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## **METAL-MICROBE INTERACTIONS IN SILVER BOW CREEK**

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This project studies the relationship between microbes and both metals and metalloids in Silver Bow Creek. Biotic manganese nodule formation in Silver Bow Creek was identified through previous studies. The formation of these nodules is of interest to Silver Bow Creek restoration since heavy metals can bind to the nodules and potentially lower contaminants of concern. The goals of this study were to identify the organism(s) involved in the formation of manganese nodules and to identify how the nodules were formed using proteomic analyses. In addition, water chemistry data was used to study relationships between several elements in the creek and the potential effect these factors have on the microbial life. A combination of microbial culturing and LC-MS was used in an attempt to isolate the microbes involved with nodule formation and identify the proteins produced by the microbes. Currently, this work is attempting to isolate a microbe in the creek and analyze metagenomic data to predict the proteins used in the formation of the nodules. Once the microbe has been isolated or the proteins predicted, proteomic analyses with LC-MS can proceed. This work, in its current phase, has implications upon the interactions of microbial communities with contaminants of concern in Silver Bow Creek.