Introduction to RDM: benefits, drivers and the role of the university

University of Nottingham
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A Quick Introduction to RDM

• Explain what research data management entails and why should you care about it

• Review of who should be involved in managing data

• Overview of DCC tools, support and guidance

• Introduction to data management plans and tips on completing them
What is Research Data Management?

- Caring for,
- Facilitating access to,
- Preserving and
- Adding value
to digital research data throughout its lifecycle.
What activities are involved in RDM?

- Data Management Planning
- Creating data
- Documenting data
- Accessing / using data
- Storage and backup
- Sharing data
- Preserving data
What do we mean by ‘research data’?

- Research data are collected, observed or created, for the purposes of analysis to produce and validate original research results.
- Both analogue and digital materials are 'data'.
- Lab notebooks and software may be classed as 'data'.
- Digital data can be:
  - created in a digital form ('born digital')
  - converted to a digital form (digitised)
Research data can be anything!
What are the Drivers for Managing and Sharing Data?

Organisation for Economic Co-operation and Development describes data as a public good that should be made available

Research Councils UK in its code of good research conduct says data should be preserved and accessible for 10 years +

Research Funder data policies increasingly demanding of institutional commitment and provisions...
RCUK Common Principles on Data Policy

• Public good
• Preservation
• Discoverability
• Protection
• First use
• Recognition
• Costs
Funder Expectations

• Familiarise yourselves with your funders’ demands with respect to data management

• What are your sources of funding?

EPSRC expected all those institutions it funds
• to develop a roadmap that aligns their policies and processes with EPSRC’s expectations by 1st May 2012;
• to be fully compliant with these expectations by 1st May 2015.
• Compliance will be monitored and non-compliance investigated.
• Failure to share research data could result in the imposition of sanctions.
Make the most of local support

• Local expertise more widespread than you think
  – Ethics committees
  – Data protection office
  – IT Services
  – Repository Service

• Don’t go it alone!

From University of Glasgow’s Data Management micro-site
Don’t forget the benefits!

• Scholarly communication/access to data
• Re-purposing and re-use of data
• Stimulating new networks/collaborations & new research
• Verification of research/research integrity
• Re-purposing data for new audiences
• Availability of data underpinning journal articles
• Increased visibility/citation
Data management planning

1 Introduction and Context
- Title project information: Name of project, funder, budget, duration, partner organisations.
- What is the aim and purpose of the research?
- Related policies: Funding body requirements, institutional or research group guidelines.
- Basic Data Management Plan: Information on creation, aims and purpose, target audience, plan.
- Glossary of terms.

2 Data Types, Formats, Standards and Capture Methods
- What does the term 'data' comprise for the research?
- What data types will you be creating or capturing?
- Existing and new data.
- How will you capture or create the data?
- Which file formats will you use, and why?
- How will metadata be created and managed?
- Why have you chosen particular standards and approaches for metadata and controlled documentation?

3 Ethics and Intellectual Property
- Ethical and policy issues: Are there any issues that need to be considered? Obligations under the Data Protection Act 1998.
- Intellectual property rights: In the dataset, released by copyright or Data License?
- Are there licensing issues?

4 Access, Data Sharing and Re-use
- Data sharing and re-use: What would you be interested in the data? Any reasons not to share? Future uses?
- Access: Obligations to make data available? How, when, cost and possible restrictions.
- Licensing: Rights of data to use for data exchange, creators, principal investigator.

5 Short-Term Storage and Data Management
- Anticipated data volumes, data back-up, access, or data management?
- Storage: Where and on what media? Security?
- Back-up: How to do it, how regularly and whose responsibility?

6 Deposit and Long-Term Preservation
- What legal reservations will be necessary to preserve data for preservation? Right of data sharing?
- What related (representative) information will be deposited?
- Metadata and documentation: What metadata will be created and by whom?
- What procedures does your intended long-term data storage facility have in place for preservation and backup?

7 Resourcing
- Staff/organisational roles and responsibilities for implementing the plan.
- Financial issues: How will data management cost?
- How and when will this data management plan be reviewed?

