



FLORIDA STATE
UNIVERSITY

Data Management Plans 101

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Overview

Defining Data

Research Data Lifecycle

Defining Data Management

Federal Funder Requirements

Resources to help build your DMP

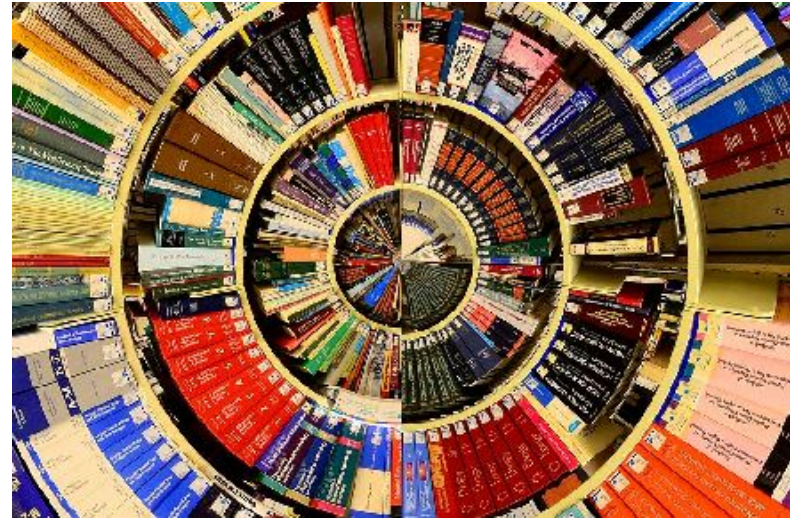
Resources from FSU Libraries



What is research data?

“...the recorded factual material commonly accepted in the scientific community as necessary to validate research findings.”

(2 CFR 200.315(3))





Examples of Research Data

Obvious

Documents

Spreadsheets

Audiotapes, Videotapes

Photographs, Films

Models, Scripts, Code

Not so Obvious

Lab notebooks, field notes

Questionnaires, survey instruments

Codebooks, data dictionaries

Methodologies, workflows

SOPs, protocols



What is not research data?

Preliminary Analysis

Drafts of papers

Plans for future research

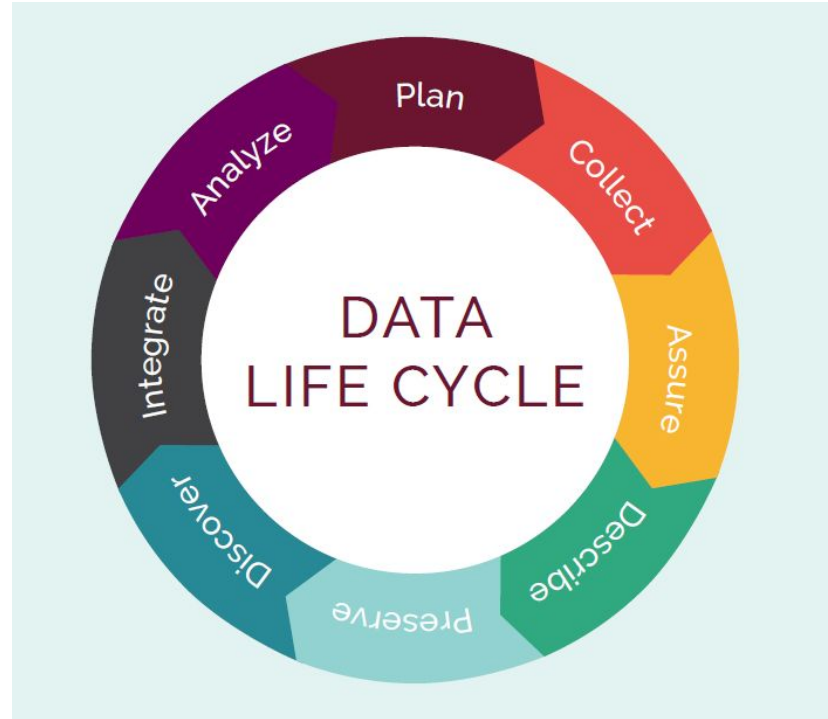
Peer reviews

Communication with colleagues



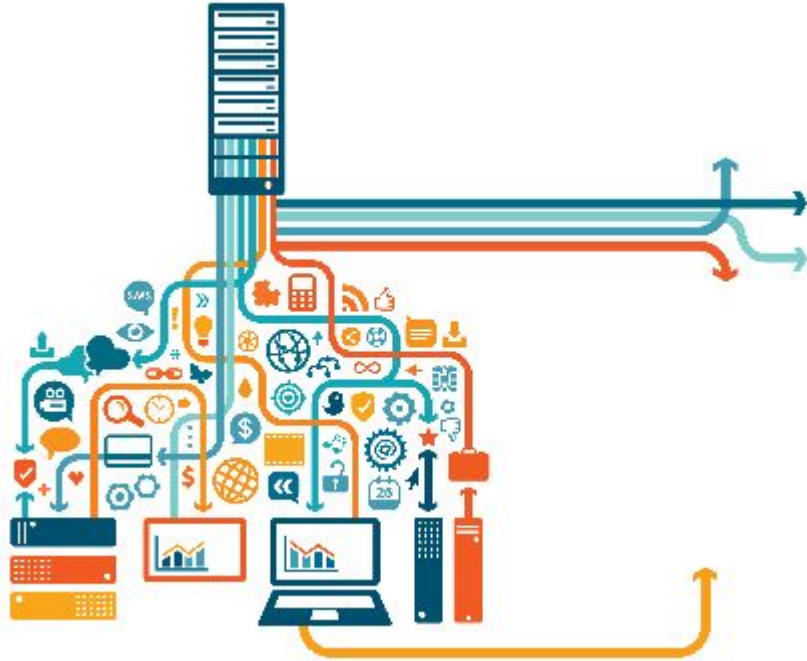


Research Data Lifecycle





What is research data management?



Research Data Management (RDM) is a broad concept that includes processes undertaken to create organized, documented, accessible, and reusable quality research data



Why Manage Research Data?

CARROTS

- Save time
- Increase citations
- Enhance reproducibility
- Credibility
- Preserve data

STICKS

- Required sharing from funders and journals
- Required data management plans for funding
- Prevent retraction



Common data management issues

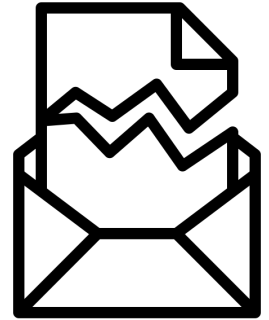
Not doing it at all

Waiting until the end of the project to start

Proprietary file formats

Incomplete and/or incoherent data

Lack of data documentation





Federal Funder Requirements

“The Administration is committed to ensuring that...the direct results of federally funded scientific research are made available to and useful for the public, industry, and the scientific community. Such results include peer-reviewed publications and **digital data**” (Holdren 2013).





National Institutes
of Health



BILL & MELINDA
GATES *foundation*



ALFRED P. SLOAN
FOUNDATION



NSF Directorate for Biological Sciences

1. **Types of data**, physical samples or collections, software, curriculum materials, and other materials
2. Describe the **standards** to be used for all the data types anticipated, including **data or file format and metadata**
3. **Roles and responsibilities** of all parties with respect to the management of the data
4. **Dissemination methods**, data access after the grant ends
5. **Policies for data sharing, public access and re-use**, including re-distribution by others and the production of derivatives. Where appropriate, include provisions for protection of privacy, confidentiality, security, **intellectual property rights** and other rights.
6. Plans for **archiving data**, samples, software, and other research products





NIH Data Sharing Plans

a brief paragraph immediately following the Research Plan Section of the application form

1. Description of data collected/created
2. Data formats and types
3. Plan for disseminating research data
4. Timeline for disseminating research data
5. Description of data documentation
6. Description of Data Sharing Agreement (if applicable)





Other NIH Considerations

Budget and Budget Justification Sections:

- Applicants may request funds in their application for data sharing. If funds are being sought, the applicant should address the financial issues in the budget and budget justification sections.

Background and Significance Section:

- If support is being sought to develop a large database that will serve as an important resource for the scientific community, the applicant may wish to make a statement about this in the significance section of the application

Human Subjects Section:

- If the research involves human subjects and the data are intended to be shared, the application should discuss how the rights and confidentiality of participants would be protected. In the Human Subjects section of the application, the applicant should discuss the potential risks to research participants posed by data sharing and steps taken to address those risks.





U.S. Department of Energy

1. Data Types and Sources
2. Content and Format
3. Data Sharing and Preservation
4. Protection
5. Rationale





General Data Management Plan Requirements

- Types of Data/Materials Produced
 - Observational, experimental, simulation, compiled
 - Tabular, audio, visual, etc.
- File Formats
 - Data should always be made available in non-proprietary file formats (.txt, .csv, etc.)
- Metadata Standards
 - How are you documenting your data/procedures?
 - Which standards are you using to document?



File Formats



Text	MS Word	PDF, TXT, HTML
Images	Photoshop	TIFF
Video/Media	Quicktime	MPEG4
Database	MS Access	DBF
Tabular Data	MS Excel	CSV
Presentations	MS Powerpoint	PDF (unencrypted)
Sound/Music	Windows Media	WAV (uncompressed)

*Be conscious about the risks of compressing your files or migrating to a file format that has different affordances than the original. See more at <http://guides.library.cornell.edu/ecommons/formats> (Slide Source: Data Curation Network)



General Data Management Plan Requirements

- Dissemination/Data Sharing/Public Access
 - How will you ensure the data meets funder data sharing and public access guidelines?
- Policies for Archiving/Preserving Data
 - How will the data be preserved for long-term access?
 - Which data repository will be used?
 - Who can access the data?
- Data privacy, copyright, and IP rights (if applicable)
 - Does the project require an IRB application?

