

# Support Your Data

## A Data Management Guide for Researchers

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### Introduction

Researchers are faced with an evolving array of expectations related to the management and sharing of data. Drawing upon models from the broader digital curation community as well as surveys, focus groups, and informal conversations with active researchers, we have developed a suite of tools designed to help researchers assess and advance their data management practices throughout the lifecycle of a project.

### Elements of the Guide

At present, our tools include a rubric that describes RDM-related activities using researcher-friendly language and a series of customizable guides that provide actionable information about how to advance RDM practices as necessary or desired.

**Our tools are designed to be user friendly, free of jargon, and customizable to meet the needs of researchers in different disciplines and with different levels of expertise.**

## RDM Rubric

	Ad hoc	One-time	Active and informative	Optimized for re-use
<b>Planning your project</b>	When it comes to my data, I have a "way of doing things" but no standard or documented plans.	I create some formal plans about how I will manage my data, but I generally don't refer back to them.	I develop detailed plans about how I will manage my data that I actively revisit and revise over the course of a project.	I design my plans for managing data to streamline future use by myself or others.
<b>Organizing your data</b>	I don't follow a consistent approach for keeping my data organized, so it often takes time to find things.	I have an approach for organizing my data, but I only put it into action after my project is complete.	I have an approach for organizing my data that I implement prospectively, but it not necessarily standardized.	I organize my data to the so that others can navigate, understand, and use it without me being present.
<b>Saving your data</b>	I decide what data is important while I am working on it and typically save it in a single location.	I know what data needs to be saved and I back it up after I'm done working on it to reduce the risk of loss.	I have a system for regularly saving important data while I am working on it. I have multiple backups.	I save my data in a manner and location designed maximize opportunities for re-use by myself and others.
<b>Getting your data ready</b>	I don't have a standardized or well documented process for preparing my data for analysis.	I have thought about how I will need to prepare my data, but I handle each case in a different manner.	My process for preparing data is standardized and well documented.	I prepare my data in such a way as to facilitate use by both myself and others in the future.
<b>Analyzing your data</b>	I often have to redo my analyses or examine their products to determine what procedures or parameters were applied.	After I finish my analysis, I document the specific parameters, procedures, and protocols applied.	I regularly report the specifics of both my analysis workflow and decision making process while I am analyzing my data.	I have ensured that the specifics of my analysis workflow and decision making process can be put into action by others.
<b>Sharing your data</b>	I share the results of my research, but generally I do not share the underlying data.	I share my data only when I'm required to do so or in response to direct requests from other researchers.	I regularly share the data that underlies my results and conclusions in a form that enables use by others.	Because of my excellent data management practices, I am able to share my data efficiently whenever I need to with whomever I need to.

The RDM rubric is designed to emphasize that the management of data is an active and iterative process that occurs throughout the different phases of a project. Activities in different phases are described without jargon and are represented in separate rows. Each row includes a series of declarative statements which describe activities at one of four levels depending on the extent to which they are described, documented, and integrated with those implemented at other phases.

**The rubric is intended to be descriptive rather than prescriptive. It is designed to help researchers understand where they are.**

**Ad hoc** - Every time a researcher has to manage their data they have to design new practices and procedures from scratch.

**One time** - Practices or procedures implemented at one phase of a project are not designed with later phases in mind.

**Active and informative** - Practices and procedures are standardized, documented, and well integrated with those implemented at other phases.

**Optimized for re-use** - Data management activities are designed to facilitate the re-use of data in the future

## One Page Guides

**Planning for Data**

A plan detailing how you'll manage your data, code, and other research materials (including physical samples) over the course of a project will help your research proceed efficiently. Creating a comprehensive, specific, and actionable plan is an important step in developing a successful project. See the best plan also create as a project process.

**What does it mean to plan for data?**

Planning for data means thinking through and documenting how data will be managed, stored, accessed, analyzed, and shared over the course of your research project.

**Requirements and How to Meet Them**

Many fields, agencies, and institutions have specific data management requirements. Check documents such as a Data Management Plan (DMP) that provide details about the type of data to be collected and managed within a research project and help you determine the best practices for managing the data. See also where data will be archived and shared, and how the financial cost of managing data will be met.

The DMP for (https://www.dmp.com) is a tool that provides guidance for creating a data management plan. [DMP.com](#) also provides DMP-related services.

