 – 2011.04 | SACS Reaffirmation of Accreditation Compliance Team (Institutional) |
| 2007.08 – 2013.12 | FAR (Faculty Activity Repository) Working Group (Institutional) |

2007.07 – 2015.12 Georgia electronic administration of Research (GeaR) Council (Chair, Institutional)
2004.07 – 2006.06 Advisory Committee, Institute of Bioinformatics (Chair, Institutional)

**Society Memberships**

American Association for the Advancement of Science (since 1981)
American Chemical Society (since 1975)
American Society for Biochemistry and Molecular Biology
Protein Society
International XAFS Society
Society of Biological Inorganic Chemistry

**Invited Presentations**

"The Biological Chemistry of Iron", NATO Advanced Study Institute, Edmonton, Alberta, 23 Aug. - 4 Sept. 1981. [Invited talk]
"Scientific Opportunities with a 6 GeV Synchrotron Radiation Source", Argonne National Laboratory, Argonne, Illinois, 30 - 31 May 1984. [Discussion chairman at workshop]
"3rd International EXAFS Conference", Stanford, California, 16 - 20 July 1984. [Invited talks (2), Discussion chairman]
"Inorganic and Biochemical Perspectives on Copper Coordination Chemistry", 2nd Annual SUNY Albany Conference; Albany, New York, 23 - 27 July 1984. [Invited talk]
"XXIIIrd International Conference on Coordination Chemistry", Boulder, Colorado, 29 July - 3 Aug. 1984. [Invited poster, Discussion chairman]
"Cytochrome Oxidase: Structure, Function, and Physiological Role", International Symposium in Memory of Eraldo Antonini, Rome and Caprarola, ITALY, 3 - 6 Oct. 1984. [Invited talk]
"2nd International Conference on Bioinorganic Chemistry", The Algarve, Portugal, 15 - 19 April 1985. [Invited talk]
"State of the Art Symposium on Bioinorganic Chemistry", 189th ACS National Meeting, Miami Beach, 28 April - 3 May 1985. [Invited talk]
"Selective Recognition and Activation of Small Molecules and Ions in Bioinorganic Chemistry", NATO Advanced Research Workshop, Noordwijkerhout, The Netherlands, 15 - 19 July 1985. [Discussion chairman, Invited talk]
"New Directions in Bioinorganic Chemistry", Symposium at ACS National Meeting, New York, 13 - 18 April 1986. [Invited talk]
"50 Years of Harry Gray", Symposium at ACS National Meeting, Anaheim, 7 - 12 September 1986. [Invited talk]
"Metals in Biology", Gordon Research Conference, Santa Barbara, 26 - 30 January 1987. [Invited talk]
"Biological Electron Transfer", Symposium at ACS National Meeting, Denver, 5 - 10 April 1987. [Symposium organizer]
"3e Colloque", Lecture series at Universities of Bern, Fribourg, Neuchatel, Lausanne, Switzerland, 13-17 June 1988. [5 invited lectures]
"Cytochrome Oxidase. Structure, Function, and Physiopathology", Rome and Caprarola, Italy, 20-24 June 1988. [Invited talk]
"XAFS V", Seattle, 22 - 26 August 1988. [Invited talk]
"2nd International Symposium on the Molecular Biology of Hydrogenases", Unicoi State Park, Georgia, 18-23 September 1988. [Invited talk]
"Synchrotron Radiation", Symposium at AAAS National Meeting, San Francisco, 14-19 January 1989. [Invited talk]
"Metals in Biology", Gordon Research Conference, Ventura, 23-27 January 1989. [Session chairman]
"Inorganic Compounds with Unusual Properties. III. Electron Transfer in Biology and the Solid State", Biennial Inorganic Symposium, DIC, ACS, 2-4 March 1989.

[Symposium co-organizer]

"Synthetic Models in Bioinorganic Chemistry", Symposium at Southeastern Regional American Chemical Society Meeting, Winston-Salem, NC, 9-11 October 1989. [Invited talk]

"EXAFS Methodology Applied to Nickel in Biological Systems", Third International Conference on Biophysics and Synchrotron Radiation, Stanford, 2-6 July 1990 [Plenary lecture]

"X-Ray Absorption Spectroscopy of [NiFe]Hydrogenases", Third International Conference on the Molecular Biology of Hydrogenases, Troia, Portugal, 29 July-1 August 1991 [Invited talk]

"Long-Range Biological Electron Transfer", Fifth International Conference on Bioinorganic Chemistry, Oxford, United Kingdom, 5-9 August 1991 [Invited talk]

"Comparative X-ray Absorption Spectroscopic Studies of [NiFe]Hydrogenases", Fourth International Conference on the Molecular Biology of Hydrogenases, Noordwijkerhout, The Netherlands, 14-19 August 1994 [Invited talk]

"Structure of the Nickel Sites in Hydrogenases by X-ray Absorption Spectroscopy", COST Workshop on Hydrogenases, Guy's Hospital, London, United Kingdom, 16-19 December 1995 [Invited talk]

"Structure of the Nickel Sites in Hydrogenases by X-ray Absorption Spectroscopy. Species Variation and Effects of Redox Poise", 9th International Conference on X-ray Absorption Fine Structure, ESRF, Grenoble, France, 26-30 August 1996 [Invited talk]

"How to Get Maximum Structural Information from EXAFS Data Analysis", Workshop on Modern and Advanced Analysis of XAS Data, SSRL96, 23rd Annual Users' Meeting, SSRL/SLAC, Stanford, California, 23-25 October 1996 [Invited talk]

"The Zinc Ribbon, a Ubiquitous Structural Motif in Archaeal and Eucaryal Transcription", 99$^{th}$ Meeting of the American Society of Microbiology, Chicago, 30 May – 3 June 1999 [Invited talk]

"X-ray Absorption Spectroscopy in Metallobiology. The Outskirts of Structural Biology", 9$^{th}$ International Conference on Biological Inorganic Chemistry, Minneapolis, 11 – 16 July 1999 [Invited talk]

"Teaching Communication Skills in the 'Age of Information'", Award Symposium honoring Harry B. Gray's receipt of the George C. Pimentel Award in Chemical Education, ACS National Meeting, San Diego, 3 April 2001 [Invited talk]

"Web-based Paperless Department Administration", Technology Expo 2001, University of Georgia, 4 April 2001

"Protein Determinants of Metal-Site Redox Potential. The Rubredoxin Paradigm Or a Caveat?" 10$^{th}$ International Conference on Biological Inorganic Chemistry, Florence, Italy, 27 August 2001 [Invited talk]

"High-Throughput X-ray Absorption Spectroscopy for Structural Genomics", Workshop *On the Roles of XAS and SAXS in Structural Genomics/Proteomics*, 28$^{th}$ Annual SSRL Users' Meeting, SLAC, Stanford, 17 October 2001 [Invited talk]

"Metalloproteomics. X-Ray Spectroscopy in the Post-Genomics Era" 12$^{th}$ X-Ray Absorption Fine Structure (XAFS12) Conference, Malmö, Sweden, 22-27 June 2003 [Invited talk]

"Bottlenecks and Roadblocks in High-Throughput XAS for Structural Genomics" 2$^{nd}$ BioXAS Study Weekend, Orsay, France, 29-30 June 2003 [Invited talk]

"The Role of the Zinc Ribbon in Transcription Initiation in Archaea" 11$^{th}$ International Conference in Biological Inorganic Chemistry, Cairns, Australia, 19-23 July 2003 [Invited talk]

"X-ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" SSRL Summer School on Synchrotron Radiation and its Applications in Structural Molecular Biology, Stanford, CA, 16-19 September 2003 [Invited talk]

"The Zinc Ribbon Motif in Transcription Initiation" Metals in Biology Gordon Research Conference, Ventura, CA, 18-23 January 2004 [Invited talk]

"X-ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" SSRL Summer School on Synchrotron Radiation and its Applications in

Structural Molecular Biology, Stanford, CA, 16-20 August 2004 [Invited talk]

"Toward High Throughput X-ray Absorption Spectroscopy for Structural Genomics" 7th International European Biological Inorganic Chemistry (EuroBIC7) Conference, Garmisch-Partenkirchen, Germany, 29 August-2 September 2004 [Invited talk]

"Toward High Throughput X-ray Absorption Spectroscopy for Structural Genomics" Biology and Synchrotron Radiation Conference, Himeji, Hyogo, Japan, 7-11 September 2004 [Invited talk]

"X-ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" SSRL Summer School on Synchrotron Radiation and its Applications in Structural Molecular Biology, Stanford, CA, 12-15 September 2005 [Invited Talk]

"X-Ray Spectroscopy in Post-Genomic Biology" 1st Annual UK-SE USA Symposium on Structural Genomics and Proteomics of Membrane and Metalloproteins, Athens, GA, 14-16 October 2005 [Co-organizer; Invited Talk]

"X-Ray Absorption Spectroscopy. Utility and Applications" 31st Congress on Science and Technology of Thailand (STT2005), Suranaree University of Technology, Nakhon Ratchasima (Korat), Thailand, 20 October 2005 [Keynote Lecture]

"Practical Application of X-Ray Absorption Spectroscopy" Workshop on X-ray Absorption Spectroscopy, National Synchrotron Research Center, Suranaree University of Technology, Nakhon Ratchasima (Korat), Thailand, 20-22 October 2005 [Invited Lectures (2)]

1st Annual Computational and Systems Biology Symposium, University of Georgia, Athens, GA, 11 November 2005 [Conference Organizer]

"Discovery and Prediction of Transcriptional Regulators. Environmental Stress Response" Environmental Biological Inorganic Chemistry Gordon Research Conference, Proctor Academy, Andover, NH, 28 June-3 July 2006 [Invited Talk]

"XAS Study of the Fate of Platinum in Silicone Breast Implants" 13th International Conference on XAFS (XAFS13), Stanford University, Stanford, CA, 9-14 July 2006 [Invited Talk]

"Whole Proteome Analysis Using Non-Crystallographic SR-Based Techniques" 2nd Annual UK-SE USA Symposium on Structural Genomics and Proteomics of Membrane and Metalloproteins, University of St. Andrews, Scotland, UK, 26-29 August 2006 [Invited Talk]

"The Promise of High Throughput X-ray Absorption Spectroscopy for Metalloproteomics" 69th Innovation Forum, Institute of High Energy Physics, Beijing, China, 27 October 2006 [Invited Talk]

"The Promise of High Throughput X-ray Absorption Spectroscopy for Metalloproteomics" 3rd Asian Biological Inorganic Chemistry Conference (AsBIC-III), Nanjing University, Nanjing, China, 31 October – 3 November 2006 [Invited Talk]

"X-ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" ESRF-EMBL-IBS Workshop on Spectroscopy around Biological Crystallography, Institute de Biologie Structurale, Grenoble, France, 6 – 8 February 2007 [Invited Talk]

"X-ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" SSRL SMB XAS Short Course, Stanford Synchrotron Radiation Laboratory, SLAC, Stanford, CA, 13 – 16 March 2007 [Invited Talk]

2nd Annual Computational and Systems Biology Symposium, University of Georgia, Athens, GA, 23 March 2007 [Conference Organizer]

