National Science Foundation (nsf.gov): NSF-DMR: Materials Research

Products of Research

Describe the types of data and products to be produced during the project. Examples of data and products include: materials samples; characterization data; (meta)data that provides information on the data, e.g. synthesis conditions or community codes used; simulation data; and software. Data and other products generated from Broader Impact activities, such as education materials and assessment results, should also be included in the plan, together with Institutional Review Board (IRB) considerations and clearance, if applicable. ***This inventory should inform the scope of the Data Management Plan and the requirements to preserve, curate, and share the products that result from the project.***

Guidance:

- NSF-DMR Advice to PIs on Data Management Plans
- NSF Proposal & Award Policies & Procedures Guide (PAPPG)
- NSF plans for data management and sharing of the products of research (PAPPG)
- NSF Frequently Asked Questions (FAQs) for Public Access

Data Format Standards

Describe the format and media in which the data or products along with metadata are stored. The description should discuss the rationale for the format and to what extent in conforms to any existing standards, e.g. formats for image data, instrument outputs, and simulation data. **Does the data format facilitate further analysis through widely used software tools? Is it compliant with other instruments?** Existing standards for data and metadata format and content should be used insofar as they facilitate the reuse of the data and its further processing. The need for deviation from existing standards, or for development of new ones, should be justified and relevant plans should be adequately documented.

Guidance:

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- NSF Proposal & Award Policies & Procedures Guide (PAPPG)
- NSF plans for data management and sharing of the products of research (PAPPG)
- NSF Frequently Asked Questions (FAQs) for Public Access

Access and sharing

Data should generally be accessible ***without*** need for explicit or required requests from interested parties. Plans should be provided for enabling broad community access to data, including websites maintained by the research group and direct contributions to appropriate public databases or repositories. **Will data be registered and indexed to enable their discovery?** Practices regarding the release of data for access should be described. For example, data and data products will be made available on completion of the project. Persistent IDs, such as Digital Object Identifiers (DOI) can enable proper citation for suitably-archived, publishable data sets. A DOI is often automatically obtained when data are published in a major repository. Significant software or code developed as part of the project should be distributed open source, and include a description of how users can access the code, how to obtain documentation on how to use the code, and the conditions under which they can use and modify the code. A software license should be explicitly specified.

Guidance:

- NSF-DMR Advice to PIs on Data Management Plans
- NSF Proposal & Award Policies & Procedures Guide (PAPPG)
- NSF plans for data management and sharing of the products of research (PAPPG)
- NSF Frequently Asked Questions (FAQs) for Public Access
- NSF Public Access Policy

Policies and provisions for re-use, re-distribution, and production of derivatives

Describe your policies regarding the use of data provided via general access or sharing, or specific licensing provisions, if applicable. Practices for appropriate protection of privacy, confidentiality, security, intellectual property, and other rights should be communicated. The rights and obligations of those who access, use, and share your data.

Guidance:

- [NSF-DMR Advice to PIs on Data Management Plans](#)
- [NSF Proposal & Award Policies & Procedures Guide (PAPPG)](#)
- [NSF plans for data management and sharing of the products of research (PAPPG)](#)
- [NSF Frequently Asked Questions (FAQs) for Public Access](#)

Archiving of Data, Samples, and Other Relevant Research Products

Describe plans for archiving data, samples, and other relevant research products. **How will the research products including data be preserved and stored? What measures will be taken to assure that they will be maintained after the grant ends?**

Guidance:

- [NSF-DMR Advice to PIs on Data Management Plans](#)
- [NSF Proposal & Award Policies & Procedures Guide (PAPPG)](#)
- [NSF plans for data management and sharing of the products of research (PAPPG)](#)
- [NSF Frequently Asked Questions (FAQs) for Public Access](#)