WRITING A DATA MANAGEMENT PLAN
What we will cover

Writing a Data Management Plan (DMP):

- Data Collection
- Documentation and Metadata
- Ethics and Legal Compliance
- Storage and Backup
- Selection and Preservation
- Data Sharing
- Responsibilities and Resources
DATA MANAGEMENT PLANNING

Data Management Plans (DMPs) are documents you create before collecting/working with data.

• What types of research data are you working with?

• What is your strategy for organising your data?

• What is your data backup strategy?

• What are your plans for data sharing?

• Are you working with sensitive data?
WHY DO I NEED A DMP?

It is best practice to create a DMP

Many funders, including the EPSRC, now require all publications to include a statement describing how to access the underlying data. Submitting a Data Management Plan is best practice and fulfils this obligation.

Visit https://data.cam.ac.uk/ to know more about funder requirements, managing and sharing your data.
Go to https://dmponline.dcc.ac.uk/ and create your plan!
Create a new plan

Before you get started, we need some information about your research project to set you up with the best DMP template for your needs.

* What research project are you planning?

* Select the primary research organisation

University of Cambridge

* Select the primary funding organisation

Begin typing to see a filtered list

Create plan Cancel

Create plan.
Title: Cohort, name, title
WHAT DATA WILL BE COLLECTED?

This first section of the DMP asks you to state what data you will be collecting and/or creating.

Describe the data, including any existing data that you could reuse, noting its content, type and coverage (e.g. survey data, experimental data, models, physical samples).

Outline and justify your choice of format, considering implications for storage, backup and access. Are there any issues with the volume of your data? Any additional costs?

DMP Online Data Collection Box 1
HOW WILL DATA BE COLLECTED?

Consider any data standards that you will use and why.

It is vital to think about how the data will be organised during the research project: file naming procedures, version control plans, and folder structures all need to be stated.

What quality assurance processes will you adopt? For example, calibration, repeat samples, data entry validation, peer review of data, etc.

DMP Online Data Collection Box 2
Metadata and any other descriptive documentation help secondary users to understand and reuse your data.

What information is needed for the data to be read and interpreted in the future?

How will you capture / create this documentation and metadata? For example, creating a procedure.

DMP Online Documentation and Metadata Box 1
ETHICS

Ethical issues affect how you collect, store, and manage your data.

Ethical issues could include anonymising your data, storage location, and formal participant consent agreements.

The Department has an Ethical Review Process (https://www.researchandfinance.eng.cam.ac.uk/ethics)

Your DMP should clearly show that you are aware of any ethical issues for your research and have planned accordingly.

DMP Online Ethics and Legal Compliance Box 1
LEGAL COMPLIANCE

It is important to state who will own the copyright and Intellectual Property Rights of any data that are collected or created in the research project in the DMP.

Are there any restrictions on sharing your data or reusing third-party data? E.g. Non-Disclosure Agreements.

Think about how your data will be licenced for reuse

http://www.dcc.ac.uk/resources/how-guides/license-research-data

DMP Online Ethics and Legal Compliance
Box 2
DATA STORAGE AND BACK-UPS

State how and where the data will be stored and backed up during the research project. Robust managed storage options are preferable:
https://www.uis.cam.ac.uk/projects/storage-strategy

Who will be responsible for backing up and how often will this happen? How will data be recovered in the event of an incident?

Do you have sufficient storage or will you need additional services?

Have you signed an agreement with a funder or industry partner? They may have specific storage requirements

DMP Online Storage and Backup Box 1
DATA SECURITY LEVELS

The University defines four levels of data security:

- **Level 0** Unclassified or public information
- **Level 1** Cambridge only
- **Level 2** Confidential information
- **Level 3** Personal and strictly confidential information

Any appropriate security measures should be outlined in your DMP.

Never share Level 3 data on any cloud service!
ACCESS AND SECURITY

Consider the risks associated with the security of the data and how these will be managed.

How will you control access to maintain security while also allowing collaborators to access the data securely?

If you are creating data in the field, how will you ensure its safe transfer into your main secured systems?

If you are working with sensitive data, consider any appropriate security measures and any formal standards.

DMP Online Storage and Backup Box 2
Your DMP should also outline how you plan to retain and preserve your data in the long term (including criteria for selecting data to store long term: which data must be retained?)

Consider how your data could be reused either to validate your findings or by other researchers where applicable.

Identify where you will store the data in the long term (e.g. an institutional repository), any associated costs, and any funder requirements to make your data open and available.

DMP Online Selection and Preservation Box 1 and Box 2
“University staff and students ought to make their research data underpinning published research findings as widely available as possible.”

http://www.data.cam.ac.uk/university-policy
DATA SHARING

State how your readers will find out about your research and your data.

How will you share your data? Who with? Will you use a repository? Are there any additional aspects to think about? E.g. complexity of data, sensitive data.

Consider when you will share your data. Funders often require a timely release of data.

How could your data be reused in other contexts?

DMP Online Data Sharing Box 1
RESTRICTIONS ON DATA SHARING

Who will be able to reuse your data? Do you need to restrict access or apply data sharing agreements? Explain why.

Consider strategies to minimise sharing restrictions (e.g. anonymization, gaining participant consent for data sharing, agreeing limited embargo periods).

DMP Online Data Sharing Box 2
RESPONSIBILITIES AND RESOURCES

The DMP should identify who is responsible for implementing, reviewing, and revising (where needed) the plan.

The roles and responsibilities for all the activities should be clearly outlined (e.g. data collection, metadata creation, data sharing). Individuals should be named where possible.

DMP Online Roles and Responsibilities
Box 1
Do you need any resources to achieve this? Consider any technical expertise, hardware, software etc. that is needed to deliver the DMP, and write it into your plan.

Where dedicated resources are required, you need to outline and justify them in the DMP.

DMP Online Roles and Responsibilities
Box 2
SHARING YOUR DMP

When you have finished drafting your DMP, click download to download a copy of your plan.

Email it to us at library@eng.cam.ac.uk if you would like feedback.
TAKEAWAYS

You should now be on your way to having a first draft of your Data Management Plan written. Congratulations!

DMPs are increasingly important in academic research. They show that you have thought about issues surrounding managing, organising, sharing, and reusing your data. They are also required by an increasing number of funders.
QUESTIONS?

For help at any point, contact the Engineering library team!

library@eng.cam.ac.uk

libguides.cam.ac.uk/engineering/managing-data

Follow us on Twitter @CamEngLib

All images from Pixabay (CC-0) unless credited.