Florida International University
FIU Digital Commons

Digital Scholar Studio Resources

5-26-2021

Virtual DSS: Managing Your Research Data (Part 1 of Managing and Archiving Your Research Data)

Jill Krefft
Florida International University

Follow this and additional works at: https://digitalcommons.fiu.edu/dss-resources

Part of the Library and Information Science Commons

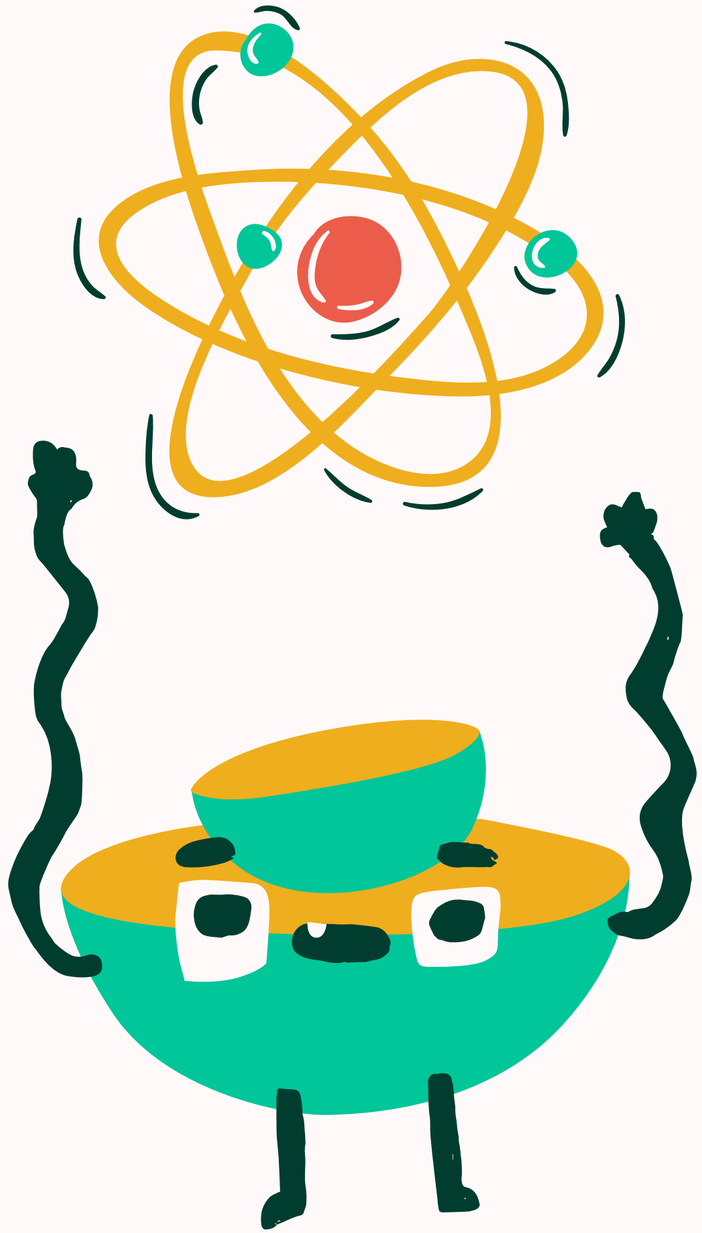
Recommended Citation

Krefft, Jill, "Virtual DSS: Managing Your Research Data (Part 1 of Managing and Archiving Your Research Data)" (2021). *Digital Scholar Studio Resources*. 13.
https://digitalcommons.fiu.edu/dss-resources/13

This work is brought to you for free and open access by FIU Digital Commons. It has been accepted for inclusion in Digital Scholar Studio Resources by an authorized administrator of FIU Digital Commons. For more information, please contact dcc@fiu.edu.

MANAGAGING YOUR RESEARCH DATA

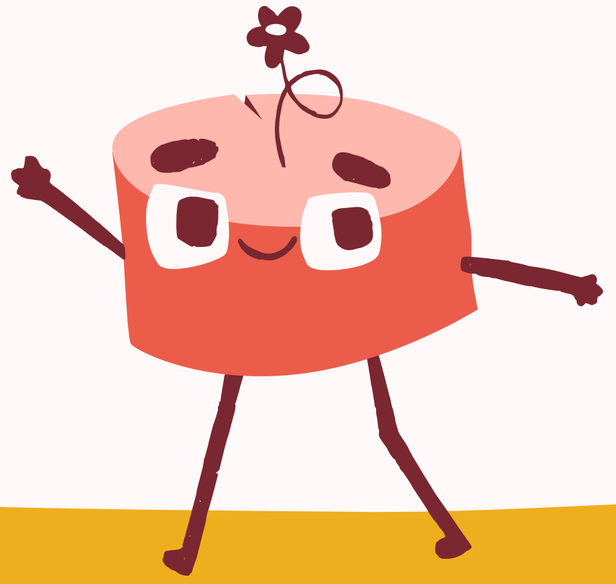
Jill Krefft
May 26, 2021



Welcome!

