

1.2 GOOD R&I PRACTICES IN MANAGING RESEARCH DATA

Research data, like publications, are R&I outputs in their own right which require careful management. In recent years research funder policies, journal requirements and disciplinary initiatives concerning research data management have evolved considerably. It is important to be aware of and observe funder and journal conditions, as well as the University policy below.

Ensuring research data integrity (i.e. so that it is complete, documented, verifiable and undistorted) is critical to ensuring the validity of research results and requires planning and management of data throughout the research process.

Enabling others to access research data is critical. All R&I activities are governed by some terms and conditions which will usually specify provisions for published outputs. There may be a requirement to delay the release of research data for a reasonable time period on commercial grounds or to allow for the de-identification of data in research involving human participants. In rare circumstances the University may not be able to publish information on the grounds of National Security. Where restrictions apply it is important to state the reason for the restriction and how others can access the data in any associated publications. PGR students may embargo both their thesis and research data, in discussion with their Supervisors, and under certain conditions (e.g. where it is necessary to delay access to a thesis until after publication of results). However, research data must be available to others in order to enable its credibility and reliability to be verified independently.

It is good R&I practice to continue managing research data after publication to safeguard its ongoing value. This includes enabling continued access to and active preservation of research data and metadata in formats that can be used by researchers across disciplines over extended periods. The value of some research data increases over time, whereas other research data may decrease in value as the focus of research moves, so the utility of research data being preserved should be assessed regularly.

Research Data Management Policy

1. Preamble

This policy aims to provide a strategic framework for the management of data generated by research projects at the University of Sheffield. The term “data” is intended to be interpreted widely in this context as the evidence used to inform or support research conclusions, and includes observational data, experimental data, and some software code, independent of format. Data could also be information from archives, videos of performances or recorded interviews. There are particular challenges with the management, storage and long-term curation of digital research data, which the policy seeks to address. This policy applies to all research undertaken by staff and research students of the University, regardless of whether or not it is externally funded. It aims to encourage a positive approach to the management of research data across the institution.

The University regards the effective management of the data generated by research projects as an integral part of good research and innovation practice. It believes that there are important drivers for effective research data management, including:

- Maximising the impact of research
- Assurance of research integrity and reproducibility

- Enhanced data security and reduced risk of data loss
- Facilitation of data sharing and collaboration by aligning with the FAIR principles¹
- Maximising opportunities for new research based on reuse and recombination of data from multiple sources, including data mining
- The principle of open access to publicly-funded research outputs, recognised by UKRI²³, OECD⁴ and universities around the world⁵
- Improving the likelihood of success in future grant proposals
- Compliance with the requirements of research funders.

2. Data Management Requirements and Responsibilities

The responsibilities outlined here apply to all those involved in undertaking research across the University, whilst recognising that research practices vary by discipline. Therefore faculties, departments and research groups may wish to develop a more specific policy relevant to local research methods.

2.1 All researchers

All researchers, including postgraduate research students, have a personal responsibility to manage effectively the data they create. All researchers are expected to:

- Ensure that there is a data management plan for all research projects they are working on and implement this plan. Topics covered by the plan should include data collection, appropriate storage, use, re-use, security, access, archiving, sharing and publication. It is recognised that for students, the level of detail required is likely to be significantly less than for a staff member undertaking an externally funded project.
- Manage personal data in line with the University's *Ethics Policy Governing Research Involving Human Participants, Personal Data and Human Tissue*, and data protection legislation.
- Consider IP, contractual or data licencing and sharing issues before the research commences and ensure any necessary agreements are in place.
- Ensure that data they have generated, collected or derived is shared with a supervisor or lead researcher during the research and before they leave the University to minimise the risk of data loss.
- Document research data and software appropriately and store this documentation alongside the data and software in line with the FAIR (Findable, Accessible, Interoperable and Reusable) principles. Documentation and research data should be shared in a research data repository unless there are financial, legal or ethical reasons which mean this is not possible. Documentation, data and software must be given to a supervisor or lead researcher before leaving the University.

¹ Wilkinson, M. D. *et al.* (2016) The FAIR Guiding Principles for scientific data management and stewardship. <https://doi.org/10.1038/sdata.2016.18>

² UKRI Common Principles on Data Policy (2011) <https://www.ukri.org/funding/information-for-award-holders/data-policy/common-principles-on-data-policy/>

³ Concordat on Open Research Data (2016) <https://www.ukri.org/files/legacy/documents/concordatonopenresearchdata-pdf/>

⁴ OECD Principles and Guidelines for Access to Research Data from Public Funding (2007) <http://www.oecd.org/dataoecd/9/61/38500813.pdf>

⁵ Sorbonne declaration on research data rights (2020) <https://www.leru.org/files/Sorbonne-declaration.pdf>

- Include data access statements in published research and formally cite data which informs published research⁶.

2.2 Lead researchers / principal investigators (PIs)

The primary responsibility for effective research data management during the course of research projects lies with lead researchers/principal investigators (PIs). PIs are expected to:

- Set clear expectations with respect to appropriate data management and ensure that all members of their research team(s) are aware of their responsibilities and have the skills, understanding and support necessary to carry these out effectively (and where required, assist team members in gaining the necessary skills and understanding).
- Have an up to date, documented copy of data from research undertaken by students, post-doctoral research associates and other researchers during the project and in particular before they leave the University.
- Seek to recover the direct costs of managing research data from the research funder. This may include costing in storage for projects involving large amounts of data and the support of a member of the Library Data Management team or a research data manager, where data management needs are likely to be complex and may require additional support and advice.

2.3 Supervisors of students

Supervisors of students at all levels are also responsible for setting clear expectations with respect to data management, and ensuring their students are aware of their data management responsibilities. Supervisors are expected to:

- Hold discussions with students about data management throughout the student's project and support them in developing the necessary skills, to a standard consistent with their level of study.
- Discuss data management with postgraduate research students as part of the Doctoral Development Programme's training needs analysis.
- Support postgraduate research students in maintaining an appropriate Data Management Plan throughout the project, to be submitted as part of the student's record of their personal development at the end of their research.
- Have an up to date, documented copy of all data from research undertaken by students throughout the project and in particular before they leave the University.

2.4 Postgraduate research (PGR) students

In addition to the general responsibilities for researchers, all PGR students are required to:

- Submit a Data Management Plan for assessment as part of their Confirmation Review,
- Maintain their plan over the course of their research.

⁶ FORCE 11 Data Citation Synthesis Group Joint Declaration of Data Citation Principles (2014)
<https://doi.org/10.25490/a97f-egykh>

- Share their data with their supervisors during their research project and make sure that a copy remains with their supervisors when they leave The University of Sheffield.

3. Ownership of research data

Unless the terms of research grants or contracts provide otherwise, data generated by research projects are the property of the University of Sheffield. The University recognises the importance of making research data available as part of the research process. This will frequently involve granting a non-exclusive licence (e.g. a Creative Commons licence) to a data repository, but researchers should exercise care in assigning rights in data to publishers or other external agencies.

4. Support from the University for research data management

The University provides:

- Training on research data management for research students, early career researchers, and other researchers who request it
- Guidelines and advice on research data management, including data management plans, costing of research data management into research proposals, creation of descriptive metadata, intellectual property and Freedom of Information requests
- Additional infrastructure and services for research data management including resilient, secure storage, to be developed in consultation with researchers.

This policy will be kept under regular review by Research & Innovation Committee.

June 2020