

Data management plan

The research proposed in the present NSF CAREER Award will conform to the NSF policy on the dissemination and sharing of research results, "Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections and other supporting materials created or gathered in the course of work under NSF grants. Grantees are expected to encourage and facilitate such sharing."

Data collected: The research proposed in the present NSF CAREER Award will result in experimental samples, laboratory data, and model output. Samples collected and data generated will be as follows: Physical samples will include DNA extractions of microbes, coral fragments, disease samples, and coral tissue and mucus extracts. Measurements taken throughout each experiment will include physiological parameters such as photochemical efficiency, calcification, respiration, photosynthesis, temperature, salinity, nutrients, pH, alkalinity, disease parameters. Microbial community information will also be collected and analyzed. All data analyses and modeling will be conducted in R (The R Foundation for Statistical Computing).

Curriculum materials will be available immediately to those educators listed within the NSF CAREER Award, and disseminated to other educators and online after pilot implementation and assessments.

Data Storage: Sample collection, tracking and storage (including unique sample identifiers), data entry, and operation of analytical instrumentation will follow strict Quality Assurance (QA) and Quality Control (QC) protocols of Mote Marine Laboratory. Standards will also be followed regarding documentation, maintenance of records, and calibration and maintenance of all sampling equipment. Sensors and equipment will be calibrated and subject to service contract as recommended by the manufacturers. Quality control and audit checks will be utilized as appropriate. Data will be stored on several external backup hard drives as well as Mote's internal network.

QA/QC: All data collection will be documented and subject to QA/QC which will, at a minimum, adhere to national standards. Mote Marine Laboratory has a long history of commitment to quality assurance procedures and prepared the first QA Plan in the State of Florida to meet Environmental Protection Agency (EPA) guidelines and to obtain the then-Florida Department of Environmental Regulation approval. When sampling and analytical efforts do not have a specific project quality assurance plan, the laboratory conducts activities under an approved Quality Plan which details the quality assurance procedures followed.

Data Dissemination: Laboratory data will be collected, edited, and reduced to Microsoft (MS) Excel or MS Access formats. Statistical analysis software packages (i.e., R) will be used with appropriate statistical models for determining significance of results. All data generated will be uploaded to appropriate databases to ensure future access. The format for the model outputs will also generally be in the form of a database (e.g., MS Access, Excel, text files). Annual reports will be submitted to the cognizant Program Officer at least 90 days before the end of the current budget period. A final project report and report outcomes report for the general public will also be submitted no later than 90 days after the expiration of the grant. Reporting will be made through NSF's electronic project-reporting system, available through FastLane.

Peer Reviewed Publications: It is projected that a number of peer reviewed publications will result from this work, which ensures transferability of the material to other interested researchers.

PI: Erinn Muller will be responsible for aspects related to the management of data. In the event that she leaves the project, all data will be managed by the Program Manager of the Coral Reef Ecology and Microbiology Program at Mote Marine Laboratory, Dr. Kim Ritchie.