

Brian R. Gibney

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Appointments Executive Officer, City University of New York PhD Program in Chemistry
The Graduate Center **July 1, 2014**
Associate Professor of Chemistry Brooklyn College **September 1, 2008**
Associate Professor of Chemistry Columbia University **July 1, 2005**
Assistant Professor of Chemistry Columbia University **July 1, 2000**

EDUCATION

Education **NIH Postdoctoral Fellow** **1995-2000**
University of Pennsylvania, Johnson Research Foundation, Philadelphia, PA
Advisor: Prof. P. Leslie Dutton
Topic: Design and Structural Characterization of Redox Protein
Maquettes; Spectroscopic studies of cytochrome *bc*₁ complex

Ph.D., Chemistry **December 1994**
University of Michigan, Ann Arbor, MI
Advisor: Prof. Vincent L. Pecoraro
Dissertation Title: 12-Metallacrown-4: A Structural and Functional
Inorganic Analogue of 12-Crown-4.

B.S., Chemistry (Honors, ACS certified) **April 1990**
The Florida State University, Tallahassee, FL

Honors and Affiliations Stanley C. Israel Regional Award for Advancing Diversity in the
Chemical Sciences (2017, CUNY PhD Program in Chemistry)
Deputy Executive Officer, CUNY Ph.D. Program in Chemistry (2011- 2014)
Jacques Edward Levy Professor of Analytical Chemistry (2010-2011, 2013-2016)
Paul Saltman Lecturer (2007)
Camille Dreyfus Teacher-Scholar (2005-2010)
Johnson Research Foundation Fellow (2001)
Young Bioenergeticist Award, Biophysical Society (1997)
Individual National Research Service Award, NIH (1995-1997)
Smeaton Research Fellowship (1993)
Baer Teaching Fellowship (1990)

American Chemical Society
Member of the Joint Board - Council *Committee on Science*
Division of Inorganic Chemistry
New York Local Section
Graduate, ACS Leadership Development System

SCHOLARSHIP

Invited Lectures

External Invited Lectures: Conferences

Inorganic and Organometallic Symposium, New York ACS 10/2017
German Center for Research and Innovation, 1/2017
Middle Atlantic Regional Meeting of the ACS, 6/2016
251st Annual Meeting of the American Chemical Society, 3/2016
New York Nanoscience Discussion Group, 2/2015
European Union PEPDIODE Project Annual Meeting, 5/2014
German Center for Research and Innovation, 3/2014
European Union PEPDIODE Project Annual Meeting, 11/2013
European Union PEPDIODE Project Annual Meeting, 10/2012
European Union PEPDIODE Project Kick-off Meeting, 10/2011
Protein Design Mega Meeting at City College of New York, 5/2010
Trace-Elements in Man and Animals – TEMA 13, 10/2008
Mid-Atlantic Regional Meeting, 5/2008
2nd Latin American Protein Society Meeting, 11/2007
Boston Regional Inorganic Conference, 7/2007
Gordon Research Conference, Metals in Biology, 1/2007
Metalloprotein and Protein Design, 7/2005
New York Academy of Science Inorganic Minisymposium, 12/2004
Northeast Regional Meeting of the American Chemical Society, 11/2004
Chairmen of the European Research Council's Chemistry Committees (CERC3) Young Chemist's Workshop on Biocatalysis, 3/2004
11th International Conference on Bioinorganic Chemistry, ICBIC 11, 7/2003
DARPA Workshop on Protein Folding and Design, 10/2002
Graduate Research Seminar on Metals in Biology, 1/2002
12th International Congress on Photosynthesis (Photosynthesis 2001), 8/2001
National Science Foundation Inorganic Workshop, 4/2002
221st Annual Meeting of the American Chemical Society, 4/2001

