Data Management Plan

The proposed research will generate 1) iron-binding organic ligand data (measured by voltammetry), 2) siderophore and/or other binding organic ligands data (measured by mass spectroscopy), 3) dissolved iron data, and 4) iron uptake and transport genes present (measure with FeGenie) within a variety of hydrothermal systems outlined in Table 1 in the Project Description. All organic ligands samples for voltammetry and mass spectroscopy will analyzed by PI Hoffman. On the upcoming 2022 Escanaba Trough research cruise, Hoffman will collect additional organic ligands samples for both voltammetry and mass spectroscopy measurements under the guidance of Dr. Joseph Resing. Co-PI Bundy will be responsible for the FeGene data analysis and collection. Both Hoffman and Bundy are well trained in international GEOTRACES protocols established to handle and analyze trace metal samples. This will ensure results generated by this work are being handle at the highest trace metal clean standards and are compatible with the GEOTRACES standards.

Produced data will be submitted by both PI Hoffman and co-PI Bundy to the Biological and Chemical Oceanography Data Management Office (BCO-DMO) for management and archiving. These data sets will be made available online from the BCO-DMO data system following standard NSF requirements. Project information and experimental data will be hosted on a dedicated page of PI Bundy's website. Mass spectrometry data will be posted on the Global Natural Products Social Molecular Networking (GNPS) website, and MATLAB and R code for processing the mass spectrometry data will be made available through PI Bundy's GitHub site with corresponding descriptions of how to use the processing code.