DATA MANAGEMENT PLAN GUIDANCE – NSF - GEN

IT IS recommended that you use the DMPTool located at https://uark.libguides.com/DMP when developing your data management plan. The highlighted and italicized questions sections of this guide are those supplied by the DMPTool via the NSF-General template, but the responses are generalizable to other data management plan templates.

TYPES OF DATA PRODUCED

The types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project.

- Consider where your data will be stored for security and processing. If you would like a review of your DMP in this area, please select the Request Feedback tab available in the DMPTool.
- Provide a summary of the data you will collect including data content, coverage, and type. This includes whether the data is gathered through models, physical samples, experimental measures, etc.
- Describe how your data enhances the data already gathered in your discipline and which data would have long-term value.
- If you are purchasing or reusing data, indicate how issues of copyright and intellectual property rights are being addressed. Be mindful of the data use agreements that often define future use and access of the procured data. Aim to minimize any restrictions on the reuse (and subsequent sharing) of third-party data. For information on proper citing of existing data and data sets, please see our guide to Data Citation https://uark.libguides.com/DataCiting
- If any of the data that is collected, analyzed, or shared meets a requirement for regulation such as PCI, HIPAA, CUI, select the Request Feedback tap on the DMPTool to request a review.
- Clearly describe the file formats you will use for your data. Where possible, it is recommended that you use platform-independent and non-proprietary formats where these formats do not diminish the usability of the data files. In any case, explain why you have chosen certain formats. For more information on data formats, please look at our guide on Data File Management https://uark.libguides.com/FileManagement .

  Estimate the amount of data (mb, gb, tb) that will be needed for the project along with the preparation of raw data and processed data. Consider the effect on the scale for storage, sharing, and transfer between sites. Data volume is a consideration in storage and computational choices.

Sample text:

Through the course of this project, we will be producing (types of data) created through (instrument identification). This data will be in (data format) and is expected to comprise (amt. of data). We have selected this format for (reason for data format). To support reproducibility of our results, the files will be offered to users in (data formats) (expected size of user formats). Additional files include (file identification, file format).

As part of this project, we will be using data gathered by (name and location of 3rd party data) which has been licensed (under what conditions).

DATA AND METADATA STANDARDS

The standards to be used for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies).

- Clearly describe your file naming polices or standards. For tips on file naming please see our guide at https://uark.libguides.com/FileManagement/ .

- Explain why you have chosen certain formats.

- Metadata describes the data that is being presented. Use the metadata format that is the format recommended by your selected repository or contact the University Libraries to identify appropriate standards.

Sample text:

Metadata for project data will be assigned in accordance with the established metadata standards and best practices required for deposit in (name repository). Metadata creation will be made in consultation and collaboration with the metadata experts at the (named repository) or at University of Arkansas Libraries.

POLICIES FOR ACCESS AND SHARING

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

- Identify which of your data will be available for access and for how long. Read your grant opportunity to identify access issues such as embargoes or extended periods.

- Security of data throughout the research project should be considered. Present any security issues. If you would like a review of your DMP for this area, please use the Request Feedback tab in the DMPTool

    - Arkansas High Performance Computing Center, https://hpc.uark.edu/ .

    - File storage information may be found at https://its.uark.edu/communication-collaboration/file-storage/

    - Information for the University of Arkansas campus security is available at https://its.uark.edu/accounts-security/cybersecurity/index.php

- Refer to your data use agreement for details on the impact that procured data may have on access to your data.

- Federal laws, institutional policies, and professional codes of conduct define responsible, ethical research. Consider how you will protect the identities of your human participants and remember that ethical issues may affect how you store and transfer data and how long that data is kept. The Office of Research Compliance (https://research.uark.edu/units/rscp/Opens in a new window) on the University of Arkansas campus provides information on university-specific procedures and policies.

- Consider methods for sharing your data – whether it be via a repository, a secure data service, or whether you handle requests directly. Your choice is dependent on many variables including the funder or sponsor's requirements. Try to consider methodologies that minimize difficulties and restrictions in the access and use of the data and is friendly to users and potential uses for years to come. For assistance on selecting a repository to provide access to your data, please see our guide at https://uark.libguides.com/DataRepositories .

