
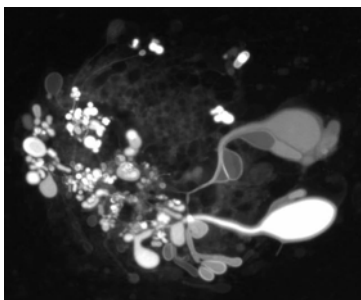


CAREER DEVELOPMENT AWARDEES

	<p><i>Sheref S. Mansy</i></p>
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Laurea	<i>Ohio State University, 1997</i>
Ph.D	<i>Ohio State University, 2003</i>
Postdoc	<i>Harvard Medical School & Massachusetts General Hospital, 2004-2007</i>
Previous work experience	<i>Assistant Professor, Department of Chemistry & Biochemistry, University of Denver</i>
Association memberships	<i>American Association for the Advancement of Science</i>

Research Interests	<p><i>We use bottom-up synthetic biological approaches to better understand how life-like processes emerge. Perspectives range from origin of life to biotechnology. One of our immediate goals is to create a compartmentalized self replicating system by coupling the activity self-assembled biological machinery with simple chemical and physical forces.</i></p> <div style="text-align: center;">  </div> <p style="text-align: center;"><i>The spontaneous formation of cell sized vesicle compartments.</i></p>
Selected Publications	<i>Raphael J. Bruckner, Sheref S. Mansy, A. Ricardo, L. Mahadevan, Jack W. Szostak (2009) Flip-flop induced relaxation of the bending energy in synthetic and biological membranes. Biophys J 97, In press.</i>

	<p><i>Sheref S. Mansy & Jack W. Szostak (2009) Reconstructing the Emergence of Cellular Life through the Synthesis of Model protocells. Cold Spring Harb Symp Quant Biol, In press. doi:10.1101/sqb.2009.74.014</i></p> <p><i>Sheref S. Mansy (2009) Model protocells from single-chain lipids. Int J Mol Sci 10, 835-843.</i></p> <p><i>Sheref S. Mansy & Jack W. Szostak (2008) Thermostability of model protocell membranes. Proc Natl Acad Sci USA 105, 13351-13355.</i></p> <p><i>Sheref S. Mansy, Jason P. Schrum, Mathangi Krishnamurthy, Sylvia Tobé, Douglas Treco, and Jack W. Szostak (2008) Template-directed synthesis of a genetic polymer inside of a model protocell. Nature 454, 122-125.</i></p> <p><i>Sheref S. Mansy, Jinglei Zhang, Rainer Kümmerle, Mikael Nilsson, James J. Chou, Jack W. Szostak, John C. Chaput (2007) Structure and evolutionary analysis of a non-biological ATP-binding protein. J Mol Biol 371, 501-513.</i></p> <p><i>Martin Hanczyc, Sheref S. Mansy, Jack W. Szostak (2007) Mineral surface directed membrane assembly. Orig Life Evol Biosph 37, 67-82.</i></p> <p><i>Shu-Pao Wu, Sheref S. Mansy, J. A. Cowan (2005) Iron-sulfur cluster biosynthesis. The functional role of the molecular chaperone DnaK in Thermotoga maritima IscU [2Fe-2S] cluster stability and cluster transfer activity. Biochemistry 44, 4284-4293.</i></p> <p><i>Sheref S. Mansy & J. A. Cowan (2004) Iron-sulfur cluster biosynthesis. Toward an understanding of cellular machinery and molecular mechanism. Acc Chem Res 37, 719-725.</i></p> <p><i>Sheref S. Mansy, Shu-pao Wu, J. A. Cowan (2004) Iron-sulfur cluster biosynthesis. Biochemical characterization of the conformational dynamics of Thermotoga maritima IscU and the relevance for cellular cluster assembly. J Biol Chem 279, 10469-10475.</i></p> <p><i>Giovanni Venturoli, Mahir Mamedov, Sheref S. Mansy, Francesco Musiani, Massimo Strocchi, Francesco Francia, Alexander Yu. Semenov, James A. Cowan, Stefano Ciurli (2004) Electron transfer from HiPIP to the photo-oxidized tetraheme cytochrome subunit of Allochromatium vinosum reaction center. New insights from site-directed mutagenesis and computational studies. Biochemistry 43, 437-445.</i></p> <p><i>Ivano Bertini, J. A. Cowan, Cristina Del Bianco, Claudio Luchinat, Sheref S. Mansy (2003) Thermotoga maritima IscU. Structural characterization and dynamics of a new class of metallochaperone. J Mol Biol 331, 907-924.</i></p> <p><i>Sheref S. Mansy, Gong Wu, Kristene K. Surerus, J. A. Cowan (2002) Iron-sulfur cluster biosynthesis: Thermotoga maritima IscU is a structured iron-sulfur cluster assembly protein. J Biol Chem 277, 21397-21404.</i></p> <p><i>Gong Wu, Sheref S. Mansy, Craig Hemann, Russ Hille, Kristene K. Surerus, J. A. Cowan (2002) Iron-sulfur cluster biosynthesis: Characterization of Schizosaccharomyces pombe Isa1. J Biol Inorg Chem 7, 526-532.</i></p> <p><i>Gong Wu, Sheref S. Mansy, Shu-pao Wu, Kristene K. Surerus, Matthew W. Foster, J. A. Cowan (2002) Characterization of an iron-sulfur cluster assembly protein (ISU1) from Schizosaccharomyces pombe. Biochemistry 41, 5024-5032.</i></p> <p><i>Sheref S. Mansy, Yong Xiong, Craig Hemann, Russ Hille, M. Sundaralingam, J. A. Cowan (2002) Crystal structure and stability studies of C77S HiPIP: A serine ligated [4Fe-4S] cluster. Biochemistry 41, 1195-1201.</i></p> <p><i>Matthew W. Foster, Sheref S. Mansy, Jungwon Hwang, James E. Penner-Hahn, Kristene K. Surerus, J. A. Cowan (2000) A mutant human IscU protein contains a stable [2Fe-2S]₂⁺ center of possible functional significance. J Am Chem Soc 122, 6805-6806.</i></p> <p><i>Weimin Gong, Bing Hao, Sheref S. Mansy, Gonzalo Gonzalez, Marie A. Gilles-Gonzalez, Michael K. Chan (1998) Structure of a biological oxygen sensor: A new mechanism for heme-driven signal transduction. Proc Natl Acad Sci USA 95, 15177-15182.</i></p> <p><i>Sheref S. Mansy, John S. Olson, Gonzalo Gonzalez, Marie A. Gilles-Gonzalez (1998) Imidazole is a sensitive probe of steric hindrance in the distal pockets of oxygen-binding heme proteins. Biochemistry 37, 12452-12457.</i></p>
Laboratory Members	<p><i>Amy C. Spencer, postdoc</i> <i>Domenica Torino, postdoc</i> <i>Laura Martini, predoctoral researcher</i></p>