Data Management Plan

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Project title: Ecology of deep-sea eukaryotic microbes in the North Atlantic

NSF program: OCE-BIO

Solicitation Info: General Grant Proposal Guide

Submission Date: 02/15/2012

Overview: Eukaryotic activity will be studied in the North Atlantic Ocean in an international research collaboration with the University of Vienna (Austria) and the Netherlands Institute of Sea Research (NIOZ). The survey portion of this project will extend into the temperate and subpolar environments and include the Charlie Gibbs Fracture Zone along the Midatlatic Ridge. Short and long-term incubations will be performed off the East Coast of Puerto Rico.

Data description and format

Metadata for each data sets will include the cruise number, date, time (UTC), longitude, latitude, depth, a detailed methods description, and will provide links to CTD data sets, and data resources of collaborators in the same project.

Type of data:

1. Bulk measurements of biological activity normalized to seawater volume

    ~~a) enzyme activity (comma delimited text)~~

    b) eukaryotic predation on prokaryotes (comma delimited text)

    ~~c) in vivo Electron Transport System Activity (comma delimited text)~~

    d) prokaryotic secondary production (via link to CODIS data base, see below)

    e) prokaryotic chemoautotrophy (via link to CODIS data base, see below)

~~2. Single cell activity (CTC, feeding incidence) and the total number of cells surveyed (comma delimited text)~~

3. Cell numbers of eukaryotic microbes per volume including groups identified via CARD FISH (comma delimited text)

4. Raw images from vertical video profiles (mp4)

5. Particle characteristics (depth, number per volume, image area of each particle in pixels), length to width ratios of the major axes for each particle (dimensionless) from image analysis of vertical video profiles in 1 m bins (comma delimited text)

6. Unreconstructed holographic images (avi)

7. Depth and length information of each reconstructed particle from holography (comma delimited text)

8. Single cell genomics sequences (ASCII)

Intended repository: All data derived from this project (raw images and processed data) will be deposited in

(1) the Biological and Chemical Oceanography Data Management Office (BCO-DMO) at Woods Hole

(bco-dmo.org). The data will be linked with the

(2) Centralized Oceanographic Data Information System (CODIS) of the Data Management Group at the Netherlands Institute of Sea Research (http://www.nioz.nl/nioz_nl/24c054320e1d73e5b298b0a6d0d32434.php).

using the following criteria:

a) unique identifier of the expedition assigned by the NIOZ

b) date

c) exact time (second accuracy, in UTC) of initial contact of the rosette with the water for each cast (synchronization with video and holography camera)

d) longitude and latitude

e) station number.

The single cell sequences will be deposited at

(3) Genbank at the National Center for Biotechnology Information (NCBI, www.ncbi.nlm.nih.gov/genbank).

Newly developed and evaluated Fluorescence In Situ Hybridization (FISH) probe sequences will be deposited in

(4) ProbeBase at the University of Vienna (www.microbial-ecology.net).

Type species from culture isolates will be deposited at the

(5) American Type Culture Collection (ATCC, www.atcc.org)

(6) Coli Genetic Stock Center (CGSC) at Yale University: http://cgsc.biology.yale.edu/

Timeline for data release:

~~12 months after field work for physiological measurements and raw images, 36 months for eukaryotic cell numbers and taxonomic identification using CARD FISH, and processed image data.~~