

## **Data Management Plan**

This plan is presented to comply with NSF policy and directions on the dissemination and sharing of research results as described in Grant Proposal Guide (GPG) Chap. II.C.2.j.

### ***Data Policy Compliance***

This project will generate data from several instruments and sampling devices managed by the PI. The types of data generated are outlined in the Methods section of the **Project Description**. Data collection will take place in the Folly Island watershed. There will be multiple sampling days per year for each location. The primary data will be chemical and physical data (temperature, salinity, DO) will be reported when collected. Submissions will include data generated by on preserved samples by the Shaw laboratory (macro and micro nutrients).

The primary challenges of managing these data will be merging data from the separate field and laboratory operations to achieve the highest degree of accessibility to the community at large.

Metadata for each of our sampling activities specific to this project will be collated into a single file and updated following each field campaign. Samples will be analyzed and data processed as expediently as possible. These data will be merged with the appropriate metadata so that it is in a usable format, both by us and our colleagues who are interested in collaborating and sharing data. Once per year, when annual reports are submitted, the data specific to this project (including new data and any updates/corrections of previously submitted data) will be submitted to the **The Biological and Chemical Oceanography Data Management Office** (BCO-DMO) or another appropriate NSF sponsored entity.

### ***Public Availability and Permanent Archive of Data***

*Field Data Management:* There are three broad classes of metadata to develop and manage: 1) event, 2) instrument, and 3) submission. Event metadata (1) will be produced in a shared spreadsheet during each field exercise. This spreadsheet is the primary means of identifying and sequencing sampling activities for traceability of samples and sampling to related activities, distance to a water body, and correlation of samples in space and time. Metadata production and quality is a shared responsibility of the investigators, with a specified individual responsible for maintenance of the spreadsheet. Instrument metadata (2) are harvested from instrument-generated datasets, while submission metadata (3) are produced from the composite of event and instrument metadata to support the submission of resulting data sets to the appropriate long-term archives.

Sampling during each field exercise produces discrete data. Discrete data are produced from pore and surface water collection and sensor measurements near the surface. We will implement a relational database to record the data and metadata associated with discrete water samples. From this database, the PI will be able to run queries to retrieve data and metadata that are relevant to specific samples. Discrete data generated post field exercise on preserved field samples will be linked to collection information in the relational database.

### ***Laboratory Data Repositories***

The PI will employ both local and NSF-recognized and supported repositories, according to the nature of the data and disciplinary convention. PI Shaw will be responsible for coordinating data submission with **BCO-DMO** at the Woods Hole Oceanographic Institution for appropriate data (e.g. estuarine samples). If the project is funded, as a first step a data inventory form will be submitted. Future data submissions will provide public access to research data generated during this project and off-site redundancy of data storage to complement the holdings each individual investigator will maintain. The Department of Chemistry at the University of South Carolina maintains an on-sight data repository that will provide a repository for data generated prior to publication and redundancy for data submitted to NSF supported archives.