Overview of Research Data

Data Management Life Cycle



What is Research Data?

“Recorded factual material commonly accepted in the research community as necessary to validate research findings (OMB Circular A-110 36.d.2.i.)

What is Research Data?

“Data are outputs of research and inputs to scholarly publications and inputs to subsequent sharing and learning” (Borgman, 2007)

Types of Research Data By Collection Method

Observational Data

- Captured in real time
- Sensor readings, sensory (human) observations, survey results

Experimental

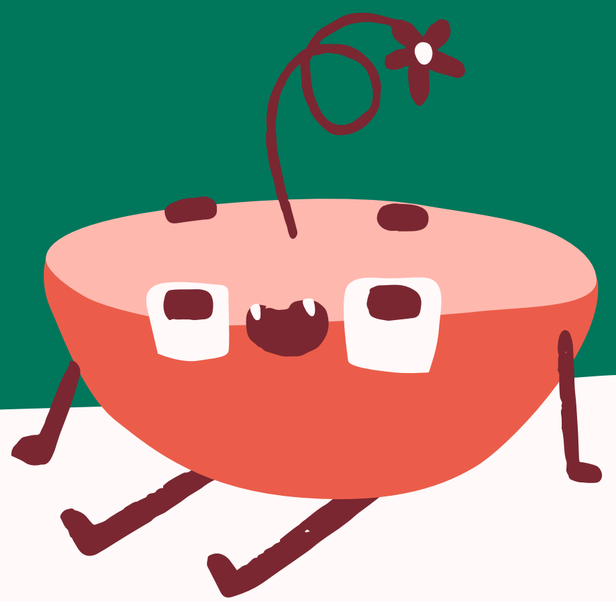
- Through active intervention
- gene sequences, chromatograms, spectroscopy, microscopy

Simulation Data

- Test Model is very important
- climate models, economic models, biogeochemical models

Derived or Compiled Data

- Track data source and check permissions
- population density maps, extracted text for text analysis

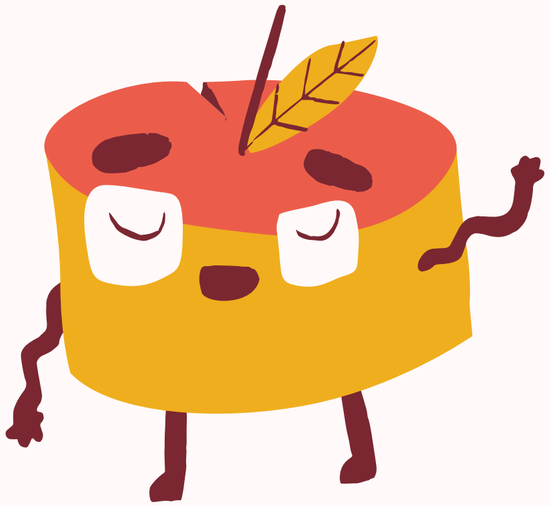


Data Formats

- Images and Video
- Mapping/GIS Data/Geodatabases
- Numerical measurements
- Survey responses
- Focus group or interview transcripts
- Economic indicators and demographics
- Polls
- Computer modeling
- Simulations
- Observation and/or field studies
- Code or software
- Physical Collections (plant specimens)

Research Data Lifecycle

Documentation &
Metadata

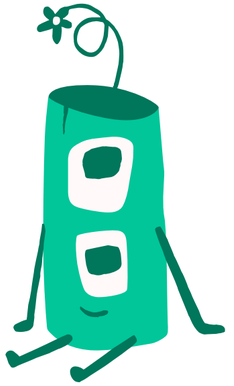


PLANNING

Questions To Ask During the Planning Phase

- What type of data will be produced?
- How much data will there be?
- Who will use the data now, and in the future?
- How long should the data be retained?
- Where will this data be retained?
- What file formats will be used?
- What documentation/metadata standards will be used?
- Are there privacy/security requirements?

