

Institutional Research Data Management Strategy

Guidance Document

1. Raise awareness

Institutions should develop a plan for engaging with stakeholders on campus and communicating the benefits and requirements for research data management (RDM). Depending on the nature and size of the institution, this plan could will involve a range of materials and outreach activities that address the relevant issues across a variety of stakeholder communities (e.g. discipline specific, career level, department or division, etc.) including:

- 1.1 **Identify stakeholder communities on campus**
- 1.2 **Recruit local champions to help promote the value of RDM and engage with various communities**
- 1.3 **Develop awareness materials and resources for different communities**
- 1.4 **Determine and apply the appropriate delivery mechanisms for outreach**
- 1.5 **Participate in the Tri-Agency consultations around RDM**

Resources:

- How and why you should manage your research data: a guide for researchers. JISC (2016): <https://www.jisc.ac.uk/guides/how-and-why-you-should-manage-your-research-data>
- Starting the Conversation: University-wide Research Data Management Policy. OCLC (2013): <https://er.educause.edu/articles/2013/12/starting-the-conversation-universitywide-research-data-management-policy>
- Portage Training Resources: <https://portagenetwork.ca/training-resources/>

2. Assess institutional readiness

Institutions should undertake a review of the current data landscape on campus and assess existing capacity and resources for managing the research data produced on campus.

2.1 Define the ideal state for RDM on campus

This can involve looking at best practices across various divisions and research communities, identifying appropriate service models and determining the costs and funding mechanisms for comprehensive RDM on campus.

Resources:

- Directions for Research Data Management in UK Universities. JISC (2015): http://repository.jisc.ac.uk/5951/4/JR0034_RDM_report_200315_v5.pdf
- Research Vision. JISC (2015): <https://www.jisc.ac.uk/sites/default/files/research-vision.pdf>
- Using RISE, the Research Infrastructure Self-Evaluation Framework. DCC (2017): <http://www.dcc.ac.uk/resources/how-guides/RISE>

2.2 Undertake a survey of institutional data assets and data management practices on campus

In order to build up an accurate picture of this context it is necessary to engage in a period of information gathering and analysis. Institutions should be aware of the scale and nature of the data being produced and current practices for managing data among their researchers. By engaging with researchers in this way, institutions can understand the key RDM issues they face and identify any gaps in infrastructure and desired support.

Resources:

- Research Data Asset Inventory. Jisc and UK Data Archive (2012): http://www.data-archive.ac.uk/media/375380/rde_datainventoryform_01-00.pdf
- Data Asset Framework. JISC, DCC and University of Glasgow: <http://data-audit.eu/index.html>
- Developing a Data Management Framework using the Capability Maturity Model. ANDS (2017): https://www.ands.org.au/_data/assets/pdf_file/0005/737276/Creating-a-data-management-framework.pdf

2.3 Evaluate existing RDM services

Institutions should be aware of their own capacity to manage data, as well as the current and possible future data storage needs. Assessing the existing service provision will help institutions have a better understanding of their capacity to support good data management practices. The aim is to determine what are the current data management services on campus (or through external providers such as Portage and domain-based services) and what are the gaps. Some information gathering for this activity could be done in conjunction with the survey of institutional data assets. We suggest that institutions focus on assessing the following four areas that are fundamental for good RDM:

Data management plans (DMPs): DMPs are formal documents that state what data will be created and how, and outline the plans for sharing and preservation, noting what is appropriate given the nature of the data and any restrictions that may need to be applied. DMPs are a way of improving data management practices and are increasingly expected by funders. DMPs are considered best practice for managing research data and institutions are encouraged to assess the current level of awareness and use of DMPs by researchers on campus.

Institutional support and training: Local support and training for researchers on campus is important, as RDM needs and requirements are very diverse based on the nature of the research project. RDM services on campus often spread across departments and are a shared responsibility. In general they involve consulting with researchers on topics such as:

- Advocacy and outreach
- Data management plans
- Data and metadata standards
- Reference support for finding and citing data
- Finding aids for data, datasets, or data repositories
- Preparing data or datasets for deposit into a repository
- Privacy, ethical and IP issues

Data repositories and archiving: Research data need to be managed over the long term, so that they can be accessed and reused (when appropriate) in the context of a formal data repository. There are a variety of repositories available for researchers, including domain repositories, and shared national (e.g. FRDR) and regional repositories. It is important to understand whether the research community is served through existing resources or there is a need for local repository services on campus.

