

UNIVERSITY GUIDE TO RESEARCH DATA MANAGEMENT

SUMMARY OF PRINCIPAL CHANGES

General changes

Document updated with effect from 1 September 2012 to incorporate the University's revised internal management structure. There are no substantive amendments to version 03.1 Appendix III, UPR IM12.

(Amendments to version 03.1, Appendix II, UPR IM12, are shown in italics.)

1 INTRODUCTION

1.1 This Guide to Research Data Management was approved by the Chief Executive's Group on 6 June 2011 and sets out the arrangements for meeting the University's data management requirements set out in UPR IM12¹ and for completing the data planning elements of funding bids.

1.2 Why manage research data?

"To maintain research integrity (and protect their reputations), institutions and researchers must ensure research data are preserved so that results can be verified and the data reused in future. Re-use maximises the return on public investment in research".

(JISC: www.jisc.ac.uk/supportingyourinstitution/researchexcellence/researchintegrity.aspx)

By managing their data researchers and others with responsibility for research data management will:

- a meet *legal and* funding body grant requirements;
- b ensure research integrity and replication;
- c ensure research data and records are accurate, complete, authentic and reliable;
- d increase research efficiency;
- e save time and resources in the long run;
- f enhance data security and minimise the risk of data loss;
- g prevent duplication of effort by enabling others to use the data;
- h comply with practices in industry and commerce;
- i enable the effective re-use of research data;*
- j enable freely available public access to research data outputs in accordance with national and funding body policies and to enhance the University's wider research profile.*

2 CONTEXT

2.1 These guidelines should be read in conjunction with section 7 ('Research Data'), UPR IM12¹ and with UPR RE02² ('Research Misconduct') which defines research misconduct as (amongst other things) the fabrication, falsification, corruption of and/or failure to preserve research data.

2.2 Where access to data is granted to any third party or where data are routinely shared between the University and any third party, reference must be made to the Data Access Sharing Agreement (Appendix IV, UPR IM12³, refers).

2.3 Reference must also be made to the University's Data Security Guidance (Appendix II, UPR IM12⁴), which applies to the processing, creation, use, disclosure, dissemination and storage of person-identifiable data and other confidential and commercially sensitive data and documents

¹ UPR IM12 'Data Management Policy'

² UPR RE02 'Research Misconduct'

³ **Appendix IV, UPR IM12 'Data Management Policy – Data Access Sharing Agreement'**

⁴ UPR IM12, Appendix II 'Data Security Guidance'

(termed Personal and Confidential Data (PCD)). Appendix II, UPR IM12⁴ sets out how PCD can process safely. The guidance set out in this document (Appendix III, UPR IM12), supports the policies and principles set out in the University's Information Management Policy (UPR IM02⁵), the Information Security Policy (UPR IM03⁶) and the Records Management Standards set out in UPR IM11⁷.

2.4 External funding requirements

These Guidelines (Appendix III, UPR IM12) will help answer questions set out by external funding bodies relating to management and the sharing of data.

2.5 Consultation process

It is the responsibility of the Principal Investigator, as Data Steward, to consult at an early stage with the Research Grants Team, Business and Research Office, about funding bids and with their designated Knowledge and Business Intelligence Consultant (KBIC) in Information Hertfordshire about their Data Management Plan (*DMP*), including any technical requirements.

3 DEFINITION

Research data, unlike other types of information, are collected, observed, or created, for purposes of analysis to produce original research results.

3.1 Classification of research data

3.1.1 "Research data can be generated for different purposes and through different processes (Research Information Network classification 2007):

- i **Observational:** data captured in real-time, usually irreplaceable. For example, sensor data, survey data, sample data, neuroimages.
- ii **Experimental:** data from lab equipment, often reproducible, but can be expensive. For example, gene sequences, chromatograms, toroid magnetic field data.
- iii **Simulation:** data generated from test models where model and metadata are more important than output data. For example, climate models, economic models.
- iv **Derived or compiled:** data is reproducible but expensive. For example, text and data mining, compiled database, 3D models.
- v **Reference or canonical:** a (static or organic) conglomeration or collection of smaller (peer reviewed) datasets, most probably published and curated. For example, gene sequence databanks, chemical structures, or spatial data portals."

4 DATA MANAGEMENT PLAN

4.1 A Data Management Plan ensures that all aspects of data management are fully perceived at the start of a project. A Data Management Plan is a document which describes:

- a what research data will be created;
- b what policies (funding, institutional and legal) apply to the data;
- c who will own and have access to the data;
- d who will be responsible for each aspect of the Plan;
- e how its re-use will be enabled and long-term preservation ensured after the original research is completed;

⁵ UPR IM02 'Information Management Policy'

⁶ UPR IM03 'Information Security Policy'

⁷ UPR IM11 'Records Management and the Archiving and retention of Prime Documents and Business Records'

- f what data management practices (backups, storage, access control, archiving) will be used and, therefore, what facilities and equipment will be required;
 - g *the resources required for the management and use of the research data.*
- 4.2 The Data Management Plan must be maintained continuously and kept up-to-date throughout the course of research.
- 4.3 *A Data Management Plan must be completed for every research project as follows:*
- a *if a Data Management Plan is required by the funding body, the Data Management Plan must be completed at the **bid application stage**;*
 - b *If a Data Management Plan is not required as part of the bid application, then a Data Management Plan must be completed **once the award is made and before the start of the research project**.*

5 **CREATING THE DATA MANAGEMENT PLAN**

5.1 *To create a Data Management Plan, researchers are advised to follow the steps set out in this section (5).*

- a *Check whether the Data Management Plan is required at the funding bid application stage or when the award is made (section 4.3, refers).*
- b *Complete and save a Data Management Plan using the online tool available at <https://dmponline.dcc.ac.uk>. This offers a convenient and efficient way of creating a Data Management Plan which addresses all the requirements.*

5.2 **Checklist for a Data Management Plan**

5.2.1 *For further information refer to the checklist available from the National Digital Curation Centre at http://www.dcc.ac.uk/webfm_send/431.*

5.2.2 *The Checklist consists of the following main headings and subheadings for consideration when drawing up a Data Management Plan:*

- i **Introduction and Context:**
for example, funding body, duration, partner organisations.
- ii **Data Types, Formats, Standards and Capture Methods**
for example, existing data sets to be used; file naming conventions; metadata standards (Ensure that University of Hertfordshire file naming conventions are used as set out in UPR IM11⁷).
- iii **Ethics and Intellectual Property**
for example, issues preventing sharing of data, personal and confidential information, IPR considerations.
- iv **Access, Data Sharing and Reuse**
for example, is data sharing required by the funder, process for access, when/how data can be exploited, licensing?
- v **Short-Term Storage and Data Management**
for example, location of data, back-ups, security, access during the project's lifetime.
- vi **Deposit and Long-Term Preservation**
for example, the basis for keeping data over the longer term, retention schedule, data archive/repository and metadata for discovery, managing sensitive data access, licensing etc.

- vii **Resourcing**
for example, staff roles/responsibilities, how data management is to be funded during the lifetime of the project and beyond?
- ix **Adherence and Review**
for example, how/when and by whom the data management plan will be reviewed?
- x **Agreement**
for example, statement of agreement.
- 5.2.3 *Seek advice and guidance from their Information Manager*
- 5.2.4 *Send a copy of the completed Data Management Plan to the Chief Information Officer for retention as the official University record.*
- 5.2.5 *Update the Data Management Plan as required throughout the research project.*

P E Waters
Secretary and Registrar
Signed: **1 September 2012**