

Managing Research Data and Data Management Planning



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Overview

Help you think about practical issues to do with creating, working with and securing data

Show how 'data management' benefits you

Highlight what support is available

Discuss how to apply these ideas through planning

Link to Open and Reproducible Research

University's policy on research data management (RDM)



There is a formal policy on research data management (RDM) and records:

“The University of Oxford seeks to promote the highest standards in the management of research data and records as fundamental to both high quality research and academic integrity.”

See Research Data Oxford (RDO)

<http://researchdata.ox.ac.uk/>



Policy in practice

No one would disagree with the policy as it is worded, but in practice what does it mean?

‘Management’ - Protecting ourselves as projects develop or things go wrong;

Laptop lost or stolen

Hard drive crash

Funding terminated

Team members disperse

Memory fails

Management Policy

Research data *and* records should be:

- a. Accurate, complete and reliable;
- b. Identifiable, retrievable, and available when needed;
- c. Secure and kept in an appropriate manner

Impact on You

Responsibility is **yours** as data creators to be aware of policy

Combine with wider research **skills** development

Helps respond to funder/publisher **expectations**

Make use of the **support** framework at Oxford

Consider right from the **start** of a project

“Overall, doing research robustly and fairly does not necessarily require more money, it simply requires that you think before you start.”

Ben Goldacre, Bad Science (2008)

Some Principles of Data Management



How can RDM help with these concerns?

It deals with Data Management Planning and the research lifecycle

All stages of research

- Before - During - After

Stresses Data *and* Metadata

Keeps data usable for you **now** (secure storage)

Also in the ***future***

- Accessible to you
- Preserved for you



Working with Data

What is data? Are there typical examples?

Born digital

Or digitised

Used and unused

Digital Media - strengths

Digital – a key factor in RDM

What are the benefits and strengths of digital?

- Perfect copies
- Easy to share and access
- Convenient
- Represent latest – contemporary techniques

But there are weaknesses **to be managed**

Digital Media - weaknesses

Weaknesses of digital

- **Too** easy to share
- Medium dependent
- Corrupted - Immediate loss
- Inflexible – difficult to repurpose over time
- Too **many** copies
- Hardware and software dependent
- Long term use issues - Digital obsolescence as ‘the latest’ becomes ‘the unsupported’
- Ethical and licensing issues

Digital Media Curation

RDM promotes the need for curation of digital assets

- Understand the weaknesses
- Take active steps to avoid potential pitfalls
- Build effective procedures and workflows
- Consider key stages in the data lifecycle for your project

Curate it

- Through own actions
- Involving institutional stakeholders

Typical Curation Issues

Day to day protocols on collection and use

Disaster planning

- Multiple storage and backups
- Data security

Appropriate workflow?

Documentation – Metadata

- Natural offshoot of literature search/ research diary?

Formalisation of procedures ensures **preservation**

Preservation as basis of sharing **with others**

Getting Support for RDM

Important distinctions in managing your data **and** how others view it

Dynamic or static?

See where and **when** support fits in

During or after the project?

- One Drive for business (during but **not** after)
- HFS (during but **not** after)
- ORA-Data
- [RDO](#) on other options
- External archival services



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Welcome to the Research Data Oxford website



About RDM

Overview of research data management and funder policies.



Working with data

Data management day-to-day and at the project planning stage.



Sharing data

Sharing, licensing, depositing, and citing your data.



Tools, services, and training

Resources to help with various aspects of data management.



Research data glossary

Terms used in the management of digital research data.



Oxford research data blog

Latest news and views on Oxford research data support.

ORA-Data



Find out more about [ORA-Data](#), the archival catalogue and repository for research data produced by Oxford academics.

Useful links

[Ask a question - Contact Us](#)

[University RDM policy - download or view](#)

[Find out what funders expect - see the funder policies page](#)

[Latest news - Read the Oxford Research Data blog](#)

Recent blog posts

> [Using DMP Online with Oxford SSO credentials – instructions now available](#) 29 January 2016

> [Seal of approval for ORA-Data 11](#)

<http://researchdata.ox.ac.uk/>

Support Frameworks (1/3)

You are not left to figure this all out yourself!

At Oxford:

- The Library and its Subject Consultants
- Departmental level support
- Research Skills training
- Research Data Oxford webpage
- Research Data Oxford email
- ORA / ORA-Data

Support Frameworks (2/3)

Ethical and legal issues

- Creating data – live participants
- Curec
- Collecting data – Licensing

Research Ethics

- Access Restrictions
- Participation/ Confidentiality agreements
- Ethics Committees and Informed Consent

Support Frameworks (3/3)

Outside Oxford:

- Digital Curation Centre
- UK Data Archive/Service
- Edinburgh – MANTRA Course
- Publications (Rice & Southall 2016, Angus Whyte 2014)
- websites

Open and Reproducible Research



Key trend in academic research around:

- Preservation of materials
 - Data / Software / Methodology
- Documentation of research
- Transparency in methodology
- Potential for provenance, verification etc.
- Augmentation

All research can be managed and planned
Not all research is Open or Reproducible



RDM Planning

Data Management Plans and Planning (DMP)

Growing popular with funders and publishers

What is it?

- About applying RDM principles

- Formalising previously informal stages

- See chapter 7 (Rice & Southall 2016)

- 'Research Data Oxford' pages

DMP – an outline

Describes the research data being created or collected

Key responsibilities

How the data will be organised

Disaster recovery

Documentation during the collection and analysis phase

Tools

Plan v. Planning - a considered approach

Other Elements of DMP

Policy on data storage and security

What facilities and equipment will be required

How stakeholder requirements being addressed

How / If the data will be **preserved**

How / If the data will be **shared**

ORA-Data Pre-deposit checklist

DMPOnline tool

In Conclusion

Beneficial to you

Make more efficient use of data

Protect against common problems of 'fragile' digital data

Increase citations/ impact of research

Respond to funder, publisher expectations:

- Good Data Management
- Open Research
- Reproducible Research

What Next?

Seek support and advice

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