# **Data Management Plan Template**

**MSU Library Data Services,** [**lib.montana.edu/services/data/toolkit**](http://lib.montana.edu/services/data/toolkit/)

**Last updated: 7 April 2016**

This template is based on NSF data management plan requirements. PIs should tailor the information to their research, and adapt the template to fit the policies and requirements of their specific directorate.

**Types of Data**

* What types of data will you be creating or capturing? (experimental measures, observational or qualitative, model simulation, existing)
* How will you capture, create, and/or process the data? (Identify instruments, software, imaging, etc. used)

**Contextual Details (Metadata) Needed to Make Data Meaningful to others**

* What file formats and naming conventions will you be using?
* Preferred file formats: non-proprietary, openly documented formats encourage long-term preservation.
  + Text: plain text (ASCII, UTF-8), PDF/A, CSV, TSV, XML
  + Image: PDF/A, JPEG/JPEG2000, PNG, TIFF, SVG (no Java)
  + Audio: FLAC, AIFF, WAVE
  + Video: AVI, M-JPEG2000
  + Compressed/archived formats: GZIP/TAR, ZIP. Files should only be compressed and/or archived when it is necessary. We encourage the use of structured organization (e.g. BagIt) within a compressed file
* [Dataset readme file template](https://goo.gl/gjH27S)

**Storage, Backup and Security**

* Where and on what media will you store the data?
* What is your backup plan for the data?
* How will you manage data security?
* MSU Policy on Research Data Security: <http://www.montana.edu/policy/research/>
* MSU Data Stewardship Policy <http://www.montana.edu/policy/enterprise_it/data_stewardship.html>
* MSU Data Stewardship Standards and Procedures <http://www.montana.edu/itcenter/security/documents/Data-Stewardship-Standards.pdf>
* **Box Boilerplate:** Box cloud storage system enables collaboration between teams within MSU and across institutions by allowing users to edit, download, and share files. Box functions as a cloud backup system by syncing content between local machines and the cloud. Box employs multiple secure data centers, and provides N+1 or greater redundancy for all network components and system components. Box’s security and encryption are suitable for most personally-identifiable information, with the exception of data which must meet HIPAA data security requirements. Any questions related to the storage of personally identifiable information and applicable security standards may be directed to MSU’s Legal Counsel.

**Provisions for Protection/Privacy**

* How are you addressing any ethical or privacy issues (IRB, anonymization of data)?
* **Knox Boilerplate:** Knox is a server managed by the MSU IT Center that utilizes encryption to safeguard student data or other information that MSU has a legal obligation to protect.

**Policies for re-use**

* What restrictions need to be placed on re-use of your data?
* How will the data be licensed?
  + We recommend CC0 or CCBY, but certain data may be owned by the university.
  + MSU Policy on Intellectual Property: <http://www.montana.edu/policy/faculty_handbook/fh900.html#910.00>
  + Please consult with Legal Counsel for more information.

**Policies for Access and Sharing**

* Will you share your data publicly? How?
* Will you keep the data private for a period before releasing it publicly?
* If you won’t be sharing publicly, what is the process for gaining access to your data?
* How long will you retain the data?
* **ScholarWorks Boilerplate:** Data supporting the conclusions from published articles will be openly published in MSU ScholarWorks, the university’s open access institutional repository. Scholarworks is managed and maintained by the Montana State University Library. Content in ScholarWorks is documented with Dublin Core metadata, with additional Highwire Press tags to optimize discoverability via search engine. A detailed readme file will accompany the files. Data in ScholarWorks is retained indefinitely, and is freely available to the public, with an optional embargo period.

**Plan for Archiving and Preservation of Access**

* What is your long-term plan for preservation and maintenance of the data?
* **ScholarWorks Boilerplate:** ScholarWorks’ secure storage servers are backed up locally and off-site. ScholarWorks runs checksums on data every night, and reports are sent to repository administrators for verification. Original files will be preserved for the long-term, and ScholarWorks may migrate files to updated formats as needed to maintain the content in a useable and understandable format into the future.