SFI Guidance on Data Management Plans

Good data governance and stewardship are key components of good research practice. During 2022, Science Foundation Ireland will begin incorporating the requirement for data management plans (DMPs) at the application submission stage in many of its Programme Calls.

What is a Data Management Plan?

A DMP is a living document that details the procedures for careful handling of data and other research outputs. A DMP follows the data through the lifecycle of the programme of research*, from collection to analysis and interpretation, sharing and dissemination, and long-term storage.

Why Create a Data Management Plan?

In support of the objectives outlined in SFI's Strategy 2025, DMPs are key to ensuring research quality and reliability. DMPs help researchers and their teams establish and maintain consistency in handling of data, ensuring that all team members understand the process involved in collecting, analysing, storing, and sharing data and other outputs from a research endeavour. By documenting the provenance of the data generated throughout the programme of research, a DMP also enhances transparency, increasing the likelihood that the research results can be validated and reproduced. A carefully considered DMP makes it easier to retrieve datasets, allowing for rapid troubleshooting of potential problems while minimising risks and enabling research team members and collaborators to quickly find and verify results. DMPs have become a critical element of international best practice and are required by research funders in many diverse contexts, including for example the Swiss National Science Foundation and Wellcome.

In describing data sharing aspects of a research endeavour, DMPs also align with SFI's commitment to Open Access and Plan S, encouraging that research data and other outputs are made as open as possible and as closed as necessary. Researchers can also describe their contributions to data management in SFI's updated 'DORA-compliant' CV (see relevant call documents). SFI's DMP guidance will be updated regularly in accordance with the laws of the European Union and the Republic of Ireland as well as with SFI policy and Grant General Terms and Conditions.

What are the Data Management Plan Requirements for SFI Grant Applicants?

SFI is a member of Science Europe, which has prioritised international alignment of research data management policies. As part of this alignment, and in keeping with global standards, SFI is introducing new guidance and requirements related to DMPs. SFI grant holders will be required to submit a DMP related to their SFI-funded research, with specific timelines set forth in programme funding call documents. DMPs will be reviewed to ensure that they contain sufficient information on practices and standards as guided below; this assessment will be incorporated into the overall scoring criteria. Although practices and standards vary across disciplines, each DMP should include the following as appropriate to the programme or project:**

1. **Data description and collection or re-use of existing data** (type and size of data or other outputs to be generated, such as samples, software, and other materials, methods for collecting or producing and re-using such data)

2. **Documentation and data quality** (standards to be used for documentation of data and metadata format and content, quality control measures)

3. **Storage and backup during the research process** (procedures and timelines for protecting and storing data, including provisions for data security and appropriate protection of confidential or sensitive data)

4. **Legal and ethical requirements, codes of conduct** (compliance with legislation on personal data and data security including GDPR, handling of intellectual property rights and ownership, management of any ethical issues and adherence to applicable codes)

5. **Data sharing and long-term preservation** (timing and methods for sharing data, relevant terms-of-use and restrictions, method for determining which data will be preserved and where (e.g., archive, repository), tools or methods for accessing and using data, application of unique identifiers for datasets and data products (e.g., Digital Object Identifier) to ensure a stable access link to data stored in a repository, measures to mitigate data sharing risks)

6. **Data management responsibilities and resources** (individual(s) responsible for general or specific aspects of data management and institutional or project-specific resources dedicated to managing data and ensuring adherence with the FAIR principles (Findable, Accessible, Interoperable, Re-usable)

Recommendations for Creating a Data Management Plan

- Please refer to the relevant funding call document to establish whether and at what point during the application process or grant term a DMP is required, and whether budgeting for data management expenses is allowable as an eligible cost.
- SFI recommends the use of Science Europe DMP templates and guidelines. Applicants and grant holders may use alternative templates if deemed more suitable.
- The DMP should be treated as a living document that will naturally be updated as data management tools evolve and procedures or project plans change during the term of grant (e.g., changes may be advised during a programme progress review).
- SFI recommends using version control to track changes in the DMP over time.
- The most updated DMP should be available to SFI upon request (e.g., especially for the purpose of progress reviews encompassing data provenance analysis, and annual reporting).
- Where possible, Grant holders should apply persistent identifiers to datasets (e.g., DOI) to ensure compliance with FAIR principles.
- Where institutional support for data management exists (e.g., data stewards, repositories, data management policies) applicants and grant holders are encouraged to draw upon such support as they develop and implement their DMPs.

SFI-funded research programmes, as described in call documents, can range from a single research project to a collection of research projects encompassed in several work packages. The data management plan should reflect the relevant standards for individual research projects while describing a cohesive approach to managing data across the overall programme of research as appropriate.

*** Based primarily on guidance provided by Science Europe: https://www.scienceeurope.org/our-resources/practical-guide-to-the-international-alignment-of-research-data-management/ and supplemented by guidance from the European Research Council of the European Commission: https://erc.europa.eu/sites/default/files/document/file/ERC_info_document-Open_Research_Data_and_Data_Management_Plans.pdf*