

Research Data Management Training

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1. Introduction

The drivers for research data management (RDM) come from the research funders, legislation, the open data agenda, and UK HEIs wanting to have a better oversight of their research outputs, and increasingly of the research data produced within their institution.

One of the biggest drivers for good RDM practice is the clear 'data' expectations of the EPSRC¹ concerning those in receipt of EPSRC funding and in particular, that all research organisations must be fully compliant with these expectations by May 2015. Non-compliance with the EPSRC data policy will result in sanctions, including ineligibility for future EPSRC funding. Any 'non-compliance' would have a significant impact on the funding received by UoN from the EPSRC and on its substantial research portfolio. The UoN's roadmap to the EPSRC policy framework was submitted in May 2012.

It is important to note that whatever the drivers, good research data management is good for research: better management of research process, potentially more productive research, avoidance of data loss, and benefits data reuse.

It is acknowledged that there is a requirement for research funders and research organisations to work together to provide guidance and develop RDM services to support and promote better management and effective sharing of research data. There needs to be an institutional commitment to up-skill and/or reskill staff in good RDM practice. Repurposing existing skills for RDM activity is both pragmatic and cost-effective for the institution.

As research data management is rapidly gaining importance in the research output landscape there is need to embed and improve skills in managing research data among staff in UK HEIs, including researchers, librarians and research support staff. Research data management training falls into three main categories:

1. Courses for researchers/academics/ (discipline-specific focus)
2. Courses for postgraduates
3. CPD to reskill support staff such as librarians and research support staff

In order to build institutional RDM capacity and capability and develop skills to support researchers with their RDM requirements, the following needs to be in place:

- The technical infrastructure, a data catalogue or repository (in progress)
- An institutional Research Data Management Policy (approved by Management Board in February 2013)

¹ <http://www.epsrc.ac.uk/about/standards/researchdata/Pages/expectations.aspx>

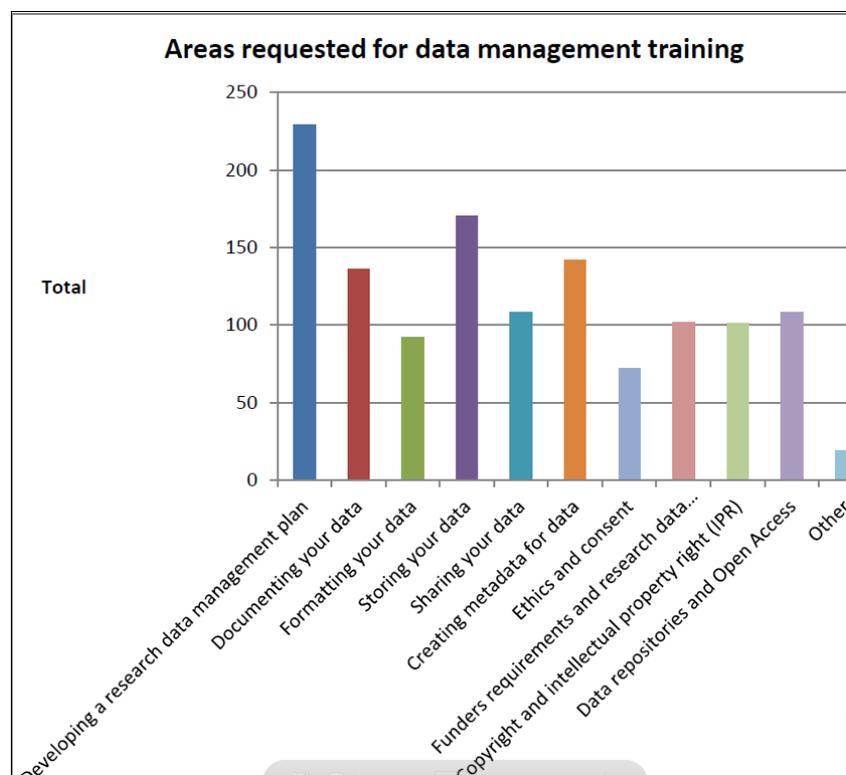
- Training and up-skilling of the professional support services and enhancing the support provided to researchers
- Authoritative guidance and support, for example, subject-discipline RDM exemplars, re-use case studies, RCUK funders' data management plans guidance

A stepped, pragmatic approach to supporting RDM at an institutional level was one of the key recommendations from the Incremental project² at the Universities of Cambridge and Glasgow. This is a valuable exemplar outlining how to build a RDM support and training service around the needs of the researchers at a research-intensive university.

