

Data Management Plan

“The Chemical Ecology of Marine Sediment Bacteria”

This proposal involves the collection of three types of data and materials. These include physical samples, DNA sequences, and experimental results. Access to all three forms of data and materials will be made available as described below and according to NSF policy on the dissemination and sharing of research results:

Physical samples and products derived thereof: Marine sediments will be collected as part of this proposal. As requested by the permitting process with the Mexican government, the sediments collected off the Yucatan Coast will remain in Mexico with our collaborator Alejandra Prieto Davó, Associate Professor, Faculty of Chemistry, University of Sisal, Yucatán, México. Access to these samples will therefore be controlled by our Mexican collaborators. Nonetheless, these samples will be processed for the isolation of bacteria while aboard ship as described in the proposal. The cultures obtained from these efforts will be shared with our Mexican collaborators and subcultures brought back to SIO. These strains will be cryopreserved and entered into the SIO culture collection. A database (Filemaker Pro) will be used to record the coordinates of the collection sites, media and processing methods, and associated meta-data. The strains obtained in culture as part of this research will be made available to colleagues upon request. The sediment samples collected in the Bahamas are not under the same restrictions and will be brought back to SIO and stored in a freezer. An inventory of these samples will be maintained in a table-delineated Excel spreadsheet. These sediments will be made available to other researchers upon request.

The research activities associated with this proposal have the potential to lead to the discovery of new natural products. There is a small but real possibility that one of these products may have potential commercial value. Discoveries deemed of value would be disclosed to the UCSD technology transfer office as required by university policy. However, stipulations on commercial activities associated with the collecting permits may limit the university's options for development. In all cases, the country from which the materials were derived would be included in this process and any potential royalties would be shared according to standard university policy. Any new chemical entities discovered will also be provided to the National Cancer Institute's Molecular Library initiative. This program provides interested scientists access to libraries of chemical compounds so that they can be screened for biological activity. Depositing compounds discovered as part of this program creates a unique opportunity for their medicinal potential to be evaluated.

Finally, the feeding studies described in this proposal will generate samples of invertebrate assemblages that congregate on the “baits”. Voucher specimens will be preserved for morphological and DNA analysis and archived into the SIO Benthic Invertebrate Collection. These samples will be maintained by the co-PI Greg Rouse and made available for analysis upon request.

DNA sequences: All 16S rRNA sequences generated from the cloning experiments will be deposited in GenBank. The sequences generated from the pyrosequencing experiments will be deposited into the NCBI Sequence Read Archive.

Experimental results: The results obtained from this research will include assessments of bacterial diversity, the antagonistic activities of bacteria and pure compounds, the genetic links between compounds and their biosynthetic pathways, and potentially, the structures of

new compounds. The primary goal of obtaining these results are to present them in to the public via conferences and publications. Select raw data will be made available through supplementary information associated with the publications. All data will be manually recorded in spreadsheet software along with essential metadata and made available upon request.