8 Adherence and Review
- Adherence: How far will this be achieved? When is this data management plan due?

About the DCC
- Digital Curation Centre is the UK's leading centre of expertise in digital curation.
- Digital curation delivery: curation, managing, and making data available for research data management.
- The prime role of the DCC is to support research data management.
- By publishing our data management tools, the DCC can help researchers plan for the long-term preservation of their data.

DC Checklist for a Data Management Plan

About this Work
- Funding bodies increasingly require that grant-holders produce data management plans. The DCC Checklist for a Data Management Plan has been published to help research teams respond to these requirements. The checklist covers what should be included in a data management plan and provides practical steps for planning.
- The checklist can be used as a tool to help researchers develop robust, comprehensive plans that can be used in the future, identifying holes where additional work is needed and ensuring the research data are made available to others.
Data Management Planning

DMPs are written at the start of a project to define:

• What data will be collected or created?
• How the data will be documented and described?
• Where the data will be stored?
• Who will be responsible for data security and backup?
• Which data will be shared and/or preserved?
• How the data will be shared and with whom?
Why develop a DMP?

DMPs are often submitted with grant applications, but are useful whenever researchers are creating data.

They can help researchers to:

- Make informed decisions to anticipate & avoid problems
- Avoid duplication, data loss and security breaches
- Develop procedures early on for consistency
- Ensure data are accurate, complete, reliable and secure
- Plan to share data and increase impact
Which funders require a DMP?

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www.dcc.ac.uk/resources/policy-and-legal/overview-funders-data-policies
Five common themes across funders

- Description of data to be collected / created (i.e. content, type, format, volume...)
- Standards / methodologies for data collection & management
- Ethics and Intellectual Property (highlight any restrictions on data sharing e.g. embargoes, confidentiality)
- Plans for data sharing and access (i.e. how, when, to whom)
- Strategy for long-term preservation
What do research funders want?

- A brief plan submitted in grant applications, and in the case of NERC, a more detailed plan once funded
- 1-3 sides of A4 as attachment or a section in Je-S form
- Typically a prose statement covering suggested themes
- Outline data management and sharing plans, justifying decisions and any limitations
How to share research data

• Use appropriate repositories
  – http://databib.org; http://www.zenodo.org/;
    http://www.re3data.org/

• License the data so it is clear how it can be reused
  – www.dcc.ac.uk/resources/how-guides/license-research-data

• Make sure it’s clear how to cite the data
  – http://www.dcc.ac.uk/resources/how-guides/cite-datasets
Tools and resources to help you develop a data management plan

http://www.dcc.ac.uk/resources/data-management-plans
What is DMP Online?

A web-based tool to help researchers write plans

It features:

- Templates based on different requirements
- Tailored guidance (disciplinary, funder etc)
- Customised exports to a variety of formats
- Ability to share DMPs with others

https://dmponline.dcc.ac.uk
How does DMP Online work?

Start a plan
Pick relevant funder template

Get a list of their specific questions
3 phases of DMPs - Pre Award

Create a plan at the bid stage

...answer the questions based on initial research ideas
3 phases of DMPs - In project

Once funded, flesh the plan out (roles, etc)

...answer the questions based on detailed workplan
3 phases of DMPs - Post project

1. When project is finished
2. Create new plan
3. Investigating control of CRPH in ARD-/- knockout mice

...answer the questions based on the outputs that are being kept
Tips to share: writing DMPs

- Keep it simple, short and specific
- Seek advice - consult and collaborate
- Base plans on available skills and support
- Make sure implementation is feasible
- Justify any resources or restrictions needed

Also see: [http://www.youtube.com/watch?v=7OJtiA53-Fk](http://www.youtube.com/watch?v=7OJtiA53-Fk)
But remember...

• Start early – don’t wait til the last minute!

• The plan shouldn’t be written in isolation

• The plan will - and should - change over life of project

• Get into the habit of update the plan with regular project updates

• Use plan as a communication tool - with partners, funders and yourself!
Thank you

Joy Davidson, Sarah Jones, Kerry Miller
Digital Curation Centre
University of Edinburgh

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