Data Management Planning

Royal Society funding applicants

Version 1.6 June 2021

University of Bristol

Research Data Service

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University of BRISTOL

INTRODUCTION

In common with many other major funders, the Royal Society supports the sharing of data so it can be disseminated to the wider research community and maximise public benefit. For some time, Royal Society Publishing have had policies in place with regards to making supporting data available for published papers, but as of late 2014, data sharing considerations are expected for most funding schemes as part of the application process. Host organisations and award holders are expected to:

- Give careful consideration to their approach for managing and sharing data in cases where the research is likely to generate data outputs that will be of benefit to the wider research community, maximises public benefit, and where appropriate, without restrictions from copyright, patents or other mechanisms of control;
- develop best practice for data sharing, submitting datasets central to the publication of research findings, including computational or curated data and data produced by an experimental or observational procedure, to an appropriate and openly available repository, ensuring that the data is accessible, assessable, useable and traceable;
- [in the case of users of research data] acknowledge the sources of their data and to abide by the terms and conditions under which they accessed the original data, ensuring that key data resources are preserved and maintained for use by the research community.[1]

Outline of Data Management and Data Sharing Plan

Applicants who expect to produce data that is of significant value to the research community are required to produce an Outline of Data Management and Data Sharing Plan as part of the application form. The plan is normally expected to be a maximum of 1500 characters (including spaces), or 200 words, depending on the particular scheme to which you're applying. Check the scheme notes for further information. Given the word limitation your plan will need to be fairly concise, but you should consider covering the following areas:

Data types

List the main types of data you will produce (including file formats) and if known, their expected volume. Where possible you should try to manage and generate data which is in open formats, to facilitate data sharing at a later date. If you find you do need to use non-standard or proprietary technology during the course of your project, consider converting your data to a more widely reusable format for sharing once your analysis is complete.

Documentation and metadata

Metadata is 'data about data' and is the information that enables data users to find and/or use a dataset. Descriptions of your data could be kept in a separate,

[1] The Royal Society Conditions of Award, https://royalsociety.org/~/media/grants/schemes/Conditions-of-Award.pdf

dedicated database or in a readme.txt file supplied alongside the dataset. Some subjects have their own metadata standards,[2] which should be used where possible. If you are planning to use a specific metadata schema for your data then mention it in your plan. The Royal Society expects data to be 'discoverable, accessible, intelligible, assessable and reusable', and to meet these criteria it is essential to provide appropriate metadata.

Data storage and preservation

Outline your plans for data backup and long-term storage. It is recommended that you store data in the University's own Research Data Storage Facility (RDSF) *as you create it*.

The RDSF is managed by the Advanced Computing Research Centre (ACRC).[3] Each research staff member is entitled to 5TB of storage without charge. If your storage quota is used up or your project requires more storage space there will be a cost, and ACRC should be contacted for guidance before your application is finalised. Your data will be safely stored for a minimum of 20 years, and the back-up procedures, policies and controlled access arrangements used by the RDSF are of a very high standard. Procedures are also in place to allow authenticated, external collaborators to view, add and/or edit data in the RDSF. If you do not intend to make use of the RDSF, provide brief details of your storage provider and their backup procedures instead.

If space allows, it will also be useful to briefly indicate how you'll keep your data safe before it's deposited in a storage facility such as the RDSF. This is particularly important if you're conducting any field research. As a minimum requirement, try to ensure that at all times at least two copies of the data exist and that every copy can easily be accounted for and located if required.

Data sharing

Provide a brief description of the ways your data will be shared and when this will be done. The best and easiest way to meet the expectations of the Royal Society with regards to data sharing is to publish in a data repository with appropriate descriptive metadata. Many subject-specific repositories exist: these are the usually the best option if there is one for your discipline as your data will be more visible if located with other related datasets. For data of high public interest, you should also note how it will be made accessible to the wider public audience.

The University has its own Research Data Repository (data.bris.ac.uk/data) available for all disciplines. This provides access to data for 20 years and issues each published dataset with a unique Digital Object Identifier (DOI), which can be used to cite your data in published papers. Contact the Research Data Service if you would like more information about the University repository.

Not all data can be openly shared and if this is the case for any of your data you should indicate and explain why in your plan. If you are working with sensitive data which is too high risk to be openly shared even after

[2] DCC list of disciplinary metadata standards: http://www.dcc.ac.uk/resources/metadata-standards

[3] Advanced Computing Research Centre, http://www.acrc.bris.ac.uk

anonymization, your chosen repository may be able to offer controlled access to approved external researchers through a validation process. The Research Data Service have produced a guide on Sharing Research Data Concerning Human Participants[4]. Restrictions may also apply if you are working with third party data, as you may not have the appropriate permissions to share, but you could still explain to other users the process you went through in order to obtain the data so that they can do the same.

Full data management plan

The Outline of Data Management and Data Sharing Plan does not allow for any real detail to be provided on the above areas. If your funding application is successful, it will be worthwhile producing a more detailed data management and sharing plan for your own project's use. This will ensure you have the processes and procedures in place for your data to be effectively organised, documented, preserved and ultimately shared throughout your project, in line with the Royal Society's expectations. The Research Data Service[5] can offer further advice on drafting full data management plans.

[4] Sharing research data concerning human participants, http://bit.ly/35hldfU

[5] http://www.bristol.ac.uk/staff/researchers/data/contacts