Shelley Hoeft McCann

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EDUCATION

M.S. Oceanography, University of Connecticut, Storrs, CT
B.S. Biology, LeMoyne College, Syracuse, NY

RESEARCH EXPERIENCE

Nov-2018 – present	Microbiology Projects Manager, Harvard University, Dept of Earth and Planetary Sciences, Cambridge, MA *Supervisor*: Ann Pearson *Projects*: cultivation of archaea (batch and continuous culture) for lipid biomarker studies; PFAS biodegradation.
1999 – July 2017	Hydrologist (GS 12), U.S. Geological Survey, Menlo Park, CA *Supervisor*: Ronald S. Oremland *Projects*: microbial redox transformations of arsenic in Mono Lake; bacterial degradation of trichloroethylene and acetylene; microbial enrichments, cultivation and isolation.
1995 – 1999	Graduate Research Assistant, Marine Sciences Department, University of Connecticut, Groton, CT *Advisor*: Dr. Pieter T. Visscher *Master's thesis*: Methyl Bromide and Dimethyl Sulfide Metabolism in Marine Bacteria
1992 – 1995	Assistant Research Scientist, Bristol-Myers Squibb, Wallingford, CT *Project*: multi-step organic chemistry syntheses of complex organic molecules for anti-infective drug targets.

PUBLICATIONS

Hoeft McCann, S., Boren, A., Hernandez-Maldonado, J. Stoneburner, B., Saltikov, C.W., Stolz, J.F., and Oremland, R.S. 2017. Arsenite as an Electron Donor for Anoxygenic Photosynthesis: Description of Three Strains of *Ectothiorhodospira* from Mono Lake, California and Big Soda Lake, Nevada. Life. DOI:10.3390/life7010001

Hernandez-Maldonado, J., Sanchez-Sedillo, B., Stoneburner, B., Boren, A., Miller, L.G., Hoeft McCann, S., Rosen, M., Oremland, R.S., and Saltikov, C.W. 2016. The genetic basis of anoxygenic photosynthetic arsenite oxidation. Environ. Microbiol. DOI: 10.1111/1462-2920.13509

Blum J.S., Hoeft McCann S., Bennett S., Miller L.G., Stolz J.F., Stoneburner B., Saltikov, C.W., Oremland, R.S. 2015. A microbial arsenic cycle in sediments of an acidic mine impoundment: Herman Pit, Clear Lake, California. Geomicrobiol. DOI: 10.1080/01490451.2015.1080323

Planer-Friedrich B., Härtig C., Lohmayer R., Suess E., Hoeft McCann S., Oremland R.S., 2015. Anaerobic chemolithotrophic growth of the haloalkaliphilic bacterium strain MLMS-1 by disproportionation of monothioarsenate. Environ. Sci. Technol. 49(11), 6554-6563.

Wolfe-Simon F., Blum J.S., Kulp T.R., Gordon G.W., Hoeft S.E., Pett-Ridge J., Stolz J.F., Webb S.M., Weber P.K., Davies P., Anbar A.D., Oremland R.S. 2010. A bacterium that can grow by using arsenic instead of phosphorus. Science. 332: 1163-1166.

Hoeft S.E., Kulp T.R., Han S., Lanoil B., Oremland R.S. 2010. Coupled arsenotrophy in a hot spring biofilm at Mono Lake, California. Appl. Environ. Microbiol. 76:4633-4639.

Richey C., Chovanec P., Hoeft S.E., Oremland R.S., Basu P., Stolz J.F. 2009. Respiratory arsenate reductase as a bidirectional enzyme. Biochem. Biophys. Res. Comm. 382:298-302.

Kulp T.R., Hoeft S.E., Madigan M., Hollibaugh J.T., Fischer J., Stolz J.F., Culbertson C.W., Miller L.G., and Oremland R.S. 2008. Arsenic (III) fuels anoxygenic photosynthesis in hot spring biofilms from Mono Lake, California. Science 321:967-970.

Hoeft S.E., Switzer Blum J., Stolz J.F., Tabita F.R., Witte B., King G.M., Santini J.M. and Oremland R.S. 2007. Alkalilimnicola ehrlichii sp. nov., a novel, arsenite-oxidizing haloalkaliphilic gammaproteobacterium capable of chemoautotrophic or heterotrophic growth with nitrate or oxygen as the electron acceptor. Int J Syst Evol Microbiol; 57: 504-512.

Kulp T.R., Hoeft S.E., Miller L.G., Saltikov C., Nilsen J., Han S., Lanoil B., Oremland R.S. 2006. Dissimilatory arsenate and sulfate reduction in sediments of two hypersaline, arsenic-rich soda lakes: Mono and Searles Lakes, California. Appl. Environ. Microbiol. 72: 6514-6526.

Oremland R.S., Kulp T.R., Blum J.S., Hoeft S.E., Baesman S., Miller L.G., Stolz J.F. 2005. A microbial arsenic cycle in a salt-saturated, extreme environment. Science 308:1305-1308.

Kulp T.R., Hoeft S.E., Oremland R.S. 2004. Redox transformations of arsenic oxyanions in periphyton communities. Appl. Environ. Microbiol. 70: 6428-6434

Hoeft S.E., Kulp T.R., Stolz J.F., Hollibaugh J.T., Oremland R.S. 2004. Dissimilatory arsenate reduction with sulfide as the electron donor: experiments with Mono Lake water and isolation of strain MLMS-1, a chemoautotrophic arsenate-respirer. Appl. Environ. Microbiol. 70: 2741-2747.

Oremland R.S., Hoeft S.E., Santini J.M., Bano N., Hollibaugh R.A., Hollibaugh J.T. 2002. Anaerobic oxidation of arsenite in Mono lake water and by a facultative, arsenite-oxidizing chemoautotroph, strain MLHE-1. Appl. Environ, Microbiol. 68: 4795-4802.

Herbel M.J., Blum J.S., Hoeft S.E., Cohen S.M., Arnold L.L., Lisak J., Stolz J.F., Oremland R.S. 2002. Dissimilatory arsenate reductase activity and arsenate-respiring bacteria in bovine rumen fluid, hamster feces, and the termite hindgut. FEMS Microb. Ecol. 41: 59

Hoeft S.E., Lucas F., Hollibaugh J.T., Oremland R.S. 2002. Characterization of microbial arsenate reduction in the anoxic bottom waters of Mono Lake, California. Geomicrobiol. 19: 23-40.

Oremland R.S., Dowdle P.R., Hoeft S.E., Sharp J.O., Schaefer J.K., Miller L.G., Switzer Blum J., Smith R.L, Bloom N.S., Wallschlaeger D. 2000. Bacterial dissimilatory reduction of arsenate and sulfate in meromictic Mono Lake, California. Geochim. Cosmochim. Acta 64: 3073-3084.

Hoeft S.E., Rogers D.R., Visscher P.T. 2000. Metabolism of methyl bromide and dimethyl sulfide by marine bacteria isolated from coastal and open waters. Aquatic Microb. Ecol. 21: 221-230.