Developing NSF Data Management Plans
Research Support Services Committee
Draft – January 17, 2011

**Background:** Each NSF proposal must include a one- to two-page Data Management Plan that describes how the proposal will conform to the NSF Data Sharing Policy. The Plan needs to address how the proposal will conform to NSF’s long-standing data management and sharing policy, which states in part:

> “Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections and other supporting materials created or gathered in the course of work under NSF grants. Grantees are expected to encourage and facilitate such sharing. Privileged or confidential information should be released only in a form that protects the privacy of individuals and subjects involved.” (see [AAG Chapter VI.D.4](#))

These guidelines assist investigators in developing Data Management Plans consistent with NSF requirements. Collaborative proposals or proposals with subawards may submit a single unified Plan reflecting all project activities. Where applicable and reasonable, costs to support dissemination and data management can be included in project budgets; any proposed post-award costs should be discussed with your NSF program officer and campus administrators. Investigators should consult with both IT Service Delivery tchavis@ltu.edu and the Research Support Services Committee rssc@ltu.edu on the details of their Plans before submitting their proposals. Research proposals including activities with human participants and/or animal models must obtain approval for the Data Management Plan as part of the review(s) conducted by Lawrence Tech’s [Institutional Review Board](#) (IRB) and/or Institutional [Animal Use and Care Committee](#) (IACUC).

While all NSF proposals must include a Data Management Plan, a detailed Plan may not be needed in some cases, most often because the proposal is not anticipated to generate data. If the investigator asserts that no detailed Plan is required, a clear justification for this assertion must be submitted.

**Data Management Plan Components:** NSF Data Management Plan requirements will be determined by peer review, and some directorates or program solicitations may provide explicit requirements for Data Management Plans. Data Management Plans should consider the life cycle of research data to ensure data integrity, usability, long-term preservation, and repurposing by other researchers.

![Diagram](#)

Figure 1- DDI Structural Reform Group, “DDI Version 3.0 Conceptual Model,” *DDI Alliance*, 2004. See [www.icpsr.umich.edu/DDI/committee-info/Concept-Model-WD.pdf](#)
These broad categories should be included in all Data Management Plans:

1. **Types of data, samples, and other materials to be produced in the course of the project.**
   This section should provide a general overview of the nature of the data or other materials produced under the project. These could include data characteristics such as observational, experimental, reference, derived, simulated, etc. The data types referenced could include data generated by computer, data collected from sensors or instruments, images, audio files, video files, reports, surveys, software, curriculum materials, physical collections, patient records, etc. The investigator should discuss the volume of data to be generated, how much data will be generated over time, and how often it may be versioned or changed. If the project will be collecting data of a sensitive nature, this should be noted here and will be reflected in subsequent sections of the Plan.

2. **Standards to be used for data and metadata format and content.**
   This section should identify the format in which the data will be stored as well as the types of metadata that will be included. These standards will often be determined by the accepted best practices of your discipline and should reference any relevant University standards. The investigator should discuss the specific file formats used for data, professional or University standards for metadata and content indexing, file naming conventions, and related data documentation.

3. **Methods and policies for providing access and enabling sharing.**
   This section should detail the specific procedures used to provide control of and access to the data. A member of the project team should be identified as the data manager. Policies and approval procedures for access to project data should be clearly articulated which ensure appropriate protection of privacy, confidentiality, intellectual property, and other rights. Specialized software or hardware needed to access and use the data should be clearly identified for applicable data types. A data backup plan and disaster recovery plan should be clearly documented using University and/or project resources.

4. **Provisions for re-use, re-distribution, and the production of derivatives.**
   This section should identify where and how project data will be published and disseminated. Provisions to comply with any sharing requirements imposed by funding agencies must be included. Discipline-specific standards or ontologies for sharing data should be addressed. All policies and procedures for limiting re-use, re-distribution, or derivation of data should be documented.

5. **Methods for archiving and preserving access to data and materials.**
   This section identifies the means by which the data and materials will be stored to enable future access and sharing in addition to the disaster recovery plan discussed above. The length of time that project data will be retained is generally indefinite, but lesser retention times should be clearly stated in years and should comply with funding agency requirements and/or accepted disciplinary practices. Archiving and preservation methods should be documented for each type of media used by the project. Plans for migrating machine-readable data to potential future media should also be addressed.

**References:** The following NSF resources may be helpful in drafting a Data Management Plan: