

# 'DIY' Research Data Management Training Kit for Librarians

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**Abstract** – This paper discusses extended professional development training in research data management for librarians piloted at the University of Edinburgh. This is framed by the evolving research data management Roadmap at the University, national and international initiatives in managing research data by bodies such as Jisc and LIBER, and the subsequent need to 'up skill' information professionals in the emerging area of academic research data management. This knowledge-transfer exercise includes independent study based on the research data MANTRA course and reflective writing, face to face sessions with different speakers giving short presentations followed by discussion, and group exercises. The resultant training 'kit' was released in Spring 2013 with an open licence for other institutions, particularly those without local research data management expertise, to utilise for 'DIY' RDM training.

**Keywords** – research data management, training, librarians

## I. INTRODUCTION

The University of Edinburgh Information Services Division (IS) has developed a high-level plan or 'Roadmap'<sup>76</sup> to deliver research data services across 4 strategic areas: data management planning, active data infrastructure, data stewardship, and data management support. This cross-divisional Roadmap will help to engage academic units and principal investigators in research data management and provide services to implement the University's Research Data Management (RDM) Policy<sup>77</sup> passed by Senate in May 2001.

In order to realise the vision of the Roadmap staff across IS will need to acquire new skills and confidence in engaging with RDM activity and support. As part of this exercise an extended professional development training for four liaison librarians at the University was piloted, facilitated by the Data Library, in relation to RDM and how it may be applicable to

research practises in the disciplinary areas each librarian represents.

## II. PILOT COURSE

There is an abundance of pointers in recent literature for academic libraries to move "upstream" in the publication process and work more closely with researchers at the pre-publication stages [1]. For example, in 2012 LIBER (Association of European Research Libraries) set down "Ten Recommendations for Libraries to Get Started with Research Data Management" [2], including providing support services for data management plans, metadata and data standards, developing staff skills in data librarianship, encouraging open data policies, supporting the entire research data lifecycle and promoting data citation. Such ideas have been reinforced by the Jisc Managing Research Data programme<sup>78</sup> (2011-2013) in particular the Research Data Management Training strand whose aim is to increase research data management skills in UK higher education and research organisations by providing high quality training materials developed to serve the needs of a variety of roles and stakeholders. (While the University of Edinburgh was not funded in this programme, it did participate in programme activities as a DCC institutional engagement participant.)

During autumn and winter 2012-13, data librarians at the University of Edinburgh led a pilot course on Research Data Management (RDM) based on the research data MANTRA open online training modules<sup>79</sup> originally developed by EDINA and Data Library to reflect best practice in research data management for PhD students and early career researchers. Materials from the training sessions were subsequently assembled to produce the 'Do-It-Yourself Research Data Management Training Kit for Librarians'.

<sup>76</sup> [http://www.ed.ac.uk/polopoly\\_fs/1.1012231/fileManager/UoE-RDM-Roadmap201121102.pdf](http://www.ed.ac.uk/polopoly_fs/1.1012231/fileManager/UoE-RDM-Roadmap201121102.pdf)

<sup>77</sup> <http://www.ed.ac.uk/schools-departments/information-services/about/policies-and-regulations/research-data-policy>

<sup>78</sup> [http://www.jisc.ac.uk/whatwedo/programmes/di\\_researchmanagement/managingresearchdata.aspx](http://www.jisc.ac.uk/whatwedo/programmes/di_researchmanagement/managingresearchdata.aspx)

<sup>79</sup> <http://datalib.edina.ac.uk/mantra/>

The training kit uses a blended learning approach and is designed to contain everything needed for academic librarians in small groups to get themselves up to speed on five key topics in RDM. It makes no assumptions about the role of librarians in supporting research data management, but aims to empower librarians to support each other in gaining confidence in this area of research support. It also provides some training in three of the identified skills that are named as gaps in the RLUK report 'Re-skilling for Research' [3]:

- Knowledge to advise on data management and curation, including ingest, discovery, access, dissemination, preservation, and portability
- Knowledge to support researchers in complying with the various mandates of funders, including open access requirements
- Knowledge to advocate and advise on the use of metadata,

and touches on some others, such as the "Ability to advise on preserving research outputs."

Digital preservation receives a light touch in the training, partly because it receives a light touch in MANTRA itself partly due to the intended audience of the materials, partly because this topic was seen as worthy of its own extended training, and partly because it may not be the responsibility of liaison librarians to run trusted preservation services such as an institutional data repository. The training kit does however list key resources for further study in digital preservation and other advanced topics.

