

Research Funder Requirements for Data Management

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Presenter

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Outline

- Background
- Which funders have data management requirements?
- What do these requirements look like?
- How do you fulfill these requirements?
- Where can you get additional help?

Background

National Science Board (2005):

“It is exceedingly rare that fundamentally new approaches to research and education arise. Information technology has ushered in such a fundamental change. Digital data collections are at the heart of this change. They enable analysis at unprecedented levels of accuracy and sophistication and provide novel insights through innovative information integration. Through their very size and complexity, such digital collections provide new phenomena for study. At the same time, such collections are a powerful force for inclusion, removing barriers to participation at all ages and levels of education.”

“The NSF should require that research proposals for activities that will generate digital data, especially long-lived data, should state such intentions in the proposal so that peer reviewers can evaluate a proposed data management plan.”

Background (cont.)

National Science Foundation (2011):

“Proposals submitted or due on or after January 18, 2011, must include a supplementary document of no more than two pages labeled ‘Data Management Plan’. This supplementary document should describe how the proposal will conform to NSF policy on the dissemination and sharing of research results.”

“Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections and other supporting materials created or gathered in the course of work under NSF grants. Grantees are expected to encourage and facilitate such sharing.”

Background (cont.)

Office of Science and Technology Policy (2013):

“To the extent feasible and consistent with applicable law and policy; agency mission; resource constraints; U.S. national, homeland, and economic security; and the objectives listed below, digitally formatted scientific data resulting from unclassified research supported wholly or in part by Federal funding should be stored and publicly accessible to search, retrieve, and analyze.”

“Ensure that all extramural researchers receiving Federal grants and contracts for scientific research and intramural researchers develop data management plans, as appropriate, describing how they will provide for long-term preservation of, and access to, scientific data in digital formats resulting from federally funded research, or explaining why long-term preservation and access cannot be justified.”

Background (cont.)

Department of Energy (2014):

“All proposals submitted to the Office of Science for research funding must include a Data Management Plan (DMP).”

“At a minimum, DMPs must describe how data sharing and preservation will enable validation of results, or how results could be validated if data are not shared or preserved.”

“DMPs should provide a plan for making all research data displayed in publications resulting from the proposed research open, machine-readable, and digitally accessible to the public at the time of publication.”

Which funders have data management requirements?

Updated list: <https://dmptool.org/guidance>

- Alfred P. Sloan Foundation
- Department of Energy
- Gordon and Betty Moore Foundation
- Gulf of Mexico Research Institute
- Institute of Education Sciences (Dept. of Ed.)
- Institute of Museum and Library Services
- Joint Fire Science Program
- National Institutes of Health
- Office of Digital Humanities (NEH)
- National Science Foundation
- U.S. Geological Survey

CU-Boulder requirements

- Innovative Seed Grants now require Data Management Plans
- Best Digital Data Management Plans and Practices competition
 - 2014 winning plans: <https://data.colorado.edu/cudmpguidance>
 - Intending to run another competition in 2015

Not just research funders...journals also have requirements

Joint Data Archiving Policy (JDAP) (2011):

“<< Journal >> requires, as a condition for publication, that data supporting the results in the paper should be archived in an appropriate public archive, such as << list of approved archives here <<. Data are important products of the scientific enterprise, and they should be preserved and usable for decades in the future. Authors may elect to have the data publicly available at time of publication, or, if the technology of the archive allows, may opt to embargo access to the data for a period up to a year after publication. Exceptions may be granted at the discretion of the editor, especially for sensitive information such as human subject data or the location of endangered species.”

JDAP adopters: Nature, Science, PLOS, and many others

What do data management requirements look like?

Basic data management plans include answers to the following questions:

- What types of data will you produce?
- What (if any) standards will you use?
- When and how will you share data?
- What can people do with your data?
- How will you archive and preserve data?

Vary by funder, directorate, division, and program...

How do you fulfill data management requirements?

DMPTool: <http://dmptool.org>

- Tool for creating custom data management plans to meet specific funder requirements
- No need to register to use:
 - Click “Get Started”
 - Select “University of Colorado Boulder”
 - Log in with IdentiKey

Most common question we receive:

“How do I provide public access to my data?”

Some (free) options:

- CU Scholar (<http://scholar.colorado.edu>)
- Figshare (<http://figshare.com>)
- DataONE Dash (<https://oneshare.cdlib.org/>)

Some options with fees (can include in proposal budgets):

- openICPSR (<http://www.openicpsr.org/>)
- Dryad (<http://datadryad.org/>)

Factors to consider when choosing a home for your data:

- Size limits
- Cost
- Service provider
- Appropriateness for discipline
- Support for sensitive data
- Discoverability and citability
- Sustainability

Where can you get additional help?

Research Data Services

<http://data.colorado.edu>

data-help@colorado.edu

Help with:

- Drafting or reviewing Data Management Plans
- Identifying appropriate places to store, archive, and provide access to your data
- Any other research data questions you have

Thank you! Questions?

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