FORESTRY, FIRE & STATE LANDS
REQUEST FOR PROPOSALS
Cover Sheet

Project Title	Spatial variation of mercury methylation in the sediment and the deep brine layer of the Great Salt Lake
Lead Project Sponsor	University of Utah
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Project Description / Abstract	Mitigating methylation of mercury in the large and complex system that is the Great Salt Lake requires first determining where methylation occurs, e,g. in the deep brine layer versus the underlying sediment, since these compartments require very different remediation strategies. Methyl mercury concentrations in the environment may vary dynamically (from year to year) since methylation and demethylation occur simultaneously in response to multiple influences including oxygen depletion, sulfate enrichment, organic matter enrichment, and sunlight. My research group has refined a multi-isotope method to quantify rates of mercury methylation and demethylation in brine and sediment samples. We have also developed field and laboratory capabilities to measure total and methyl mercury, nutrients, trace elements other than mercury, organic matter concentrations, oxidation-reduction potential, along with field parameters such as dissolved oxygen, pH, etc. The proposed project capitalizes on advanced analytical capabilities using stable isotope-labeled mercury. Outputs will include a quantitative report describing the spatial variation in methylation rate and total and methyl mercury concentrations in the deep brine layer and underlying sediment in the Great Salt Lake, as well as the factors controlling mercury methylation, and conceptual description of strategies to mitigate mercury based on the findings of the study. These findings will also be published in at least one peer-reviewed publication.

Project Funding	Amount Requested	Matching Funds	Total Project Cost
	$ 29,700	$ 8,000	$ 37,700