Institutional policies, guidelines and/or procedures: Most research institutions have some type of procedures, guidelines, or policies that touch on RDM issues, such as those dealing with ethics, data retention, and intellectual property. In addition, there may be external policies or requirements related to data management that impact researchers, such as funder or project-related policies. Documenting all the internal and external policies, guidelines, or procedures that are related RDM practices will help the institution gain an understanding of existing requirements for affiliated researchers.

Resources:

- Collaborative Assessment of Research Data Infrastructure and Objectives. DCC: <http://www.dcc.ac.uk/resources/tools/cardio>
A tool for institutions to assess their data management support and infrastructure and to collaboratively plan for improvement.
- The Portage DMP Assistant. Portage: <https://assistant.portagenetwork.ca/>
A bilingual tool for preparing data management plans (DMPs). The tool follows best practices in data stewardship and walks researchers step-by-step through key questions about RDM, and will include specific templates related to funders' requirements, as they are adopted.
- Canadian RDM Survey Consortium. Portage: <https://portagenetwork.ca/working-with-portage/network-of-expertise/rdm-survey-consortium/>
Consult reports and data associated with surveys of researchers on their needs and practices related to RDM
- Research Data Repositories. Portage: <https://portagenetwork.ca/planning-managing-data/research-data-repositories/>
A brief guide to discipline-based, institutional and national repository platforms existing or in development for storing research data produced within Canadian research institutions.

2.4 Identify gaps in the existing RDM environment

This involves assessing the current environment against the ideal state as defined in 3.1. This will help the institution identify areas where RDM needs are already being well served, and areas where more resources and support are required.

3. Formalize RDM practices

Formalizing the expected practices around research data management through the adoption of guidelines, procedures or policies is an important step in establishing an effective and sustainable approach to RDM at the institution. This will set the tone and underscore the institutional commitment and expectations. Depending on the institution, this could be implemented through a set of coherent guidelines or procedures, or through the implementation of a cohesive policy. Community engagement and consultation is a key aspect for getting buy-in for any new requirements.

3.1 Adopt policies, guidelines or procedures that advance good practices and assign responsibilities

These may address a variety of aspects of RDM such as:

- Data quality and standards
- Data access and sharing
- Data retention
- Long-term data preservation
- Data management plans
- Privacy, ethical issues and intellectual property
- Other aspects: principles, scope, and monitoring and rewarding compliance

Resources:

- UK Institutional Data Policies. DCC: <http://www.dcc.ac.uk/resources/policy-and-legal/institutional-data-policies>
- Model Language for Research Data Management Policies. ASERL/SURA Research Data Coordinating Committee (2013): <https://www.fosteropenscience.eu/node/243>
- Five Steps to Developing a Research Data Policy. Digital Curation Centre (2014): www.dcc.ac.uk/resources/policy-and-legal/five-steps-developing-research-data-policy/five-steps-developing-research
- Starting the Conversation: University-wide Research Data Management Policy. OCLC (2013): <http://www.oclc.org/content/dam/research/publications/library/2013/2013-08.pdf>
- Guidance for Developing a RDM Policy. In LEARN Toolkit of Best Practice for Research Data Management (pp. 137-140). LEARN (2017): <http://dx.doi.org/10.14324/000.learn.27>

4. Define a roadmap

Based on the information gathered in the previous components of the strategy, a roadmap should include information such as:

- 4.1 What are our current practices and what support we have in place?**
- 4.2 What are the gaps?**
- 4.3 What must we do to meet any identified gaps?**
- 4.4 When will we do it?**
- 4.5 Who will take responsibility?**
- 4.6 What resources are needed for each item, how will we secure those resources?**
- 4.7 How will the roadmap be assessed over time and success be measured?**

Resources

- How to Develop RDM Services - a guide for HEIs. DCC (2015): <http://www.dcc.ac.uk/resources/how-guides/how-develop-rdm-services>
- University of Edinburgh RDM Roadmap: Version 3, 2017-2020. University of Edinburgh (2017): <https://www.ed.ac.uk/information-services/about/strategy-planning/rdm-roadmap>