In the [UoN Research Data Management policy](#) there is an expectation that the University will provide the following:

1.4. The University will provide training, support, advice and where appropriate guidelines and templates for the research data management process and research data management plans.

The UoN Research Data Management Survey³ had 366 responses from researchers and it ran from 5th July 2012 to 14th September 2012. A high percentage of respondents indicated that they had RDM training and support requirements. See below:



² <http://www.lib.cam.ac.uk/preservation/incremental/docs.html>

³ http://eprints.nottingham.ac.uk/1893/1/ADMIRe_Survey_Results_and_Analysis_2013.pdf

2. A lifecycle for Research Data

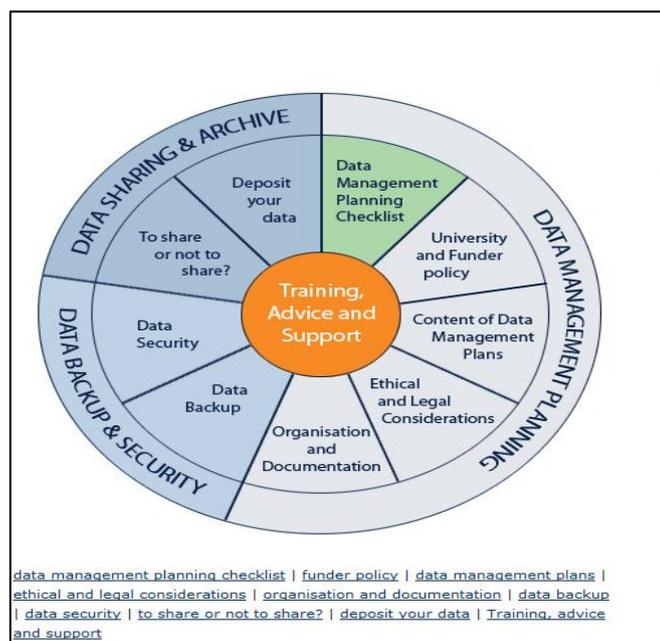
For researchers it is important to develop training and support materials around the research data lifecycle. There are several issues that need to be considered:

- What training tools are currently available to support our research community?
- What support can we provide at different stages in the research lifecycle?
- What RDM issues will a researcher be thinking about at each of the stages of the lifecycle?
- What tools or services offer support at each of the stages?
- Training and support – who has institutional responsibility for this?

There are a number of lifecycles for research data which have been developed. These include the following:

- The University of Western Australia research data lifecycle, <http://guides.is.uwa.edu.au/content.php?pid=319161&sid=2616069> [Accessed 08 April 2013]
- Digital Curation Centre, Lifecycle Model, <http://www.dcc.ac.uk/sites/default/files/documents/publications/DCCLifecycle.pdf> [Accessed 08 April 2013]
- UK Data Archive, Research Data Lifecycle <http://data-archive.ac.uk/create-manage/life-cycle> [Accessed 09 April 2013]

The University of Oxford have produced a useful diagram describing some of the key stages in RDM, with 'training, advice, and support' underpinning the process. See below:



3. RDM Training materials currently available at UoN

3.1. University of Nottingham short course on research data management

The [ADMIRe project](#) worked with the Graduate School during 2012/2013 and adapted and embedded the University of Edinburgh Research Data Management MANTRA online course in Moodle. This standalone online learning course is aimed specifically at postgraduate research students and early career researchers and was made available in April 2013. It now forms part of the UoN short course portfolio ⁴ and it provides guidelines for good practice in RDM. Research Data MANTRA aims to reflect best practice in research data management grounded in three disciplinary contexts: social science, clinical psychology, and geoscience. This is a standalone (self-study) online course containing learning units, video interviews and practical exercises. This course is delivered entirely online via Moodle and is self-study.

