Data Management Plan

This study will produce two main types of data:

Model data: A large amount of data will be generated from simulations of the biogeochemical model (MOBI), as well as diagnostic tracers such as Green functions and preformed tracers. The simulations will be performed on the NSF-funded Cheyenne and NERC-funded Archer supercomputers. Model data will be stored in NetCDF format, which contain all necessary meta-data, including variable names, units, model resolution, latitude/longitude coordinates, and is recognized by software analysis packages, such as GrADS, NCL, Matlab, ferret, python etc.

Model code: As part of this project, MOBI and its interface to the transport matrix method (TMM) will be extended to incorporate new biogeochemical process parameterizations and additional prognostic and diagnostic tracers.

Data archiving: The biogeochemical model data will be stored on a server maintained by Khatiwala's Ocean Biogeochemical Modeling group at Oxford. It will be backed up to both a RAID (we have budgeted for a 20 TB NAS RAID) and to the University's mass storage system. UVic climate model data of less than ~0.5 TB will be archived on a dedicated RAID system on Schmittner's data network.

Data and code sharing: We will make model output public as soon as a scientific paper on the results has been submitted by the PIs or one year after the end of the simulation, whichever comes sooner. This condition ensures public access to the data within a reasonable time frame, regardless of publication status. Anyone wishing to make use of the data before this time can communicate with the PIs regarding access. Data will be distributed via websites maintained by Schmittner and Khatiwala's groups at OSU and Oxford, respectively. Selected model output and scripts used to create figures will be made available with the publishing journal and/or with the NOAA Paleoclimate data repository.

All code developed by this project will be distributed via github: https:/github/com/samarkhatiwala/tmm and https://github.com/OSU-CEOAS-Schmittner.