SSRL Workshop on STXM and X-ray Nanoprobe Capabilities and Needs for Geo-, Environmental, and Biological Sciences, SSRL, Stanford, CA, 9-10 July 2007 [Group Leader]

"Spiders and Scorpions and Crabs, Oh My! Metal-Halogen Biomaterials in Nature" Workshop: New Opportunities in Microfocusing, 2007 SSRL/LCLS Users Meeting, 3 October 2007 [Invited Talk]

"Transcriptional Regulation Based on Metal Stress Response – from Microarray to Molecular Mechanism" 3rd Annual UK-Southeast USA Symposium on Structural

Genomics and Proteomics of Membrane and Metalloproteins, Birmingham, AL, 19 October 2007 [Invited Talk]

"X-Ray Microprobe Imaging of Metal-Halogen Biomaterials in Spider Fangs and Crab Claws" International Symposium on Synchrotron Radiation and Biology, Shanghai, China, 8 November 2007 [Invited Talk]

"Discovery of SurR, a Redox-Switched Transcriptional Regulator Controlling $H_2$ Production in *Pyrococcus furiosus*" 4th Asian Conference on Biological Inorganic Chemistry (AsBIC4), Jeju Island, South Korea, 13 November 2008 [Keynote Talk]

"X-Ray Microprobe Spectroscopy of Arthropod Cuticular Tools" 2nd Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Ontario, Canada, 28 May 2009 [Invited Talk]

"Metal Speciation for Metalloproteomics using X-ray Absorption Spectroscopy" 14th International Conference on Biological Inorganic Chemistry (ICBIC14), Nagoya, Japan, 26 June 2009 [Invited Talk]

"X-ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" SSRL SMB XAS Short Course, Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, Stanford, CA, 8 – 11 September 2009 [Invited Talk]

"Intersection of Inorganic Chemistry and the –omics Revolution" Pre-conference symposium, Kaohsiung Medical University, Taiwan, 01 November 2010 [Invited Talk]

"Sulfur-Based Redox-Switched Transcriptional Regulation of Microbial $H_2$ Production" 5th Asian Conference on Biological Inorganic Chemistry (AsBIC V), Kaohsiung, Taiwan, 02 November 2010 [Invited Talk]

"UGA Participation in USG Space Utilization Initiative" USG Board of Regents meeting, Atlanta, Georgia, 14 May 2013 [Invited Talk]

"International Partnerships. A View from the Research Office" Association of Public and Land-grant Universities Commission on International Initiatives (APLU CII) Summer Meeting, Park City, Utah, 15 July 2013 [Invited Talk]

"Customer Panel Session – Academic: Use of Research Analytics in the Research Office" Clarivate Analytics Sales Kickoff, Philadelphia, PA, 26 January 2017 [Invited Panelist]

**Invited Seminars**

University of Cincinnati, 13 September 1982.
Rutgers, State University of New Jersey, 22 October 1985.
University of Wisconsin, Eau Claire, 6 December 1985.
University of Michigan, 24 March 1986.
University of Illinois at Chicago, 1 April 1986.
University of Illinois at Urbana-Champaign, 23 September 1986.
Harvard/Massachusetts Institute of Technology (joint seminar), 25 September 1986.
Amherst College/University of Massachusetts (joint seminar), 29 September 1986.
Princeton University, 30 September 1986.
University of California, Berkeley, 3 October 1986.
University of California, Davis, 6 October 1986.
Oregon Graduate Center, 9 October 1986.
Stanford University, 10 October 1986.
California Institute of Technology, 11 October 1986.
University of California, San Diego, 13 October 1986.
University of Southern California, 14 October 1986.
University of California, Los Angeles, 15 October 1986.
Smith, Kline, & French Labs, Philadelphia, 18 November 1986.
Bucknell University, 19 November 1986.
Texas A & M University, 9 February 1987.
Rice University, 11 February 1987.
University of Georgia, 16 February 1987.

Ohio State University, 24 February 1987.
Northern Illinois University, 27 March 1987.
SRI, International, Menlo Park, 21 October 1987.
University of Georgia, 26 October 1987.
Georgia Institute of Technology, 5 May 1988.
University of Lisboa, Portugal, 27 June 1988.
University of South Carolina, 28 October 1988.
Georgia State University, 3 April 1989.
Emory University (Chemistry), 3 April 1989.
Emory University (Physics), 27 April 1989.
Oregon Graduate Center, 12 September 1989.
Ohio State University, 16 November 1989.
University of Georgia (Biochemistry), 15 May 1992.
University of Pennsylvania (School of Medicine), 17 August 1992.
University of Alabama, 23 April 1993.
Syntex Corporation, Palo Alto, 18 May 1993.
University of Rochester, 27 April 1994.
University of Nebraska, Lincoln, 6 December 1994.
Emory University (Physics), 24 February 1995.
Washington State University, 28 March 1996.
Oregon Graduate Institute, 29 March 1996.
University of British Columbia, 1 April 1996.
University of Washington, 2 April 1996.
University of Florence, Italy, 3 September 1996.
Institut de Biologie Structurale Jean-Pierre Ebel, CEA, CNRS, Grenoble, France, 6 September 1996.
Virginia Tech, Biochemistry, "X-Ray Absorption Spectroscopy of Biomolecules: The Outskirts of Structural Biology", 8 December 1997.
Wayne State University, School of Medicine, "X-Ray Absorption Spectroscopy of Biomolecules: The Outskirts of Structural Biology", 31 March 1998.
Michigan State University, Chemistry, "Protein Determinants of Metal-Site Redox Potential and Thermostability", 1 April 1998.
University of Michigan, Chemistry, "Protein Determinants of Metal-Site Redox Potential and Thermostability", 2 April 1998.
Emory University (Physical, Materials, and Computational Sciences Program), "X-Ray Absorption Spectroscopy. Molecular Structure in Chemistry, Biology, and Materials Science", 8 September 1998.
Emory University (Chemistry), "The Zinc Ribbon Structural Motif in Eucaryal and Archaeal Transcription", 3 March2000.
DuPont Central Research, Wilmington, DE "Protein Determinants of Metal-Site Redox Potentials. The Rubredoxin Paradigm? Or a Caveat?", 8 June 2001.
University of Illinois at Urbana-Champaign "Molecular Topography of the Archaeal Transcription Pre-initiation Complex" 25 April 2002.
Emory University "X-ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" 17 March 2004.
Emory University "The Zinc Ribbon Motif in Transcription Initiation" 17 March 2004.
University of South Florida "Molecular Topography of a Biological Machine Involved in Transcription Initiation" 28 October 2004.
University of South Florida "X-Ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" 28 October 2004.
Auburn University "X-Ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" 21 April 2005.
University of Cincinnati "Transcription Initiation and Regulation in an Archaeal Hyperthermophile" 23 May 2005.
Children's Hospital of Oakland Research Institute "X-Ray Spectroscopy in Post-Genomic Biology" 29 November 2005.

Stanford University (Chemistry) "Metalloproteomics: The Intersection of Inorganic Chemistry and Systems Biology" 28 February 2006.

Emory University (Chemistry) "X-ray Absorption Spectroscopy of Metallobiomolecules. The Outskirts of Structural Biology" 9 March 2007.

Lawrence Berkeley National Laboratory (Virtual Institute for Microbial Stress and Survival) "Survey of Transcriptional Response to Environmental Stress (STRES). From Microarrays to Molecular Mechanisms" 9 January 2008.

**Research Grants** (as PI)

"Electron Transfer Reactions of Cytochrome *c* Oxidase" $7,000
NIH Biomedical Research Support Grant 4/1/81-3/31/82

"Electron Transfer Reactions Within Cytochrome *c* Oxidase" $15,000
Research Corporation Cottrell Research Grant 9/1/81-8/31/82

"Stopped-Flow Kinetics Study of Cytochrome *c* Oxidase Electron Transfer Pathways" $25,485
University of Illinois Research Board Beckman Research Award 11/1/81-6/30/82

"Quantitative Determination of Coordination Numbers by EXAFS Analysis" $10,000
American Chemical Society Petroleum Research Fund Grant 2/1/82-1/31/84

"Structural Studies of Cytochrome *c* Oxidase Active Sites by X-Ray Absorption Spectroscopy", NIH Biomedical Research Support Grant $5,000 4/1/82-3/31/83

"Electrostatic Effects in Cytochrome *c* Electron Transfer Reactions" $128,807
NIH GM-30975 7/1/82-6/30/85

"Rapid Freeze Quench X-Ray Absorption Spectroscopy for Biological Studies" $5,000
NIH Biomedical Research Support Grant 4/1/83-3/31/84

"Copper EXAFS Spectroscopy of Non-Blue Copper Proteins. Amine Oxidases" $3,000
NIH Biomedical Research Support Grant 4/1/84-3/31/85

"X-Ray Absorption Spectroscopy of Metalloenzymes" $230,000
NSF DMB 86-45819 7/1/85-8/30/88

"Structural and Functional Studies of Metalloenzyme Active Sites" $500,000
NSF CHE 87-15889 (Presidential Young Investigator Award) 6/1/85-4/30/90

"The $F_{430}$ Cofactor of S-Methyl Coenzyme M Reductase" $280,000
NSF DMB 90-13276 3/1/91-2/28/95

"Metalloprotein Stability and Redox Chemistry" (joint with D. M. Kurtz) $563,935
NIH GM-50736 05/01/94-04/30/98

"The Role of Transition Metals in Biology" (joint with M. K. Johnson) $1,478,500
NSF DIR 90-14281 (Research Training Group Award) 07/01/95-06/30/00

"Topology of Archaeal Transcription Pre-Initiation Complex" $240,000
NSF MCB 96-31093 09/01/96-08/31/00

"Georgia Structural Biology Resource" $1,775,000
GBC98.110 (Georgia Research Alliance) 07/01/97-06/30/98

"X-Ray Absorption Spectroscopy of Metalloenzymes" $445,365
NIH GM-042025 (since 1989) 12/01/99-11/30/02

"X-Ray Absorption Spectroscopy of Metalloenzymes" $876,102
NIH GM-042025 (since 1989) 12/01/02-11/30/06

"X-Ray Absorption Spectroscopy of Metalloenzymes" $1,102,000
NIH GM-042025 (since 1989) 12/01/06-11/30/12

"Systems Level Description of Metabolic and Regulatory Pathways of a Hydrogen-Producing Model Microorganism" $1,200,000
DOE DEFG0208ER64690 (Genomic Sciences) 09/15/08-09/14/12

**Courses Taught**

*University of Illinois*

Fall 1981 Physical Methods in Inorganic Chemistry (406)
Spring 1982 Bioinorganic Chemistry (407)
Fall 1982 Physical Methods in Inorganic Chemistry (406)
Spring 1983 Inorganic Seminar (405)
Fall 1983 Physical Methods in Inorganic Chemistry (406); Biological Electron

