DMPtool (Malli: USDA-NIFA: National Institute of Food and Agriculture)

**Expected Data Type**
Data types could include text, spreadsheets, images, 3D models, software, audio files, video files, reports, surveys, etc. Consider the following:

- What data will be generated in the research?
- What data types will you be creating or capturing?
- How will you capture or create the data?
- If you will be using existing data, state this and include how you will obtain it.
- What is the relationship between the data you are collecting and any existing data?
- How will the data be processed?
- What quality assurance & quality control measures will you employ?

**Data Format**
For scientific data to be readily accessible and usable it is critical to use an appropriate community-recognized standard and machine readable formats when they exist. The data should preferentially be stored in recognized public databases appropriate for the type of research conducted. Regardless of the format used (notebook, samples, images, spreadsheet, etc.), that data set should contain enough information to allow independent investigators to understand, validate, and use the data.

Describe the format of your data and how it will be “documented.” Think about what information is needed for the data to be read and interpreted in the future. What would someone else need to be able to use these files? Consider the following:

- Which file formats will you use for your data, and why?
- What data will be preserved for the long-term?
- What transformations (to more shareable formats) will be necessary to prepare data for preservation / data sharing?
- What metadata/documentation will be submitted alongside the data or created on deposit/transformation in order to make the data reusable?
- What contextual details (metadata) are needed to make the data you capture or collect meaningful?
- How will you create or capture these details?
- What form will the metadata describing/documenting your data take?
- Which metadata standards will you use and why have you chosen them? (e.g. accepted domain-local standards, widespread usage)
Data Storage and Preservation
Scientific data should be stored in a safe environment with adequate measures taken for its long-term preservation. Applicants should describe plans for storing and preserving their data during and after the project and specify the data repositories, if they exist. They should outline strategies, tools, and contingency plans that will be used to avoid data loss, degradation, or damage.

See the NIFA – USDA Research Terms and Conditions for specific deposit requirements: Article 9, Section C. Release of Animal or Plant Genome Sequence Data and Distribution of Animal or Plant Genomic Resource (page 10).

- Will you share data via a repository, handle requests directly or use another mechanism?
- If your method of sharing is with an archive, 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?
- What is the long-term strategy for maintaining, curating and archiving the data?

Data Sharing and Public Access
Describe your data access and sharing procedures during and after the grant. Provide any restrictions such as copyright, confidentiality, patent, appropriate credit, disclaimers, or conditions for use of the data by other parties.

DMPs should clearly articulate any justifiable limitations on project data sharing due to confidentiality, privacy, proprietary interests, business confidential information, and intellectual property rights and avoid significant negative impact on intellectual property rights, innovation, and U.S. competitiveness. Any restrictions on data sharing, such as a delay of disclosing proprietary data, should be presented. Consider the following:

- Will any permission restrictions need to be placed on the data?
- With whom will you share the data, and under what conditions?
- Will a data sharing agreement be required?
- Have you gained consent for data preservation and sharing?
- Are there ethical and privacy issues? If so, how will these be resolved?
- How long will the original data collector/creator/principal investigator retain the right to use the data before opening it up to wider use?
- Explain details of any embargo periods for political/commercial/patent reasons?
- When will you make the data available?

Roles and Responsibilities
Who will ensure DMP implementation? This is particularly important for multi-investigator and multi-institutional projects. Provide a contingency plan in case key personnel leave the project. Also, what resources will be needed for the DMP? If funds are needed, have they been added to the budget request
and budget narrative? Projects must budget sufficient resources to develop and implement the proposed DMP.

Consider the following:

- Outline the staff/organizational roles and responsibilities for implementing this data management plan.
- How will responsibilities be split across partner sites in collaborative research projects?
- 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?
- What costs if any will your selected sharing method charge?

**Monitoring and Reporting**

Successful projects should monitor the implementation of the DMP throughout the life of the project and after, as appropriate. Implementation of the DMP should be a component of annual and final reports to NIFA (REEport) and include progress in data sharing (publications, database, software, etc.). The final report should also describe the data that was produced during the award period and the components that will be stored and preserved (including the expected duration) after the award ends.

Acknowledge that your project and DMP will be monitored as specified by NIFA. Who will be responsible for reviewing and revising this data management plan?