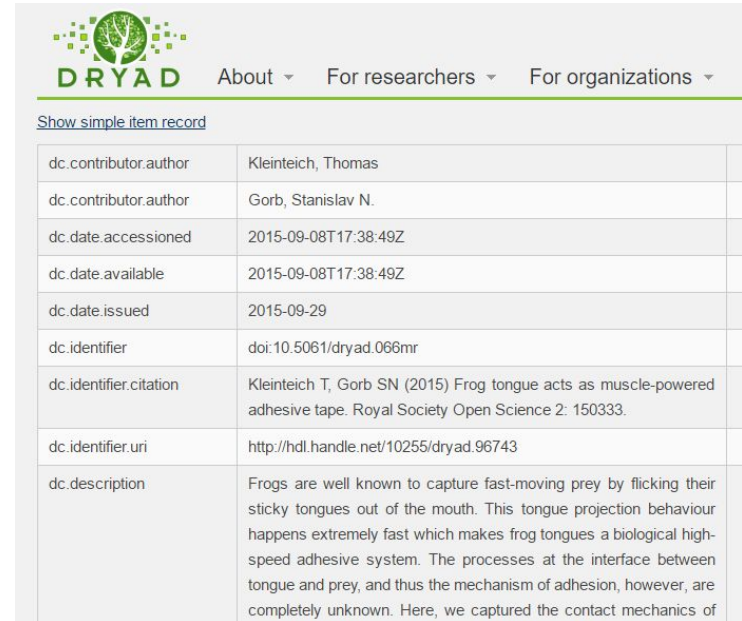


Defining Data Documentation

Information about the dataset itself that allows researchers to understand data in detail and enables other researchers to find, use, and properly cite data

Types of data documentation:

- Metadata
- README files
- Codebooks and Data Dictionaries
- Research Methods and Analytical Strategies



The screenshot shows the DRYAD (Digital Repository of Yucca and Agave Data) website interface. At the top, there is a green logo with a tree and the word "DRYAD". To the right of the logo are navigation links: "About", "For researchers", and "For organizations". Below the logo, there is a link "Show simple item record". The main content is a table with two columns: the first column contains DC metadata terms, and the second column contains the corresponding values.

dc.contributor.author	Kleinteich, Thomas
dc.contributor.author	Gorb, Stanislav N.
dc.date.accessioned	2015-09-08T17:38:49Z
dc.date.available	2015-09-08T17:38:49Z
dc.date.issued	2015-09-29
dc.identifier	doi:10.5061/dryad.066mr
dc.identifier.citation	Kleinteich T, Gorb SN (2015) Frog tongue acts as muscle-powered adhesive tape. Royal Society Open Science 2: 150333.
dc.identifier.uri	http://hdl.handle.net/10255/dryad.96743
dc.description	Frogs are well known to capture fast-moving prey by flicking their sticky tongues out of the mouth. This tongue projection behaviour happens extremely fast which makes frog tongues a biological high-speed adhesive system. The processes at the interface between tongue and prey, and thus the mechanism of adhesion, however, are completely unknown. Here, we captured the contact mechanics of



Data Repositories

- Curate and archive in a way that is FAIR:
 - Findable
 - Accessible
 - Interoperable
 - Reproducible
- Citation
- Linking and versioning





Data repositories

Discipline specific: [re3data](https://re3data.org/)

Institutional repository: Diginole

National repository: Data.gov



FSU RESEARCH REPOSITORY





Using DMPTool to build your DMP

- Tool developed by data librarians and other data professionals to guide you in writing your DMP
- Developed in collaboration with internal and external partners, including funding agencies
- Provides guidance for many funding agencies, directorates, and divisions, along with links to additional resources, services, and help.



Using DMPTool to build your DMP

Let's do an example!





Example DMPs

- DMPTool Public Plans: https://dmptool.org/public_plans
- NSF Biological Sciences Directorate:
<https://dmptool.org/plans/35572/export.pdf>
- NIH Data Sharing Plans:
<https://www.niaid.nih.gov/research/sample-data-sharing-plan>
- DOE example plan:
<https://docs.google.com/document/d/1Hy8qLbWBtZwyJP-yNfQqFcltSs0bbN9x4tRL8Py4-9o/edit?usp=sharing>
- IES (Institute of Educational Sciences):
https://docs.google.com/document/d/1RLfCXhzQ_he5ZZokMfFQBTGM7cmSbj-eWpBIWeQBpXQ/edit?usp=sharing



FSU Libraries Resources

Data management plan consultations

Data management [LibGuide](#)

Data intellectual property and copyright questions

Finding and selecting data repositories

Archiving datasets into Diginole

Help with data management tools



FLORIDA STATE UNIVERSITY
LIBRARIES



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Questions/Discussion

