



FLORIDA STATE
UNIVERSITY

Data Management & Sharing Plans

Presented by:

Dr. Nick Ruhs

Research Data Management Librarian

Florida State University Libraries

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Overview

Defining Research Data

Defining Research Data Management

OSTP Memos

Funder Requirements

Components of an NIH DMSP (2023)

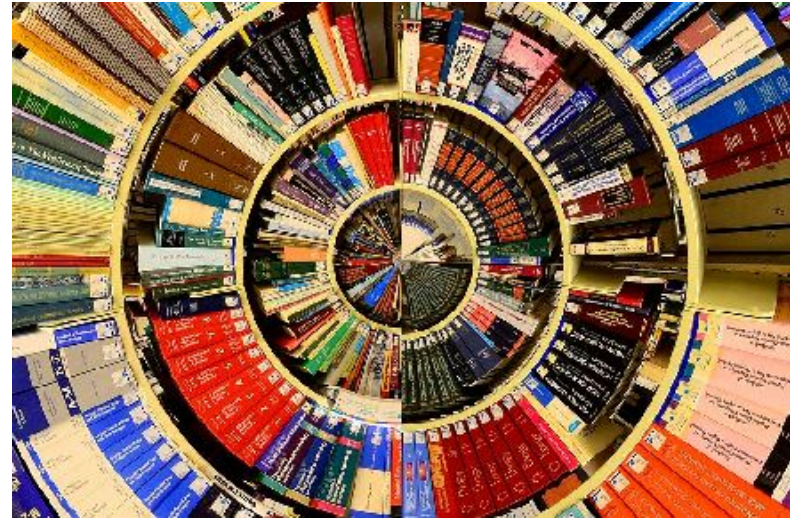
Resources and tools for crafting DMSPs



What is research data?

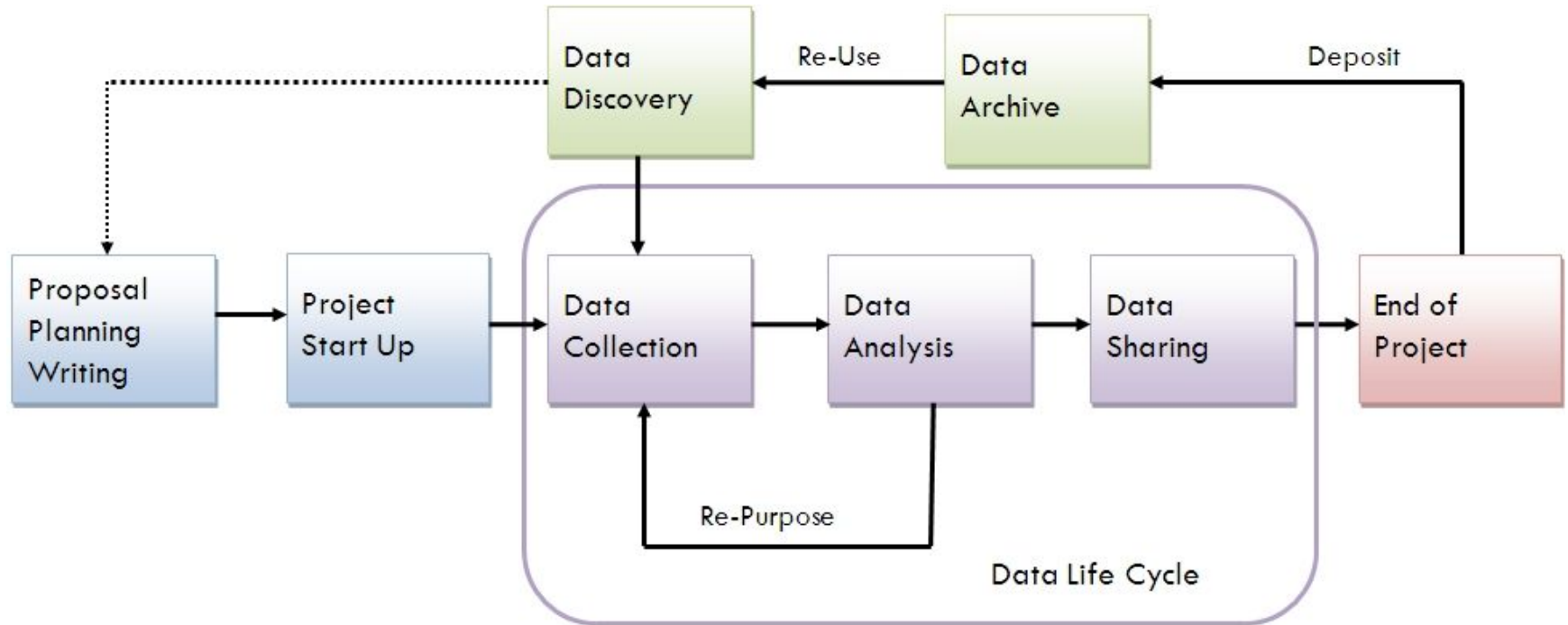
“...the recorded factual material commonly accepted in the scientific community as necessary to validate research findings.”

