DATA MANAGEMENT PLAN

Agency for Proposal:	Antarctic Earth Sciences (Office of Polar Programs, NSF)
Submission date:	15 April 2014
P.I.s:	Drs. John P. Christensen and David Burdige
Proposal title:	Organic Carbon Oxidation and Iron Remobilization by West Antarctic Shelf Sediments

One four-week cruise on the Nathaniel Palmer, or equivalent, is planned for this project in the first grant year (Jan. 2016). A shiptime request has been submitted to UNOLS. Dr. John P. Christensen will be Project Chief Scientist and will develop the science implementation plan for the project's portion of the cruise. We anticipate collaborative use of the vessel.

We propose to sample 14 sites on the continental shelf west of the Antarctic Peninsula. A Megacorer will collect short cores (40 cm in depth) from each site. These will be used to measure the sediment-water fluxes of dissolved solutes, to measure the dissolved constituents in the interstitial waters, and to determine properties of the bulk sediments. We will only collect enough cores to satisfy the needs of our analyses or to satisfy any sample requests that we can easily accommodate. We may perform CTD/Rosette casts to collect bottom water. For all of the analyses, the sediments used for these analyses will be processed on-board to some point in their protocol. For many samples, analysis will be finalized in the shore-based laboratories. The analyses that we currently plan are listed in Table 1.

If this proposal is successful, we will contact the Antarctic Data Coordination Center and work with them on the details of the data submission, including the timing and contents of the science implementation plan, the cruise report including metadata, and the final cruise reports. Within 180 days after the cruise, metadata describing the scientific events on the cruise will be submitted to the data office. We anticipate that this will include a map of the ship's track and sampling sites, and will include descriptions of the casts and sample collections occurring for this project, including tables describing the details of the scientific sampling. This report will be completed by the Project Chief Scientist.

Sample analysis will be completed in the shore-based laboratories and in less than 2 years after the cruise, final cruise data reports for the listed analyses will be filed with the data office. This will include a listing of the sample names/numbers, the information about their collection (cast number, date and time, and ship's location), description of the methods used in the analysis, a discussion of the quality controls applied to the analyses and the data, and a listing of the data. Data will be replicated and stored at both the NEOL laboratory and at Old Dominion University. Data records will be frequently backed up. At ODU, data are backed up to both a hard drive on the local area network in the P.I.'s lab as well as to a separate data storage system that is a part of the university computer system. During the cruise, data in electronic format will be transmitted to the home email box and staff will move it to the backup data hard drives.

We anticipate that much of this data will be used in scientific publications. Although manuscript publication sometimes takes longer than the time periods involved in data submission

to the data office, we will keep the data office notified of these accomplishments.

Table 1. Analyses to be performed on the sediments and waters on this project

Analysis	From Sediment-water fluxes:	From downcore profiles:	Responsible P.I.
Dissolved:			
dissolved oxygen	yes	yes	Both
total CO_2	yes	yes	Christensen
calcium	yes	yes	Christensen
nitrate	yes	yes	Christensen
ammonium	yes	yes	Christensen
phosphate	yes	yes	Christensen
silicate	yes	yes	Christensen
iron (+2)	no	yes	Burdige
manganese (+2)	no	yes	Burdige
bromide	yes	yes	Christensen
Sulfate	No	Yes	Burdige
Whole sediments:			
organic C content	No	Yes	Christensen
carbonate content	No	Yes	Christensen
porosity	No	Yes	Christensen
biogenic silica	No	Yes	Christensen
several Fe phases	No	Yes	Burdige
several S phases	No	Yes	Burdige
^{210}Pb concentrations	No	Yes	Christensen