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| | Transfer (440) |
| Spring 1984 | Advanced Descriptive Inorganic Chemistry (407) |
| Fall 1984 | Accelerated General Chemistry Laboratory (109) |
| Spring 1985 | Advanced Descriptive Inorganic Chemistry (407) |
| Fall 1985 | Physical Methods in Inorganic Chemistry (406) |
| Spring 1986 | (on leave as Beckman Fellow, Center for Advanced Study) |
| Fall 1986 | Physical Methods in Inorganic Chemistry (406) |
| | Chemical Fundamentals (P.Chem. Laboratory) (385) |
| Spring 1987 | Chemical Fundamentals (P.Chem. Laboratory) (385) |

*University of Georgia*

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| Winter 1988 | Advanced Inorganic Chemistry (421/621) |
| Fall 1988 | General Chemistry (Freshman Honors) (127H/137) |
| Winter 1989 | Physical Methods in Inorganic Chemistry (824) |
| Fall 1989 | General Chemistry (Freshman Honors) (127H/137) |
| Winter 1990 | Physical Methods in Inorganic Chemistry (824) |
| Spring 1990 | Bioinorganic Chemistry (824) |
| Fall 1990 | General Chemistry (Freshman Honors) (127H/137) |
| Winter 1991 | Modern Inorganic Theory: Transition Metal Chemistry (821B) |
| Fall 1991 | General Chemistry (Freshman Honors) (127H/137) |
| Winter 1992 | Modern Inorganic Theory: Transition Metal Chemistry (821B) |
| Fall 1992 | Intermediate Inorganic Chemistry (426/626) |
| | Physical Methods in Inorganic Chemistry (901) |
| Fall 1993 | Symmetry and Group Theory (821A) |
| Winter 1994 | Physical Methods in (Bio)inorganic Chemistry (901) |
| Fall 1994 | Symmetry and Group Theory (821A) |
| Winter 1995 | Physical Methods in (Bio)inorganic Chemistry (822) |
| Fall 1995 | Symmetry and Group Theory (821A) |
| Spring 1996 | Physical Methods in (Bio)inorganic Chemistry (822) |
| Spring 1997 | Physical Methods in (Bio)inorganic Chemistry (822) |
| Winter 1998 | Physical Methods in (Bio)inorganic Chemistry (822) |
| Fall 1998 | Scientific Information Acqusition and Dissemination (4500) |
| Spring 1999 | Physical Methods in (Bio)inorganic Chemistry (8220) |
| Fall 1999 | Scientific Information Acquisition and Dissemination (4500) |
| Fall 2000 | Scientific Information Acquisition and Dissemination (4500) |
| Fall 2001 | Scientific Information Acquisition and Dissemination (4500) |
| Spring 2002 | Scientific Communication Skills (8290) |
| Fall 2002 | Scientific Information Acquisition and Dissemination (4500) |
| Spring 2003 | Scientific Communication Skills (8290) |
| Fall 2003 | Scientific Information Acquisition and Dissemination (4500) |
| Spring 2004 | Scientific Communication Skills (8290) |
| Fall 2004 | Scientific Information Acquisition and Dissemination (4500/8290) |
| Spring 2005 | Modern Inorganic Chemistry (3400/6400) |
| Fall 2006 | Symmetry and Group Theory (8210) |
| Fall 2017 | Symmetry and Group Theory (8210) |

1. "Proton Assisted Two-Electron Transfer from Hydroxylammonium Ion to Chromium(VI) through Oxygen Bridges", Scott, R. A.; Haight, G. P., Jr.; Cooper, J. N. *J. Am. Chem. Soc.* **1974**, *96*, 4136-4142.
2. "Coupling of Adenosine Triphosphate Hydrolysis to a Simple Inorganic Redox System: $VO^{2+}$ + $H_2O_2$", Woltermann, G. M.; Scott, R. A.; Haight, G. P., Jr. *J. Am. Chem. Soc.* **1974**, *96*, 7569-7570.
3. "Mechanisms for Electron Transfer Assisted Phosphorylation and ATP Hydrolysis", Haight, G. P., Jr.; Scott, R. A.; Woltermann, G. M. *Physiol. Chem. Phys.* **1974**, *6*, 375-378.
4. "Separation and Detection of Orthopolyphosphate, Pyropolyphosphate, and Tripolyphosphate by Anion Exchange Thin Layer Chromatography", Scott, R. A.; Haight, G. P., Jr. *Anal. Chem.* **1975**, *47*, 2439-2441.
5. "Magnetic Susceptibility Studies of Laccase and Oxyhemocyanin", Dooley, D. M.; Scott, R. A.; Ellinghaus, J.; Solomon, E. I.; Gray, H. B. *Proc. Natl. Acad. Sci. USA* **1978**, *75*, 3019-3022.
6. "Electron Transfer Reactions of Trifluoroacetylated Horse Heart Cytochrome *c*", Holwerda, R. A.; Read, R. A.; Scott, R. A.; Wherland, S.; Gray, H. B.; Millett, F. *J. Am. Chem. Soc.* **1978**, *100*, 5028-5033.
7. "Cytochrome $aa_3$ Electron-Transfer Reactions. Kinetics of Hexaammineruthenium(II) Reduction of the Beef Heart Enzyme", Scott, R. A.; Gray, H. B. *J. Am. Chem. Soc.* **1980**, *102*, 3219-3224.
8. "Distances of Electron Transfer to and from Metalloprotein Redox Sites in Reactions with Inorganic Complexes", Mauk, A. G.; Scott, R. A.; Gray, H. B. *J. Am. Chem. Soc.* **1980**, *102*, 4360-4363.
9. "A Calculator Program for Determination of Phosphate Buffer Composition", Mauk, A. G.; Scott, R. A. *Computers and Chemistry* **1981**, *5*, 67-69.
10. "Extended X-ray Absorption Fine Structure of Copper in Cytochrome *c* Oxidase. Direct Evidence for Copper-Sulfur Ligation", Scott, R. A.; Cramer, S. P.; Shaw, R. W.; Beinert, H.; Gray, H. B. *Proc. Natl. Acad. Sci. USA* **1981**, *78*, 664-667.
11. "New Fluorescence Detection System for X-ray Absorption Spectroscopy", Cramer, S. P.; Scott, R. A. *Rev. Sci. Inst.* **1981**, *52*, 395-399.
12. "Metalloprotein EXAFS. A Group Fitting Procedure for Imidazole Ligands", Co, M. S.; Scott, R. A.; Hodgson, K. O. *J. Am. Chem. Soc.* **1981**, *103*, 986-988.
13. "Single-Crystal Polarized X-ray Absorption Spectroscopy. Observation and Theory for $(MoO_2S_2)^{2-}$", Kutzler, F. W.; Scott, R. A.; Berg, J. M.; Hodgson, K. O.; Doniach, S.; Cramer, S. P.; Chang, C. H. *J. Am. Chem. Soc.* **1981**, *103*, 6083-6088.
14. "Chemical and Spectroscopic Properties of the Binuclear Copper Active Site in *Rhus* Laccase: Direct Confirmation of a Reduced Binuclear Type 3 Copper Site in Type 2 Depleted Laccase and Intramolecular Coupling of the Type 3 to the Type 1 and Type 2 Copper Sites", LuBien, C. D.; Winkler, M. E.; Thamann, T. J.; Scott, R. A.; Co, M. S.; Hodgson, K. O.; Solomon, E. I. *J. Am. Chem. Soc.* **1981**, *103,* 7014-7016.
15. "Extended X-ray Absorption Fine Structure of the Copper Sites in Cytochrome *c* Oxidase", Scott, R. A. In "The Biological Chemistry of Iron", Dunford, H. B.; Dolphin, D. H.; Raymond, K. N.; Sieker, L. C., Eds.; D. Reidel: Boston, 1982; pp 475-484. [Symposium proceedings]
16. "Observation of an Electric Quadrupole Transition in the X-ray Absorption Spectrum of a Cu(II) Complex", Hahn, J. E.; Scott, R. A.; Hodgson, K. O.; Doniach, S.; Desjardins, S. R.; Solomon, E. I. *Chem. Phys. Lett.* **1982**, *88*, 595-598.
17. "Polarized X-ray Absorption Spectra of Oriented Plastocyanin Single Crystals. Investigation of Methionine-Copper Coordination", Scott, R. A.; Hahn, J. E.; Doniach, S.; Freeman, H. C.; Hodgson, K. O. *J. Am. Chem. Soc.* **1982**, *104*, 5364-5369.
18. "Iron-Sulfur Stoichiometry and Structure of Iron-Sulfur Clusters in Three- Iron Proteins: Evidence for [3Fe-4S] Clusters", Beinert, H.; Emptage, M. H.; Dreyer, J.-L.; Scott, R. A.; Hahn, J. E.; Hodgson, K. O.; Thomson, A. J. *Proc, Natl. Acad. Sci. USA* **1983**, *80*, 393-396.
19. "X-ray Absorption Spectroscopy", Scott, R. A. In "Structural and Resonance Techniques in Biological Research", Rousseau, D. L., Ed.; Academic: New York, 1984; Chapt. 4, pp 295-362. [Invited chapter]
20. "X-ray Absorption Spectroscopy of Nickel in the Hydrogenase from *Desulfovibrio gigas*", Scott, R. A.; Wallin, S. A.; Czechowski, M.; DerVartanian, D. V.; LeGall, J.; Peck, H. D., Jr.; Moura, I. *J. Am. Chem. Soc.* **1984**, *106*, 6864-6865.
21. "Copper X-ray Absorption Spectroscopy of Cytochrome *c* Oxidase", Scott, R. A.; Schwartz, J. R.;

Cramer, S. P. In "EXAFS and Near Edge Structure III", Hodgson, K. O.; Hedman, B.; Penner-Hahn, J. E., Eds.; Springer-Verlag: Berlin, 1984; pp 111-116. [Symposium proceedings]