(2 CFR 200.315(3))





Research Data Lifecycle





Examples of Research Data

- Documents (text, Word), spreadsheets
- Questionnaires, transcripts, codebooks
- Audiotapes, videotapes
- Photographs, films
- Protein or genetic sequences
- Spectra
- Slides, artifacts, specimens, samples
- Collection of digital objects acquired and generated during research
- Database contents (video, audio, text, images)
- Models, algorithms, scripts
- Methodologies and workflows
- Standard operating procedures





What is not research data?

Lab notebooks, field notes

Preliminary Analysis

Drafts of papers

Plans for future research

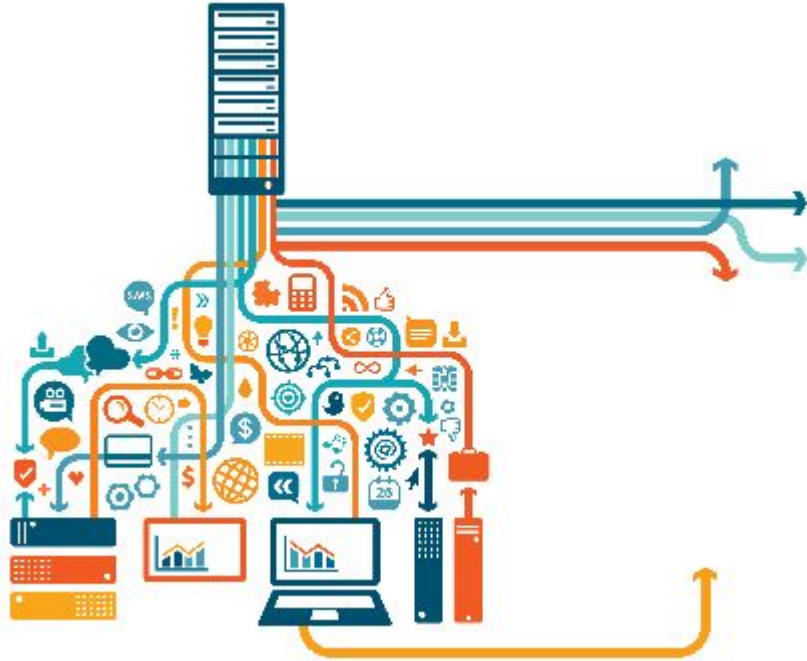
Peer reviews

Communication with colleagues





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
- Preserve data

STICKS

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



Common data management issues

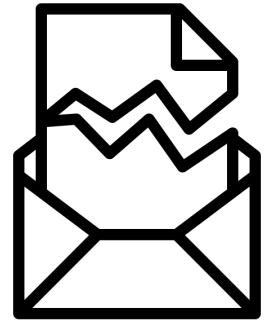
Not doing it at all

Waiting until the end of the project to start

Proprietary file formats

Incomplete and/or incoherent data

Lack of data documentation



Created by Pham Thi Dieu Linh
from Noun Project



Holdren memo (2013)

- Federal agencies w/over \$100 million in annual R & D expenditures required to create plans to support public access to research
- This includes both peer reviewed publications and digital data
- Allows for a 12-month post-publication embargo period for making publications publicly available
- Data resulting from research supported by federal funding should be stored and publicly accessible





Nelson memo (2022)

- ALL Federal agencies in required to create or update plans that support public access to research (eliminates the \$100 million in grants threshold)
- Eliminates the 12-month embargo period—publications are to be made publicly available *immediately* upon publication
- Data that are *not associated* with peer-reviewed publications are now covered under the data-access requirement





Data Management Plans

- To meet federal requirements, government and some private funders have started requiring a data management plan with grant applications
 - These are usually 2 pages, vary depending on agency
- Generally all plans have multiple components, including:
 - Where/how to archive and share data
 - Data privacy, copyright, and intellectual property rights
 - Documenting the data
 - File Formats and Data Types
 - Data Security and Encryption
 - Data Storage and Backups



New NIH Data Sharing Policy

- Takes effect on January 25, 2023
- Requires ALL researchers applying for NIH funding to submit a Data Management and Sharing Plan
- Should include the following elements:
 - Data Type
 - Related Tools, Software and/or Code
 - Standards
 - Data Preservation, Access, and Associated Timelines
 - Access, Distribution, or Reuse Considerations
 - Oversight of Data Management and Sharing



National Institutes
of Health



Elements of an NIH DMSP

- Data Type
 - Types and amount of scientific data to be generated
 - Which data will be preserved and shared
 - Metadata and associated data documentation
- Related Tools, Software, and/or code
 - A listing of any specialized tools needed to access or manipulate data, and how those tools can be accessed
- Standards
 - Standards are you applying to the data and associated metadata

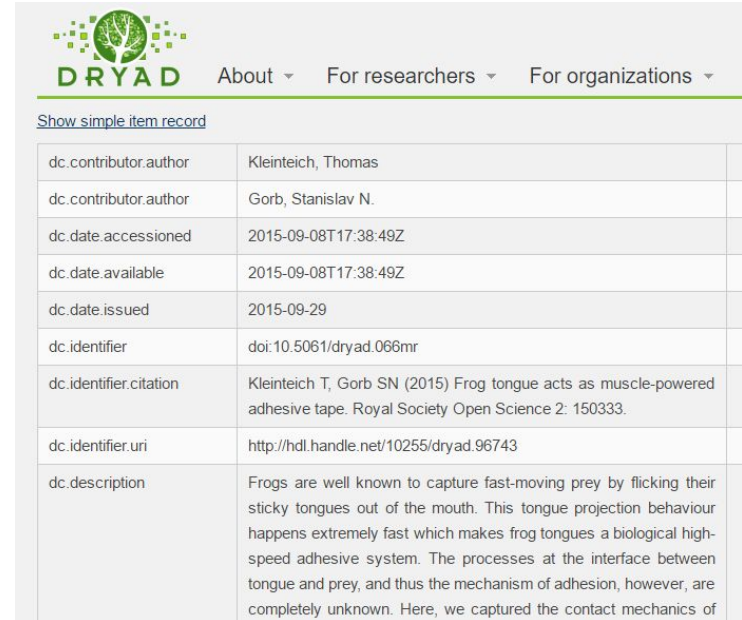


Defining Data Documentation

Descriptive information about a dataset that explains its meaning and enables other users to find, understand, use, and manage data

Types of data documentation:

- README files
- Codebooks and Data Dictionaries
- Research Methods and Analytical Strategies
- File Directories

A screenshot of a DRYAD dataset record page. The page features the DRYAD logo (a green tree with dots) and navigation links: "About", "For researchers", and "For organizations". Below the logo is a link "Show simple item record". The main content is a table with two columns: a label (e.g., "dc.contributor.author") and a value (e.g., "Kleinteich, Thomas").

Label	Value
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



Elements of an NIH DMSP (con't)

- Data Preservation, Access, and Associated Timelines
 - Repository(ies) where data and metadata will be archived
 - How the data will be findable & identifiable
 - When the data will be made available
- Access, Distribution, or Reuse considerations
 - Applicable factors affecting subsequent access, distribution, or reuse of scientific data
- Oversight
 - How compliance with the DMS plan will be monitored and managed, the frequency of oversight, and by whom.