Invited Talks at Colleges/Universities

University of Idaho, 10/2017
St. Joseph's College, 22nd Annual High School Poster Session Keynote, 2/2017
St. John's University, Institute for Biotechnology, 9/2015
College of Staten Island, Department of Chemistry, 11/2014
St. John's University, Department of Chemistry 6/2014
City College of New York, Department of Chemistry, 3/2014
Iona College, Department of Chemistry, 10/2013
Hofstra University, Department of Chemistry, 9/2013
Aix-Marseille Universite, Department of Chemistry, 10/2012
Weizmann Institute of Science, Plant Sciences Department, 10/2011
University of Nevada – Reno, Department of Chemistry, 10/2011
City University of New York, Graduate Center, 6/2011
Long Island University, Department of Biology, 4/2010
State University of New York – Potsdam, Department of Chemistry 9/2009
St. Lawrence University, Department of Chemistry, 9/2009
Yeshiva University, Department of Chemistry, 4/2009
St. John's University, Department of Chemistry, 3/2009

University of Western Ontario, Department of Chemistry, 5/2007
Indiana University, Department of Chemistry, 3/2007
New York University, Department of Chemistry, 11/2006
Pace University, Department of Chemistry, 10/2006
Utah State University, Department of Chemistry, 10/2006
University of Utah, Department of Chemistry, 10/2006
University of Massachusetts, Department of Chemistry, 3/2006
Haverford College, Department of Chemistry, 1/2006
University of Miami (Ohio), Department of Chemistry, 12/2005
Boston University, Department of Chemistry, 11/2005
Massachusetts Institute of Technology, Department of Chemistry, 10/2005
University of Illinois, Department of Chemistry, 9/2005
Cornell University, Department of Chemistry, 9/2005
University of California – Davis, Department of Chemistry, 5/2009
University of California – Santa Cruz, Department of Chemistry, 5/2005
Stanford University, Department of Chemistry, 5/2005
Columbia University, Department of Chemistry, 4/2005
Iowa State University, Department of Chemistry, 4/2005
University of Iowa, Department of Chemistry, 4/2005
Purdue University, Department of Chemistry 3/2005
University of Pennsylvania, Department of Chemistry, 2/2005
University of Delaware, Department of Chemistry, 12/2004
Wayne State University, Department of Chemistry, 11/2004
University of Michigan, Department of Chemistry, 11/2004
Michigan State University, Department of Chemistry, 11/2004
Ohio State University, Department of Chemistry, 10/2004
University of Cincinnati, Department of Chemistry, 10/2004
Tufts University, Department of Chemistry, 4/2004
University of Kansas, Department of Chemistry, 4/2004
Max Plank Institute for Bioinorganic Chemistry, 3/2004
North Dakota State University, Department of Chemistry, 12/2003
St. John's University, Department of Chemistry, 10/2003
City College of New York, Department of Chemistry, 10/2003
Stockholm University, Department of Biochemistry and Biophysics, 4/2003
Barnard College, Department of Chemistry, 3/2002
University of Nebraska, Department of Chemistry, 9/2002
Scripps Research Institute, Department of Biochemistry and Molecular Biophysics,
5/2002
Hunter College, Department of Chemistry, 9/2001
Texas A&M University, Department of Chemistry, 4/2001
Memorial Sloan-Kettering Cancer Center, Department of Biochemistry and Biophysics,
10/2000
Columbia University, Department of Biochemistry and Biophysics, 9/2000

Publications (75 publications, *h* index: 34, 3152 total citations)

Gibney, B.R. "Equilibrium Studies of Designed Metalloproteins", *Methods in Enzymology, Peptide, Protein and Enzyme Design*, Pecoraro, V.L. Ed, **2016**, vol. 580, 417-438.

Aussignargues, C.; Pandelia, M.-E.; Sutter, M.; Plegaria, J.S.; Zarzycki, J.; Turmo, A.; Huang, J.; Ducat, D.C.; Hegg, E.L.; Gibney, B.R.; Kerfeld, C.A. "Structure and Function

