Addressing the FAIR Data Principles in a Data Management Plan

FAIR stands for Findable, Accessible, Interoperable and Reusable. The FAIR Data Principles were developed and endorsed by researchers, publishers, funding agencies, industry partners in 2016 and are designed to enhance the value of all digital resources.

For more information please refer to the FAIR Data guide at: libguides.ucd.ie/FAIR

Following the lead of the European Commission and Horizon 2020, Irish funders, including the Health Research Board (HRB) and Irish Research Council (IRC) are now asking Irish researchers to address, via a Data Management Plan (DMP), how they will make their data FAIR.

Steps towards FAIRer data

If your goal is to make your data FAIR you should build this into your research plan from the start. To achieve FAIRness, datasets should be available online in a searchable resource, e.g., a catalogue, data repository or archive, and at least have:

- A persistent identifier (PID). This is similar to a digital object identifier (DOI) and will make the data more findable.
- Rich metadata (elements which describe the data). This will enhance findability, interoperability and reusability of your data. The quality of the descriptive information (metadata and documentation) regarding the data has a profound impact on their reusability so the more documentation you can provide, the better.
- A clear licence. This lets researchers who find a dataset understand what they are allowed to do with it. When applying a licence keep in mind the rule of thumb ‘as open as possible, as closed as necessary’.

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Findable

☑ Your data will be published online in a searchable resource e.g. a catalogue, data repository or archive.
☑ Your chosen repository or archive will assign a persistent identifier to your data.
☑ You will provide rich metadata describing your data, according to the requirements of the repository or archive.
**Accessible**
Not all data can be made openly available and FAIR does not mean that data need to be open. As a rule of thumb data should be ‘as open as possible, as closed as necessary’.

- If your data can’t be made openly available, access conditions should be made clear to researchers wishing to re-use your data, e.g. only available for research purposes.
- Metadata will be accessible, wherever possible, even if the data aren’t.

**Interoperable**
Data and metadata should conform to widely used file formats and disciplinary standards for data collection should be used where possible to allow your data to be combined and re-used with other data.

- Your data will be provided in suitable file formats for long term access and re-use.
- The metadata will be provided following relevant disciplinary standards.
- Controlled vocabularies, keywords, thesauri or ontologies will be used where possible.

**Reusable**
Lots of documentation is needed to support data interpretation and reuse. The data should conform to community norms and be clearly licensed so others know what kinds of reuse are permitted.

- Your data will have a clear and accessible data usage license.
- Your data and metadata will meet relevant disciplinary standards.

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**Useful resources**

- For help in identifying a suitable data repository or archive see our Information Sheet ‘Where to Submit Data’.
- For help writing a Data Management Plan (DMP) see our Information Sheet ‘Data Management Checklist’.
- FAIRsharing.org is a curated, informative and educational resource on data and metadata standards, inter-related to databases and data policies.
- For help in identifying a suitable metadata standard for your discipline see: DCC list of discipline-specific metadata standards or RDA Metadata Standards Directory.

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**Contact:** Jenny O’Neill, Data Manager, UCD Library  
**email:** jenny.oneill@ucd.ie  
**website:** libguides.ucd.ie/data  
**tel:** (01) 716 7857

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