

## DATA MANAGEMENT PLAN

### *General:*

Primarily we will work with the Biological and Chemical Oceanography Data Management Office (BCO-DMO; <http://bco-dmo.org/>) to ensure that data resulting from this project will be submitted to the appropriate national data centers in support of its ultimate usefulness within the oceanographic community. Through the BCO-DMO, we plan to ensure quality, timeliness, dissemination, and improved access to our unique data set, thus facilitating regional, national, and international data and information exchange.

### *Types of Data:*

General oceanographic data will be obtained aboard a UNOLS oceanographic research vessel as standard procedure during the course of the cruise (water column T, S, O<sub>2</sub>, DOM-fluorescence, Chl-fluorescence, etc., as well as meteorological data) and will be collected using UNOLS protocol (see next section). Our specific project will produce both chemical and optical data from water collected in deep ocean profiles, as well as photochemical laboratory experiments both at sea and back ashore. Some seawater samples will be collected, labelled, and shipped to Athens, GA from the north Pacific Ocean. Our Optical Data includes: fluorescent dissolved organic matter (FDOM), fluorescent excitation-emission matrix spectra (EEMS), and chromophoric dissolved organic matter (CDOM) on collected seawater samples. Our Chemical Data includes: dissolved organic carbon (DOC) concentrations on collected samples, and calculated rates of change for DOC, H<sub>2</sub>O<sub>2</sub>, CO, and superoxide radical in irradiated seawater samples.

### *Cruise Planning, Documentation, and Data Disposition:*

Our proposed field work includes a cruise in year 2. Collaboration with Dr. Dennis Hansell's group from the University of Miami is proposed for this effort. If successful in funding this joint project, we will coordinate development of jointly agreed upon data formats and protocols (planning visits budgeted) well in advance of the cruise to allow QA/QC testing for all analysis. It is hoped that the proposed 2013 expedition to the north Pacific (preliminary details supplied in this proposal) will be joined by a suite of complementary studies of DOC cycling in the ocean (PI's as yet unknown). As this develops, pre-cruise planning will be done via teleconferencing and a PI planning workshop. Additionally, an expedition website will be established with a data portal for exchange of related information among scientists prior to the cruise. An ad hoc committee of PI's involved will be formed with the specific task to coordinate data management. A formal cruise report will be distributed by the designated chief scientist shortly following for the cruise.

Once funded, a more detailed plan for station locations, instrument deployment, water sampling strategy and water sample allocation will be written up as a science implementation plan for the cruise. The actual sampling events will be recorded on paper logs (scanned into PDF documents) and in a digital event log. Following completion of the cruise, the original underway data will be contributed by the vessel

operator to the UNOLS central data repository at <http://www.rvdata.us/catalog/> managed by the Rolling Deck to Repository (R2R) project. Also, R2R will ensure that the original underway measurements will be archived permanently at NODC and/or NGDC as appropriate for the data type.

Measurements made by the entire science party will be managed by the Biological and Chemical Oceanography Data Management Office (BCO-DMO) and the data sets will be available online from the BCO-DMO data system (<http://bco-dmo.org/data/>). BCO-DMO will also archive all the data they manage at the appropriate national archive facility, such as NODC and NGDC. BCO-DMO will advise on standards for metadata and data formats compatible with eventual submission to national archives will be implemented at the onset of the project to minimize the effort required for submission at the end. Chemical data will continue to be produced from post-cruise experiments and analysis. Regular teleconference meetings with PI's will coordinate data submissions and ensure completion of data management issues. Policies regarding access, protection, and privacy of data will be compatible with those from the appropriate NSF and national archive programs.

*Additional Plans for archiving and Preserving for access:*

The optical data for CDOM and FDOM distribution will be deposited into NASA's SesBASS database (<http://seabass.gsfc.nasa.gov/>). This repository archives data that includes measurements of apparent and inherent optical properties, phytoplankton pigment concentrations, and other related oceanographic and atmospheric data, such as water temperature, salinity, stimulated fluorescence, and aerosol optical thickness. The use of this database by the oceanographic community is open and leads to algorithm development for eventual use by the general scientific community.