22. "Structural Characterization of 3Fe Clusters in Fe-S Proteins by EXAFS", Scott, R. A.; Penner-Hahn, J. E.; Hodgson, K. O.; Beinert, H.; Stout, C. D. In "EXAFS and Near Edge Structure III", Hodgson, K. O.; Hedman, B.; Penner-Hahn, J. E., Eds.; Springer-Verlag: Berlin, 1984; pp 105-110. [Symposium proceedings]
23. "Measurement of Metal-Ligand Distances by EXAFS", Scott, R. A. *Meth. Enzymol.* **1985**, *117*, 414-459. [Invited chapter]
24. "Copper EXAFS of Cytochrome *c* Oxidase. Structure of the $a_3$-$Cu_B$ Binuclear Site", Scott, R. A.; Schwartz, J. R.; Cramer, S. P. In "Biological and Inorganic Copper Chemistry", vol. 1; Adenine: New York, 1985; pp 41-52. [Symposium proceedings]
25. "Reversible Reactions of Dioxygen with Synthetic Copper(I) Complexes Under Ambient Conditions", Goodwin, J. A.; Stanbury, D. M.; Wilson, L. J.; Scott, R. A. In "Biological and Inorganic Copper Chemistry", vol. 2; Adenine: New York, 1985; pp 11-26. [Symposium proceedings]
26. "[4Fe-4S]-Cluster-Depleted *Azotobacter vinelandii* Ferredoxin I: A New 3Fe Iron-Sulfur Protein", Stephens, P. J.; Morgan, T. V.; Devlin, F.; Penner-Hahn, J. E.; Hodgson, K. O.; Scott, R. A.; Stout, C. D.; Burgess, B. K. *Proc. Natl. Acad. Sci. USA* **1985**, *82*, 5661-5665.
27. "Kinetics of Dithionite Reduction of the Heme Nonapeptide of Cytochrome *c*", Kazmi, S. A.; Mills, M. A.; Pitluk, Z. W.; Scott, R. A. *J. Inorg. Biochem.* **1985**, *24*, 9-12.
28. "Effect of Cyanide Binding on the Copper Sites of Cytochrome *c* Oxidase. An X-ray Absorption Spectroscopic Study", Scott, R. A.; Schwartz, J. R.; Cramer, S. P. *J. Inorg. Biochem.* **1985**, *23*, 199-205.
29. "X-ray Absorption Spectroscopic Studies of the Cu(II) Sites in Bovine Plasma Amine Oxidase", Scott, R. A.; Dooley, D. M. *J. Am. Chem. Soc.* **1985**, *107*, 4348- 4350.
30. "Nickel X-ray Absorption Spectroscopy of *Desulfovibrio gigas* Hydrogenase", Scott, R. A.; Czechowski, M.; DerVartanian, D. V.; LeGall, J.; Peck, H. D., Jr.; Moura, I. *Rev. Portug. Chim.* **1985**, *27*, 67-70. [Symposium proceedings]
31. "Nickel X-ray Absorption Spectroscopy of *Methanobacterium thermoautotrophicum* S-Methyl Coenzyme-M Reductase", Scott, R. A.; Hartzell, P. L.; Wolfe, R. S.; LeGall, J.; Cramer, S. P. In "Frontiers in Bioinorganic Chemistry", Xavier, A. V., Ed.; VCH Verlagsgesellschaft: Weinheim, FRG, 1985; pp 20-26. [Symposium proceedings]
32. "Experimental Approaches to Studying Biological Electron Transfer", Scott, R. A.; Mauk, A. G.; Gray, H. B. *J. Chem. Educ.* **1985**, *62*, 932-938.
33. "Reactions of $MoS_3$, $WS_3$, $WSe_3$, and $NbSe_3$ with Lithium. Metal Cluster Rearrangement Revealed by EXAFS", Scott, R. A.; Jacobson, A. J.; Chianelli, R. R.; Pan, W.-H.; Stiefel, E. I.; Hodgson, K. O.; Cramer, S. P. *Inorg. Chem.* **1986**, *25*, 1461-1466.
34. "Structural Evidence Concerning the Frontier Orbitals in $[Fe_2S_2(CO)_6]^{2-}$, $[Fe_2Se_2(CO)_6]^{2-}$: Redox Active Dichalcogen Ligands", Weatherill, T. D.; Rauchfuss, T. B.; Scott, R. A. *Inorg. Chem.* **1986**, *25*, 1466-1472.
35. "Structural Diversity of $F_{430}$ from *Methanobacterium thermoautotrophicum*. A Nickel X-ray Absorption Spectroscopic Study", Eidsness, M. K.; Sullivan, R. J.; Schwartz, J. R.; Hartzell, P. L.; Wolfe, R. S.; Flank, A.-M.; Cramer, S. P.; Scott, R. A. *J. Am. Chem. Soc.* **1986**, *108*, 3120-3121.
36. "Structural Aspects of the Copper Sites in Cytochrome *c* Oxidase. An X-ray Absorption Spectroscopic Investigation of the Resting State Enzyme", Scott, R. A.; Schwartz, J. R.; Cramer, S. P. *Biochemistry* **1986**, *25*, 5546-5555.
37. "Extended X-ray Absorption Fine Structure of Copper in $Cu_A$-Depleted, *p*-(Hydroxy mercuri)benzoate-Modified, and Native Cytochrome *c* Oxidase", Li, P. M.; Gelles, J.; Chan, S. I.; Sullivan, R. J.; Scott, R. A. *Biochemistry* **1987**, *26*, 2091-2095.
38. "X-ray Absorption Spectroscopic Evidence for a Unique Nickel Site in *Clostridium thermoaceticum* Carbon Monoxide Dehydrogenase", Cramer, S. P.; Eidsness, M. K.; Pan, W.-H.; Morton, T. A.; Ragsdale, S. W.; DerVartanian, D. V.; Ljungdahl, L. G.; Scott, R. A. *Inorg. Chem.* **1987**, *26*, 2477-2479.
39. "Electronic and Molecular Structure of Biological Nickel as Studied by X-ray Absorption Spectroscopy", Eidsness, M. K.; Sullivan, R. J.; Scott, R. A. In "Bioinorganic Chemistry of Nickel", Lancaster, J. R., Ed.; VCH: Deerfield Beach, FL, 1988; pp 73-91. [Invited chapter]

40. "Resonance Raman Spectroscopic Investigation of Axial Coordination in *M. thermoautotrophicum* Methyl Reductase and its Nickel Tetrapyrrole Cofactor $F_{430}$", Shiemke, A. K.; Scott, R. A.; Shelnutt, J. A. *J. Am. Chem. Soc.* **1988**, *110*, 1645-1646.
41. "Structural Heterogeneity and Purification of Protein-Free $F_{430}$ from the Cytoplasm of *Methanobacterium thermoautotrophicum*", Shiemke, A. K.; Hamilton, C. L.; Scott, R. A. *J. Biol. Chem.* **1988**, *263*, 5611-5616.
42. "The Copper Sites of Dopamine β-Hydroxylase: An X-ray Absorption Spectroscopic Study", Scott, R. A.; Sullivan, R. J.; DeWolf, W. E., Jr.; Dolle, R. E.; Kruse, L. I. *Biochemistry* **1988**, *27*, 5411-5417.
43. "The Use of X-Ray Absorption Spectroscopy for Detection of Metal-Metal Interactions. Application to Copper-Containing Enzymes", Scott, R. A.; Eidsness, M. K. *Comments Inorg. Chem.* **1988**, *7*, 235-267.
44. "Copper X-ray Absorption Spectroscopic Studies of the Bovine Plasma Amine Oxidase-Sulfide Complex", Scott, R. A.; Cote, C. E.; Dooley, D. M. *Inorg. Chem.* **1988**, *27*, 3859-3861.
45. "The Binuclear Site of Cytochrome *c* Oxidase. Structural Evidence from Iron X-ray Absorption Spectroscopy", Scott, R. A.; Li, P. M.; Chan, S. I. *Ann. N. Y. Acad. Sci.* **1988** *550*, 53-58.
46. "Heterogeneity in an Isolated Membrane Protein. Has the 'Authentic Cytochrome Oxidase' Been Identified?", Hartzell, C. R.; Beinert, H.; Babcock, G. T.; Chan, S. I.; Palmer, G.; Scott, R. A. *FEBS Lett.* **1988**, *236*, 1-4.
47. "Ligand-Substitution and Electron-Transfer Reactions of Pentacoordinate Copper(I) Complexes", Goodwin, J. A.; Wilson, L. J.; Stanbury, D. M.; Scott, R. A. *Inorg. Chem.* **1989**, *28*, 42-50.
48. "Evidence for Selenocysteine Coordination to the Active Site Nickel in the [NiFeSe]hydrogenase from *Desulfovibrio baculatus*", Eidsness, M. K.; Scott, R. A.; Prickril, B.; DerVartanian, D. V.; LeGall, J.; Moura, I.; Moura, J. J. G.; Peck, H. D., Jr. *Proc. Natl. Acad. Sci. USA* **1989**, *86*, 147-151.
49. "X-ray Absorption Spectroscopic Investigations of Cytochrome *c* Oxidase Structure and Function", Scott, R. A. *Annu. Rev. Biophys. Biophys. Chem.* **1989**, *18*, 137-158. [Invited chapter]
50. "Structural and Spectroscopic Characterization of Exogenous Ligand Binding to Isolated Cofactor $F_{430}$ and its Configurational Isomers", Shiemke, A. K.; Kaplan, W. A.; Hamilton, C. L.; Shelnutt, J. A.; Scott, R. A. *J. Biol. Chem.* **1989**, *264*, 7276-7284.
51. "Long-Range Electron Transfer in a Cytochrome *c* Derivative Containing a Covalently Attached Cobalt-Cage Complex", Conrad, D. W.; Scott, R. A. *J. Am. Chem. Soc.* **1989**, *111*, 3461-3463.
52. "Coordination Chemistry of Factor $F_{430}$: Axial Ligation Equilibrium Between Square-Planar and Bis-Aquo Species in Aqueous Solution", Shiemke, A. K.; Shelnutt, J. A.; Scott, R. A. *J. Biol. Chem.* **1989**, *264*, 11236-11245.
53. "Comparative X-ray Absorption Spectroscopic Structural Characterization of Nickel Metalloenzyme Active Sites", Scott, R. A. *Physica B* **1989**, *158*, 84-86.
54. "*Pseudomonas stutzeri* $N_2O$ Reductase Contains $Cu_A$-Type Sites", Scott, R. A.; Zumft, W. G.; Coyle, C. L.; Dooley, D. M. *Proc. Natl. Acad. Sci. USA* **1989**, *86*, 4082-4086.
55. "The Magnetic and Electronic Properties of *M. thermoautotrophicum* (strain ΔH) Methyl-CoM Reductase and Its Nickel Tetrapyrrole Cofactor $F_{430}$: A Low-Temperature Magnetic Circular Dichroism Study", Hamilton, C. L.; Scott, R. A.; Johnson, M. K. *J. Biol. Chem.* **1989**, *264*, 11605-11613.
56. "X-ray Absorption Spectroscopic Evidence for Binding of the Competitive Inhibitor 2-Mercaptoethanol to the Nickel Sites of Jackbean Urease. A New Ni-Ni Interaction in the Inhibited Enzyme", Clark, P. A.; Wilcox, D. E.; Scott, R. A. *Inorg. Chem.* **1990**, *29*, 579-581.
57. "Bimetallic Catalysts from Alumina-Supported Molybdenum-Iridium Clusters", Shapley, J. R.; Uchiyama, W. S.; Scott, R. A. *J. Phys. Chem.* **1990**, *94*, 1190-1196.
58. "Probing Macrocycle Flexibility: Ligand Binding to Zinc and Nickel Tetraphenylhydroporphyrins", Kaplan, W. A.; Scott, R. A.; Suslick, K. S. *J. Am. Chem. Soc.* **1990**, *112*, 1283-1285.
59. "Long-Range Electron Transfer in Cytochrome *c* Derivatives with Covalently Attached Probe Complexes", Scott, R. A.; Conrad, D. W.; Eidsness, M. K.; Gorren, A. C. F.; Wallin, S. A. In *Metal Ions in Biological Systems*, Sigel, H., Sigel, A., Ed.; Marcel Dekker, 1991; Vol. 27, pp. 199-222. [Invited chapter]
60. "Spectroscopic Studies of the Copper Sites in Wild-Type *Pseudomonas stutzeri* $N_2O$ Reductase

and in an Inactive Protein Isolated from a Mutant Deficient in Copper-Site Biosynthesis", Dooley, D. M.; McGuirl, M. A.; Rosenzweig, A. C.; Landin, J. A.; Scott, R. A.; Zumft, W. G.; Devlin, F.; Stephens, P. J. *Inorg. Chem.* **1991**, *30*, 3006-3011.

