

Directorate of Mathematical and Physical Sciences
Division of Astronomical Sciences (AST)
Advice to PIs on Data Management Plans

NSF has published a revised version of the NSF Proposal and Award Policies and Procedures Guide (PAPPG) (NSF 11-1) that will require, in all proposals submitted, or due, on or after January 18, 2011, a supplementary document of no more than two pages describing a Data Management Plan for the proposed research. Fastlane will not permit submission of a proposal that is missing the Data Management Plan. The Data Management Plan will be reviewed as part of the intellectual merit or broader impacts of the proposal, or both, as appropriate. The goal is to provide clear, effective, and transparent implementation of the long-standing NSF Policy on Dissemination and Sharing of Research Results, which may be found in the [Award Administration Guide, Section VI.D.4](#). This 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, 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 ways appropriate to field and circumstances, through the proposal review process; through award negotiations and conditions; and through appropriate support and incentives for data cleanup, documentation, dissemination, storage and the like.

MPS-supported research covers a broad spectrum of communities of investigators, from individual investigators on experimental and theoretical topics to support for users at national and international facilities to large national and international collaborations of investigators involving tens or hundreds of individuals.

MPS Divisions will rely heavily on the merit review process in this initial phase to determine those types of plan that best serve each community and update the information accordingly.

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 but must not be used to circumvent the 15-page Project Description limitation by discussing other aspects of planned research. Proposals without a DMP will not be accepted by FastLane. 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.

This short document provides guidelines that appear to be most helpful for AST proposers in developing the content of their DMP. We emphasize that these are guidelines that seem most appropriate for AST; the contents of the DMP are subject to the standard merit review process by panels and/or ad-hoc reviewers, and proposers should write the DMP with this merit review in mind.

The following five items are listed in the same order as those in the revised PAPPG. Examples are given to help guide the Astronomy community, but these guidelines are not intended to replace the guidance given in the PAPPG. In other words if there is conflict, the PAPPG will take precedence.

1. Products of the Research

Describe the types of data and products that will be generated in the research, such as images of astronomical objects, spectra, data tables, time series, theoretical formalisms, computational strategies, software, and curriculum materials.

2. Data Format

Describe the format in which the data or products are stored (e.g., ASCII, html, FITS, VO-compliant tables, XML files, etc.). Include a description of the metadata that will make the actual data products useful to the general researcher. Where data are stored in unusual or not generally

accessible formats, explain how the data may be converted to a more accessible format or otherwise made available to interested parties. In general, solutions and remedies should be provided.

3. Access to Data and Data Sharing Practices and Policies

“Access to data” refers to data made accessible without explicit request from the interested party, for example those posted on a website or made available to a public database. Describe your plans, if any, for providing such general access to data, including websites maintained by your research group, and direct contributions to public databases. 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 data base is expected to be maintained. Note that data taken at national or private observatories may be accessible through public archives (perhaps after a standard proprietary period). Various forms of data (e.g., FITS images and tables, other data tables) also may be deposited with published articles in the AAS journals and other journals. Particular attention should be paid to data sets that are products of well-defined surveys. Also describe your practice or policies regarding the release of data for access, for example whether data are posted before or after formal publication.

“Data sharing” refers to the release of data in response to a specific request from an interested party. Describe your policies for data sharing, including where applicable provisions for protection of privacy, confidentiality, intellectual property, national security, 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. For example, if you plan to provide data and images on your website, will the website contain disclaimers, or conditions regarding the use of the data in other publications or products? If the data or products (e.g., images) are copyrighted (by a journal, for example), 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. If the data will be archived by a third party (e.g., national observatory or journal), please refer to their preservation plans if available.