Course information	
Title:	Research data management (standalone online learning course)
Duration:	1.5 days
Training Units:	3.0
Target Audience	
Early stage postgraduate research students [especially off-campus]	
Early career researchers	
Postgraduate research students and early career researchers who work with data and would like to learn more about managing their research data.	
Pre-requisites	
To study this course you must have access to the internet.	
Process	
This is a standalone (self-study) online course containing learning units, video interviews and practical exercises.	
This course is delivered entirely online via Moodle and is self-study. You may access the course as often as you like until the end of the academic year.	
You can self-enrol on this course in Moodle by following this link: http://moodle.nottingham.ac.uk/courseView.php?id=9791	
Description	
An online course which provides guidelines for good practice in Research Data Management (RDM). Research Data MANTRA aims to reflect best practice in research data management grounded in three disciplinary contexts: social science, clinical psychology, and geoscience.	
The course includes web-based learning units that users can work through at their own pace, the course includes video interviews with leading academics about data management challenges, and practical exercises in handling data in four software analysis environments: SPSS, NVivo, R and ArcGIS. Topics covered include: data management plans, organising data, file formats and transformation, documentation and metadata, storage and security, and data protection, rights, and access.	

⁴ <https://training.nottingham.ac.uk/cbs-notts/Guests/GuestCourse.aspx?CourseRef=GSTRDM>

3.2 The University of Nottingham Research Data Management website

The ADMIRe team produced and published the University of Nottingham Research Data Management website, which aims to offer guidance for researchers, whilst also showcasing how our data is used to create world-leading research. There is a page on RDM training and support⁵, which provides information on internal and external training courses, and generic and discipline-specific materials.

3.3 supportDM course for research data management support services

In April 2013 the ADMIRe team embedded the University of East London (UeL) Training for Data Management (TraD) supportDM course in Moodle, aimed specifically for those involved in research data management support services. This course is delivered entirely online via [Moodle](#) and is self-study.

The SupportDM course presumes no prior knowledge of data management or digital curation and is designed for use in a blended learning environment with group meetings and individual tasks to complement the Xerte online elements. It is also suitable for standalone self-directed learning using the Xerte modules. The first release (April 2013) encompasses an introductory meeting, a Xerte module and a 'homework' task, for reviewing ahead of the second module. Creative Commons license facilitating re-use and adaptation to local context.

4. Review of available RDM training resources

The ADMIRe team have reviewed a substantial collection of RDM training materials (UK and international resources) and the following sections include some of the most authoritative and well-used resources.

The JISC Managing Research Data Programme 2011-13⁶ has funded several projects which have designed, piloted, and tested training materials for RDM. Key outputs are re-usable (with appropriate CC licenses) and can often be re-used, re-branded and re-purposed for local needs. The training materials are either discipline-focussed and aimed at researchers or created specifically for subject discipline liaison librarians.

ADMIRe reviewed existing RDM training resources from the following sources during a landscape assessment in 2012/2013:

1. [JISC RDMTrain Programme](#)
2. [DCC training](#)

⁵ <http://www.nottingham.ac.uk/research/research-data-management/training-advice-and-support/training-advice-and-support.aspx>

⁶ http://www.jisc.ac.uk/whatwedo/programmes/di_researchmanagement/managingresearchdata.aspx

3. [Vitae/RCUK Researcher Development Framework](#)
4. [The Supporting Data Management Infrastructure for the Humanities \(Sudamih\) project](#)
5. [JORUM](#) RDM resources

Useful 'train the trainer' resources which focus on building RDM capacity and sustainability of current and emerging training materials include:

- [Data Management Skills and Support Initiative – Assessment, Benchmarking and Classification \(DaMSSI-ABC\)](#) which supports and improves coherence in the development, dissemination and reuse of research data management training materials developed by JISC projects
- [DCC 'Train the Trainer'](#) - useful collection of resources for those who have responsibility for training the trainers
- [DaMSSI](#) - Assessment, Benchmarking and Classification
- [DigCurv](#)
- [3TU.DataCentrum](#)

5. Research Data Management Training resources for Librarians

Do-It-Yourself Research Data Management Training Kit for Librarians Published March 2013

Provided by EDINA and Data Library, University of Edinburgh in association with the UK Data Archive, Digital Curation Centre (DCC), and Distributed Data Curation Center at the Purdue University Libraries.