61. "Core Size and Flexibility of Metallohydroporphyrin Macrocycles. Implications for $F_{430}$ Coordination Chemistry", Kaplan, W. A.; Suslick, K. S.; Scott, R. A. *J. Am. Chem. Soc.* **1991**, *113*, 9824-9827.
62. "Ni(II) and Ni(I) Forms of Pentaalkylamide Derivatives of Cofactor $F_{430}$ of *Methanobacterium thermoautotrophicum*", Hamilton, C. L.; Ma, L.; Renner, M. W.; Scott, R. A. *Biophys. Biochim. Acta* **1991**, *1074*, 312-319.
63. "The Role of Tyrosine 67 in the Cytochrome *c* Heme Crevice Structure Studied by Semisynthesis", Frauenhoff, M. M.; Scott, R. A. *Proteins: Structure, Function, and Genetics* **1992**, *14*, 202-212.
64. "Spectroscopic Characterization of the Alternate Form of S-Methylcoenzyme M Reductase from *Methanobacterium thermoautotrophicum* (Strain ΔH)," Brenner, M. C.; Ma, L.; Johnson, M. K.; Scott, R. A. *Biochim. Biophys. Acta* **1992**, *1120*, 160-166.
65. "X-Ray Absorption Spectroscopic Studies of the High-Spin Iron(II) Active Site of Isopenicillin N Synthase: Evidence for Fe-S Interaction in the Enzyme-Substrate Complex," Scott, R. A.; Wang, S.; Eidsness, M. K.;Kriauciunas, A.; Frolik, C. A.; Chen, V. J. *Biochemistry* **1992**, *31*, 4596-4601.
66. "Expression of a Synthetic Gene Coding for the Amino Acid Sequence of *Clostridium pasteurianum* Rubredoxin," Eidsness, M. K.; O'Dell, S. E.; Kurtz, D. M., Jr.; Robson, R. L.; Scott, R. A. *Protein Engineering* **1992**, *5*, 367-371.
67. "Synthesis and Characterization of Singly Modified (Carboxyferrocenyl)cytochrome *c* Derivatives," Gorren, A. C. F.; Chan, M. L.; Crouse, B. R.; Scott, R. A. *Bioconj. Chem.* **1992**, *3*, 291-294.
68. "Distance Dependence of Long-Range Electron Transfer in Cytochrome *c* Derivatives Containing Covalently Attached Cobalt Cage Complexes," Conrad, D. W.; Zhang, H.; Stewart, D. E.; Scott, R. A. *J. Am. Chem. Soc.* **1992**, *114*, 9909-9915.
69. "Purification and Characterization of *Klebsiella aerogenes* UreE Protein: A Nickel-Binding Protein that Functions in Urease Metallocenter Assembly," Lee, M. H.;Pankratz, H. S.; Wang, S.; Scott, R. A.; Finnegan, M. G.; Johnson, M. K.; Ippolito, J. A.; Christianson, D. W.; Hausinger, R. P. *Protein Science* **1993**, *2*, 1042-1052.
70. "Nature of the Low Activity of *S*-Methyl-coenzyme M Reductase as Determined by Active Site Titrations," Brenner, M. C.; Zhang, H.; Scott, R. A. *J. Biol. Chem.* **1993**, *268*, 18491-18495.
71. "Structure of the Dinuclear Active Site of Urease. X-Ray Absorption Spectroscopic Study of Native and 2-Mercaptoethanol-Inhibited Bacterial and Plant Enzymes," Wang, S.; Lee, M. H.; Hausinger, R. P.; Clark, P. A.; Wilcox, D. E.; Scott, R. A. *Inorg. Chem.* **1994**, *33*, 1589-1593.
72. "Structural and Functional Models for the Dicopper Site in Hemocyanin. Dioxygen Binding by Copper Complexes of Tris(1-R-4-R'-Imidazolyl-κ*N*)Phosphines," Lynch, W. E.; Kurtz, D. M., Jr.; Wang, S.; Scott, R. A. *J. Am. Chem. Soc.* **1994**, *116*, 11030-11038.
73. *Encyclopedia of Inorganic Chemistry*, King, R. B., Ed., Wiley: London, 1994. [Bioinorganic subject editor]
74. "Mutations of Cysteine Ligands in Rubredoxin. Altered Properties of the Iron Site," O'Dell, S. E.; Kurtz, D. M., Jr.; Scott, R. A.; Smith, E. T. *J. Inorg. Biochem.* **1994**, *56*, 18.
75. "Spectroscopic Studies of the Active Site of Galactose Oxidase," Knowles, P. F.; Brown, R. D.; Koenig, S. H.; Wang, S.; Scott, R. A.; McGuirl, M. A.; Brown, D. E.; Dooley, D. M. *Inorg. Chem.* **1995**, *34*, 3895-3902.
76. "An X-ray Absorption Spectroscopy Study of the Interactions of $Ni^{2+}$ with Yeast Enolase," Wang, S.; Scott, R. A.; Lebioda, L.; Zhou, Z. H.; Brewer, J. M. *J. Inorg. Biochem.* **1995**, *58*, 209-221.
77. "Discriminating compact non-native structures from the native structure of globular proteins," Wang, Y.; Zhang, H.; Li, W.; Scott, R. A. *Proc. Natl. Acad. Sci. USA* **1995**, *92*, 709-713.
78. "X-ray and Visible Absorption Spectroscopy of Wild-type and Mutant T4 Gene 32 Proteins: $His^{64}$, not $His^{81}$, is the Non-thiolate Zinc Ligand," Guo, J.; Wang, S.; Dong, J.; Qiu, H.; Scott, R. A.; Giedroc, D. P. *J. Am. Chem. Soc.* **1995**, *117*, 9437-9440.
79. "Biological Applications of Synchrotron Radiation," Scott, R. A. *SLAC Beam Line* **1995**, *24*, 19-28. [Invited article]
80. "Mechanism of Formation of Platinum(0) Complexes Containing Silicon-Vinyl Ligands," Lewis, L. N.; Colborn, R. E.; Grade, H.; Bryant, G. L.; Sumpter, C. A.; Scott, R. A. *Organometallics*

**1995**, *14*, 2202-2213.

81. "A New Computational Model for Protein Folding Based on Atomic Solvation," Wang, Y.; Zhang, H.; Scott, R. A. *Protein Science* **1995**, *4*, 1402-1411.
82. "EXAFS, EPR, and Electronic Absorption Spectroscopic Study of the α Metallosubunit of CO Dehydrogenase from *Clostridium thermoaceticum*," Xia, J.; Dong, J.; Wang, S.; Scott, R. A.; Lindahl, P. A. *J. Am. Chem. Soc.* **1995**, *117*, 7065-7070.
83. "Functional Significance of Cytochrome *c* Oxidase Structure" Scott, R. A. *Structure* **1995**, *3*, 981-986. [Invited minireview]
84. "Protein Determinants of Metal Site Reduction Potentials. Site-Directed Mutagenesis Studies of *Clostridium pasteurianum* Rubredoxin," Zeng, Q.; Smith, E. T.; Kurtz, D. M., Jr.; Scott, R. A. *Inorg. Chim. Acta* **1996**, *242*, 245-251. [Invited article]
85. *Cytochrome c: A Multidisciplinary Approach*, Scott, R. A.; Mauk, A. G., Eds., University Science: Menlo Park, 1996. [Book editor]
86. "Long-Range Intramolecular Electron Transfer Reactions in Cytochrome c," Scott, R. A. In *Cytochrome c. A Multidisciplinary Approach*; Scott, R. A.; Mauk A. G., Ed.; University Science Press: Menlo Park, 1996; pp 515-541. [Invited chapter]
87. "A Transcription Factor IIB Homolog from the Hyperthermophilic Archaeon *Pyrococcus furiosus* Binds Zn or Fe in an N-terminal $Cys_4$ Motif" Zeng, Q.; Lewis, L. M.; Colangelo, C. M.; Dong, J.; Scott, R. A. *JBIC* **1996**, *1*, 162-168.
88. "The N-terminal Domain of TFIIB from *Pyrococcus furiosus* forms a Zinc Ribbon" Zhu, W.; Zeng, Q.; Colangelo, C.; Lewis, L. M.; Summers, M. F.; Scott, R. A. *Nature: Structural Biology* **1996**, *3*, 122-124.
89. "The role of arsenic-thiol interactions in metalloregulation of the *ars* operon" Shi, W.; Dong, J.; Scott, R. A.; Ksenzenko, M. Y.; Rosen, B. P. *J. Biol. Chem.* **1996**, *271*, 9291-9297.
90. "Probing Protein Electrostatic Interactions by Direct Electrochemistry," Zeng, Q.; Kurtz, D. M.; Scott, R. A.; Popovich, L. L.; Smith, E. T. *Current Separations* **1996**, *14*, 90-92.
91. "Characterization of the Mono-Nickel Metallocenter in H134A Mutant Urease," Park, I.-S.; Michel, L. O.; Pearson, M.; Jabri, E.; Karplus, P. A.; Wang, S.; Dong, J.; Scott, R. A.; Koehler, B. P.; Johnson, M. K.; Hausinger, R. P. *J. Biol. Chem.* **1996**, *271*, 18632-18637.
92. "Structure of the Ni Sites in Hydrogenases by X-ray Absorption Spectroscopy. Species Variation and the Effects of Redox Poise," Gu, Z.; Dong, J.; Allan, C. B.; Choudhury, S. B.; Franco, R.; Moura, J. J. G.; LeGall, J.; Przybyla, A. E.; Roseboom, W. R.; Albracht, S. P. J.; Axley, M. J.; Scott, R. A.; Maroney, M. J., *J. Am. Chem. Soc* **1996**, *118*, 11155-11165.
93. "Investigation by EPR and ENDOR Spectroscopy of the Nickel(I) Form of Cofactor $F_{430}$ of *Methanobacterium thermoautotrophicum* and of Ni(I) Octaethylisobacteriochlorin," Telser, J.; Fann, Y.-C.; Renner, M. W.; Fajer, J.; Wang, S.; Zhang, H.; Scott, R. A.; Hoffman, B. M. *J. Am. Chem. Soc.* **1997**, *119*, 733-743.
94. "Biophysical and Mutagenic Analysis of *Thermoanaerobacter ethanolicus* Secondary-Alcohol Dehydrogenase Activity and Specificity," Burdette, D. S.; Secundo, F.; Phillips, R. S.; Dong, J.; Scott, R. A.; Zeikus, J. G. *Biochem. J.* **1997**, *326*, 717-724.
95. "Dissecting Contributions to the Thermostability of *Pyrococcus furiosus* Rubredoxin: β-Sheet Chimeras," Eidsness, M. K.; Richie, K. A.; Burden, A. E.; Kurtz, D. M., Jr.; Scott, R. A. *Biochemistry* **1997**, *36*, 10406-10413.
96. "Macrocyclic $[Cu^{I/II}(bite)]^{+/2+}$ (bite = biphenyldiimino dithioether): An Example of Fully-Gated Electron Transfer and its Biological Relevance" Flanagan, S.; Dong, J.; Haller, K.; Wang, S.; Scheidt, W. R.; Scott, R. A.; Webb, T. R.; Stanbury, D. M.; Wilson, L. J. *J. Am. Chem. Soc* **1997**, *119*, 8857-8868.
97. "Assembly of a $[2Fe\text{-}2S]^{2+}$ Cluster in a Molecular Variant of *Clostridium pasteurianum* Rubredoxin" Meyer, J.; Gagnon, J.; Gaillard, J.; Lutz, M.; Achim, C.; Münck, E.; Pétillot, Y.; Colangelo, C. M.; Scott, R. A. *Biochemistry* **1997**, *36*, 13374-13380.
98. "Structures of the Cu(I) and Cu(II) Forms of Amine Oxidases from X-ray Absorption Spectroscopy" Dooley, D. M.; Scott, R. A.; Knowles, P. F.; Colangelo, C. M.; McGuirl, M. A.; Brown, D. E. *J. Am. Chem. Soc.* **1998**, *120*, 2599-2605.
99. "Probing the Iron Environment in Desulforedoxin. EXAFS of Oxidized and Reduced States" Stålhandske, C. M. V.; Dong, J.; Tavares, P.; Liu, M.-Y.; LeGall, J.; Moura, J. J. G.; Moura, I.; Park, J.-B.; Adams, M. W. W.; Scott, R. A. *Inorg. Chim. Acta* **1998**, *273*, 409-411. [Invited article]

