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# Web Reviews: NSF Data Management Plan: A Primer

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# Web Reviews

Lisa R. Johnston

Reviews of web resources of interest to *SciTech News* readers.

## NSF Data Management Plan: A Primer

Breaking away from the usual format, this month I've decided to focus on a hot topic that should be on the minds of anyone who deals with science and technology researchers and organizations: the National Science Foundation (NSF) Data Management Plan (DMP). This new requirement will open the door to many new conversations with our users about how they manage their data and what we, as library and information professionals, can do to help preserve and disseminate their research data for future generations of researchers. You may use this column as a guide to getting started on developing your own handouts and training.

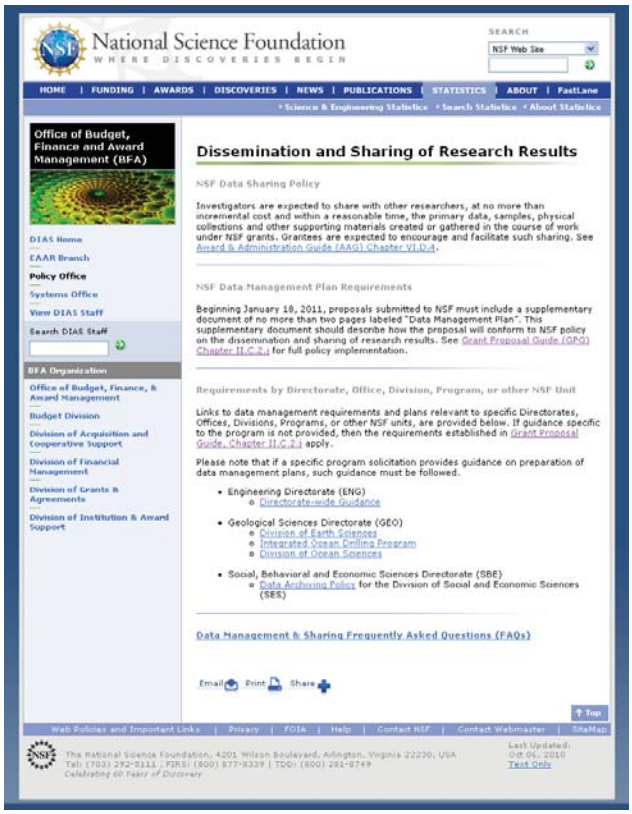
### NSF Data Management Plan

http://www.nsf.gov/bfa/dias/policy/dmp.jsp

Beginning January 18, 2011, the National Science Foundation will require a Data Management Plan (DMP) included with all new proposals. (This does not pertain to supplementary support to an existing award). This supplementary document, of no more than two pages, will describe how the proposal will conform to the NSF data sharing policy. Some important points about the new NSF policy:

- Fastlane, the NSF online proposal submission tool, will not permit submission of a proposal that is missing a Data Management Plan.
- A valid Data Management Plan may include only the statement that no detailed plan is needed, as long as the statement is accompanied by a clear justification.
- Finally, the Data Management Plan will be reviewed as an integral part of the proposal, coming under Intellectual Merit or Broader Impacts or both, as appropriate for the scientific community of relevance.

This page collects the various resources (described below) into one URL that can be used in handouts and for speaking with researchers.




### NSF Guide Part 1: Grant Proposal Guide (GPG)

http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/gpg_2.jsp#dmp

The NSF's Proposal & Award Policies & Procedures Guide has two parts. The first part, known as the Grant Proposal Guide (GPG), is a mammoth, 71-page booklet outlining all aspects of the proposal and submission process for NSF grants. In the relevant section titled, "Special Information and Supplementary Documentation," following instructions for creating a Postdoctoral Researcher Mentoring Plan, the NSF outlines the suggestions for creating a DMP. This placement alone underscores the need to better support our users who may be faced with this task, not to mention their lack of preservation and sharing expertise. In this section NSF suggests that a DMP include:

1. the types of data (including samples, physical



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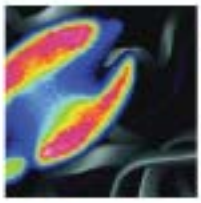

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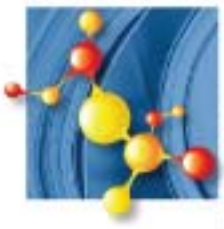

