Research Management Documentation for Team-Based Research

Interactive Worksheet

Commonly referred to as a “lab manual” or “project organization protocol,” a research management document is used to outline expectations for your project team and to keep your project on track. In addition to increasing research efficiency, developing and sharing research and data management best practices for your team will help to foster a climate of diversity and inclusion by creating transparent work practices that provide equal footing for all team members to positively contribute to the research project.

Most people don’t have picture perfect memory, so even individual projects can benefit from creating a manual. Think of this document as a living “readme” file for your project. At the start of the project it will explain your intended practices; be sure to keep the document updated if you find that particular aspects of your plan require modification.

This document provides a descriptive list of items to help you create a research management plan for you and your team. It is intended as a tool to assess the current status of your project documentation and to assist in considering all of the possible details that you may want to include. Questions include the extent to which you already provide documentation within particular categories of information, and the extent to which this information currently meet the needs of team members. Use this worksheet as an opportunity to reflect and take notes on specific ways you can update or create new documentation for your team.

Consider all of the documentation possibilities presented here, then use your discretion to add/edit/modify to fit your project parameters. Depending on the size and complexity of your project, certain components may require separate and more detailed documentation. For example, data collection protocols may be referenced in a project organization protocol and live as their own stand-alone documents.

Please indicate the documentation that you create to support your lab in conducting research and managing data, and the extent to which existing documentation is currently meeting the needs of your team. Take notes on how your documentation might be modified or new documentation created.

Identify a project to use in answering the following questions:
1. PROJECT OVERVIEW

A. Summary of Research: In a brief statement describe the research to be performed and the data to be developed. This could include a statement on the source of funding; research design and context; project history; aims and objectives; hypotheses; related publications and research outputs; etc.

i. Do you include “Summary of Research” information in your documentation?

Not at all  Somewhat  Completely

ii. If Not at all, do you want to?

Yes  No  I Don’t Know

iii. Are the needs of all team members met by any existing “Summary of Research” documentation?

Not at all  Somewhat  Completely

iv. If there are needs in your team that are not being met by the “Summary of Research” documentation, how could this be addressed?
1. PROJECT OVERVIEW

B. Roles and Responsibilities: Description of the research team. List team member names and contact information. Include additional details such as team member roles and responsibilities, both generally and specific to data management/organization. Provide information on data ownership and rights. Set guidelines for communication best practices; standards for teamwork and conduct; other general expectations (e.g., work required for publication credit, etc.).

i. Do you include “Roles and Responsibilities” information in your documentation?

- Not at all
- Somewhat
- Completely

ii. If Not at all, do you want to?

- Yes
- No
- I Don’t Know

iii. Are the needs of all team members met by any existing “Roles and Responsibilities” documentation?

- Not at all
- Somewhat
- Completely

iv. If there are needs in your team that are not being met by the “Roles and Responsibilities” documentation, how could this be addressed?
1. PROJECT OVERVIEW

C. Individual Team Member Documentation: Detail standards and practices for personal lab notebooks or project diaries. Include information such as documentation responsibilities; ownership of research materials; and sharing policies.

i. Do you include “Individual Team Member Documentation” information in your documentation?

Not at all  Somewhat  Completely

ii. If Not at all, do you want to?

Yes  No  I Don’t Know

iii. Are the needs of all team members met by any existing “Individual Team Member Documentation” documentation?

Not at all  Somewhat  Completely

iv. If there are needs in your team that are not being met by the “Individual Team Member Documentation” documentation, how could this be addressed?
2. PROJECT MANAGEMENT AND ORGANIZATION PLAN

A. Folders and Files: Outline the project folder structures and location of files by type and/or stage of development (raw, processed, master, etc.). Set standards for folder or file naming conventions, including for versioning or modifications. Provide guidance on selecting file formats.

i. Do you include “Folders and Files” information in your documentation?

ii. If Not at all, do you want to?  
- Yes
- No
- I Don’t Know

iii. Are the needs of all team members met by any existing “Folders and Files” documentation?

iv. If there are needs in your team that are not being met by the “Folders and Files” documentation, how could this be addressed?
B. Storage and Backup: Explain the storage infrastructure and protocols for saving and backup (e.g., scheduling, testing, disposal, etc.). Detail how to handle security considerations, including access rights.

i. Do you include “Storage and Backup” information in your documentation?

- [ ] Not at all
- [ ] Somewhat
- [ ] Completely

ii. If Not at all, do you want to?

- [ ] Yes
- [ ] No
- [ ] I Don’t Know

iii. Are the needs of all team members met by any existing “Storage and Backup” documentation?