- of a Baterial Microcompartment Shell Protein Engineered to bind a [4Fe-4S] Cluster", *J. Am. Chem. Soc.* **2016**, 138, 5262-5270. (Issue Cover, Spotlight, ACS Editors Choice)
- Reddi, A.R.; Pawlowska, M.; Gibney, B.R.; "Evaluation of the Intrinsic Zn(II) Affinity of a Cys.His₂ Site in the Absence of Protein Folding Effects", *Inorg. Chem.*, **2015**, 54, 5942-5948.
- Chan, K.L.; Bakman, I.; Marts, A.R.; Batir, Y.; Dowd, T.L.; Tierney, D.L.; Gibney, B.R.; "Characterization of the Zn(II) Binding Properties of the Wilms' Tumor Suppressor Protein C-terminal Zinc Finger Peptide", *Inorg. Chem.*, **2014**, 53, 6309-6320.
- Gibney, B.R. "Heme" Encyclopedia of Biophysics, Gordon Roberts, Ed. Springer, **2013**.
- Gibney, B.R. "Metallopeptides as Tools to Understand Metalloprotein Folding and Stability", in Protein Folding and Metal Ions - Mechanisms, Biology and Disease, Gomes, C. and Wittung-Stafshede, P. Eds., Taylor & Francis, London, **2011**, 227-245.
- Deng, B.; Parthasarathy, S.; Wang, W.; Gibney, B.R.; Battaile, K.P.; Lovell, S.; Benson, D.R.; Zhu, H. "Unique Heme Pocket in Human Ncb5or and Structural Basis for Intra-Domain Electron Transfer", *J. Biol. Chem.* **2010**, 285, 30181-30191.
- Westerlund, K.; Moran, S.D.; Privett, H.K.; Hay, S.; Jarvet, J.; Gibney, B.R.; Tommos, C.T. "Making a single-chain four-helix bundle for redox chemistry studies", **Proteins: Engineering, Design and Selection**, **2008**, 21, 645-652.
- Reedy, C.J.; Elvekrog, M.M.; Gibney, B.R. "Development and Analysis of a Heme Protein Structure-Electrochemical Function Database" **Nucleic Acids Research**, **2008**, 36, D307-D313.
- Reddi, A.R.; Guzman, T.; Breece, R.M.; Tierney, D.L.; Gibney, B.R. "Deducing the Energetic Cost of Protein Folding in Zinc Finger Proteins Using Designed Metallopeptides", **J. Am. Chem. Soc.**, **2007**, 129, 12815-12827.
- Thompson, A. M.; Reddi, A.R.; Shi, X.; Goldbeck, R.A.; Moenne-Loccoz, P.; Gibney, B.R.; Holman, T.R. "Characterization of the Role of Heme-binding in the Yeast Protein Dap1p", **Biochemistry**, **2007**, 46, 14629-12637.
- Reddi, A.R.; Gibney, B.R. "The Role of Protons in the Thermodynamic Contribution of a Zn(II)-Cys₄ Site Toward Protein Stability", **Biochemistry**, **2007**, 46, 3745-3758.
- Reddi, A.R.; Reedy, C.J.; Mui, S.; Gibney, B.R. "Thermodynamic Investigation into the Mechanisms of Proton-Coupled Electron Transfer in Heme Protein Maquettes" **Biochemistry**, **2007**, 46, 291-305.
- Gibney, B.R.; Franklin, S.J. "Preface: Forum on Biomolecular Design in Inorganic Chemistry", **Inorg. Chem.**, **2006**, 45, 9927-9929.
- Petros, A.K.; Reddi, A.R.; Kennedy, M.L.; Hyslop, A.G.; Gibney, B.R. "Femtomolar Zn(II) Affinity in a Peptide Ligand Designed to Model Thiolate-Rich Metalloprotein Active Sites", **Inorg. Chem.**, **2006**, 45, 9941-9958.

Riley, E.A.; Petros, A.K.; Smith, K.A.; Gibney, B.R.; Tierney, D.L. "Frequency-Switching Inversion-Recovery: Application to Severely Hyperfine Shifted NMR in aqueous Solution", **Inorg. Chem.**, **2006**, 45, 10016-10018.

Zhuang, J.; Reddi, A.R.; Wang, Z.; Khodaverdian, B.; Hegg, E.L.; Gibney, B.R. "Evaluating the Roles of the Heme *a* Sidechains in Cytochrome *c* Oxidase Using Designed Heme Proteins", **Biochemistry**, **2006**, 45, 12530-12538.

Hong, J.; Kharenko, O.A.; Petros, A.K.; Gibney, B.R.; Ogawa, M.Y. "A Miniature Cu(I) Metalloprotein Displays Unusual Electron-transfer Reactivity: Collisional Electron-transfer in the Inverted Marcus Region", **Angew. Chem. Intl. Ed.**, **2006**, 45, 6137-6140.

