**Data Management Plan**

**1. Project Description:** This proposal aims to investigate concentrations and isotopic composition of reactive nitrogen species in precipitation and aerosol extracted samples collected in (a) Honolulu, Hawaii; and (b) Chang-Dao Island, China.

**2. Data Description:** The concentration and nitrogen ($\delta^{15}N$) and oxygen ($\delta^{18}O$, $\Delta^{17}O$) isotopic composition of nitrate and the concentration and nitrogen isotopic composition ($\delta^{15}N$) of ammonia and ammonium will be determined from precipitation samples and water-based extracts of aerosol samples. The concentration of aerosol and rainwater organic matter will also be determined. Precipitation samples will be collected on an event basis; aerosols will be collected on a weekly basis throughout the year, and on a daily basis during intensive campaigns once per season. Short-term sampling via research cruises will be conducted during the intensive campaigns. Field blanks and sample processing blanks will also be collected and measured. All samples will be run for isotopes in the laboratory of PI Hastings at Brown University using the denitrifier method (nitrate) and a hypobromite/azide method (ammonium). All samples will be run for concentrations in the laboratories of the subcontractors and co-PI at offsite locations. The Suffolk University co-PI (Schiebel) and sub-contractor Wang will analyze all samples for total dissolved nitrogen (TDN) concentrations and Schiebel will intercalibrate samples. All data will be combined (i.e. concentrations, isotopes) to be reported together.

**3. Standards/Metadata:** If this project is recommended for funding, Hastings will contact BCO-DMO immediately to register the project and provide a list of sample types and metadata detailing the analytical techniques used during sample analysis (Hastings has previously submitted nitrate conc and isotopic data from GEOTRACES projects). As part of a metadata description, PI Hastings will include descriptions of isotopic data processing and will report the values and composition used for internationally accepted isotopic standards of nitrate and ammonium. Typically, 2-3 internationally recognized standards are used for verification of nitrate nitrogen isotopic data (IAEAN3, USGS34, USGS32) and 3 standards (in addition to internal working standards) are used for verification of oxygen isotopic data (IAEAN3, USGS34, USGS35). 2 internationally recognized standards are used for verification of ammonium nitrogen isotopic data (IAEAN2, USGS25). Analytical precision is reported based on pooled standard deviations for the standards (which are run multiple times with every sample batch run), along with paired standard deviations for replicate measurements of samples. Standardization and calibration for TDN analyses will also be reported.

**4. Data Storage:** Raw data generated are stored on a computer in the laboratory that is also copied to an external hard drive as backup on a regular basis. Corrected data is processed via spreadsheets and stored on individual computers that are backed up on a regular basis.

**5. Data Sharing and Access:** The PIs will adhere to the OCE Sample and Data Policy and submit all data and sample metadata to the Biological and Chemical Oceanography Data Management Office (BCO-DMO) as soon as possible after generation of data: within two years of data collection or upon publication, whichever comes first. The data reported to BCO-DMO will also be shared via the SOLAS metadata portal (http://www.solas-int.org). Progress on and compliance with the data management plan will be addressed in annual and final reports. Links to publicly available data will also be shared as part of peer-reviewed publications. Documentation of the corrections scheme used, a list of standards and the values used in corrections, and the error associated with analytical methods, along with the corrected data, will also be included in any submission.