Data Management Plans (DMP)



Data Management Plan (DMP)

A written document that describes the data you expect to acquire or generate during the course of a research project, how you will manage, describe, analyze and store those data, and what mechanism you will use at the end of your project to share and preserve your data

DMP Tool

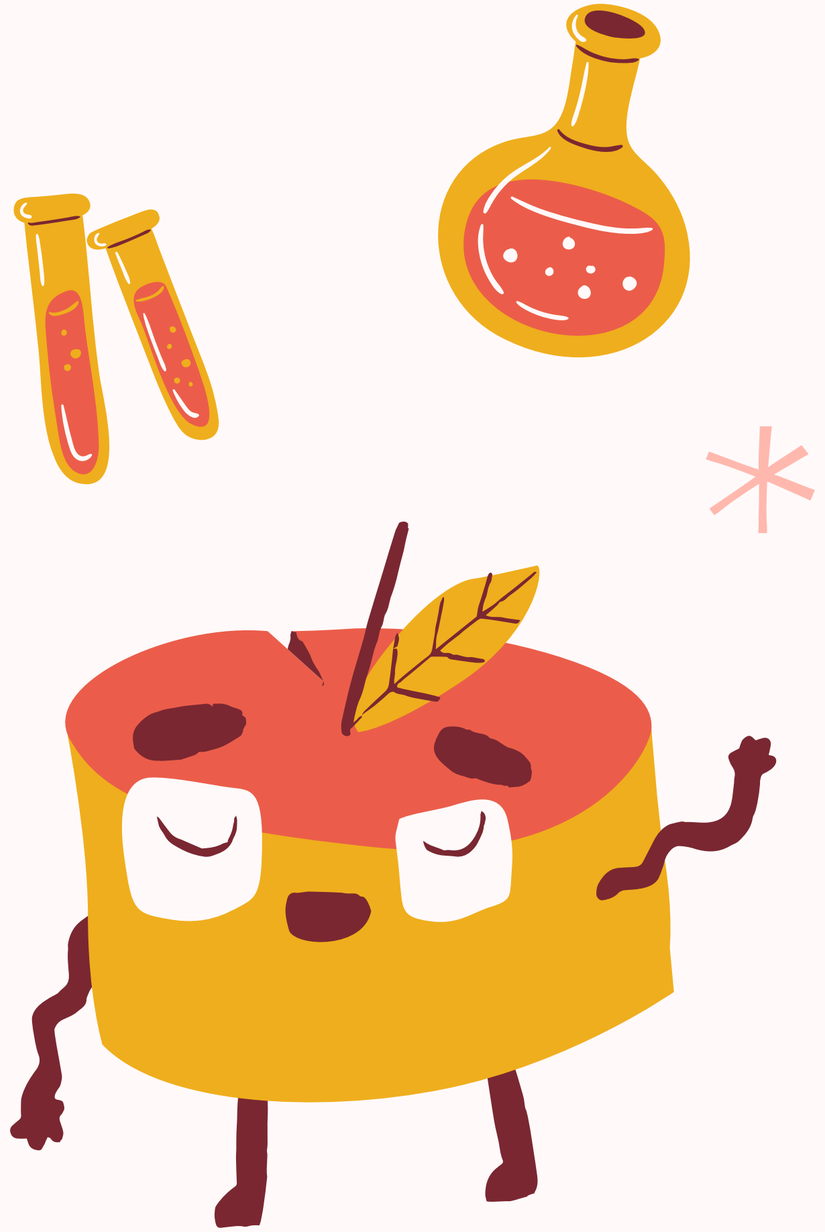
The DMPTool helps researchers create data management plans (DMPs). It provides guidance from specific funders who require DMPs, but the tool can be used by anyone interested in developing generic DMPs to help facilitate their research (http://dmptool.org)

COLLECTING & ORGANIZING DATA

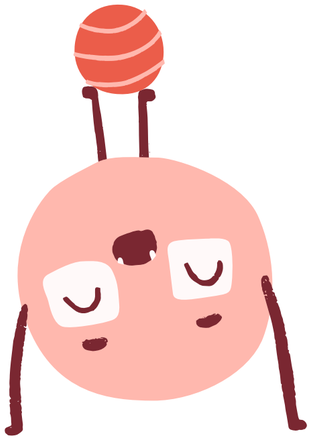
Collecting & Organizing Data

Keeping track of documents and datasets is critical while you are still conducting the research. There are two main strategies that can assist you in organizing your data while collecting research:

- Use a Naming Convention for individual files
- Grouping your files into meaningful datasets (File Structure)



Using a Naming Convention



These are some best practices when creating a naming convention:

- Use file naming consistently
- Make sure the names clearly represent what the file is (descriptive) – Identify the activity of project in the file name
- Use short informative words or phrases and try to keep file names under 32 characters
- Avoid using these symbols "/\:*<>[]&$
- Dates should be formatted like this: YYYYMMDD (e.g., 20150209) Put dates at the beginning or the end of your files, not in the middle, to make it easy to sort files by name
- Use underscores (_) not spaces/dashes/hyphens to separate terms

Creating a File Naming Schema

Start By Creating a File Inventory

A. Data Type	B. File Format	C. Unique characteristics	D. Multiple versions?	E. Draft file name

Draft Your File Names

Create File Folder Hierarchy

Adapted from MIT Libraries Data Management Services
https://www.dropbox.com/s/xx26a1onsu1qdpc/Worksheet_fileOrg.docx?dl=0

Retrospective File Renaming Tools

Mac

Renamer

https://renamer.com/

ExifToolGUI

http://u88.n24.queensu.ca/~bogdan/

Windows

Advanced Renamer

https://www.advancedrenamer.com/

ExifToolGUI

http://u88.n24.queensu.ca/~bogdan/

File Folder Structure

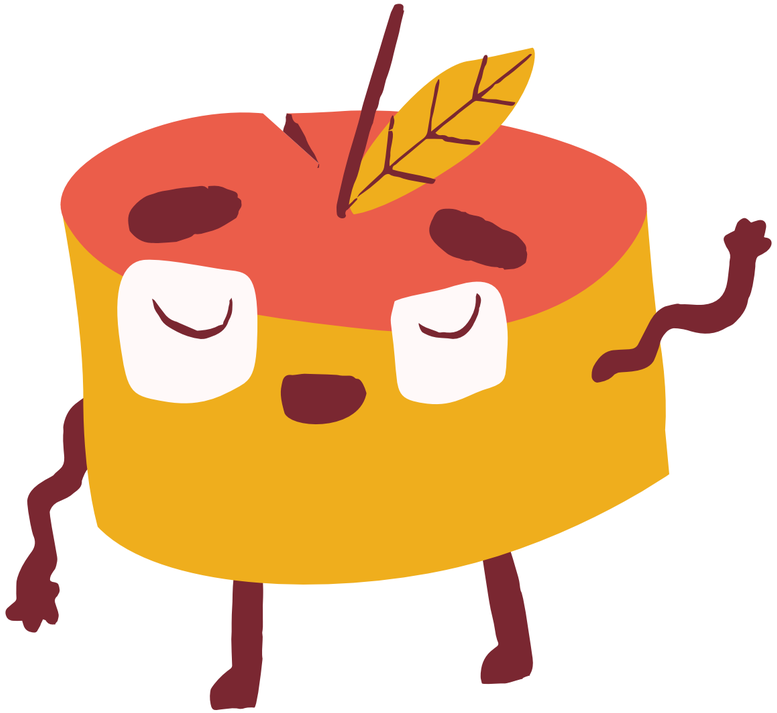
- Folders named for major functions/activities
- Structure by date or event (especially subfolders)
- Names should be self explanatory
- Avoid duplication
- Make it simple and consistent

Example file structure:
[Project]/[SubProject]/[Type_of_File]/[Data_Collector_Name]/[YYYYMMDD]

Organizing Your Data

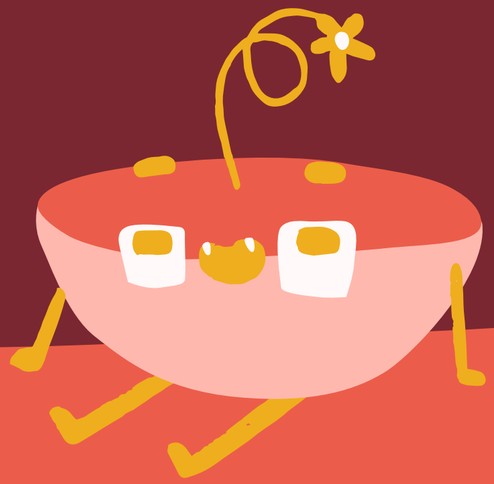
Final Thoughts:

- Document your system and use it consistently
- Include important contextual information:
  - Data
  - Collection Method
  - Collector.....



Be Consistent and Document !!!!

