I. Data Management Plans for NSF Proposals

Effective January 11, 2011, the National Science Foundation (NSF) requires that all proposals contain a brief description, up to two pages in length, to describe the Data Management Plan for the proposed project (see NSF Policy Statement on Dissemination and Sharing of Research Results). Principal Investigators (PIs) should consult with data management requirements and plans specific to the Directorate, Office, Division, Program, or other NSF unit relevant to the proposal, available at: http://www.nsf.gov/bfa/dias/policy/dmp.jsp.

The present document attempts to provide guidance and offer templates to facilitate the development of a data management plan responsive to the NSF requirement.

General Guidance:
Description of the plan, up to two pages in length, should be labeled “Data Management Plan.”

PIs who feel that the plan cannot fit within the two-page limit may use part of the 15-page Project Description for additional data management information. PIs are advised that the Data Management Plan may not be used to circumvent the 15-page Project Description limitation.

Note that FastLane, the online proposal system used by NSF, will not permit submission of a proposal that does not include a Data Management Plan. General issues of proposal formatting and FastLane submission may be addressed with Sponsored Projects Administration.

At Tulane, we do not presently operate an institutional data repository. A university Task Force, headed by Lance Query, Dean of Libraries and Academic Information Resources, is presently addressing that issue. In the interim, the PI is responsible for maintaining project data.

II. Points to address in the Data Management Plan:

Describe the data. Identify the data that will be measured, recorded, calculated, or modeled, as well as the manner in which these tasks will be performed. Put the data in context and explain
the rationale for its collection and the insights anticipated from the data.

*Explain the types or forms that the data will take.* Data may be collected in a variety of forms, e.g., field survey reports, laboratory notebook entries, computer files created by data acquisition software, visual images. Explain the form and nature of the data, give an estimate of its amount, and describe the necessary metadata, such as laboratory notebook entries, software codes, etc., that may be required for its proper interpretation.

*Describe the method for preserving and curating the data.* Describe the plan for data storage and curation, if appropriate. **NSF requires a commitment that data from NSF-funded research will be preserved for at least three years beyond the end of the award.**

*Discuss the approach for data access and sharing.* In many cases, data access and sharing will be accomplished through the use of established public databases. In other cases, access and sharing may be achieved through individual collaboration or data provision upon request. The plan for data access and sharing should be described.

*Discuss ethical and/or privacy issues that may be associated with the data.* Privacy issues may arise when the data involve human subjects, for example, or protection of intellectual property. General issues of data security may be addressed with Tulane Technology Services.

*Discuss any intellectual property issues associated with the data.* The Tulane policy statement on Intellectual Property provides guidance and can be found in the Faculty Handbook. General issues of intellectual property may be addressed with the Office of Technology Transfer and Intellectual Property Development.

**III. A Sample Data Management Plan (Drafted for Biological Sciences, but modifiable for any discipline)**

The proposed study will generate data that consist of … [e.g., hand-recorded observations in laboratory notebooks, instrument-generated recordings, computational structures, reconstructed images, photographs or videography, gene expression signatures, etc.] in both raw and curated forms. The indicated types of data will consist specifically of … [describe types of data to be collected, e.g., gene expression analysis from cell cultures or animal tissues exposed to variables as described in the proposal]. Data will be collected using the experimental approach and methodology detailed in the proposal. Data will be subject to statistical analysis when appropriate. Datasets generated from commonly accepted data acquisition software will be maintained in appropriately titled electronic files along with the indexed laboratory notebook narrative. Laboratory records will be indexed, labeled and stored as a hard copy or digitized. Experimental or other research observations will be recorded in hand or electronic notation that will be dated and stored in dated laboratory notebooks. The data collected in the course of the proposed work will provide new insight into……[describe anticipated outcomes, briefly]. As such, the results will be of interest to the [name the communities] communities.

Original data in laboratory notebooks will be retained in a secure location in the research laboratory and behind a locked door when the laboratory is not occupied. Electronic data will be backed up using….[specify, e.g., a portable hard-drive, university back-up server, etc.]. Data will be shared upon request to qualified individuals once it has been determined that the request does not compromise intellectual property interests, interfere with publication, invade research subject privacy, violate confidentiality obligations, or predate data curation. If invention disclosures or provisional patent filings result from the study, data will be shared once these...
disclosures or filings are complete. Data will be available for sharing as quickly after acquisition as reasonably possible, normally within two years after acquisition. Some data [specify] will be made publicly available through deposition in a public repository, …. [specify repository].

The proposed study does not include the use of human subjects.
OR
The data to be acquired in the proposed study will involve human subjects, and as such, review and approval of the proposed project by the Institutional Review Board is required. Rules and regulations related to privacy and confidentiality of human subjects in research will be observed. [You may need to add more information here about de-identifying the data, and how identifying information will be maintained in a secure manner.]

The proposed study does not include the use of vertebrate animals.
OR
The proposed study will include the use of vertebrate animals as experimental subjects as described in the proposal. As such, review and approval of the proposed project by the Institutional Animal Care and Use Committee is required.

Responsible Conduct of Research training for members of the investigative team with access to data is provided through Tulane’s subscription with the Collaborative Institutional Training Initiative (CITI) and through the annual seminar series coordinated at Tulane by the University Research Compliance Officer. This seminar is an eight-hour, faculty-driven offering on a series of topics including data acquisition and management, data sharing and ownership, conflict of interest, mentor/mentee responsibilities, peer review and responsible authorship and publication.

Data will be retained for at least three years beyond the award period as required by NSF policy. The data acquired and preserved will be further governed by Tulane policies pertaining to intellectual property, privacy, use of human subjects and data management.

IV. More information may be found at the following websites:

National Science Foundation Policy Statement: Dissemination and Sharing of Research Results

National Science Foundation FAQs: Data Management and Sharing

MIT Libraries: Data Management and Publishing
http://libraries.mit.edu/guides/subjects/data-management/#plan

USC Data Management Plan (document will download at this site)
http://www.usc.edu/research/private/NSF_Data_Mngmt_Plan_Reqs_1.7.2011.doc

Rice University Data Management Plan
http://osr.rice.edu/forms/datamanagementPlans.pdf

University of Minnesota Libraries: Managing Your Data
http://www.lib.umn.edu/datamanagement