100. "X-ray Absorption Spectroscopy of the Molybdenum Site of *Escherichia coli* Formate Dehydrogenase" George, G. N.; Colangelo, C. M.; Dong, J.; Scott, R. A.; Khangulov, S. V.; Gladyshev, V. N.; Stadtman, T. C., *J. Am. Chem. Soc* **1998**, *120*, 1267-1273.
101. "Monitoring Protein Expression in Whole Bacterial Cells with MALDI Time-of-Flight Mass Spectrometry" Easterling, M. L.; Colangelo, C. M.; Scott, R. A.; Amster, I. J. *Anal. Chem.* **1998**, *70*, 2704-2709.
102. "Spectroscopic Characterization of Metal Binding by *Klebsiella aerogenes* UreE Urease Accessory Protein" Colpas, G. J.; Brayman, T. G.; McCracken, J.; Pressler, M. A.; Babcock, G. T.; Ming, L.-J.; Colangelo, C. M.; Scott, R. A.; Hausinger, R. P. *JBIC* **1998**, *3*, 150-160.
103. "Solution Structure of Reduced *Clostridium pasteurianum* Rubredoxin" Bertini, I.; Kurtz, D. M., Jr.; Eidsness, M. K.; Liu, G.; Luchinat, C.; Rosato, A.; Scott, R. A. *JBIC* **1998**, *3*, 401-410.
104. "Spectroscopic, Redox, and Structural Characterization of the Ni-Labile and Nonlabile Forms of the Acetyl-CoA Synthase Active Site of Carbon Monoxide Dehydrogenase" Russell, W. K.; Stålhandske, C. M. V.; Xia, J.; Scott, R. A.; Lindahl, P. A. *J. Am. Chem. Soc* **1998**, *120*, 7502-7510.
105. "Crystal structure of rubredoxin from *Pyrococcus furiosus* at 0.95 Å resolution, and the structures of N-terminal methionine and formylmethionine variants of Pf Rd. Contributions of N-terminal interactions to thermostability" Bau, R.; Rees, D. C.; Kurtz, D. M., Jr.; Scott, R. A.; Huang, H.; Adams, M. W. W.; Eidsness, M. K. *JBIC* **1998**, *3*, 484-493.
106. "Investigation of Iron-Sulfur Covalency in Rubredoxins and a Model System Using Sulfur K-edge X-ray Absorption Spectroscopy" Rose, K.; Shadle, S. E.; Eidsness, M. K.; Kurtz, D. M., Jr.; Scott, R. A.; Hedman, B.; Hodgson, K. O.; Solomon, E. I. *J. Am. Chem. Soc.* **1998**, *120*, 10743-10747.
107. "Pressure-Controlled Voltammetry of a Redox Protein: An Experimental Approach to Probing the Internal Protein Dielectric Constant?" Gilles de Pelichy, L. D.; Eidsness, M. K.; Kurtz, D. M., Jr.; Scott, R. A.; Smith, E. T. *Current Separations* **1998**, *17*, 79-82.
108. "X-Ray Absorption Spectroscopy", Scott, R. A. In *Physical Methods in Inorganic and Bioinorganic Chemistry*; Que, L., Ed.; University Science Press: Menlo Park, 2000. [Invited chapter]
109. "The Core Metal-Recognition Domain of MerR" Zeng, Q.; Stålhandske, C. M. V.; Anderson, M. C.; Scott, R. A.; Summers, A. O. *Biochemistry* **1998**, *37*, 15885-15895.
110. "X-Ray Absorption Spectroscopic Analysis of Fe(II) and Cu(II) Forms of a Herbicide-Degrading α-Ketoglutarate Dioxygenase" Cosper, N. J.; Stålhandske, C. M. V.; Saari, R. E.; Hausinger, R. P.; Scott, R. A. *JBIC* **1999**, *4*, 122-129.
111. "*In Situ* Determination of the Active Catalyst in Hydrosilylation Reactions Using Highly Reactive Pt(0) Catalyst Precursors" Stein, J.; Lewis, L. N.; Gao, Y.; Scott, R. A. *J. Am. Chem. Soc.* **1999**, *121*, 3693-3703.
112. "Cu XAS Shows a Change in the Ligation of $Cu_B$ Upon Reduction of Cytochrome $bo_3$ from *Escherichia coli*" Osborne, J. P.; Cosper, N. J.; Stålhandske, C. M. V.; Scott, R. A.; Alben, J. O.; Gennis, R. B. *Biochemistry* **1999**, *38*, 4526-4532.
113. "Kinetic and Spectroscopic Characterization of the Gamma Carbonic Anhydrase from the Methanoarchaeon *Methanosarcina thermophila*" Alber, B. E.; Colangelo, C. M.; Dong, J.; Stålhandske, C. M. V.; Baird, T. T.; Tu, C.; Fierke, C. A.; Silverman, D. N.; Scott, R. A.; Ferry, J. G. *Biochemistry* **1999**, *38*, 13119-13128.
114. "Characterization of Metal-Substituted *Klebsiella aerogenes* Urease" Yamaguchi, K.; Cosper, N. J.; Stålhandske, C. M. V.; Scott, R. A.; Pearson, M. A.; Karplus, P. A.; Hausinger, R. P. *JBIC* **1999**, *4*, 468-477.
115. "Structural Conservation of the Isolated Zinc Site in Archaeal Zinc-containing Ferredoxins as Revealed by X-ray Absorption Spectroscopic Analysis and Its Evolutionary Implications" Cosper, N. J.; Stålhandske, C. M. V.; Iwasaki, H.; Oshima, T.; Scott, R. A.; Iwasaki, T. *J. Biol. Chem.* **1999**, *274*, 23160-23168.
116. "Modulation of the Redox Potential of the $Fe(SCys)_4$ Site in Rubredoxin by the Orientation of a Peptide Dipole" Eidsness, M. K.; Burden, A. E.; Richie, K. A.; Kurtz, Jr., D. M.; Scott, R. A.; Smith, E. T.; Ichiye, T.; Beard, B.; Min, T.; Kang, C. *Biochemistry* **1999**, *38*, 14803-14809.
117. "Spectroscopic Investigation of Selective Cluster Conversion of Archaeal Zinc-containing Ferredoxin from *Sulfolobus* sp. Strain 7" Iwasaki, T.; Watanabe, E.; Ohmori, D.; Imai, T.; Urushiyama, A.; Akiyama, M.; Hayashi-Iwasaki, Y.; Cosper, N. J.; Scott, R. A. *J. Biol. Chem.*

