**Project title**


**Project abstract**

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


**Project contributors**

Please list the project's Principal Investigator(s) and those responsible for data management.


**What data will you collect or create?**

- What type, format, and volume of data?
- Do your chosen formats and software enable sharing and long-term access to the data?
- Are there any existing data that you can reuse?

Give a brief description of the data, including any existing data or third-party sources that will be used, in each case noting its content, type and coverage. Outline and justify your choice of format and consider the implications of data format and data volumes in terms of storage, backup and access.

**How will the data be collected or created?**

- What standards or methodologies will you use?
- How will you structure and name your folders and files?
- How will you handle versioning?
- What quality assurance processes will you adopt?

Outline how the data will be collected/created and which community data standards (if any) will be used. Consider how the data will be organized during the project, mentioning for example naming conventions, version control and folder structures. Explain how the consistency and quality of data collection will be controlled and documented. This may include processes such as calibration, repeat samples or measurements, standardized data capture or recording, data entry validation, peer review of data or representation with controlled vocabularies.

**What documentation and metadata will accompany the data?**

- What metadata will be provided to help others identify and discover the data?
- Researchers are strongly encouraged to use community metadata standards where these are in place. The Research Data Alliance offers a Metadata Standards Catalog. Data repositories may also provide guidance about appropriate metadata standards.
- Consider what other documentation is needed to enable reuse. This may include information on the methodology used to collect the data, analytical and procedural information, definitions of variables, units of measurement, any assumptions made, the format and file type of the data, and software used to collect and/or process the data.
- Consider how you will capture this information and where it will be recorded, e.g., in a database with links to each item, in a "readme" text file, in file headers, etc.

**How will you manage any ethical issues?**

- Investigators carrying out research involving human participants should request consent to preserve and share the data. Do not just ask for permission to use the data in your study or make unnecessary promises to delete it at the end.
- Consider how you will protect the identity of participants, e.g., via anonymization or using managed access procedures.
- Ethical issues may affect how you store and transfer data, who can see/use it, and how long it is kept. You should demonstrate that you are aware of this and have planned accordingly.
- See ICPSR approach to confidentiality and Health Insurance Portability and Accountability Act (HIPAA) regulations for health research.

**How will you manage copyright and Intellectual Property Rights (IP/IPR) issues?**

- Who owns the data?
  - In most cases, CSU owns your research data and you are considered a steward of the data. However, CSU strives to promote open scholarship and, unless you have signed agreements stating otherwise, you are free to publicly share your research data.
  - If your research is supported by grant funding or if you are collaborating with people outside the university, then data ownership becomes more complicated. Contact Linda Schutjer, Senior Associate Legal Counsel, to discuss your particular research in regards to ownership.
- Typically, you cannot copyright data or facts; however, you can copyright the creative arrangement of data or facts. If you decide to share your data, we recommend that you use Creative Commons licenses to make it easier for others to use your data.
- If you will be producing software, see the Software Preservation Network's Copyright Guide for Scientific Software.
- Are there any restrictions on the reuse of third-party data?
- Will data sharing be postponed / restricted e.g. to publish or seek patents?

**How will the data be stored and backed up during the research?**

- Describe where the data will be stored and backed up during the course of research activities. This may vary if you are doing fieldwork or working across multiple sites so explain each procedure.
- Identify who will be responsible for backup and how often this will be performed. The use of robust, managed storage with automatic backup, for example, that provided by university IT teams, is preferable. Storing data on laptops, computer hard drives, or external storage devices alone is very risky.
- How will the data be recovered in the event of an incident?
- See CSU's Information Technology Security Policy and Data Classification and Storage Table.

**How will you manage access and security?**

- If your data is sensitive (e.g., detailed personal data, politically sensitive information or trade secrets), you should outline any appropriate security measures and note any formal standards that you will comply with. For questions about research data security, contact ResearchCUI@colostate.edu.
- How will you ensure that collaborators can access your data securely?
- If creating or collecting data in the field how will you ensure its safe transfer into your main secured systems?

**Which data are of long-term value and should be retained, shared, and/or preserved?**

- What data must be retained/destroyed for contractual, legal, or regulatory purposes?
- How will you decide what other data to keep?
- What are the foreseeable research uses for the data?
- How long will the data be retained and preserved?
- See retention requirements in the CSU Research Data Policy.

**What is the long-term preservation plan for the dataset?**

Consider how datasets that have long-term value will be preserved and curated beyond the lifetime of the project. Also outline the plans for preparing and documenting data for sharing and archiving. If you do not propose to use an established repository, the data management plan should demonstrate that resources and systems will be in place to enable the data to be curated effectively beyond the lifetime of the grant or project.

**How will you share the data?**

- How will you share the data, e.g., deposit in a data repository, use a secure data service, handle data requests directly, or use another mechanism? The methods used will depend on a number of factors such as the type, size, complexity, and sensitivity of the data.
- When will you make the data available? Research funders expect timely release. They typically allow embargoes but not prolonged exclusive use.
- How might your data be reused in other contexts? Where there is potential for reuse, you should use standards and formats that facilitate this, and ensure that appropriate metadata is available online so your data can be discovered. Persistent identifiers should be applied so people can reliably and efficiently find your data. They also help you to track citations and reuse.

- See DataCite's Repository Finder tool, re3data.org, or NIH-Supported Data Sharing Resources.
- For information about CSU's institutional membership in Dryad, see Publishing Research Data in Dryad.

**Are any restrictions on data sharing required?**

- Who will be able to use your data? If you need to restrict access to certain communities or apply data sharing agreements, explain why.
- Consider strategies to minimize restrictions on sharing. These may include anonymizing or aggregating data, gaining participant consent for data sharing, gaining copyright permissions, and agreeing a limited embargo period.

**Who will be responsible for data management?**

- Outline the roles and responsibilities for all activities, e.g., data capture, metadata production, data quality, storage and backup, data archiving, and data sharing. Individuals should be named where possible.
- For collaborative projects you should explain the coordination of data management responsibilities across partners.

**What resources will you require to implement your plan?**

- Is additional specialist expertise (or training for existing staff) required?
- Do you require additional hardware or software?
- Will charges be applied by data repositories?