Zhuang, J.; Amoroso, J.H.; Kinloch, R.; Dawson, J.H.; Baldwin, M.J.; Gibney, B.R. "Evaluation of electron-withdrawing group effects on heme binding in designed proteins: Implications for heme *a* in cytochrome *c* oxidase", **Inorg. Chem.**, **2006**, 45, 4685-4694.

Yu, B.; Edstrom, W.C.; Benach, J.; Hamuro, Y.; Weber, P.C.; Gibney, B.R.; Hunt, J.F. "Substrate Recognition and Redox Chemistry of AlkB Repair Enzyme Revealed by Crystal Structures", **Nature**, **2006**, 439, 879-884.

Eichenbaum, K.D.; Thomas, A.A.; Eichenbaum, G.M.; Gibney, B.R.; Needham, D.; Kiser, P.F. "Oligo- α -hydroxy Ester Cross-linkers: Impact of Cross-Linker Structure on Biodegradable hydrogel Networks", **Macromolecules**, **2005**, 38, 10757-10762.

Gibney, B.R.; Tommos, C.T. "De novo Protein Design in Respiration and Photosynthesis", **Adv. in Photosynthesis and Respiration**, T. Wydrzynski and K. Satoh, eds., Springer, New York, **2006**, Ch. 22, 729-751.

Zhuang, J.; Amoroso, J.H.; Kinloch, R.; Dawson, J.H.; Baldwin, M.J.; Gibney, B.R. "Design of a Five-coordinate Heme Protein Maquette: A Spectroscopic Model of deoxyMyoglobin", **Inorg. Chem.**, **2004**, 43, 8218-8220.

Petros, A.K.; Shaner, S.E.; Costello, A.L.; Tierney, D.L.; Gibney, B.R. "Comparison of Cysteine and Penicillamine Ligands in a Co(II) Maquette", **Inorg. Chem.**, **2004**, 43, 4793-4795.

Strazalka, J.; Kneller, L.R.; Gibney, B.R.; Satija, S.; Majkrzak, C.F.; Blaise, J.K. "Specular Neutron Reflectivity and the Structure of Artificial Protein Maquettes Vectorally Oriented at Interfaces" **Phys. Rev. E**, **2004**, 70, 061905-01-061905-10.

Reedy, C.J.; Gibney, B.R. "Heme-Protein Assemblies", **Chem. Rev.** **2004**, 101, 617-649.

Kennedy, M.L.; Petros, A.K.; Gibney, B.R. "Cobalt(II) and Zinc(II) Binding to a Ferredoxin Maquette" **J. Inorg. Biochem.**, **2004**, 98, 727-732. (ICBIC 11 Special Issue).

Gibney, B.R. "Ferredoxin and Ferredoxin-Heme Maquettes / Proton Coupling to [4Fe-4S]^{2+/+} and [4Fe-4Se]^{2+/+} Oxidation/Reduction in a Designed Protein", **ChemTracts-Inorganic Chemistry**, **2003**, 16, 263-271. (Invited Group Highlight)

Reedy, C.J.; Kennedy, M.L.; Gibney, B.R. "Thermodynamic Characterization of Ferric and Ferrous Haem Binding to a Designed Four- α -Helix Protein" **Chem. Commun.**, **2003**, 570-571.

Privett, H.K.; Reedy, C.J.; Kennedy, M.L.; Gibney, B.R. "Nonnatural Amino Acid Ligands in Heme Protein Design", **J. Am. Chem. Soc.**, **2002**, 124, 6828-6829.

Kennedy, M.L.; Gibney, B.R. "Proton Coupling to [4Fe-4S]^{2+/+} and [4Fe-4Se]^{2+/+} Oxidation/Reduction in a Designed Protein" **J. Am. Chem. Soc.**, **2002**, 124, 6826-6827.

