Plan Overview

A Data Management Plan created using DMPonline

Title: Supporting FAIR-from-the-Start with Electronic Research Notebooks

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Template: University of Manchester Generic Template

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Project abstract:

As research practices increasingly shift toward digital record-keeping. Electronic Laboratory Notebooks (ELNs) offer a valuable opportunity to embed FAIR data principles directly into everyday scientific workflows. At the Cancer Research UK Manchester Institute (CRUK MI), the institute-wide adoption of eLabFTW, an open-source ELN, provides a platform to improve the consistency, completeness, and reusability of research documentation. Focusing on spatial biology and complex bioimaging datasets, and informed by best practices from initiatives such as QUAREP-LiMi, this project will work with researchers and technical experts to address common barriers to FAIR data, particularly the inconsistent capture of critical sample, instrumentation and analysis metadata.

By developing and implementing structured eLabFTW templates, standardising metadata capture across the research lifecycle, and linking experimental records with datasets and analysis outputs, the project will enhance reproducibility, interoperability, and long-term data value. We will gather feedback through surveys, interviews, and user testing, using this evaluation to iteratively refine workflows, templates, and guidance materials to maximise usability and FAIR alignment. Key outcomes will include open, FAIR-aligned templates for the eLabFTW community, practical guidance for producing FAIR documentation, and institutional recommendations for enabling interoperable, AI-ready research data. The project will also provide a transferable case study on implementing FAIR practices in biomedical research through ELNs, highlighting both technical challenges and cultural enablers of successful adoption.

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Supporting FAIR-from-the-Start with Electronic Research Notebooks

Manchester Data Management Outline

1. Will this project be reviewed by any of the following bodies (please select all that apply)?

- Funder

2. Is The University of Manchester collaborating with other institutions on this project?

- No - only institution involved

3. What data will you use in this project (please select all that apply)?

- Acquire new data

The project will generate new data through co-design activities, including textual guidance, training resources, and non-sensitive survey/interview notes. Existing metadata standards will be referenced.

4. Where will the data be stored and backed-up during the project lifetime?

- Other storage system (please list below)

All project files will be stored in Microsoft Teams (institutional secure storage with automated backups). Templates, documentation, and scripts will be version-controlled via GitHub and uploaded on the eLabFTW platform for medium-long period.

5. If you will be using Research Data Storage, how much storage will you require?

- Not applicable

6. Are you going to be receiving data from, or sharing data with an external third party?

- No

Some reference materials from public repositories (e.g., GEO/PRIDE/GenBank/PDB) will be used, but no sensitive data will be received or shared externally.

7. How long do you intend to keep your data for after the end of your project (in years)?

- 21+ years

Final outputs (templates, guidance and case studies) will be deposited in Zenodo or Figshare for long-term preservation (>10 years).

Guidance for questions 8 to 13

Highly restricted information defined in the Information security classification, ownership and secure information handling SOP is information that requires enhanced security as unauthorised disclosure could cause significant harm to individuals or to the University and its ambitions in respect of its purpose, vision and values. This could be: information that is subject to export controls; valuable intellectual property; security sensitive material or research in key industrial fields at particular risk of being targeted by foreign states. See more examples of highly restricted information .

If you are using 'Very Sensitive' information as defined by the Information Security Classification, Ownerships and Secure Information Handling SOP, please consult the Information Governance Office for guidance.

Personal information, also known as personal data, relates to identifiable living individuals. Personal data is classed as special category personal data if it includes any of the following types of information about an identifiable living individual: racial or ethnic origin; political opinions; religious or similar philosophical beliefs; trade union membership; genetic data; biometric data; health data; sexual life; sexual orientation.

Please note that in line with data protection law (the UK General Data Protection Regulation and Data Protection Act 2018), personal information should only be stored in an identifiable form for as long as is necessary for the project; it should be pseudonymised (partially de-identified) and/or anonymised (completely de—identified) as soon as practically possible. You must obtain the appropriate ethical approval in order to use identifiable personal data.

8. What type of information will you be processing (please select all that apply)?

- No confidential or personal data
- Anonymised personal data

Only minimal personal data from interviews/surveys will be collected and anonymised unless explicit consent is given for identification.

9. How do you plan to store, protect and ensure confidentiality of any highly restricted data or personal data (please select all that apply)?

- Anonymise data
- Store data on University of Manchester approved and securely backed up servers or computers

Personal information will be anonymised and stored in institutional secure storage (Microsoft Teams). Access will be restricted to project team members.

10. If you are storing personal information (including contact details) will you need to keep it beyond the end of the project?

- No

Only anonymised summaries of participant feedback will be retained long-term. No identifiable personal information will be kept.

11. Will the participants' information (personal and/or sensitive) be shared with or accessed by anyone outside of the University of Manchester?

- No

All personal data will remain anonymised and internal to the project team, unless explicit consent is given for identification.

12. If you will be sharing personal information outside of the University of Manchester will the individual or organisation you are sharing with be outside the EEA?

- Not applicable

No personal data will be shared externally.

