

# **Directorate of Mathematical and Physical Sciences Division of Astronomical Sciences (AST) Advice to PIs on Data Management Plans, January 17, 2018**

The NSF Proposal and Award Policies and Procedures Guide (PAPPG) (NSF 18-1) requires, in all submitted proposals, a supplementary document of no more than two (2) pages describing a Data Management Plan (hereafter DMP) 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 of this document 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 Proposal and Award Policies and Procedures Guide, Section XI.D.4 [https://www.nsf.gov/pubs/policydocs/pappg18\\_1/pappg\\_11.jsp#XID4](https://www.nsf.gov/pubs/policydocs/pappg18_1/pappg_11.jsp#XID4).

MPS supports research carried out by a broad spectrum of communities of researchers, from individual investigators on experimental and theoretical topics to users at national and international facilities to large national and international collaborations involving tens or hundreds of individuals.

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. 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 the AST Division considers most appropriate for astronomy programs; these guidelines should be helpful for AST proposers in developing the content of their DMP. We emphasize, however, that 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 guidelines are not intended to replace the guidance given in the PAPPG. In any perceived 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, Virtual Observatory-compliant tables, XML files, etc.). Include a description of any

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 to an interested party without the need for an explicit request from the interested party. Describe your plans, if any, for providing such general access to data, including websites maintained by your research group, and contributions of your data 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 you plan to maintain the web site or data base. Note that data taken at national or private observatories may already be accessible through a public archive (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 making accessible data sets that are products of well-defined surveys. Also describe your practice or policies regarding the release of data, 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.