Access, Distribution, Reuse

Factors that may affect access, distribution, & reuse:

- Informed consent
- Privacy and confidentiality protections
- Whether access to scientific data derived from humans will be controlled
- Restrictions imposed by federal, Tribal, or state laws, regulations, or policies
- Exceptions for human genomic data subject to GDS Policy





Data Repositories

- Curate and archive in a way that is FAIR
 - Findable
 - Accessible
 - Interoperable
 - Reusable
- Types:
 - Discipline Specific (re3data.org)
 - Generalist repository
 - Institutional Repository
- NIH tips for [selecting a data repository](#)





DMPTool

- Direct response to demands from funding agencies, such as NSF and NIH, that researchers plan for managing their research data
- Provides guidance from specific funders and templates researchers can use to craft plans
- FSU is a DMPTool member institution



DMPTool



University of California

CDL

California Digital Library



UC3



Creating a DMP in DMPTool



Build your Data Management Plan [My Dashboard](#) [Create Plan](#) [Funder Requirements](#) [Public DMPs](#) [Help](#)

Nicholas Ruhs ▾ Language ▾

Florida State University (fsu.edu)

Admin ▾

My Dashboard

The table below lists the plans that you have created, and that have been shared with you by others. You can edit, share, download, make a copy, or remove these plans at any time.

Project Title	Template	Edited	Role	Test	Visibility	Shared	
Test	NSF-BIO: Biological Sciences	02-25-2022	Owner	<input checked="" type="checkbox"/>	N/A	No	Actions▾
Internal Data	Digital Curation Centre	11-09-2021	Owner	<input type="checkbox"/>	Private	No	Actions▾
	Department of Energy (DOE): Office of Science	02-01-2021	Editor	No	Private	Yes	Actions▾
Test	Department of Energy (DOE): Office of Science	01-21-2021	Owner	<input type="checkbox"/>	Private	No	Actions▾
	Department of Energy (DOE): Office of Energy Efficiency and Renewable Energy (EERE)	11-23-2020	Editor	No	Private	Yes	Actions▾
Nicholas's Plan	NSF-DMR: Materials Research	11-03-2020	Owner	<input type="checkbox"/>	Private	No	Actions▾
Nicholas's Plan	NSF-BIO: Biological Sciences	10-21-2020	Owner	<input type="checkbox"/>	Private	No	Actions▾
Sample DMP	NSF-BIO: Biological Sciences	04-23-2020	Owner	<input checked="" type="checkbox"/>	N/A	No	Actions▾
Sample NSF DMP for workshop	NSF-BIO: Biological Sciences	04-22-2020	Owner	<input checked="" type="checkbox"/>	N/A	No	Actions▾

Create plan

Lists current or completed plans

Click here to create a new DMP



Features of DMPTool



Build your Data Management Plan

[My Dashboard](#)

[Create Plan](#)

[Funder Requirements](#)

[Public DMPs](#)

[Help](#)

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Admin

Find example DMPs from different agencies

Test

Project Details **Collaborators** **Write Plan** **Research outputs** **Download** Finalize / Publish

Project title *

mock project for testing, practice, or educational purposes

Project abstract

B *I*

Select Guidance

To help you write your plan, DMPTool can show you guidance from a variety of organizations.

Select up to 6 organizations to see their guidance.

- DMPTool
- Florida State University (fsu.edu)

Find guidance from additional organizations below

[See the full list](#)

If applying for funding, state the name exactly as in the grant proposal.

Briefly summarize your research project to help others understand the purposes for which the data are being collected or created.

Fill in different sections of your DMP

Download DMP to submit with your grant



Example DMPs

- [DMPTool Public Plans](#)
- NSF-BIO [Example](#)
- NSF-SBE [Example](#)
- NIH Data Management and Sharing Plan:
<https://osf.io/euaty>
 - [Sample plans from NIH](#)





FSU resources

FSU Libraries

[Research Data Management Guide](#)

Office of Research Development

Office of Research Compliance

Office of Human Subjects Protection

[NIH DMS page](#)

[FSU Health Data Sciences Initiative](#)



FLORIDA STATE UNIVERSITY
LIBRARIES





Community resources

DMPTool: <https://dmptool.org/>

SPARC [Listing of Funder Policies](#)

Open Science Framework: <https://osf.io/>

Registry of Research Data Repositories: <https://www.re3data.org/>

Working group on NIH DMSP guidance: <https://osf.io/uadxr/>

[Checklist for researchers](#)

NIH Scientific Data Sharing [page](#)





Contact Information

Dr. Nick Ruhs
Research Data Management Librarian
nruhs@fsu.edu



Questions/Discussion