- [ ] Not at all
- [ ] Somewhat
- [ ] Completely

iv. If there are needs in your team that are not being met by the “Storage and Backup” documentation, how could this be addressed?
3. DATA COLLECTION AND PROCESSING DOCUMENTATION

A. Data Collection Methods: Describe the protocols, procedures, and workflows. List information about tools used such as instruments, hardware, and software. Give details of quality assurance procedures; information recorded about the data collection process itself; use of structured data entry documents (if any).

i. Do you include “Data Collection Methods” information in your documentation?

Not at all   Somewhat   Completely

ii. If Not at all, do you want to?

Yes   No   I Don’t Know

iii. Are the needs of all team members met by any existing “Data Collection Methods” documentation?

Not at all   Somewhat   Completely

iv. If there are needs in your team that are not being met by the “Data Collection Methods” documentation, how could this be addressed?
3. DATA COLLECTION AND PROCESSING DOCUMENTATION

B. Data Processing Methods: Detail the protocols and procedures to clean the data and prepare it for analysis. List the hardware and software used; quality assurance procedures; information to be recorded about the data processing procedure itself.

i. Do you include “Data Processing Methods” information in your documentation?

- [ ] Not at all
- [ ] Somewhat
- [ ] Completely

ii. If Not at all, do you want to?

- [ ] Yes
- [ ] No
- [ ] I Don’t Know

iii. Are the needs of all team members met by any existing “Data Processing Methods” documentation?

- [ ] Not at all
- [ ] Somewhat
- [ ] Completely

iv. If there are needs in your team that are not being met by the “Data Processing Methods” documentation, how could this be addressed?
3. DATA COLLECTION AND PROCESSING DOCUMENTATION

C. Metadata: Provide contextual information about the data needed to discover, understand, and make use of it. Describe alignment with disciplinary standards (if any). Detail how to create or link to codebook or data dictionary which includes variables. Explain coding practices.

i. Do you include “Metadata” information in your documentation?

- Not at all
- Somewhat
- Completely

ii. If Not at all, do you want to?

- Yes
- No
- I Don’t Know

iii. Are the needs of all team members met by any existing “Metadata” documentation?

- Not at all
- Somewhat
- Completely

iv. If there are needs in your team that are not being met by the “Metadata” documentation, how could this be addressed?
3. DATA COLLECTION AND PROCESSING DOCUMENTATION

D. Sensitive Data Considerations: Explain how to adhere to requirements such as anonymization; special storage protections and permissions; disposal regulations. Include IRB considerations and link to/append compliance documents.

i. Do you include “Sensitive Data Considerations” information in your documentation?

[ ] Not at all  [ ] Somewhat  [ ] Completely

ii. If Not at all, do you want to?

[ ] Yes  [ ] No  [ ] I Don’t Know

iii. Are the needs of all team members met by any existing “Sensitive Data Considerations” documentation?

[ ] Not at all  [ ] Somewhat  [ ] Completely

iv. If there are needs in your team that are not being met by the “Sensitive Data Considerations” documentation, how could this be addressed?
4. DATA ANALYSIS DOCUMENTATION

A. Data Analysis Methods: Describe the protocols, procedures, and workflows. List information about tools used such as hardware and software. Give details of quality assurance and quality control procedures; information recorded about the data analysis process itself (e.g., techniques, etc.).

i. Do you include “Data Analysis Methods” information in your documentation?

[ ] Not at all  [ ] Somewhat  [ ] Completely

ii. If Not at all, do you want to?

[ ] Yes  [ ] No  [ ] I Don’t Know

iii. Are the needs of all team members met by any existing “Data Analysis Methods” documentation?

[ ] Not at all  [ ] Somewhat  [ ] Completely

iv. If there are needs in your team that are not being met by the “Data Analysis Methods” documentation, how could this be addressed?
4. DATA ANALYSIS DOCUMENTATION

B. Dataset Versioning: Outline how to provide clear identification and definition of versions; including distinction between versions.

i. Do you include “Dataset Versioning” information in your documentation?

Not at all  Somewhat  Completely

ii. If Not at all, do you want to?

Yes  No  I Don’t Know

iii. Are the needs of all team members met by any existing “Dataset Versioning” documentation?

Not at all  Somewhat  Completely

iv. If there are needs in your team that are not being met by the “Dataset Versioning” documentation, how could this be addressed?
4. DATA ANALYSIS DOCUMENTATION

C. Master Dataset Rules: Explain the designation of the master dataset. Describe protocols for using the master dataset.

i. Do you include “Master Dataset Rules” information in your documentation?

- Not at all  - Somewhat  - Completely

ii. If Not at all, do you want to?

- Yes  - No  - I Don’t Know

iii. Are the needs of all team members met by any existing “Master Dataset Rules” documentation?

- Not at all  - Somewhat  - Completely

iv. If there are needs in your team that are not being met by the “Master Dataset Rules” documentation, how could this be addressed?