13. Are you planning to use the personal information for future purposes such as research?

- No

14. Will this project use innovative technologies to collect or process data?

- No

15. Who will act as the data custodian for this study, and so be responsible for the information involved?

Zuzanna B. Zagrodzka

16. Please provide the date on which this plan was last reviewed (dd/mm/yyyy).

2025-12-09

Project details

What is the purpose of your research project?

The project aims to improve research data management and reproducibility at the Cancer Research UK Manchester Institute (CRUK MI) by embedding FAIR (Findable, Accessible, Interoperable and Reusable) principles into everyday research workflows using the eLabFTW electronic laboratory notebook (ELN). It will focus on spatial biology and bioimaging data, co-developing ELN templates, guidance materials, and institutional recommendations to standardise metadata capture, improve reproducibility, and enable long-term data sharing and reuse. The project will also document technical and cultural barriers to FAIR adoption to inform future implementation in biomedical research.

What policies and guidelines on data management, data sharing, and data security are relevant to your research project?

- University of Manchester Research Data Management Policy
- Cancer Research UK Manchester Institute Research Data Management requirements
- FAIR principles
- Funders’ data sharing policies (e.g., Cancer Research UK, UKRI)
- Repository-specific metadata and submission standards (e.g., GEO, PRIDE, GenBank, PDB)

Responsibilities and Resources

Who will be responsible for data management?

The Project Administrator (Zuzanna Zagrodzka) will be responsible for data management. The Project Lead (dr. Andrew Porter) will oversee data management and ensure adherence to this plan.

What resources will you require to deliver your plan?

- Institutional secure storage (Microsoft Teams)
- eLabFTW ELN platform for template deployment and versioning
- GitHub for version-controlled storage of scripts and templates
- Computers and software for data analysis (R, productivity software)
- Staff time for co-designing templates, conducting interviews and evaluating adoption

Data Collection

What data will you collect or create?

- New experimental metadata and documentation from researchers (ELN entries)
- Non-sensitive survey and interview notes regarding FAIR adoption
- Guidance materials, training resources, and FAIR-aligned ELN templates

How will the data be collected or created?

- Participatory engagement with researchers and facility staff to co-design ELN templates
- Collection of survey and interview notes using productivity software
- Generation of FAIR-aligned documentation and training materials in PDF, DOCX, PPTX or MP4 formats
- Export of structured metadata from ELN templates and scripts (JSON, CSV)

Documentation and Metadata

What documentation and metadata will accompany the data?

- Template descriptions, including title, creator, date and applicable instruments and/or workflows
- Metadata schemas (FAIRsharing-compliant, repository-specific) embedded in templates
- Guidance on data collection, instrument use, processing steps, and analytical methods
- README files, workflow notes, and annotations for scripts and templates

Ethics and Legal Compliance

How will you manage any ethical issues?

- Only minimal personal data will be collected from interviews or surveys.
- Where applicable, participants will provide informed consent, and any identifiable information will be anonymised unless explicit permission is granted.
- Data will be stored securely in institutional systems, with access restricted to project staff only.
- Ethical approval and consent procedures will be followed as required for all human participant data.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

All project-generated templates, scripts, and guidance will be released under open licences (e.g., CC-BY for documentation, MIT for scripts). Additionally, outputs will clearly indicate authorship and usage rights.

Storage and backup

How will the data be stored and backed up?

Working files will be stored in Microsoft Teams managed by the University of Manchester under an Enterprise M365 Licence.

eLabFTW - an open-source Electronic Laboratory Notebook - will be used for storing experimental data and templates related to this project. The ELN is hosted by the Cancer Research UK Manchester Institute IT & Scientific Computing Core Facility, who manage access controls, redundant backup servers and off-site data backups.

Versioned files will be maintained in GitHub, eLabFTW system and/or at the eLabFTW template platform. All scripts, templates, and outputs will be archived in Zenodo or Figshare for long-term access.

How will you manage access and security?

Access to personal data will be restricted to project team members. Personal data will be anonymised and stored on secure, University-approved servers.

Selection and Preservation

Which data should be retained, shared, and/or preserved?

Final ELN templates, guidance materials, and training outputs will be retained and shared openly.

Anonymised survey/interview data (notes) may be retained in aggregated form for evaluation and reporting.

What is the long-term preservation plan for the dataset?

- Openly shareable outputs (templates, guidance materials, demonstrations) will be deposited in Zenodo or Figshare (persistent identifiers for citation and tracking)
- ELN templates will remain in institutional eLabFTW account(s) in exportable formats (.eln/JSON) for future use and/or on the eLabFTW template platform which is currently in development and managed by Deltablot (https://www.deltablot.com/)

Data Sharing

How will you share the data?

- Templates, guidance, and training materials will be released under CC-BY licences via Zenodo/Figshare
- Scripts and associated documentation will be released under MIT licence
- Aggregated, anonymised survey/interview results may be included in reports or publications

Are any restrictions on data sharing required?

No restrictions on templates, scripts and guidance outputs.