PROCESSING & ANALYSIS

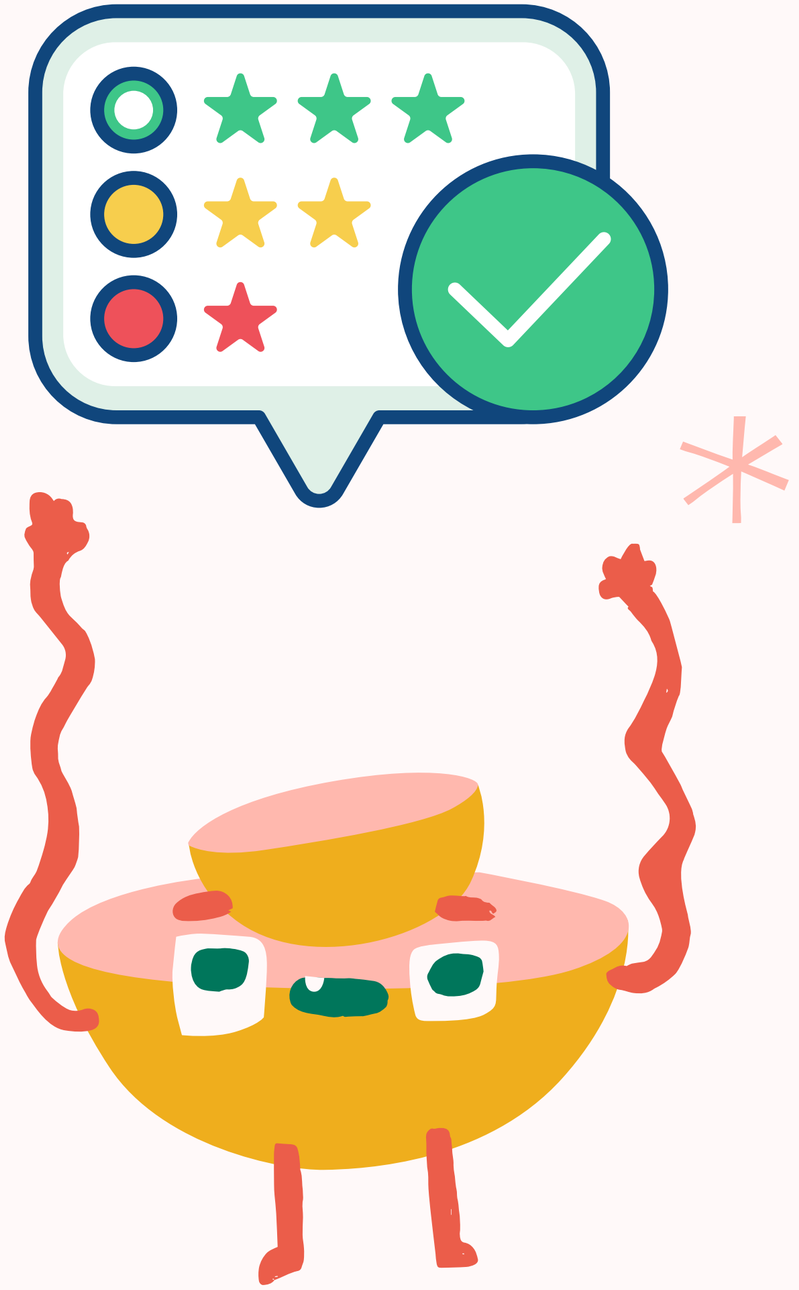


Quantitative Data Analysis Tools

- Numerous statistics package are available at FIU through eLabs, including SPSS, R, STATA, SAS and Minitab.
- SPSS is additionally available on the computers located in the Green Library Hub (2nd floor).

Qualitative Data Analysis Tools

- eLabs - https://elabs.fiu.edu/
- Atlas.ti - https://atlasti.com/
- Nvivo - https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home
- rSpace - https://www.researchspace.com/



Digital Scholar Studio

Comprehensive List of Online Tools Available
https://library.fiu.edu/c.php?g=557430&p=3833427

- Text Analysis
- Annotation
- Transcritption
- Audio
- Mapping
- Timelines
- Digital Exhibits
- Infographics

DOCUMENTATION & METADATA

Documentation VS. Metadata

Documentation

Documentation is “all about the use”

Makes reference to data in the context of their use

Metadata

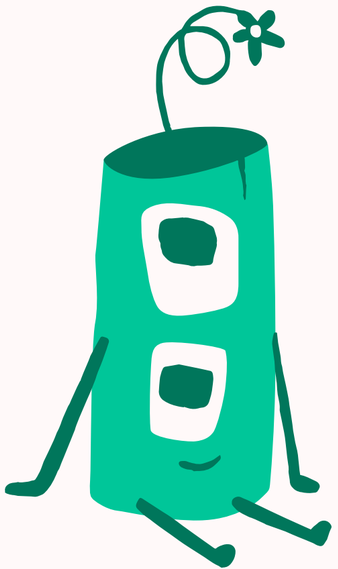
Metadata is “data about data”

Describes key attributes of each data element or collection of elements

Project Level Documentation

What's important to document?

