

DATA MANAGEMENT PLAN

Expected Data. Data collected in the proposed work will include results from measurements of oceanic particulate and dissolved organic carbon (POC, DOC), total dissolved nitrogen (TDN), suspended solids, DOC, dissolved lignin, DOM absorption and fluorescence, and molecular characterization of microbial populations, seawater [chl a], a variety of sample-specific environmental parameters (seawater and air temperature, wind speed, salinity, water depth, freshwater discharge, etc.) and laboratory experiment-specific data.

Data Format, Standards and Archiving. Primary data will be recorded in laboratory notebooks, as instrumental output on computers, and as archived physical samples and associated extracts. Other data-related products include spreadsheets and documents that interpret the primary data. All laboratory notebooks will remain in the laboratories of the PIs. Whenever possible data will be converted to screen capture images or PDF format for further manipulation and archival. All data will be backed up using external hard drives and stored on centralized servers at ECU. As technological standards or practices change, the data will be transferred to appropriate devices or storage media to ensure that it is accessible to current technologies.

Throughout the course of the project, data and progress will be evaluated during monthly meetings across all three PIs. Data will be disseminated via publications and at presentations at one national meeting. Chemical and biological data collected for the project will be submitted to the Biological and Chemical Oceanography Data Management Office for archiving within 2 years of project completion. GC-MS data from lignin analysis will include peak areas for specific retention times, which are calibrated for extraction efficiency and instrument response, using surrogate, internal and a relative response factor standard. Assigned molecular formula and m/z lists will be stored in Microsoft Excel spreadsheets for archiving. All data obtained by Shimadzu TOC-VPN analyzer will also be stored on ECU's central server. Outputs are in the form of response areas that are calibrated to a standard curve generated using solutions of potassium hydrogen phthalate and distilled deionized water. Concentrations will be adjusted appropriately for blank contamination and archived in spreadsheets along with calculated air-sea fluxes and associated metadata. Ancillary seawater [chl a], microbial counts, phytoplankton and microbial characterization, and environmental and laboratory incubation parameters will be similarly archived in excel spreadsheets with accompanying metadata. Any seawater samples not consumed during analyses over the course of this project will be archived frozen for a period of no less than 2 years. Filters and sediment used for microbial analyses will be stored in an ultra low temp freezer for long-term preservation for a period of no less than 2 years. Sample extracts from molecular analyses will be archived at ECU.

Policies for Re-use, Re-Distribution. Data generated by this project will be disseminated in accordance with NSF policy on the dissemination and sharing of research results. Generally, all findings will be published promptly (within 2 years of project completion) with detailed data provided in the supplementary information sections of those publications. Full data sets and physical samples (if available) will also be made available via requests to the PIs at no more than actual cost. Microbial community sequence data will be submitted to an online repository such as Dryad or NCBI's Short Read Archive. Whenever possible, data will be provided in a format such that specialized software is not needed to work with the data, spectra, or images. Any re-use, redistribution or production of derivatives of our data is expected to acknowledge our work generating these data via citation of appropriate publications. In addition, a description of the project and any important results will be highlighted on each PI's website in an area designed specifically for this project. The websites will be updated periodically as project activities progress and will be intended to inform interested parties of our advances. Interested parties will be directed to email the PIs to inquire about data availability via a link on the website.