Data Management Plan for the Research Proposal: Identifying the Role of Basin-scale Climate Variability in the Decline of Atlantic Corals

PIs: Anne Cohen, Daniel Sigman, Samantha dePutron

The PIs and students will participate in and present papers at international meetings and workshops and all results of this work will be published in international, peer-reviewed journals in a timely manner.

We will generate new experimental datasets that allow us, for the first time, to quantify the physiological response of two major reef-building coral species to change in food availability under different light conditions. A new tool ($d^{15}N$ of organic material bound in the coral skeleton) will be tested, developed and applied to enable reconstruction of coral responses to food availability, on natural reefs, on decadal timescales. This time scale is important because climate change impacts will likely be felt most strongly over the next several decades, and coral responses to environmental variability are different on seasonal versus interannual and longer timescales. New multi-decade long, annually resolved growth histories (linear extension, density, calcification) will be generated for three genera of Atlantic reef-builders at two sites Bermuda and Curacao, allowing evaluation of the impact of ocean circulation on coral growth. New annually-resolved SBO-$\delta^{15}N$ time-series will be generated in parallel; these data will provide the framework within which to interpret the response of corals to changes in ocean climate.

All field and laboratory data generated under this grant will be submitted to and archived by WHOI's Biological and Chemical Oceanography Data Management Office. In addition, we will submit our data for curation, archiving and distribution by EPOCA (http://www.epoca-project.eu/index.php/data.html) in cooperation with the World Data Center for Marine Environmental Sciences (WDC-MARE). Data are archived in Pangaea, an information system operated as an Open Access library aimed at archiving, publishing and distributing georeferenced data from earth system research. (http://www.pangaea.de/about/).