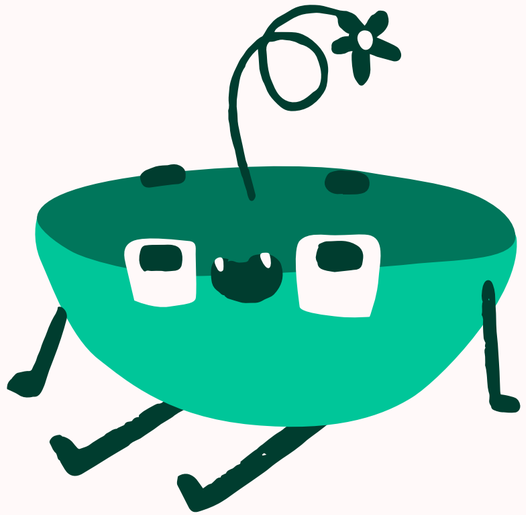
- Context of data collection
- Data collection methodology
- Structure and organization of data files
- Data validation and quality assurance
- Data manipulations through data analysis from raw data
- Data confidentiality, access and use conditions

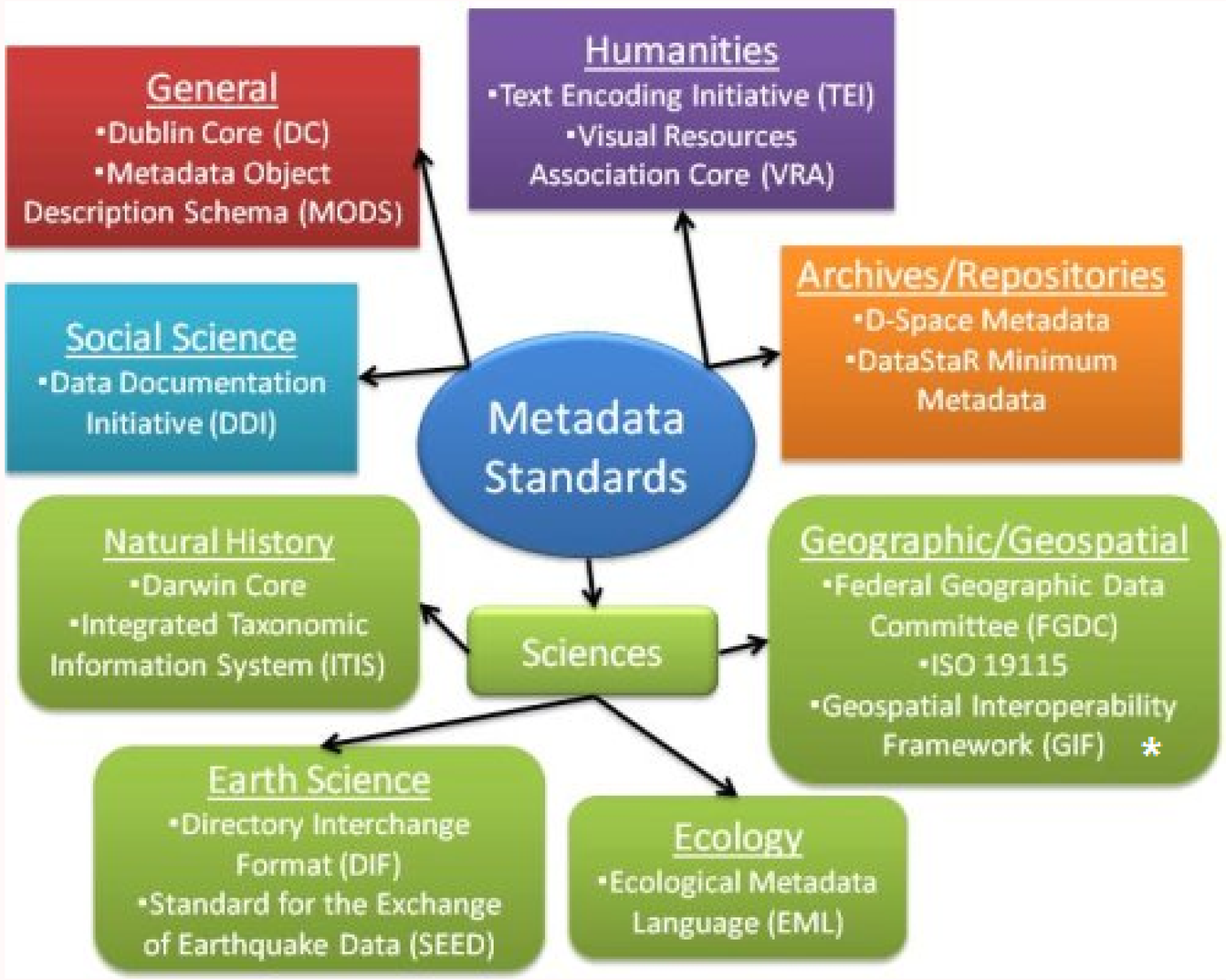


Data Level Documentation

What's important to document?

- Variable names and descriptions
- Definition of codes and classification schemes
- Codes of, and reasons for, missing values
- Definitions of specialty terminology and acronyms
- Algorithms used to transform data
- File format and software used





Metadata Concept Map by Amanda Tarbet is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Metadata

All metadata standards provide standardized structured information explaining

- Purpose
- Origin
- Time references
- Geographic locations
- Creator
- Access conditions and terms of use of data

For a full list of metadata standards you can visit: Digital Curation Centers Disciplinary Metadata List
http://www.dcc.ac.uk/drupal/resources/metadata-standards

ReadMe_[LastName].txt*

Data Pilot Program Documentation and Metadata Template:
http://libguides.fiu.edu/ld.php?content_id=24464305

•Best Practices for Read Me Files (Cornell University)

*

library.fiu.edu/ld.php?content_id=24464305

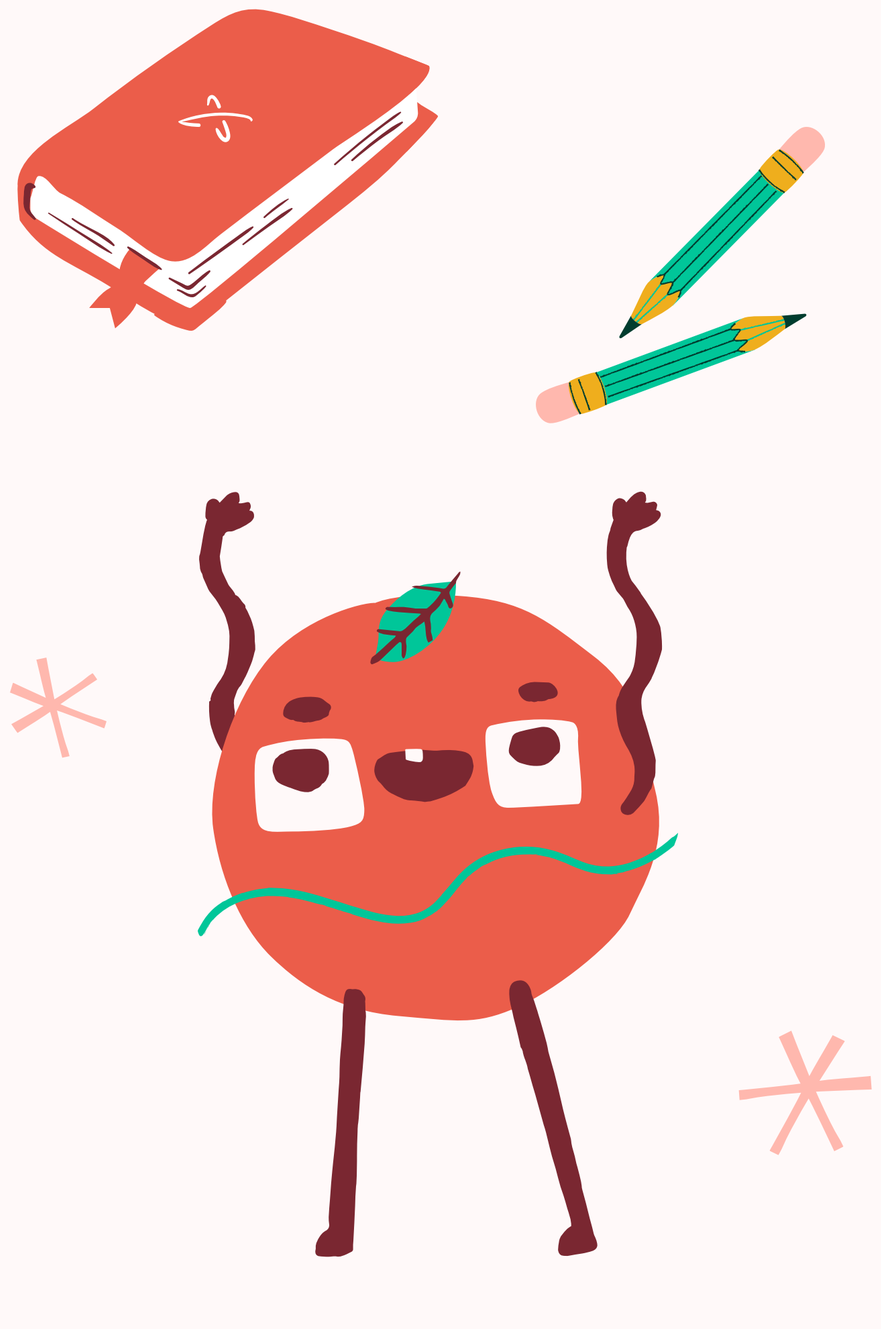
```
--------------------
General Information
--------------------


1. Title of Dataset

2. Title of Thesis or Dissertation associated with Data

3. Author Name: <Last Name, First Name>

4. Author's ORCID

5. Date of data collection (single date or range) <suggested format YYYY-MM-DD or YYYY-MM-DD/YYYY-MM-DD>

6. Geographic location of data collection (where was data collected?)

7. Keywords (what is the data about?)

8. Format (examples include: PDF/A, Excel Spreadsheet, etc.)

9. Language of the data

10. Description of Data (what is the data about?)

---------------------------
Sharing/Access Information
---------------------------

1. Are there sharing/accessibility restrictions for this data?

2. Links to other publicly accessible locations of the data

3. Was data derived from another source?
        If yes, list source(s):



---------------------------
Data & File Overview
---------------------------

1. File List
        A. Filename:
           Short description:

        B. Filename:
           Short description:

        C. Filename:
           Short description:

2. Relationship between files:



--------------------------
Methodological Information
--------------------------


1. Description of methods used for collection/generation of data:
<Include links or references to publications or other documentation containing experimental design or protocols used in data collection>
```