The training comprises five 2-hour face-to-face sessions. These open with short talks followed by discussion and group exercises from the UK Data Archive, in a private collegiate setting. Emphasis is placed on facilitation and individual learning rather than long lectures and passive listening. MANTRA modules are used as reading assignments and reflective writing questions are designed to help librarians *put themselves in the shoes of the researcher*. Learning is reinforced and put into practice through an independent study assignment of completing and publishing an interview with a researcher using the Data Curation Profile framework developed by D2C2 at Purdue University.

### III. TOPICS

The 'DIY Research Data Management Training Kit for Librarians' focuses on learning objectives for the following topics:

#### 1. *Data management planning*

Including an understanding of appropriate data management in accordance with responsible conduct of research, an awareness of good practice in managing research,

and an understanding of what constitutes a data management plan.

#### 2. *Organising & documenting data*

Combining two MANTRA units to provide an understanding of why it is important to organise and document research data including managing data file versioning, naming and re-naming conventions, and an appreciation of why and when to use metadata.

#### 3. *Data storage & security*

Providing an awareness of secure data storage options, encryption, and the importance of regular data backups and backup policies.

#### 4. *Ethics & copyright*

Focusing on the ethical requirements that apply to the collection and management of data involving human subjects, and providing an appreciation of privacy and confidentiality, and how they apply to the management of research data. It also explains what IPR is and how it applies to research data as well as how Freedom of Information and related legislation affects access to research data.

#### 5. *Data sharing*

Introducing the benefits, challenges and drivers associated with sharing research data as well as the raising awareness of the risks to the longevity of digital data. The topic also introduces the basic concepts of digital preservation and trusted repositories, and data licensing.

### IV. TRAINING KIT CONTENTS

- Promotional slides for the RDM Training Kit
- Training schedule
- Research Data MANTRA online course developed 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 at: <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 and pdf) 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/>

#### V. INDEPENDENT STUDY: DATA CURATION PROFILES

In the University of Edinburgh pilot training, the evaluations indicated that overall the librarians considered what they were learning was of value to them. However, there was no ready way to apply their knowledge in their day-to-day work. In order to test their knowledge and also increase the confidence of the librarians to engage in discussions with researchers about data management, a post-training independent study was assigned. Data Curation Profiles, hosted by the Distributed Data Curation Center at the Purdue University Libraries, were the chosen method for the independent study work.

Data Curation Profiles provide a complete framework for interviewing a researcher in any discipline about their research data and their data management practices. Register on the DCP Toolkit website, <http://datacurationprofiles.org> to download the user guide, interviewer's manual, interview worksheet and template, as well as to access the user support forum.

The pilot training was deemed successful by participants and Information Services managers, and another round of training with another small group is about to begin, with discussions on going to extend training kit materials for technical support staff as well. Meanwhile, the librarians trained in the pilot are in the process of pursuing their independent studies - interviews with researchers from liaison constituencies which will result in new public Data Curation Profiles.

#### VI. PUBLIC RELEASE

The DIY Training Kit is designed to contain everything needed to complete a similar training course independently (in small groups) and is based on open educational materials. Users can apply their own creativity to reshape the course as they wish. For example, there are a number of group exercises available from the UKDA training resources pack, many of which are not included in the kit.

The public release of the 'Do-It-Yourself Research Data Management Training Kit for Librarians' is now available under a CC-BY (Creative Commons Attribution) licence: <http://data.lib.edina.ac.uk/mantra/libtraining.html>.

#### VII. RECOMMENDATIONS FOR FUTURE STUDY

- In MANTRA there are four software modules in data handling. These modules are based on four common data analysis packages. You can print off the user guide, download the dataset and work through the

exercises at your own pace (some familiarity with each software package is suggested as a pre-requisite).

- *Data Intelligence 4 Librarians* is another online course, developed by data librarians at 3TU.Datacentrum in the Netherlands - available in Dutch and English. Their "Data management" unit is similar to MANTRA, but you could investigate more librarian-specific advanced topics by working through "Technical Skills" and "Acquisition and Advice" on your own.
- The UK Digital Curation Centre (DCC) website provides a clearinghouse of valuable information. In particular, browse their 'Resources for digital curators' to find useful and up to date reading material.
- The DCC also hosts a relevant email discussion list with subscribers from around the world. Join Research-dataman on JISCMail.
- Last but not least we encourage anyone whose job involves academic data support to consider joining IASSIST, the international professional organisation for data professionals from all sorts of environments dealing with social and other types of research data. IASSIST hosts a vibrant annual conference - normally in the US, Canada or Europe. Their Fellows awards provides international travel stipends to selected applicants to broaden attendance from under represented countries.

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