



FORESTRY, FIRE & STATE LANDS REQUEST FOR GRANT APPLICATION Cover Sheet



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|---------------------------------------|---|--|---------------------------|
| Project Title | <i>Microbial ecology of key biological processes contributing to nutrient, carbon and mercury cycling in Great Salt Lake- a genomics approach</i> | | |
| Lead Project Sponsor | <i>University of Utah</i> | | |
| Project Contact | <i>Name</i> | <i>Dr. Ramesh Goel, Ph.D</i> | |
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| Project Description / Abstract | <p>The overall goal of this research is to evaluate the microbial ecology of bacteria participating in nitrogen, mercury and carbon cycling in GSL ecosystem. The research will enable Utah DNR with novel tools to monitor the microbial ecology against seasonal variations in GSL geochemistry. The research will also combine the microbial ecology with water and sediment chemistry to answer broader questions such as; (1) what is the overall microbial ecology of bacterial community, (2) what is the microbial ecology of bacteria involved in nitrogen and mercury cycling directly compliments past and ongoing research related to nitrogen and mercury transformations in GSL ecosystem and, will develop, (1) the ARISA profiles developed in this research will enable a powerful tool to Utah DNR to monitor bacterial community changes over time and as a result of ecosystem changes and, (2) the metagenome approach will reveal about almost all the microbial ecology at selected sites in GSL environment. The PI of this project, Dr. Goel, has been researching in this area for the past 15-years and his expertise is well suited for this project. Advanced molecular tools including high throughput sequencing will be used along with other laboratory scale analytical techniques (such as ion chromatography, total organic carbon analysis) to establish correlation between microbial ecology, sustainability of GSL ecosystem and water chemistry. This research directly addresses two of the hot topics listed in recently released RFP by Utah DNR.</p> | | |
| Project Funding | <i>Amount Requested</i> | <i>Matching Funds</i> | <i>Total Project Cost</i> |
| | <i>\$51,686</i> | <i>Will be leveraged</i> | <i>\$51,686</i> |