

## **DATA MANAGEMENT PLAN**

### **1. Types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project**

This project will generate primarily laboratory experimental and analytical data.

### **2. Standards to be used for data and metadata format and content**

We will follow best practices for recording and archiving laboratory experimental and analytical data, generated within our respective laboratories. All results of laboratory experiments and analyses will be stored electronically, including the raw data from analysis, both on the equipment – the automated Tekrans, radioisotope equipment and other equipment that have internal data storage capacity or are linked to laptops - and on lab data storage folders (e.g. Dropbox). Where instruments still generate paper data output, this will also be stored for five years. The data will include all quality assurance information such as blanks, calibration curves, replicates, spike recovery and related data. Mason's research group participates regularly in national or international intercalibration exercises. Data will be backed up on computers as well as on Dropbox, flash drives, and/or external hard drives, to ensure redundancy and protection of data integrity. These various storage media will be kept in multiple locations and will be properly labeled to ensure clarity.

### **3. Policies for access and sharing including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements;**

We have no specific privacy, confidentiality, security or intellectual property concerns relevant to this project. The raw data from the laboratory experiments are not normally posted on websites in order to avoid issues of inaccuracy since these have not yet been properly evaluated or peer-reviewed. However, data will be available to all legitimate colleagues and institutions upon request, as we have done in the past, once they have been properly evaluated using our internal quality assurance (QA) procedures. Once the data is published in the peer-reviewed literature, the data will be made available publically, most likely through BCO-DMO or a similar repository. These published data will be made readily accessible, as done in the past and as required by NSF, through submission to the university maintained data archive, or as requested by NSF policies. Published papers will thoroughly describe all experimental protocols and conditions, and include data in the supplementary information. Because the PI believes in openness, transparency, and reproducibility of the scientific process, the intent is to share any primary data and relevant samples with colleagues at other institutions, upon reasonable request. This project will not generate data that will impact upon national security nor does this project produce data that will infringe upon the personal privacy and confidentiality of any individual.

### **4. Policies and provisions for re-use, re-distribution, and the production of derivatives**

We have no current plans for re-use, re-distribution or the production of derivatives.

### **5. Plans for archiving data, samples, and research products, and for preservation of access to them.**

All data will be archived, including analyzed data, using standard operating procedures and data analysis methods, to ensure access to these materials regardless of the presence of key personnel for 3+ years after the project is complete. Secondary data generated through data manipulation and extrapolation will also be stored at a central location (e.g. labgroup Dropbox folders or on Google Drive or the university's OneDrive). When field and lab data have undergone QA processing, they will be submitted to be archived at BCO-DMO, and submission will comply with their recommendations with regard to data formatting and metadata generation in all instances. Any further archiving as required by NSF Chemical Oceanography Program will be adhered to.