Daugherty, R.G.; Wasowicz, T.; Gibney, B.R.; DeRose, V.J. "Design and Spectroscopic Characterization of Peptide Models for the Plastocyanin Copper-binding Loop", **Inorg. Chem.** **2002**, 41, 2623-2632. (Featured on Cover of Issue)

Kennedy, M.L.; Gibney, B.R. "Metalloprotein and Redox Protein Design" **Curr. Opin. Struct. Biol.** **2001**, 11, 485-490.

Publications Prior to Independent Career

Huang, S.S.; Gibney, B.R.; Stayrook, S.E.; Dutton, P.L.; Lewis, M. "X-ray Structure of a Maquette Scaffold" **J. Mol. Biol.**, **2003**, 326, 1219-1225.

Gibney, B.R.; Pecoraro, V.L. "Use of Salicyl- and Naphthoylhydroxamate Complexes in Preparation of Manganese and Copper 12-Metallacrown-4 Complexes: Mn(II)(Acetate)₂ [Mn(III)(Salicylhydroximate)]₄ and (tetramethylammonium)₂ [Cu(II)₅(naphthoylhydroximate)₄]," **Inorganic Syntheses**, vol. 33, McGraw-Hill Book Company, Inc., New York, **2002**, 70-74.

Chen, X.; Discher, B.M.; Pilloud, D.L.; Gibney, B.R.; Moser, C.C.; Dutton, P. L. "De novo Design of a Cytochrome b Maquette for Electron Transfer and Coupled Reactions on Electrodes", **J. Phys. Chem. B**, **2002**, 106, 617-624.

Gibney, B.R.; Huang, S.S.; Skalicky, J. J.; Fuentes, E.J.; Wand, A. J.; Dutton, P. L. "Hydrophobic Modulation of Heme Properties in Heme Protein Maquettes", **Biochemistry**, **2001**, 40, 10550-10561.

Ugulava, N.B.; Gibney, B.R.; Jarrett, J.T. "Biotin Synthase Contains Two-Distinct Iron-Sulfur Cluster Binding Sites: Chemical and Spectroelectrochemical Analysis of Iron-Sulfur Cluster Interconversions", **Biochemistry**, **2001**, 40, 8343-8451.

Kennedy, M.L.; Silchenko, S.; Houndonougbo, N.; Gibney, B.R.; Dutton, P.L.; Rodgers, K. R.; Benson, D. R. "Model Hemoprotein Reduction Potentials: The Effects of Histidine to Iron Coordination Equilibrium", **J. Am. Chem. Soc.**, **2001**, 123, 4635-4636.

Grosset, A.M.; Gibney, B.R.; Rabanal, F.; Moser, C.C.; Dutton, P.L. "Proof of Principle in a De Novo Designed Synthetic Protein Maquette: An Allosterically Regulated, Charge Activated Conformational Switch in a Tetra- α -Helix Bundle", **Biochemistry**, **2001**, 40, 5474-5487.

Gibney, B.R.; Dutton, P.L. "De novo Design and Synthesis of Heme Proteins" **Adv. Inorg. Chem.**, Mauk, A. G.; Sykes, A. G. eds., Academic Press, New York, **2001**, vol 51, 409-455.

Shifman, J.M; Gibney, B.R.; Sharp, R.E.; Dutton, P.L. "Heme Redox Potential Control in de novo Designed Four- α -Helix Bundle Proteins", **Biochemistry**, **2000**, 39, 14813-14821.

Dutton, P.L.; Ohnishi, T.; Darrouzet, E.; Leonard, M.A.; Sharp, R.E.; Gibney, B.R.; Daldal, F.; Moser, C.C. "Coenzyme Q Oxidation-Reduction Reactions in Mitochondrial Electron Transport", Chapter 4 in **Coenzyme Q: Molecular Mechanisms in Health and Disease**, Quinn, P.E.; Kagan, V.J. eds., CRC Press, Boca Raton, Fl., **2000**, 65-82.

Gibney, B.R.; Isogai, Y.; Reddy, K. S.; Rabanal, F.; Grosset, A. M.; Moser, C. C.; Dutton, P. L. "Comparison of Heme A and Heme B in a designed four- α -helix bundle: Implications for a Cytochrome *c* Oxidase Maquette", **Biochemistry**, **2000**, 39, 11041-11049.

