



**DIVISION OF AGRICULTURE
RESEARCH & EXTENSION**

University of Arkansas System

Data Management Plans

Some funding agencies, such as National Science Foundation (NSF) and National Institute of Health (NIH), are requiring grant applications include a data management plan when they are submitted. These plans address the data that is collected during the funded project and how it will be managed. Basically, it is a written summation of how you will address two questions: (1) What data will be created by your project? (2) What is your plan for handling this data? The goal is to make sure there is security for the data and that it is available for sharing with other researchers as appropriate. Some funders, such as NSF, also limit the number of pages that can be included in the plan. The current NSF limit is two pages.

The plan commonly contains 12 key components. All of the elements focus on what data is generated or accessed by the project and how you plan to manage it. The key elements and a brief explanation of them include:

- **Data Description** – overview of the information that will be collected as well as the nature, format, scope and scale of the data. This element is important because it helps reviewers in recognizing the data’s attributes, its relationship to any pre-existing information and any risks that are associated with the data.
- **Data Organization**
 - **Metadata** – Data documentation including the standards that will be used, any unique data identifiers, naming conventions, etc.
 - **Pre-existing data** – Review of existing data relative to the study subject and how, if at all, this data will be incorporated into the present project.
- **Data Quality or Quality Assurance** – overview of steps to be taken to ensure production of high quality data in connection with the project.
- **Responsibility** – overview of the personnel working with the data collected, the individual who will serve as the steward of the data generated and a more detailed description of any unusual situations, such as multiple P.I.s, and how they will be handled in the project.
- **Potential Data Audience** – overview of the anticipated audience for the data created. Sometimes there may be multiple secondary audiences that are anticipated such as other researchers as well as members of certain groups of the general public.
- **Retention, Access and Sharing** – overview of how the data gathered will be archived and shared with others as appropriate, as well as why that approach was selected and the proposed timeline for the data sharing.

Any planned restrictions on the availability of the data for other researchers should be included. Most commercial databases are licensed and include restrictions on their use and the amount of sharing that can be done with their data. Carefully attention should be given to this type of data as plans are developed for sharing this type of information.

- **Intellectual Property** – information on who controls the intellectual property rights associated the data and how they will be protected. Usually the University of Arkansas Cooperative Extension Service owns the data that Extension P.I.s developed.
- **Privacy of Human Subjects** – overview of the rights of human subjects involved in the project and how their privacy will be protected. A provision for the sharing of data should be included in the informed consent form at the outset of the project. Information on how informed consent will be handled with the participants, including any unusual arrangement that need to be made to address participant privacy.
- **Storage Format** – overview of the format in which the data will be collected, stored and provided to other researchers as well as a justification of selection of these methods versus other available. Consideration should be given to the potential obsolescence of both hardware and software currently available. For this reason, you may want to consider using non-proprietary software, non-encrypted and uncompressed storage methods, as well as standard representation formats.
- **Archiving Preservation** – overview of the long-terms archiving plans for the data as well as plans for addressing the succession of such archiving should the original entity go out of existence.
- **Security** – explanation of the security with which the data will be maintained. Ideally, unencrypted and uncompressed data are most desirable for storage due to changing technology, but may not always be practical due to the sensitivity of the data involved. Information on the protections in place for direct identifiers should be addressed in this section.
- **Costs** – overview of the costs associated with creating and documenting data in a format suitable for storage. Can be included as a direct cost of the project.

Backing Up the Data

It is recommended that multiple backups of the data be maintained in different locations. In addition to the computer's hard drive, the principal investigator may choose to keep a backup copy on an external hard drive locally as well as a backup copy which is maintained away from the facility.

Creating a Data Management Plan

A group of educational institutions partnered to create an online data management development tool. The Data Management Plan tool is made available to all researchers at <https://dmp.cdlib.org/>. It is designed to help create data management plans for specific funding agencies, develop plans which comply with the requirements for data management plans, as well as provide step-by-step guidance for the development of the project's data management plan.

Faculty from contributing institutions can select their institution from the dropdown menu and be directed to their own institution's login page. Arkansas Extension is not a contributing institution, but Extension faculty members can still use the tool. You will be able to create an individual account and use the DMPTool. After establishing your account, you will select the *My Plans* tab on the navigation bar to begin your data management plan. Once completed the plan developed through this tool can be exported in a "Rich Text" format for use with the grant.

There may be cases when a valid plan is simply an explanation of why a detailed plan is not needed along with a clear justification for this assertion.