**Things to Think About**

- Planning for data is not a one-time activity. You should revisit your plan as you develop your project, but you should also revisit and revise your plan as your project proceeds.
- Plans should identify the data you intend to collect, as well as how you plan to transfer, analyze, and share it. Be as specific as possible.
- Agree to create only useful if people can follow it. Be sure your plan is documented and communicated to your collaborators.
- Even if you do not have a Data Management Plan (DMP), you may have a document that describes how you plan to handle your data. For example, the information could be included in a [proposal](#) or an [IRB application](#).
- While planning for data is not a one-time activity, you should revisit and revise your plan as you develop your project, but you should also revisit and revise your plan as your project proceeds.

**Organizing Data**

Organizing data involves how you collect, store, and manage your data and research materials when you need to find them. It's important to think about how you'll manage your data and research materials when you need to find them. It's important to think about how you'll manage your data and research materials when you need to find them.

**What does it mean to organize data?**

Organizing data means arranging your data and other research materials so they can be found by yourself or others - or needed. This can be done in a number of ways. However, you can't find data you can't find.

**Requirements and How to Meet Them**

There are specific requirements about how [data should be organized](#). See also where data will be archived and shared, and how the financial cost of managing data will be met.

**Things to Think About**

- The organization of your data determines how much flexibility you will have about what you can find. If you have large quantities of data, data containing sensitive information, or data that is difficult to access, you should think about how you'll manage your data and research materials when you need to find them.
- There may be a difference between when and how you use your data and when you need to find it. Think about how you'll manage your data and research materials when you need to find them.

**Saving Data**

There is a lot of data in the world. It's important to think about how you'll manage your data and research materials when you need to find them. It's important to think about how you'll manage your data and research materials when you need to find them.

**What does it mean to save data?**

Saving data means storing research materials in a manner so they can be accessed and used by yourself or others - at a later date. Here are three factors to consider when saving your data.

**Requirements and How to Meet Them**

There are specific requirements about how [data should be saved](#). See also where data will be archived and shared, and how the financial cost of managing data will be met.

**Things to Think About**

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**Preparing Data**

It is very likely that there are several steps between the data you collect and the data you ultimately analyze and publish. Preparing your data involves creating a data management plan that details how you'll manage your data and research materials when you need to find them. It's important to think about how you'll manage your data and research materials when you need to find them.

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**Requirements and How to Meet Them**

There are specific requirements about how [data should be prepared](#). See also where data will be archived and shared, and how the financial cost of managing data will be met.

**Things to Think About**

- Whenever possible, maintain a copy of your data in its original form. The link between the original and prepared data should be clear. If you prepare new files, the link to the original data should be clear.
- It is important to think about how you'll manage your data and research materials when you need to find them.
- There may be a difference between when and how you use your data and when you need to find it. Think about how you'll manage your data and research materials when you need to find them.

**Analyzing Data**

There is a lot of data in the world. It's important to think about how you'll manage your data and research materials when you need to find them. It's important to think about how you'll manage your data and research materials when you need to find them.

**What does it mean to analyze data?**

The methods you use to derive conclusions from your data will, of course, depend on your research questions, your field of research, and the tools you have available to you. However, here are two factors to consider when analyzing your data.

**Requirements and How to Meet Them**

There are specific requirements about how [data should be analyzed](#). See also where data will be archived and shared, and how the financial cost of managing data will be met.

**Things to Think About**

- Properly documenting and managing your analyses are important for reasons related to research transparency and reproducibility. See also where data will be archived and shared, and how the financial cost of managing data will be met.
- While many research communities only focus on analyzing existing data, a subset of researchers should apply the same practices to all of the analyses you conduct in your research project.

**Sharing Data**

Sharing data means making your data available to other researchers so they can use it to advance their research. It's important to think about how you'll manage your data and research materials when you need to find them. It's important to think about how you'll manage your data and research materials when you need to find them.

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**Requirements and How to Meet Them**

There are specific requirements about how [data should be shared](#). See also where data will be archived and shared, and how the financial cost of managing data will be met.

**Things to Think About**

- Think about how you'll manage your data and research materials when you need to find them.

Each row of the rubric is complemented by a one page guide designed to provide researchers with information about RDM-related requirements and advice about advancing practices as required or desired. We developed the guides so that they can be easily customized by RDM specialists to meet the needs of different disciplinary or institutional communities.

**Our aim is to help researchers get where they want or need to be.**

## Next Steps

Stay tuned as we work on the presentation of the Support Your Data material in both physical media and online. We welcome any and all feedback about the content and application of our tools.

