Data Management Plan (DMP) requirements for NASA ROSES
Revised February 2021

To comply with the NASA DMP requirements, you'll need information about: 1) the type of data to be generated, 2) any standards to be applied, file formats generated, documentation, etc., 3) how you will provide access to the data (and when and how long), 4) intellectual property issues, if any, 5) data provenance, etc.

Additional information about NASA DMPs:

1) Scope of DMP

For NASA, all proposals or project plans for scientific research funding will be required to include a Data Management Plan (DMP) that describes whether and how data generated through the course of the proposed research will be shared and preserved (including timeframe), or explains why data sharing and/or preservation are not possible or scientifically appropriate. At a minimum, DMPs must describe how data sharing and preservation will enable validation of published results, or how such results could be validated if data are not shared or preserved.

2) Access to underlying data via peer-reviewed publications

DMPs must provide a plan for making research data that underlie the results and findings in peer-reviewed publications digitally accessible at the time of publication or within a reasonable time period after publication. This requirement could be met by including the data as supplementary information to the published article, through NASA archives, or other means. The published article should indicate how these data can be accessed.

Related to this, awards deriving from ROSES-2019 will (continue to) include terms and conditions requiring that accepted manuscript versions of peer-reviewed publications that result from ROSES awards must be uploaded into NASA's part of the PubMed Central (PMC) repository called NASA PubSpace.

There is more information on this requirement on the Schwerdtfeger Library's Public Access page: http://library.ssec.wisc.edu/public_access/index.php

3) Data Management Plan FAQ for ROSES-2020
https://science.nasa.gov/researchers/sara/faqs/dmp-faq-roses/

The FAQ says:

"Starting in ROSES-2020, unless the program element states otherwise, the sufficiency of the data management plan will be evaluated and will have a bearing on whether or not the proposal is selected …"

In past years most DMPs were collected by plain text in a mandatory text box in the NSPIRES cover page, in ROSES-2020 this will no longer be true. Unless otherwise stated, the new default is that the data management plan must be placed in a 2-page section in the proposal PDF immediately following the references and citations for the Scientific/Technical/Management (S/T/M) portion of the proposal and does not count against the page limit for the S/T/M Section. This is new for most of ROSES but has been the default approach for Appendix C (Planetary Science).

4) Code or Software considerations

In the past, NASA has not taken a consistent stance on when code should be accessible, but that has changed, especially if a user would need that code to process the data. Now, there is clearer guidance on software across ROSES. See Question 13 here:
https://science.nasa.gov/researchers/sara/faqs/dmp-faq-roses

5) Writing your DMP

 Match your plan headings to those from NASA (these are included in NASA's response to the Office of Science and Technology Policy Memo of 2013: https://www.nasa.gov/open/researchaccess/public-access-results). Be aware, however, that some areas, like planetary sciences, may have their own template.

1. **Types of data produced** (in the course of the project)
   Describe the types of data to be produced in the course of the project. For NASA's Earth Science Program and according to the NASA Earth Science Data & Information Policy, the term "data" includes observation data, experimental data, simulations, derived or compiled data, metadata, products, information, algorithms, including scientific source code, documentation, models, images, and research results.

2. **Data and metadata standards**
   The standards to be used for data and metadata format and content

   - Are the data non-proprietary? Open, with documented standards? In common usage by the research community? Using standard character encodings (i.e. ASCII)
   - Be sure to cite and adhere to data practices. For example, NASA has protocols for managing ASCII or NetCDF data files:
     https://earthdata.nasa.gov/esdis/eso/standards-and-references
   - NASA also has a Data Product Development Guide for Data Producers at:cdn.earthdata.nasa.gov/conduit/upload/14909/ESDS-RFC-041.pdf
   - Is there specific software required to read the data?

3. **Policies for access and sharing**
   Policies for accessing and sharing the data, including provisions for the appropriate protection of privacy, confidentiality, security, intellectual property, and other rights or requirements

4. **Policies and provisions for re-use, re-distribution, and derivatives**;
   Are there any considerations around re-use or re-distribution of the data?

   Possible language: Data will be available for free use and dissemination [with no restriction??] following the publication of a manuscript describing the work. Proper citation of the dataset is required. Further information and clarification of the data is available to users by contacting the investigators.

5. **Plans for access to data used in publications**; and

   Sample language: All data resulting from this project will be published and made freely available to the research community through peer-reviewed publications (and conference presentations) and their supplementary materials. Publications resulting from the project will be deposited into [NASA's PubSpace](#) within one year of publication.

6. **Plans for archiving and preservation**,
   Plans for archiving and preserving the data, as appropriate (use of existing databases or public repositories will be strongly encouraged), including how long the data will be preserved and accessible

   Note: Current UW-Madison policy states that, "Research Data must be archived for a minimum of seven years after the final project close-out, with original Data retained wherever possible."

   https://it.wisc.edu/wp-content/uploads/Policy-on-Data-Stewardship-Access-and-Retention.pdf

6) **Data archiving options (**most services will supply a DOI or handle to your dataset**)**

   a) NASA may have an interest in the data and may want to archive it. NASA archives include:
      EOSDIS Distributed Active Archive Centers (DAACS): https://earthdata.nasa.gov/about/daacs
      Planetary Data System: https://pds.nasa.gov/

   b) NASA may also approve uploading of your data to the NASA Open Data Portal:
      https://data.nasa.gov.
      OR, you can submit the metadata for your dataset to the Open Data Portal to enable discovery.

   c) Dryad:

      You can consider Dryad (http://datadryad.org/) as an option if you need a repository for your data ([there are many others](#)). It provides longer-term preservation, makes the data supporting your publications available, assigns a DOI. There are costs associated with submission. Dryad is a DataOne partner. Currently, our campus does not offer data archive capabilities but this may be available in the future.

d) Zenodo:

Another free alternative, Zenodo, is a multi-disciplinary open repository maintained by CERN. It is FAIR compliant, provides long-term preservation, with assignment of DOIs for those who lack other alternatives.

e) You may be able to serve and archive the data locally, but verify before doing so.

7) **Publications resulting from the research and data:**

You may be able to archive the final datasets *supporting your publications* on MINDS@UW offered by the UW-Madison Libraries. This is a managed repository for the intellectual products of UW-Madison researchers and faculty. The Schwerdtfeger Library is working with UW Libraries to offer this service. Please contact us for more information.

8) **Digital Object Identifiers (DOIs):**

The Big Ten Alliance is working with the California Digital Library to enable PIs to assign DOIs to datasets they wish to archive and manage on their own. Contact the Schwerdtfeger Library for information on setting up an EZID account. *We recommend, however, submitting your data to a managed repository when possible.*