

Lisa M. Utschig

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Professional Experience

- **2003-Present.** Scientist in the Photosynthesis Group at Argonne National Laboratory, investigating photochemical energy conversion in natural photosynthetic systems and developing innovative bioinorganic approaches to modify photosynthetic proteins for solar fuels production.
- **1998-2002.** Assistant Scientist at Argonne National Laboratory.
- **1995-1997.** Enrico Fermi Scholar, Chemistry Division, Argonne National Laboratory.
- **1990-1995.** Ph.D. Thesis Research, Northwestern University, Evanston, IL.
- **1989-1990.** Summer Undergraduate Research Fellowship (SURF), University of Iowa, Iowa City, IA.

Education

- Ph.D., Inorganic Chemistry, Northwestern University, Evanston, IL, 1995.
- Master's Degree, Chemistry, Northwestern University, Evanston, IL, 1991.
- B.A. (magna cum laude), Cornell College, Mt. Vernon, IA, 1990.

Research Interests

Dr. Utschig's research at Argonne is centered on photochemical energy conversion in natural photosynthetic systems. Her notable accomplishments include the discovery of roles for transition metals in photosynthetic electron transfer. She specializes in developing novel chemical methods for modifying photosynthetic reaction center proteins and in characterizing these specialized proteins with advanced EPR and XAFS techniques. Her current research is focused on developing innovative bioinorganic approaches to modify photosynthetic proteins for solar fuels production.

Awards

- Pacesetter Award, ANL (2007)
- Enrico Fermi Scholar (1995-1997)
- NIH National Research Service Award Training Grant in Molecular Biophysics, (1992-1994)
- NSF Honorable Mention (1991)
- Phi Beta Kappa, (elected 1990)
- The American Institute of Chemists Foundation Student Award, (1990)
- ACE Analytical Chemistry Award (1989)
- Pacesetter Award, Argonne National Laboratory (1999)
- Arthur E. Lowell Scholarship for Leadership and Academic Excellence (1988-1990)

Publications

- Total publications : 38

Selected Publications

“Discovery of Native Metal Ion Sites Located on the Ferredoxin Docking Side of Photosystem I” L. M. Utschig, L. X. Chen, and O. G. Poluektov, *Biochemistry*, **2008**, *47*, 3671-3676.

“Electron Paramagnetic Resonance Study of Radiation Damage in Photosynthetic Reaction Center Crystals” L. M. Utschig, S. D. Chemerisov, D. M. Tiede, and O. G. Poluektov, *Biochemistry*, **2008**, *47*, 9251-9257.

“Low Temperature Interquinone Electron Transfer in Photosynthetic Reaction Centers from *Rb. sphaeroides* and *Blc. viridis*: Characterization of Q_B^- States by High-Frequency EPR and ENDOR” L. M. Utschig, M. C. Thurnauer, D. Tiede, and O. G. Poluektov, *Biochemistry*, **2005**, *44*, 14131-14142.

“Electron Transfer Pathways and Protein Response to Charge Separation in Photosynthetic Reaction Centers: Time-Resolved High-field ENDOR of the Spin-Correlated Radical Pair $P_{865}^+Q_A^-$ ” O. G. Poluektov, L. M. Utschig, A. A. Dubinskij, and M. C. Thurnauer, *J. Am. Chem. Soc.*, **2005**, *127*, 4049-4059.

“Pulsed EPR/ENDOR Characterization of the Cu^{2+} Surface Site in Photosynthetic Bacterial Reaction Centers” L. M. Utschig, A. V. Astashkin, A. M. Raitsimring, M. C. Thurnauer, and O. G. Poluektov, *J. Phys. Chem. B*, **2004**, *108*, 11150-11156.

“Metal Ion Modulated Electron Transfer in Photosynthetic Proteins” L. M. Utschig and M. C. Thurnauer, *Acc. Chem. Res.*, **2004**, *37*, 439-447.

“EPR Investigation of Cu^{2+} -Substituted Photosynthetic Bacterial Reaction Centers: Evidence for Histidine Ligation at the Surface Metal Site,” L. M. Utschig, O. Poluektov, D. M. Tiede and M. C. Thurnauer, *Biochemistry*, **2000**, *39*, 2961-2969.

“A New Metal-Binding Site in Photosynthetic Bacterial Reaction Centers that Modulates Q_A to Q_B Electron Transfer” L.M. Utschig, Y. Ohigashi, M. C. Thurnauer, and D. M. Tiede, *Biochemistry*, **1998**, *37*, 8278-8281.

“Influence of Iron-Removal Procedures on Sequential Electron Transfer in Photosynthetic Bacterial Reaction Centers Studied by Transient EPR Spectroscopy” L. M. Utschig, S. R. Greenfield, J. Tang, P. D. Laible, and M. C. Thurnauer *Biochemistry*, **1997**, *36*, 8548-8558.

“Mercury-199 NMR of the Metal Receptor Site in MerR and its Protein-DNA Complex,” L. M. Utschig, J. W. Bryson, T. V. O’Halloran, *Science*, **1995**, *268*, 380-385.