Ugulava, N.B.; Gibney, B.R.; Jarrett, J.T. "Iron-Sulfur Cluster Interconversion in Biotin Synthase: Dissociation and Reassociation of Iron is Required for Conversion of [2Fe-2S] to [4Fe-4S] Clusters" **Biochemistry**, **2000**, 39, 5206-5214.

Sharp, R.E.; Palmitessa, A.; Gibney, B.R.; White, J.L.; Wan, J. T.; Moser, C.C.; Daldal, F.; Dutton, P. L. "Probing the cytochrome *bc*₁ complex Q_o site mechanism using weak binding inhibitors" in **Photosynthesis: Mechanisms and Effects**, 1999, G. Garab, Ed., Kluwer Academic Publishers, Dordrecht.

Moser, C.C.; Sharp, R.E.; Gibney, B.R.; Isogai, Y.; Dutton, P. L. "Synthetic protein maquette design for light activated intraprotein electron transfer" in **Photosynthesis: Mechanisms and Effects**, 1999, G. Garab, Ed., Kluwer Academic Publishers, Dordrecht.

Sharp, R.E.; Gibney, B.R.; Palmitessa, A.; White, J.L.; Dixon, J.; Moser, C.C.; Daldal, F.; Dutton, P. L. "Effect of Inhibitors on the Ubiquinone Binding Capacity of the Primary Energy Conversion Site in *Rhodobacter capsulatus* Cytochrome *bc*₁ Complex", **Biochemistry**, **1999**, 38, 14973-14980.

Chen, X.; Moser, C. C.; Pilloud, D.L.; Gibney, B.R.; Dutton, P. L. "Engineering Oriented Heme Protein Maquette Monolayers Through Surface Charge Distribution Patterns", **J. Phys. Chem. B**, **1999**, 103, 9029-9037.

Sharp, R.E.; Palmitessa, A.; Gibney, B.R.; Moser, C.C.; Dutton, P. L. "Probing the ubiquinone primary energy conversion site in the *Rhodobacter capsulatus* cytochrome *bc*₁ complex", **Biochemical Society Transactions**, **1999**, 27, 572-576.

Sharp, R.E.; Moser, C.C.; Gibney, B.R.; Dutton, P. L. "Primary Steps in the Energy Conversion Reactions of the Cytochrome *bc*₁ Complex Q_o Site", **J. Bioenerg. Biomembr.**, **1999**, 31, 225-233.

Gibney, B.R.; Dutton, P. L. "Histidine Placement in *De novo* Designed Heme Proteins", **Protein Science**, **1999**, 8, 1888-1898.

Mulholland, S. E.; Gibney, B.R.; Rabanal, F.; Dutton, P. L. "Determination of Non-Ligand Amino Acids Critical to [4Fe-4S]^{2+/+} Assembly in Ferredoxin Maquettes", **Biochemistry**, **1999**, 38, 10442-10448.

Skalicky, J. J.; Gibney, B.R.; Rabanal, F.; Bieber-Urbauer, R. J.; Dutton, P. L.; Wand, A. J. "Solution Structure of a designed four- α -helix bundle maquette scaffold", **J. Am. Chem. Soc.**, **1999**, 121, 4941-4951.

Gibney, B.R.; Rabanal, F.; Skalicky, J. J.; Wand, A. J.; Dutton, P. L. "Iterative Protein Redesign", **J. Am. Chem. Soc.**, **1999**, 121, 4952-4960.

Sharp, R. E.; Palmitessa, A.; Gibney, B.R.; Moser, C. C.; Daldal, F.; Dutton, P. L. "Correlation Between Cytochrome *bc*₁ Structure and Function: Kinetic and Spectroscopic Observations on Q_o Site Occupancy and Dynamics", **The Phototrophic Prokaryotes - Proceedings of the IX Int. Symp. on Phototrophic Prokaryotes**, Peschek, G. A.; Loefflhardt, W.; Schmetterer, G. eds., Plenum, New York, **1999**, 241-250.

Sharp, R. E.; Palmitessa, A.; Gibney, B.R.; White, J.L.; Moser, C. C.; Daldal, F.; Dutton, P. L. "The ubiquinone Binding Capacity of *Rhodobacter capsulatus* Cytochrome *bc*₁ Complex: Effect of Diphenylamine, A Weak Q_o site Inhibitor", **Biochemistry**, **1999**, 38, 3440-3446.

