**Directorate for Computer & Information Science & Engineering (NSF-CISE)**

**Roles and Responsibilities**

The Data Management Plan should clearly articulate how the PI and co-PIs plan to manage and disseminate data generated by the project. The plan should outline the rights and obligations of all parties as to their roles and responsibilities in the management and retention of research data, and consider changes that would occur should a PI or co-PI leave the institution or project. Any costs should be explained in the Budget Justification pages.

* Explain how the responsibilities regarding the management of your data will be delegated. This should include time allocations, project management of technical aspects, training requirements, and contributions of non-project staff—individuals should be named where possible. Remember that those responsible for long-term decisions about your data will likely be the custodians of the repository/archive you choose to store your data. **While the costs associated with your research (and the results of your research) must be specified in the Budget Justification portion of the proposal, you may want to reiterate who will be responsible for funding the management of your data.** *Consider these questions*:
	+ Outline the staff/organizational roles and responsibilities for implementing this data management plan.
	+ Who will be responsible for data management and for monitoring the data management plan?
	+ How will adherence to this data management plan be checked or demonstrated?
	+ What process is in place for transferring responsibility for the data?
	+ Who will have responsibility over time for decisions about the data once the original personnel are no longer available?

**Types of Data**

The Data Management Plan should describe the types of data, samples, physical collections, software, curriculum materials, or other materials to be produced in the course of the project. It should then describe the expected types of data to be retained and shared, and the plans for doing so. The DMP should cover how data are to be managed and maintained during the project.

* Give a short description of what "data" will mean in your research—explain what the contents of each dataset will be, including size and amount if known. It would also help if you can identify your methods for collecting data. *Consider these questions*:
	+ What data will be generated in the research?
	+ What data types will you be creating or capturing? (E.g. experimental measures, observational or qualitative, model simulation, processed etc.)
	+ How will you capture or create the data?
	+ Which file formats will you use for your data, and why?
	+ If you will be using existing data, state that fact and include where you got it. What is the relationship between the data you are collecting and the existing data?
	+ Where (physically) and on what media will you store the data during the project's lifetime?
	+ How will you back-up the data during the project's lifetime and how regularly will back-ups be made?
	+ Who is responsible for the storage and backup of the project's data?
	+ What data will be preserved and shared?

**Policies for Access and Sharing and Appropriate Protection and Privacy**

The Data Management Plan should describe the period of time the data will be retained and shared; factors that limit the ability to manage and share data, e.g., legal and ethical restrictions on access to human subjects data; and provisions for appropriate protection of privacy, confidentiality, security, and intellectual property.

* In this section you are also asked to account for issues of privacy, confidentiality and ownership that may arise from the dissemination of your data. If the data is of a sensitive nature that public access is inappropriate, address here the means by which granular control and access will be achieved (e.g. formal consent agreements; anonymization of data; level of aggregation; restricted access, only available within a secure network). Think about what you have done to comply with your obligations in your IRB Protocol. *Consider these questions*:
	+ How and when will you make the data available? (Include the resources needed to make the data available: equipment, systems, expertise, etc.)
	+ What other types of information should be shared regarding the data, e.g. the way it was generated, analytical and procedural, information?
	+ What is the process for gaining access to the data?
	+ Will any permission restrictions need to be placed on the data?
	+ How will you manage data with sensitive information?
	+ Are there ethical and privacy issues? If so, how will these be resolved?
	+ What have you done to comply with your obligations in your IRB Protocol?
	+ How long will/should data be kept beyond the life of the project?

**Data Storage and Preservation of Access**

The Data Management Plan should describe the mechanisms and formats for storing data and making them accessible to others, which may include third party facilities and repositories; and other types of information that would be maintained and shared regarding data, e.g. the means by which it was generated, detailed analytical and procedural information required to reproduce experimental results, and other metadata.

* This portion of the Data Management Plan asks the researcher to provide a long-term strategy for archiving and preserving the data from the research described in the proposal. This section of the DMP also asks you to combine an explanation of the format of your data and how that format will allow for fast and easy access to the data. Also consider how to make your data more usable to a "general researcher," and what information they would need to use your data. This could be achieved by the inclusion of a "readme file" to explain the variables, the structure of your files, etc., or the application of metadata to your data files. *Consider these questions*:
	+ What is the long-term strategy for maintaining, curating and archiving the data?
	+ On what basis will data be selected for long-term preservation?
	+ Which archive/repository/database have you identified as a place to deposit data?
	+ What procedures does your intended long-term data storage facility have in place for preservation and backup?

Data and Related Information

* + What transformations (to more shareable formats) will be necessary to prepare data for preservation and data sharing?
	+ What contextual details (metadata) are needed to make the data you capture or collect meaningful?
	+ What form will the metadata take?
	+ How will you create or capture these details?
	+ Which metadata standards will you use and why have you chosen them? (e.g. accepted domain-local standards, widespread usage).
	+ What metadata/documentation will be submitted alongside the data or created on deposit/ transformation in order to make the data reusable?
	+ What related information will be deposited?

**Additional Possible Data Management Requirements**

Note that individual solicitations may have additional data management plan requirements. If guidance specific to the program is not available, then the requirements established in the Grant Proposal Guide apply.

* You are asked to explain in this section how you plan on satisfying any additional, program-specific data management requirements, if any exist. If not, you may leave this section blank.