**2000**, *275*, 25391-25401.

118. "Structural Evidence for a Common Zinc Binding Domain in Archaeal and Eukaryal Transcription Factor IIB Proteins" Colangelo, C. M.; Lewis, L. M.; Cosper, N. J.; Scott, R. A. *JBIC* **2000**, *5*, 276-283.
119. "Structure of a ($Cys_3His$) Zinc Ribbon, a Ubiquitous Motif in Archaeal and Eucaryal Transcription" Chen, H.-T.; Legault, P.; Glushka, J.; Omichinski, J. G.; Scott, R. A. *Prot. Sci.* **2000**, *9*, 1743-1752.
120. "Structural and Kinetic Characterization of an archaeal beta-class Carbonic Anhydrase" Smith, K. S.; Cosper, N. J.; Stålhandske, C. M. V.; Scott, R. A.; Ferry, J. G. *J. Bacteriol.* **2000**, *182*, 6605-6613.
121. "Mutations in *catB*, the Gene Encoding Muconate Cycloisomerase, Activate Transcription of the Distal *ben* Genes and Contribute to a Complex Regulatory Circuit in *Acinetobacter* sp. ADP1" Cosper, N. J.; Collier, L. S.; Clark, T. J.; Scott, R. A.; Neidle, E. L. *J. Bacteriol.* **2000**, *182*, 7044-7052.
122. "The Zinc Metalloregulatory Protein *Synechococcus* PCC7942 SmtB Binds a Single Zinc Ion per Monomer with High Affinity in a Tetrahedral Coordination Geometry" VanZile, M. L.; Cosper, N. J.; Scott, R. A.; Giedroc, D. P. *Biochemistry* **2000**, *39*, 11818-11829.
123. "Direct Fe-S Cluster Involvement in Generation of a Radical in Lysine 2,3-Aminomutase" Cosper, N. J.; Booker, S. J.; Ruzicka, F.; Frey, P. A.; Scott, R. A. *Biochemistry* **2000**, *39*, 15668-15673.
124. "Expression, Purification and Characterization of NosL, a Novel Cu(I) Protein of the Nitrous Oxide Reductase (*nos*) Gene Cluster" McGuirl, M. A.; Bollinger, J. A.; Cosper, N. J.; Scott, R. A.; Dooley, D. M. *JBIC* **2001**, *6*, 189-195.
125. "X-ray Absorption Spectroscopic Analysis of the High-Spin Ferriheme Site in Substrate-Bound Neuronal Nitric-Oxide Synthase" Cosper, N. J.; Scott, R. A.; Hori, H.; Nishino, T.; Iwasaki, T. *J. Biochem.* **2001**, *130*, 191-198.
126. "Spectroscopic Properties of the Metalloregulatory Cd(II) and Pb(II) Sites of *S. aureus* pI258 CadC" Busenlehner, L. S.; Cosper, N. J.; Scott, R. A.; Rosen, B. P.; Wong, M. D.; Giedroc, D. P. *Biochemistry* **2001**, *40*, 4426-4436.
127. "Structural Evidence that the Methionyl Aminopeptidase from *Escherichia coli* Is a Mononuclear Metalloprotease" Cosper, N. J.; D'souza, V. M.; Scott, R. A.; Holz, R. C. *Biochemistry* **2001**, *40*, 13302-13309.
128. "Thermal stability of the [$Fe(SCys)_4$] site in *Clostridium pasteurianum* rubredoxin: contributions of the local environment and Cys ligand protonation" Bonomi, F.; Burden, A. E.; Eidsness, M. K.; Fessas, D.; Iametti, S.; Kurtz Jr., D. M.; Mazzini, S.; Scott, R. A.; Zeng, Q. *J. Biol. Inorg. Chem.* **2002**, *7*, 427-436.
129. "Redox-dependent Structural Changes in Archaeal and Bacterial Rieske-type [2Fe-2S] Clusters" Cosper, N. J.; Eby, D. M.; Kounosu, A.; Kurosawa, N.; Neidle, E. L.; Kurtz, Jr., D. M.; Iwasaki, T.; Scott, R. A. *Protein Science* **2002**, *11*, 2969-2973.
130. "Novel [2Fe-2S]-type Redox Center C in SdhC of Archaeal Respiratory Complex II from *Sulfolobus tokodaii* Strain 7" Iwasaki, T.; Kounosu, A.; Aoshima, M.; Ohmori, D.; Imai, T.; Urushiyama, A.; Cosper, N. J.; Scott, R. A. *J. Biol. Chem.* **2002**, *277*, 39642-39648.
131. "Kinetic and Structural Characterization of Manganese(II)-Loaded Methionyl Aminopeptidases" D'Souza, V. M.; Swierczek, S. I.; Cosper, N. J.; Meng, L.; Ruebush, S.; Copik, A. J.; Scott, R. A.; Holz, R. C. *Biochemistry* **2002**, *41*, 13096-13105.
132. "Coordination and Geometry of the Nickel Atom in Active Methyl-coenzyme M Reductase from *Methanothermobacter marburgensis* as Detected by X-ray Absorption Spectroscopy" Duin, E. C.; Cosper, N. J.; Mahlert, F.; Thauer, R. K.; Scott, R. A. *J. Biol. Inorg. Chem.* **2003**, *8*, 141-148.
133. "Structural elements of metal selectivity in metal sensor proteins" Pennella, M. A.; Shokes, J. E.; Cosper, N. J.; Scott, R. A.; Giedroc, D. P. *Proc. Natl. Acad. Sci. USA* **2003**, *100*, 3713-3718. [invited article]
134. "Structural studies of the interaction of *S*-adenosylmethionine with the [4Fe-4S] clusters in biotin synthase and pyruvate formate-lyase activating enzyme" Cosper, M. M.; Cosper, N. J.; Hong, W.; Shokes, J. E.; Broderick, W. E.; Broderick, J. B.; Johnson, M. K.; Scott, R. A. *Protein Science* **2003**, *12*, 1573-1577.
135. "The *dap*E-encoded N-succinyl-L,L-diaminopimelic Acid Desuccinylase from *Haemophilus influenzae* is a Dinuclear Metallohydrolase" Cosper, N. J.; Bienvenue, D. L.; Shokes, J. E.; Gilner, D. M.; Tsukamoto, T.; Scott, R. A.; Holz, R. C., *J. Am. Chem. Soc.* **2003**, *125*, 14654-14655.

136. "X-ray Absorption Spectroscopic Analysis of Reductive [2Fe-2S] Cluster Degradation in Hyperthermophilic Archaeal Succinate:Caldariellaquinone Oxidoreductase Subunits" Li, Z.; Shokes, J. E.; Kounosu, A.; Imai, T.; Iwasaki, T.; Scott, R. A. *Biochemistry* **2003**, *42*, 15003-15008.
137. "Engineered single chain, antiparallel, coiled coil mimics the MerR metal binding site" Song, L.; Caguiat, J.; Li, Z.; Shokes, J. E.; Scott, R. A.; Olliff, L.; Summers, A. O. *J. Bacteriol.* **2004**, *186*, 1861-1868.
138. "Engineering a Three-cysteine, One-histidine Ligand Environment into a New Hyperthermophilic Archaeal Rieske-type [2Fe-2S] Ferredoxin from *Sulfolobus solfataricus*" Kounosu, A.; Li, Z.; Cosper, N. J.; Shokes, J. E.; Scott, R. A.; Imai, T.; Urushiyama, A.; Iwasaki, T. *J. Biol. Chem.* **2004**, *279*, 12519-12528.
139. "Spectroscopic Determination of the Thermodynamics of Cobalt and Zinc Binding to GATA Proteins" Ghering, A. B.; Shokes, J. E.; Scott, R. A.; Omichinski, J. G.; Godwin, H. A. *Biochemistry* **2004**, *43*, 8346-8355.
140. "Transcription Factor B Contacts Promoter DNA Near the Transcription Start Site of the Archaeal Transcription Initiation Complex" Renfrow, M. B.; Naryshkin, N.; Lewis, L. M.; Chen, H.-T.; Ebright, R. H.; Scott, R. A. *J. Biol. Chem.* **2004**, *279*, 2825-2831.
141. "A Stable Mercury-Containing Complex of the Organomercurial Lyase MerB: Catalysis, Product Release, and Direct Transfer to MerA" Benison, G. C.; Di Lello, P.; Shokes, J. E.; Cosper, N. J.; Scott, R. A.; Legault, P.; Omichinski, J. G. *Biochemistry* **2004**, *43*, 8333-8345.
142. "Rational Design of a Mononuclear Metal Site into the Archaeal Rieske-type Protein Scaffold" Iwasaki, T.; Kounosu, A.; Tao, Y.; Li, Z.; Shokes, J. E.; Cosper, N. J.; Imai, T.; Urushiyama, A.; Scott, R. A. *J. Biol. Chem.* **2005**, *280*, 9129-9134.
143. "Bottlenecks and Roadblocks in High-Throughput XAS for Structural Genomics" Scott, R. A.; Shokes, J. E.; Cosper, N. J.; Jenney, F. E.; Adams, M. W. W. *J. Synchrotron Radiation* **2005**, *12*, 19-22. [invited article]
144. "Direct Interaction of Coenzyme M with the Active-site Fe-S Cluster of Heterodisulfide Reductase" Shokes, J. E.; Duin, E. C.; Bauer, C.; Jaun, B.; Hedderich, R.; Koch, J.; Scott, R. A. *FEBS Lett.* **2005**, *579*, 1741-1744.
145. "Structural Basis for Metal Binding Specificity: The N-Terminal Cadmium Binding Domain of the P1-Type ATPase CadA" Banci, L.; Bertini, I.; Ciofi-Baffoni, S.; Su, X.-C.; Miras, R.; Bal, N.; Mintz, E.; Catty, P.; Shokes, J. E.; Scott, R. A., *J. Mol. Biol.* **2006**, *356*, 638-650. [NIHMSID: 432093] [PMID: 16388822] [PMC3562998]
146. "Modulating Amyloid Self-assembly and Fibril Morphology with $Zn^{2+}$" Dong, J.; Shokes, J. E.; Scott, R. A.; Lynn, D. G. *J. Am. Chem. Soc.* **2006**, *128*, 3540-3542. [NIHMSID: 432094] [PMID: 16536526] [PMC3555692]
147. "EXAFS structure refinement supplemented by computational chemistry" Hsiao, Y.-W.; Tao, Y.; Shokes, J. E.; Scott, R. A.; Ryde, U. *Phys. Rev. B* **2006**, *74*, 214101-1 to -17.
148. "XAFS Studies of Transition Metal and Halogen Biomaterials in Invertebrate Tools" Tao, Y.; Shokes, J. E.; Scott, R. A.; Nesson, M. H.; Schofield, R. M. S. *AIP Conference Proceedings* **2007**, *882*, 352-354.
149. "Engineering Metal Ion Coordination to Regulate Amyloid Fibril Assembly and Toxicity" Dong, J.; Canfield, J. M.; Mehta, A. K.; Shokes, J. E.; Tian, B.; Childers, W. S.; Simmons, J. A.; Mao, Z.; Scott, R. A.; Warncke, K.; Lynn, D. G. *Proc. Natl. Acad. Sci. USA* **2007**, *104*, 13313-13318. [PMC1948904]
150. "Multiple metal binding domains enhance the Zn(II) selectivity of the divalent metal ion transporter AztA" Liu, T.; Reyes-Caballero, H.; Li, C.; Scott, R. A.; Giedroc, D. P. *Biochemistry* **2007**, *46*, 11057-11068. [NIHMSID: 432095] [PMID: 17824670] [PMC3561713]
151. "A Cysteine-Rich CCG Domain Contains a Novel [4Fe-4S] Cluster Binding Motif as Deduced from Studies with Subunit B of Heterodisulfide Reductase from *Methanothermobacter marburgensis*" Hamann, N.; Mander, G. J.; Shokes, J. E.; Scott, R. A.; Bennati, M.; Hedderich, R. *Biochemistry* **2007**, *46*, 12875-12885. [NIHMSID: 432096] [PMID: 17929940] [PMC3543786]
152. "A $Cu^{I}$-sensing ArsR Family Metal Sensor Protein with a Relaxed Metal Selectivity Profile" Liu, T.; Chen, X.; Ma, Z.; Shokes, J. E.; Hemmingsen, L.; Scott, R. A.; Giedroc, D. P., *Biochemistry* **2008**, *47*, 10564-10575. [PMC2599807]
153. "SurR: A Transcriptional Activator and Repressor Controlling Hydrogen and Elemental Sulfur

Metabolism in *Pyrococcus furiosus*" Lipscomb, G. L.; Keese, A.; Cowart, D. M.; Schut, G.; Thomm, M.; Adams, M. W. W.; Scott, R. A. *Molec. Microbiol.* **2009**, *71*, 332-349. [PMC2745277]