Daniels, S.B.; Hantman, S.F.; Solé, N. A.; Gibney, B.R.; Rabanal, F.; Kates, S.A. "Pioneer™: A Continuous-flow Peptide Synthesis System", **Peptides** **1996**, Ramage, R.; Epton, R. eds.; Mayflower Scientific, Ltd.; Kingswinford, England, **1998**, 323-324.

Valkova-Valchanova, M.; Saribas, A.S.; Gibney, B.R.; Dutton, P. L.; Daldal, F. "Isolation and Characterization of a Two Subunit Cytochrome *b-c*₁ Subcomplex from *Rhodobacter capsulatus* and Reconstitution of its Ubiquinone Oxidation (Q_o) Site with purified Fe-S Protein Subunit", **Biochemistry**, **1998**, 37, 16242-16251.

Mulholland, S. E.; Gibney, B.R.; Rabanal, F.; Dutton, P. L. "Characterization of the Fundamental Protein Ligand Requirements of [4Fe-4S]^{2+/+} Clusters Using Sixteen Amino Acid Peptide Maquettes", **J. Am. Chem. Soc.**, **1998**, 120, 10296-10302.

Sharp, R. E.; Palmitessa, A.; Gibney, B.R.; Moser, C. C.; Daldal, F.; Dutton, P. L. "Non-inhibiting perturbation of the primary energy conversion site (Q_o site) in *Rhodobacter capsulatus* ubiquinol: cytochrome *c* oxidoreductase", **FEBS Lett.**, **1998**, 431, 423-426.

Skalicky, J. J.; Bieber, R. J.; Gibney, B.R.; Rabanal, F.; Dutton, P. L.; Wand, A. J. "Sequence-Specific Resonance Assignments for a Designed Four- α -Helix Bundle Protein", **Journal of Biomolecular NMR**, **1998**, 11, 227-228.

Johansson, J. S.; Gibney, B.R.; Skalicky, J. J.; Wand, A. J.; Dutton, P. L. "A Native-Like Three- α -Helix Bundle Protein From Structure Based Redesign: A Novel Maquette Scaffold", **J. Am. Chem. Soc.**, **1998**, 120, 3881-3886.

Gibney, B.R.; Rabanal, F.; Reddy, K. S.; Dutton, P. L. "Effect of Four Helix Bundle Topology on Heme Binding and Redox Properties", **Biochemistry**, **1998**, 37, 4635-4643.

Pilloud, D.L.; Rabanal, F.; Gibney, B.R.; Farid, R. S.; Moser, C. C.; Dutton, P. L. "Self-Assembled Monolayers of Synthetic Hemoproteins on Silanized Quartz", **J. Phys. Chem. B**, **1998**, 102, 1926-1937.

Johansson, J. S.; Gibney, B.R.; Rabanal, F.; Reddy, K. S.; Dutton, P. L. "A Designed Cavity in the Hydrophobic Core of a Four- α -Helix Bundle Improves Volatile Anesthetic Binding Affinity", **Biochemistry**, **1998**, 37, 1421-1429.

Gibney, B.R.; Rabanal, F.; Reddy, K. S.; Dutton, P. L. "Effect of Four Helix Bundle Topology on Heme Binding and Redox Properties", **Biochemistry**, **1998**, 37, 4635-4643.

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- Gibney, B.R.; Rabanal, F.; Dutton, P. L. "Synthesis of Novel Proteins", **Curr. Opin. Chem. Biol.**, **1997**, 1, 537-542.
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- Gibney, B.R.; Wang, H.; Kampf, J. W.; Pecoraro, V. L. "Structural Evaluation and Solution Integrity in the Manganese 12-MC-4 Structural Type", **Inorg. Chem.**, **1996**, 35, 6184-6193.
- Gibney, B.R.; Mulholland, S. E.; Rabanal, F.; Dutton, P. L. "Ferredoxin and Ferredoxin-Heme Maquettes", **Proc. Nat. Acad. Sci. U.S.A.**, **1996**, 93, 15041-15046.
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