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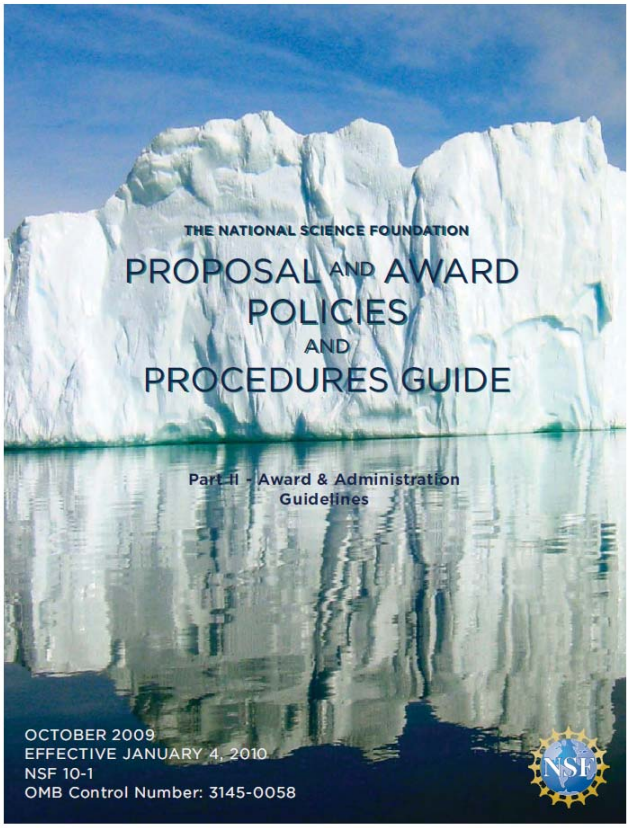
3. policies for access and sharing (including provisions for privacy/intellectual property);
4. policies and provisions for re-use; and
5. plans for archiving and preservation of access.




**NSF Guide Part 2: Award and Administration Guide (AAG)**
http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/aag_6.jsp#VID4

Part 2 of the NSF's Proposal & Award Policies & Procedures Guide is the even longer 81-page document outlining the management of the award once it has been given. This section contains the Dissemination and Sharing of Research Results section (as it relates to Intellectual Property) and outlines the expectations for data sharing. NSF has long had a sharing of data requirement that expects investigators to "share with other researchers, at no more than incremental cost and within a reasonable time, the data, samples, physical collections, and other supporting materials created or gathered in the course of the work under NSF grants." The updated requirement goes on to say, "Grantees are expected to encourage and facilitate such sharing" and that NSF will implement these policies for dissemination and sharing of research results through:

1. the proposal review process;
2. award negotiations and conditions; and
3. appropriate support and incentives for data cleanup, documentation, dissemination, storage and the like.

Finally, grantees are "encouraged" to share software and inventions created under the grant in a "widely available and usable" way. More on this in the exceptions outlined below.

**Requirements by NSF Programs**
http://www.nsf.gov/bfa/dias/policy/dmp.jsp

NSF explicitly says that any data sharing requirements specific to the Directorate, Office, Division, Program, or other NSF unit, should be followed and that "if guidance specific to the program is not available, then the requirements established in this section apply." Several NSF programs have established guidance on preparation of data management plans, and though they offer more concrete terms, each has their own set of exceptions. The sections, linked from the above URL, are:

- **Engineering Directorate (ENG):** This 4-page document reemphasizes NSF DMP requirements and goes on to say that "compliance with this policy will be evaluated not only by proposal peer review but also through project monitoring by NSF program officers…."
  - Minimum retention of data is 3 years.
  - Data should be accessible immediately after publication (except with patented information, where exceptions may apply).

- **Geological Sciences Directorate (GEO):** Three program divisions have more specific DMP requirements:
  - Division of Earth Sciences: Requires preservation for data supporting long-term research and stipulates that data be made openly accessible no more than two years after collection (but can be extended with permission).
  - Integrated Ocean Drilling Program: Ensures availability of drill samples are publicly available for access 36 months after research completion (with possibility of extension).
  - Division of Ocean Sciences: Requires that data be submitted to the "appropriate national data center" as soon as possible.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Suggests no later than two years after collection; and for observational metadata inventory to be deposited within sixty (60) days after the observational period/cruise.

- **Social, Behavioral and Economic Sciences Directorate (SBE):** The Division of Social and Economic Sciences' policy requires that data, in fully cleaned and documented form, must be placed in a data archive or library within one year after the expiration of an award. Before an award is made, investigators will be asked to specify in writing where they plan to deposit their data, and the suggestion is the Inter-University Consortium for Political and Social Research (ICPSR).

