

Division of Atmospheric and Geospace Sciences

Advice to PIs on Data Management Plans

The NSF Proposal and Award Policies and Procedures Guide articulates the agency's requirements for a supplementary document of no more than two pages that describes a plan for managing data (data is used here in very broad terms) produced by the project. This Data Management Plan (DMP) is required for all proposals. Proposals without a DMP will not be accepted by FastLane/Grants.gov. Reviewers are asked to consider the DMP as part of either the intellectual merit or the broader impacts review criterion. The scope of the proposal will determine which review criterion is appropriate.

The goal is to provide clear, effective and transparent implementation of the long-standing NSF Policy on dissemination and sharing of research results. Although the policies presented below only refer to grants and grantees, the policy covers awards made as cooperative agreements as well. Full details of the policy can be found in the Proposal Award Policy and Practices Guide. The policy states:

- a. Investigators are expected to promptly prepare and submit for publication, with authorship that accurately reflects the contributions of those involved, all significant findings from work conducted under NSF grants. Grantees are expected to permit and encourage such publication by those actually performing that work, unless a grantee intends to publish or disseminate such findings itself.
- b. Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time (by not more than two years after the expiration of the project), 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. Privileged or confidential information should be released only in a form that protects the privacy of individuals and subjects involved. General adjustments and, where essential, exceptions to this sharing expectation may be specified by the funding NSF Program or Division/Office for a particular field or discipline to safeguard the rights of individuals and subjects, the validity of results, or the integrity of collections or to accommodate the legitimate interest of investigators. A grantee or investigator also may request a particular adjustment or exception from the cognizant NSF Program Officer.
- c. Investigators and grantees are encouraged to share software and inventions created under the grant or otherwise make them or their products widely available and usable.
- d. NSF normally allows grantees to retain principal legal rights to intellectual property developed under NSF grants to provide incentives for development and dissemination of inventions, software and publications that can enhance their usefulness, accessibility and upkeep. Such incentives do not, however, reduce the responsibility that investigators and organizations have as members of the scientific and engineering community to make results, data and collections available to other researchers.

e. NSF program management will implement these policies for dissemination and sharing of research results, in a way appropriate to field and circumstances, through the proposal review process; through award negotiations and grant conditions; and through appropriate support and incentives for data cleanup, documentation, dissemination, storage and the like.

f. Each NSF grant contains, as part of the grant terms and conditions, an article implementing dissemination and sharing of research results.

In general, a DMP will contain descriptions of one or more aspects of data generation and handling. The plan should contain information on how the data will be managed. In some cases, the DMP may contain a statement such as “a data management plan is not relevant to the proposed activities”; such statements should be explained by the proposer.

Items that should be considered for inclusion in the DMP are:

1. Products of the Research

Describe the types of data and products that will be generated in the research, such as physical samples, space and/or time-dependent information on chemical and physical processes, images, spectra, final or intermediate numerical results, theoretical formalisms, computational strategies, software, and curriculum materials.

2. Data Format

Describe the format in which the data or products are stored (e.g. hardcopy logs and/or instrument outputs, ASCII, XML files, HDF5, CDF, existence of metadata, etc).

3. Access to Data and Data Sharing Practices and Policies

Describe your plans for providing access to data, including websites maintained by your research group and contributions to public databases, and the mechanism for making the existence of an archive publicly known (e.g. by indicating the data sharing mechanism in publications that recognize NSF support). If maintenance of a web site or database is the direct responsibility of your group, provide information about the period of time the web site or database is expected to be maintained. Also describe your practice or policies regarding the release of data – for example whether data are available before or after formal publication and the approximate duration of time that the data will be kept private. Describe your policies (where applicable) for protection of propriety data, privacy and confidentiality, intellectual property, or other rights or requirements.

4. Policies for Re-Use, Re-Distribution, and Production of Derivatives

Describe your policies regarding the use of data provided via general access or sharing. If you plan to provide data on a website, will the site contain disclaimers, or conditions regarding the use of the data in other publications or products? If the data or products are copyrighted, how will this be noted on the website?

5. Archiving of Data

Describe whether and how data will be archived and how preservation of access will be handled. For example, will hardcopy logs, instrument outputs, and physical samples be stored in a location where there are safeguards against fire or water damage? Is there a plan to transfer digitized information to new storage media or devices as technological standards or practices change? Will there be an easily accessible index that documents where all archived data are stored and how they can be accessed? If the data will be archived by a third party, please refer to their preservation plans (if available).

6. Cost of Implementing the DMP

If implementing the DMP will incur additional costs to the project this fact should be mentioned in the appropriate section of the plan (for example the cost of setting up and maintaining a web site). Details of the costs must be included in the budget justification in the budget section of the proposal.

The Division of Atmospheric and Geospace Sciences has prepared a PDF form that you can fill out, save and then upload to FastLane for your DMP. You do not have to use this form. We provide it as a possible easy guide to the sort of information that we expect to be relevant and of interest to reviewers when evaluating a DMP. The PDF form will be found on the AGS web page (see <https://www.nsf.gov/geo/geo-data-policies/ags/index.jsp>).

Researchers from the paleoclimate community are encouraged to upload project Data Management Plans using the fillable document found at www.ncdc.noaa.gov/data-access/paleoclimatology-data/contributing