The [DIY RDM training kit for librarians](#) is an excellent training resource and the training kit includes:

- Promotional slides for the RDM Training Kit
- Training schedule
- Research Data MANTRA online course by EDINA and Data Library, University of Edinburgh: <http://datalib.edina.ac.uk/mantra>
- Reflective writing questions
- Selected group exercises (with answers) from UK Data Archive, University of Essex - *Managing and sharing data: Training resources*. September, 2011 (PDF). Complete RDM Resources Training Pack available: <http://data-archive.ac.uk/create-manage/training-resources>
- Podcasts for short talks by the original Edinburgh speakers if running course without 'live' speakers (Windows or Quicktime versions).
- Presentation files (pptx) if learners decide to take turns presenting each topic.
- Evaluation forms
- Independent study assignment: Data Curation Profile, from D2C2, Purdue University Libraries. Resources available: <http://datacurationprofiles.org/>

The training kit is free to re-use part or all of the work, with or without modification. Licensed under a Creative Commons Attribution 2.5 UK: Scotland License.

RDMRose – an Open Educational Resource for information professionals on RDM

This resource was produced with Jisc funding (Jun 2012-May 2013) by a collaboration between the libraries of the University of Leeds, Sheffield and York, with the Information School at Sheffield. .

<http://www.sheffield.ac.uk/is/research/projects/rdmrose>

The materials are available for reuse by other educators and have also been designed for self-supported CPD. There is a strong emphasis on practical hands-on activities often engaging with real documents such as institutional RDM policies or data management plans. An element of inquiry based learning is offered through a scaffolded exercise to plan an interview of a researcher.

An element of problem based learning is offered through a number of case studies based on documents and recordings relating to specific real projects and a fictional institutional case study.

6. Research Data Management Training resources for academics/researchers

Disciplinary RDM Training from the DCC <http://www.dcc.ac.uk/training/train-trainer/disciplinary-rdm-training/disciplinary-rdm-training> which is mapped to the DCC data lifecycle

[Research Data Management Training \(MANTRA\)](#) – the course content is mainly geared for three disciplines: geosciences, social and political sciences and clinical psychology, however, many of the issues covered apply equally to all research disciplines

[DATUM for Health](#) - produced by Northumbria University this training programme is aimed at postgraduate research (i.e. doctoral) students (PGR) in health studies, including those whose PhD has a health focus but who are not necessarily registered in a school/faculty of health/medicine (e.g. in psychology, social sciences). The programme covers both generic and discipline-specific issues, focusing on the management of qualitative, unstructured data, and is suitable for students at any stage of their PhD.

[Managing Creative Arts Research Data \(MCARD\) Training Module](#) - a post-graduate teaching and learning module aimed at meeting the digital preservation and data management needs of the arts researcher-practitioner.

[DMTpsych](#) - postgraduate training for research data management in the psychological sciences

[DataTrain](#) - disciplinary focused data management training modules for post-graduate courses in Archaeology and Social Anthropology at the University of Cambridge.

Sound Data Management Training (SoDaMaT) a training resource produced by the Sound Data Management Training (SoDaMaT) project at the Centre for Digital Music. This training resource is aimed at those with an interest in digital music and audio research. [Awaiting final release of project output – summer 2013]

The University of Hertfordshire will develop Research Data Management (RDM) training materials directed at Post-Graduate and early career researchers in the physical sciences. [Awaiting final release of the RDM toolkit – summer 2013]

[UK Data Archive Training Resources](#) a substantial collection of training resources around RDM, in particular Copyright, Ethics, DM Planning, Formatting and Storing data & a training resources pack. Downloadable as a zip file.

7. ADMIRe recommendations

1. There is evidence that researchers require **subject-specific** RDM training and this would require 'expert' resourcing. Creating a detailed research data management training course would be a major undertaking.
2. The use of Webinars to deliver awareness and training may be a useful method to engage stakeholders. Hosting scalable, multi-country training sessions is cost-effective via this method. This may be useful for an international multi-site university which has campuses in China and Malaysia.
3. LRLR could provide some RDM training as part of their library induction sessions with postgraduate students.
4. Hands-on Workshops for PIs on data management planning would be beneficial, however they are resource intensive.
5. Further opportunities for collaborative working with the Graduate School. The ADMIRe/Graduate School work on MANTRA in Moodle worked well.
6. RDM drop-in clinics and surgeries have been used at other UK HEIs and have worked well.
7. Further investigation of the usefulness of [DMPOne](#) should be explored.

Important caveat: when considering training on RDM at UoN it is important to note that there is currently no RDM technical infrastructure in place. Therefore this training document does not take into account any training for researchers/academics on the use of any planned UoN research data repository/depository