- The University of Arkansas is in the business of public dissemination of knowledge. However, as a state-supported institution of higher learning, the University of Arkansas has a responsibility for and an interest in the advancement of knowledge and creative work that will enhance its educational mission and promote the economic and social welfare of the public it serves, particularly the people of the State of Arkansas. This responsibility and interest are advanced by engaging in research, the results of which may, on occasion,

have commercial applications which are patentable or copyrightable. While Inventions and copyrightable works are not the primary objectives of University Research, when they occur the University has the responsibility of insuring that such Inventions and Works are used and controlled in a manner that benefits the public, the Inventor or Author and the University to the fullest extent possible. Further, when copyrightable subject matter may also be patentable subject matter and the most economically viable protection strategy is not immediately evident, the possibility to wait and hold off on public dissemination may be desirable in order to ensure utilization of the intellectual property for the greatest public benefit. Please refer to Board of Trustees Policy 210.1.

Sample text:

We anticipate no sensitive or confidential data. All data produced during this research will be available freely to the public under [STATE WHICH OPEN LICENSE YOU INTEND TO APPLY] for [period of time]

[If sensitive or personally identifiable information is used, include this instead:]

Results, data, and collections will be made available to other researchers in a timely basis with [EXAMPLE] limitations. Sensitive and confidential data collected will be treated following [HIPAA/IRB] regulations, and an added layer of security will be implemented using [STRATEGIES SUCH AS DATA ENCRYPTION, RESTRICTED ACCESS, OR THE SEPARATION OF IDENTIFIABLE DATA]. Non-sensitive and non-confidential data produced during this research will be available freely to the public under [STATE WHICH OPEN LICENSE YOU INTEND TO APPLY.] for [period of time].

POLICIES FOR RE-USE, RE-DISTRIBUTION, DERIVATIVES

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

- Consider methods for sharing your data – whether it be via a repository, a secure data service, or you handle requests directly. Your choice is dependent on many variables including the funder or sponsor's requirements. Try to consider methodologies that minimize difficulties and restrictions in the access and use of the data and is friendly to users and potential uses for years to come.

- The university of Arkansas is in the business of public dissemination of knowledge. However, as a state-supported institution of higher learning, the University of Arkansas has a responsibility for and an interest in the advancement of knowledge and creative work that will enhance its educational mission and promote the economic and social welfare of the public it serves, particularly the people of the State of Arkansas. This responsibility and interest are advanced by engaging in research, the results of which may, on occasion, have commercial applications which are patentable or copyrightable. While Inventions and copyrightable works are not the primary objectives of University Research, when they occur the University has the responsibility of insuring that such Inventions and Works are used and controlled in a manner that benefits the public, the Inventor or Author and the University to the fullest extent possible. Further, when copyrightable subject matter may also be patentable subject matter and the most economically viable protection strategy is not immediately evident, the possibility to wait and hold off on public dissemination may be desirable in order to ensure utilization of the intellectual property for the greatest public benefit. Please refer to Board of Trustees Policy 210.1.

- Clearly state the ownership of the copyright and intellectual property rights. Many grants request that a data license be applied to limit the rights that are reserved by copyright and to allow greater flexibility in data reuse. When appropriate select an Open Data License or a Creative Commons license (some grantors, publishers or repositories will specify). For more information on Creative Commons licensing, please see our guide at http://libguides.uark.edu/CreativeCommons

Sample text:

The data for this project will be available through (repository) and is licensed according to (Selected CC or Data license as applicable) for the following uses as specified through the license agreement (specifics).

PLANS FOR ARCHIVING AND PRESERVATION

Plans for archiving data, samples, and other research products, and for preservation of access to them.

- Remember that the costs of data deposits may vary. Consider these costs when developing your budget.
- Remember that PIs are responsible for the preservation of their selected data throughout the extent stated within the data management plan.
- Consider costs for initial ingest as well as any recurring costs – especially post grant.
- Review the data repository guidelines for funding agencies and potential journal publishers for guidance on data repository choice and use.
- When making your choice of a data repository, the University of Arkansas Libraries recommends that you deposit your data in a discipline-specific repository for maximum impact and discovery in your field. If your discipline does not have a suggested repository, consider depositing it in a general data repository. Use our Data Storage and Repository Guide, https://uark.libguides.com/DataRepositories , for reviewing guidelines for repositories and creating your list potential repositories.
- Determine and state the intended period for archiving and preserving your data.
- Describe methods for storing, backing-up and refreshing the data including the hardware and software resources that are required. If you plan on choosing a data repository for long-term storage, review its method of preserving the data. For assistance, contact datalib@uark.edu.

Sample text:

We intend to deposit our data into the (name) repository. This repository guarantees the preservation of and access to the data for (number of) years. The data will be backed up through (methodology).