An Introduction to Research Data Management (RDM)

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Information Services
What is data?

- The term ‘data’ refers to any evidence that underpins your research question and validates your findings.

- Data can take the form of various media, including spreadsheets, audio-visual recordings, lab notebooks, sketchbooks, digital images, interview transcripts, objects, manuscripts or survey results.

- Some researchers use or prefer other terms, e.g. “sources”
A few examples...

- Weather measurements
- Photographs
- Results from experiments
- Government records
- GIS data
- Simulation data
- Log data
- Field notes
- Software
- Images
- Questionnaires
- Historical documents
- Moving images
- Bones or blood samples
- Specimens
- Social media
- Statistics
- Notebooks
- Blogs
- Audiotapes
- Videotapes
- Scripts
- Algorithms
- Slides
- Surveys
- Transcripts
- Spreadsheets
What is Research Data Management?

Research data is *all* the information researchers make use of in their research.

Data management is how researchers organise, structure, and care for this data.
Why does RDM matter?

Good RDM provides a number of benefits for both researchers and their institution:

- It is part of good research practice (Vitae RDF Domain C, research governance and organisation).
- Researchers meet funder requirements
- Data are accurate, complete, authentic and reliable – leading to research integrity
- Data security & minimise the risk of loss.
- Data is available for researchers own future use.
- Increased research impact, visibility and opportunity for collaboration.
- Open research data is for the public good.
PhD student perspective

Gail Baxter - Why is RDM Important to You from VADS4R Project on Vimeo. Interview conducted March 2014.
University of Cumbria’s RDM Principles of Good Practice

The principles cover these four areas:
• Data management and planning
• Data curation
• Data preservation
• Data sharing and reuse

https://my.cumbria.ac.uk/media/MyCumbria/Documents/Library/research_data_management_principles.pdf
Simple RDM lifecycle

Plan

Create, collect & use

Preserve & reuse
Data Management Plans (DMPs)

To help researchers think about managing their research data, a generic University of Cumbria research data management plan form has been produced.

https://my.cumbria.ac.uk/media/MyCumbria/Documents/Library/Research_Data_Management_Plan_Template.docx

If you are being funded by a research sponsor, they may stipulate that you use their bespoke RDM planning form.

The University of Cumbria has signed up to DMP online. This is a service which helps you to create, review, and share data management plans that meet institutional and funder requirements.

The Library can provide support if you have queries when completing funder DMPs – please contact skills@cumbria.ac.uk
Data curation – File Management

It is very easy for research data to become disorganised due to improper management of files and documentation. This can be avoided by adopting a clear and consistent approach to file naming and version control.

https://my.cumbria.ac.uk/Student-Life/Learning/Skills-Cumbria/Digital-Skills/File-Management-Strategies/

Privacy and data protection

It is important that you familiarise yourself with University research policies.

For guidance on research policies, please visit:
https://www.cumbria.ac.uk/research/research-support/
Where can I store my live project data?

Where you choose to store your ongoing project data will depend on a number of factors, such as:

- The kinds of data you are producing (e.g. images, text, audio-visual files)
- The size of your files
- How often you need to access your files
- Whether you are working with sensitive information

Contact IT Service Desk to discuss your research data needs:

- Telephone (internal phones): 8888
- Telephone (off campus): 01228 888888
- Email: itservicedesk@cumbria.ac.uk
Cyber Security and Internet Safety

When it comes to RDM, Cyber Security is something we should all be aware of because threats can come from anywhere.

The university employs a number of technologies as well as policy to reduce the likelihood of a successful attack, whether information breach or disruption of service.

https://my.cumbria.ac.uk/Student-Life/it-media/Cyber-Security/

Reuse

• Think about the usability of your data and obtain any consents necessary for sharing

• All relevant data must be associated with rich metadata which meets minimum standards set out in funders’ guidance if appropriate

• Research data and supporting material must be sufficient to enable other researchers to understand how it was created or acquired, and, to assess its reuse potential.
Preservation

“Research data must be recorded in a durable and auditable form so that it can be recovered readily. It must be retained intact for a minimum period of five years from the date of any publication based upon it (or the minimum period defined by research sponsors or relevant professional or statutory bodies, where this is longer).”

University of Cumbria – Code of Practice for Research
Research data repositories

Research data is best preserved and published using a research data repository. A repository is an online service that manages the long-term storage and preservation of digital resources and provides a catalogue for discovery and access.

Some funders provide data centres to preserve and publish research data from the projects they fund. If a repository is not specified by the funder, there are many discipline based data repositories established by research communities, where data may be deposited.

Some journal publishers specify repositories in which data, code and supplementary materials may be deposited.

Most data repositories do not charge to deposit research data, though many require registration.

See the ‘data repositories’ section on this page for more information:
https://my.cumbria.ac.uk/Student-Life/Learning/postgraduate-study-and-research/Research-Data-Management/
Open Access - Would you share your data?

It is natural to be protective over your research data, especially if it has taken you a great deal of time and effort to collect/generate them.

Good Research Data Management doesn’t mean that you’ll forfeit your right to exclusive first use of your data. Most funders allow you to embargo your results for a well-defined period of time to enable you to publish your findings and file any patents related to your research.
Benefits of making Research Data openly available

- Visibility – more citations, more downloads, more exposure for your research
- Public Good – enhances your reputation and that of the university
- Compliance – Many funders require it
- Preparation for REF 2028 – open access research data is likely to be a requirement
- Enables collaboration with other researchers
Open data: what does UK Research and Innovation say?

UKRI lead the overall strategic direction of research and innovation funding in the UK.

This is what they say about open data:

“UKRI is strongly committed to opening up research data for scrutiny and reuse, to enable high-quality research, drive innovation and increase public trust in research.”

https://www.ukri.org/funding/information-for-award-holders/data-policy/
Further support

To arrange individual support or group workshops please email: skills@cumbria.ac.uk

For guidance on research policies, please visit: https://www.cumbria.ac.uk/research/research-support/