**NSF Exceptions to the DMP**

Going over the documentation revealed several "loopholes" for researchers to get around the data sharing policy aspect of the DMP. This is of course with valid reason to protect intellectual property and patentable information. However, with so many exceptions clearly outlined, it is not evident that this updated policy will have the sticking power that say, the NIH Sharing Policy had on researchers providing an open access copy of their research after one year of publication. Time will tell, but for now, here are a few such examples of NSF exceptions:

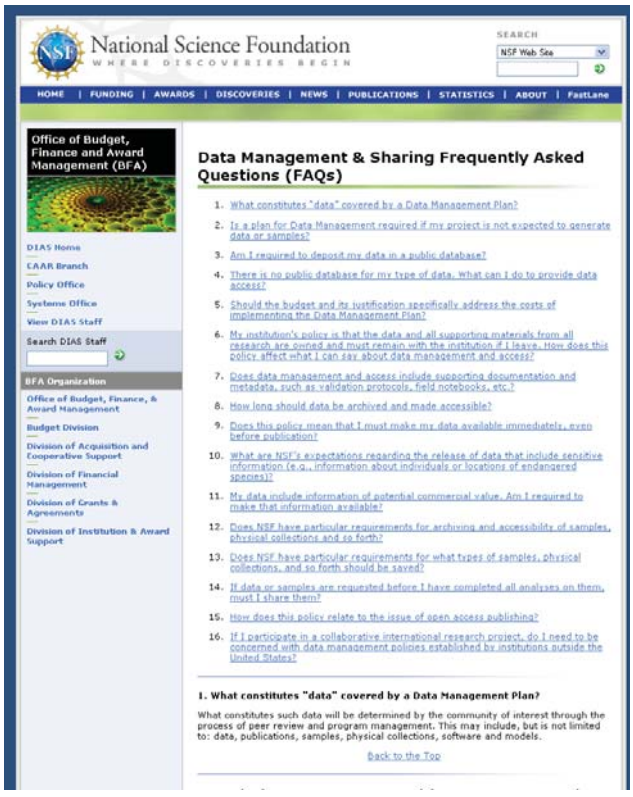
GPG Source: http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/gpg_2.jsp#dmp

1. A valid Data Management Plan may include only the statement that no detailed plan is needed, as long as the statement is accompanied by a clear justification.

AAG Source: http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/aag_6.jsp#VID4

1. 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.

2. 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.



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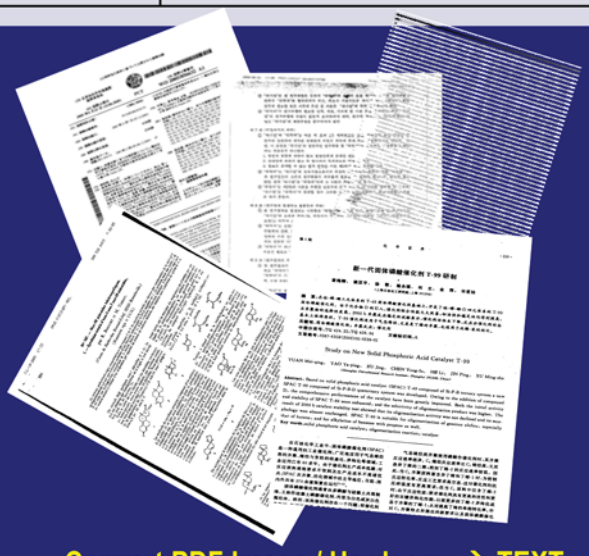

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**FAQ's on Public Access to Data**
http://www.nsf.gov/bfa/dias/policy/dmpfaqs.jsp

In many cases, the data type and disciplinary culture will determine the most appropriate place for sharing (i.e., ICPSR for social science or survey response data or NODC for oceanographic data). However, not all research disciplines have established repositories for data. In the FAQ section of the DMP policy page, the following questions are posed:

- *There is no public database for my type of data. What can I do to provide data access?* [A.] Contact the cognizant NSF Program Officer for assistance in this situation.

- *Should the budget and its justification specifically address the costs of implementing the Data Management Plan?* [A.] Yes. As long as the costs are allowable in accordance with the applicable cost principles, and necessary to implement the Data Management Plan, such costs may be included (typically on Line G2) of the proposal budget, and justified in the budget justification.

- *My institution's policy is that the data and all supporting materials from all research are owned and must remain with the institution if I leave. How does this policy affect what I can say about data management and access?* [A.] Data maintenance and archiving by an institution is one avenue by which data preservation and access can be achieved. However, the data access plan must address the institutional strategy for providing access to relevant data and supporting materials. ❖