Documentation and Metadata

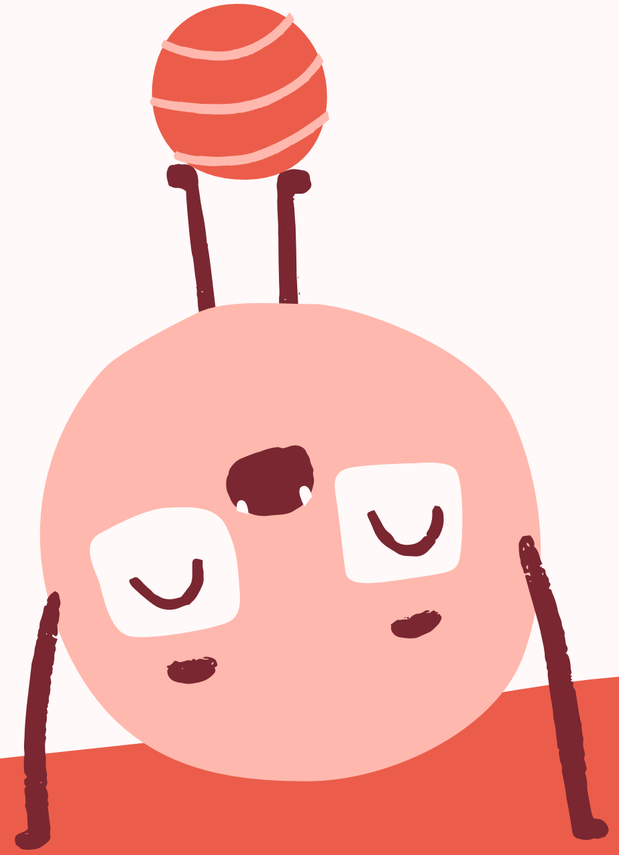
1.Make a note of all file names and formats associated with the project, how the data is organized, how the data was generated (including any equipment or software used), and information about how the data has been altered or processed.

2.Include an explanation of codes, abbreviations, or variables used in the data or in the file naming structure.

3.Keep notes about where you got the data.



THANK YOU FOR ATTENDING!

Part 2 - Sharing Your Research Data
June 2 at 2:30pm
https://go.fiu.edu/datamanagement2

Contact:
Jill Krefft
Jkrefft@fiu.edu