154. "The CCG Domain-containing Subunit SdhE of Succinate:quinone Oxidoreductase from *Sulfolobus solfataricus* P2 Binds a [4Fe-4S] Cluster" Hamann, N.; Bill, E.; Shokes, J. E.; Scott, R. A.; Bennati, M.; Hedderich, R., *J. Biol. Inorg. Chem.* **2009**, *14*, 457-470. [PMC2754724]
155. "Auranofin Disrupts Selenium Metabolism in *Clostridium difficile*: A Novel Target for Antimicrobial Development" Jackson-Rosario, S.; Cowart, D. M.; Myers, A.; Tarrien, R.; Levine, R. L.; Scott, R. A.; Self W. T., *J. Biol. Inorg. Chem.* **2009**, *14*, 507-519. [PMC2672108]
156. "Br-rich tips of calcified crab claws are less hard but more fracture resistant: A comparison of mineralized and heavy-element biological materials" Schofield, R. M. S.; Niedbala, J. C.; Nesson, M. H.; Tao, Y.; Shokes, J. E.; Scott, R. A.; Latimer, M. J., *J. Struct. Biol.* **2009**, *166*, 272-287. [DOI: 10.1016/j.jsb.2009.01.007] [PMC2778496]
157. "Molecular insights into the metal selectivity of the Cu(I)-sensing repressor CsoR from *Bacillus subtilis*" Ma, Z.; Cowart, D. M.; Scott, R. A.; Giedroc, D. P. *Biochemistry* **2009**, *48*, 3325-3334. [PMC2728441]
158. "Molecular Structure of the HCCH-Zinc Site in HIV-1 Vif and the Role of Zinc Binding in Stabilizing the Vif-Cullin-5 Interface" Giri, K.; Scott, R. A.; Maynard, E. L., *Biochemistry* **2009**, *48*, 7969-7978. [PMC2729716]
159. "Biophysical Characterization of the Iron in Mitochondria from Atm1p-depleted *Saccharomyces cerevisiae*" Miao, R.; Kim, H.; Koppolu, U. M. K.; Ellis, E. A.; Lill, R.; Scott, R. A.; Lindahl, P. A., *Biochemistry* **2009**, *48*, 9556-9568. [PMC2758324]
160. "Unnatural amino acid substitution as a probe of the allosteric coupling pathway in a mycobacterial Cu(I)-sensor" Ma, Z.; Cowart, D. M.; Ward, B. P.; Arnold, R. J.; DiMarchi, R. D.; Zhang, L.; George, G. N.; Scott, R. A.; Giedroc, D. P., *J. Am. Chem. Soc.* **2009**, *131*, 18044-18045. [PMC2797707]
161. "SurR regulates hydrogen production in *Pyrococcus furiosus* by a sulfur-dependent redox switch" Yang, H; Lipscomb, G. L.; Keese, A. M.; Schut, G. J.; Thomm, M.; Adams, M. W. W.; Wang, B. C.; Scott, R. A., *Molec. Microbiol.* **2010**, *77*, 1111-1122. [PMC2975895]
162. "The metalloregulatory zinc site in *Streptococcus pneumoniae* AdcR, a zinc-activated MarR-family repressor" Reyes-Caballero, H.; Guerra, A. J.; Jacobsen, F. E.; Kazmierczak, K. M.; Cowart, D. M.; Koppolu, U. M. K.; Scott, R. A.; Winkler, M. E.; Giedroc, D. P., *J. Mol. Biol.* **2010**, *403*, 197-216. [PMC2949468]
163. "Natural competence in the hyperthermophilic archaeon *Pyrococcus furiosus* facilitates genetic manipulation: construction of markerless deletions of genes encoding the two cytoplasmic hydrogenases" Lipscomb, G. L.; Stirrett, K.; Schut, G. J.; Yang, F.; Jenney, F. E., Jr.; Scott, R. A.; Adams, M. W. W.; Westpheling, J., *Applied and Environmental Microbiology* **2011**, *77*, 2232-2238. [PMC3067412]
164. "Control of copper resistance and inorganic sulfur metabolism by paralogous regulators in *Staphylococcus aureus*" Grossoehme, N.; Kehl-Fie, T. E.; Ma, Z.; Adams, K. W.; Cowart, D. M.; Scott, R. A.; Skaar, E. P.; Giedroc, D. P., *J. Biol. Chem.* **2011**, *286*, 13522-13531. [PMC3075698]
165. "Dipeptide-Based Models of Nickel Superoxide Dismutase: Solvent Effects Highlight a Critical Role to Ni–S Bonding and Active Site Stabilization" Gale, E. M.; Cowart, D. M.; Scott, R. A.; Harrop, T. C., *Inorg. Chem.* **2011**, *50*, 10460-10471. [NIHMSID: 432097] [PMID: 21932766] [PMC3561719]
166. "Deletion Strains Reveal Metabolic Roles for Key Elemental Sulfur-Responsive Proteins in *Pyrococcus furiosus*" Bridger, S.; Clarkson, S.; Stirrett, K.; DeBarry, M.; Lipscomb, G.; Schut, G.; Westpheling, J.; Scott, R. A.; Adams, M. W. W., *J. Bacteriol.* **2011**, *193*, 6498-6504. [PMC3232869]
167. "Structural characterization of Zn(II)-, Co(II)-, and Mn(II)-loaded forms of the *argE*-encoded N-acetyl-L-ornithine deacetylase from *Escherichia coli*" Tao, Y.; Shokes, J. E.; McGregor, W. C.; Scott, R. A.; Holz, R. C., *J. Inorg. Biochem.* **2012**, *111*, 157-163. [NIHMSID: 432098] [PMID: 22459917] [PMC3543689]
168. "Mutational analyses of the enzymes involved in the metabolism of hydrogen by the hyperthermophilic archaeon Pyrococcus furiosus" Schut, G. J.; Nixon, W. J.; Lipscomb, G. L.; Scott, R. A.; Adams, M. W. W., *Frontiers in Evolutionary and Genomic Microbiology*, **2012**, *3*, 163. [PMC3341082]

169. "Recombinogenic Properties of *Pyrococcus furiosus* Strain COM1 Enable Rapid Selection of Targeted Mutants" Farkas, J.; Stirrett, K.; Lipscomb, G.; Nixon, W.; Scott, R. A.; Adams, M. W. W.; Westpheling, J., *Applied and Environmental Microbiology*, **2012**, *78*, 4669-4676. [PMID: 22544252]
170. "Mechanism of Oxygen Detoxification by the Surprisingly Oxygen-Tolerant Hyperthermophilic Archaeon, *Pyrococcus furiosus*" Thorgersen, M. P.; Stirrett, K. L.; Scott, R. A.; Adams, M. W. W., *Proc. Natl. Acad. Sci. USA*, **2012**, *109*, 18547-18552. [PMC3494905]
171. "Regulation of Iron Metabolism by *Pyrococcus furiosus*" Zhu, Y.; Kumar, S.; Menon, A. L.; Scott, R. A.; Adams, M. W. W., *Journal of Bacteriology*, **2013**, *195*(10), 2400-2407. doi: 10.1128/JB.02280-12
172. "Organic and inorganic mercurials have distinct effects on cellular thiols, metal homeostasis, and Fe-binding proteins in *Escherichia coli*". LaVoie, S. P.; Mapolelo, D. T.; Cowart, D. M.; Polacco, B. J.; Johnson, M. K.; Scott, R. A.; . . . Summers, A. O., *Journal Of Biological Inorganic Chemistry*, **2015**, *20*(8), 1239-1251. doi:10.1007/s00775-015-1303-1

**Theses, Dissertations Directed**

"Electron Transfer Reactions of Cytochrome *c*", Schwartz, James R., Ph.D., University of Illinois at Urbana-Champaign, 1987.

"Covalent Attachment of Coordinatively-Saturated Metal Complexes to Horse Cytochrome *c* Lysines", Wallin, Sten A., Ph.D., University of Illinois at Urbana-Champaign, 1988.

"The $F_{430}$ Cofactor of Methyl Coenzyme M Reductase: Ligand Binding to the Nickel and Chemical Modification of the Tetrapyrrole Substituents", Hamilton, C. L., Ph.D., University of Illinois at Urbana-Champaign, 1989.

"Long-Range Intramolecular Electron Transfer in Cobalt-Labeled Cytochrome *c*", Conrad, D. W., Ph.D., University of Illinois at Urbana-Champaign, 1990.

"The Structure and Reactivity of Metallohydroporphyrins", Kaplan, W. A., Ph.D., University of Illinois at Urbana-Champaign, 1990.

"Semisynthetic Cytochrome *c* Site-67 Substitutions", Frauenhoff, M. M., Ph.D., University of Illinois at Urbana-Champaign, 1991.

"Spectroscopic Characterization of Nickel-Containing $F_{430}$ and S-Methyl Coenzyme M Reductase", Ma, L., Ph.D., University of Georgia, 1993.

"Thermostability Comparison of Rubredoxin from *Clostridium pasteurianum* and *Pyrococcus furiosus* by Site Directed Mutagenesis", Elkin, Christopher J., M.S., University of Georgia, 1995.

"Preparation of Ruthenium-Modified *Clostridium pasteurianum* Rubredoxin Derivatives", Chan, M. L., Ph.D., University of Georgia, 1995.

"Protein Folding Simulation and Structure and Function of Methylreductase", Zhang, H., Ph.D., University of Georgia, 1995.

"Cloning, Expression, and Structural Characterization of the N-Terminal "Zinc Ribbon" Domain of Transcription Factor B from Various Archaea", Colangelo, Christopher M., Ph.D., University of Georgia, 2000.

"Structural Study of Eucaryal and Archaeal Transcription Factors TF(II)B", Chen, Hung-Ta, Ph.D., University of Georgia, 2000.

"Structural and Functional Characterization of the Transcription Preinitiation Complex from *Pyrococcus furiosus*", Lewis, L. Michelle, Ph.D., University of Georgia, 2000.

"Metals in Medicine and Nature: Function and Form", Cosper, Nathaniel J., Ph.D., University of Georgia, 2002.

"Analysis of Protein-DNA Interactions within the Transcription Preinitiation Complex of *Pyrococcus furiosus*", Renfrow, Matthew B., Ph.D., University of Georgia, 2002.

"The Fishing Expedition: Searching for Unidentified Archaeal Transcription Factors", Chen, Yu, M.S., University of Georgia, 2003.

"X-Ray Absorption Spectroscopic Analysis of Metal-Containing Proteins and Peptides", Shokes, Jacob E., Ph.D., University of Georgia, 2006.

"Discovery of New Transcription Factors in *Pyrococcus furiosus* with DNA-Affinity Protein Capture and Mass Spectrometry", Wang, Meiyao, Ph.D., University of Georgia, 2006.

"Discovery of New Regulatory Transcription Factors in *Pyrococcus furiosus* in Metal Stress and Cold Shock", Yuan, Guanqun, M.S., University of Georgia, 2007.

"Reconstitution of *Pyrococcus furiosus* RNA polymerase and identification of potential transcriptional regulators responding to iron deprivation in *Pyrococcus furiosus*", Murugesan, Minnie, Ph.D., University of Georgia, 2007.

"A Novel Redox-Sensitive Transcriptional Regulator Involved in *Pyrococcus furiosus* Sulfur Response", Lipscomb, Gina L., Ph.D., University of Georgia, 2007.

"A Novel Transcriptional Regulator Involved in *Pyrococcus furiosus* Cold Shock Response", Li, Xin, Ph.D., University of Georgia, 2008.

"Identification and Characterization of a New Transcription Factor Involved in *Pyrococcus furiosus* Response to Oxidative Stress", Hong, Sungguan, Ph.D., University of Georgia, 2008.

"Discovery of a Potential Regulatory Transcription Factor Upon Redox Alterations in *Shewanella oneidensis* MR-1", Huang, Xiayu, Ph.D., University of Georgia, 2008.

"Transcription Factor Binding Site Detection and Comparative Modeling as Discovery Approaches in *Pyrococcus*", Cowart, Darin M., Ph.D., University of Georgia, 2009.

"Characterization of Iron-Responsive Transcription Regulators in *Pyrococcus furiosus*", Zhu, Yixuan, Ph.D., University of Georgia, 2011.