



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

# The University Policy on research data management

## 1) Aims and Objectives

Alma Mater Studiorum – Università di Bologna (hereinafter the “University”) recognises that the Data created and/or collected during research are of the utmost importance as a valid scientific result for the advancement of knowledge. Research Data are a valuable asset and a resource to scientific research, education and society as a whole. As such, the University favours their management according to international standards and best practices, in order to ensure the quality and integrity of scientific research.

In this Policy, the University sets the guidelines for appropriate Research Data Management, in accordance with the FAIR Principles and with relevant international and subject-specific standards, and outlines roles and responsibilities in the Research Data Management process.

## 2) Definitions

“Research Data” (or “Data”) means information in any form, which is used according to a defined protocol within a specific research activity carried out by a Researcher and which is necessary for the validation of research results. The definition comprises Data used in scientific publications. Research Data include, among others: results, facts, observations, experiences, published and unpublished sources, bibliographic references, text, images, which are created and/or collected in digital form, as well as other digital outputs of research, such as 3D models and source code.

“Dataset” means an organised set of related Data, which are created and/or collected for a common goal and arranged to reflect the results of a research activity.

“Research Data Management” (or “RDM”) means the adoption of best practices, guidelines and standards to ensure Data quality, integrity, intelligibility and secure storage during research, as well as Data preservation and accessibility in the long term, in compliance with current regulations and taking into account existing Open Access policies.

A “Data Management Plan” (or “DMP”) is a document that presents how the Research Data created and/or collected or reused during research are managed. Specifically, a DMP describes the nature and provenance of Research Data, the measures taken to ensure their quality and protection, the persons involved in their production and processing, Data Management and organisation during and after research, and the measures taken to bring Research Data in line with the FAIR Principles, pursuant to the law and any agreements with third parties.

“FAIR Principles”<sup>1</sup> are guiding principles defined and recognised at an international level to facilitate discovery and indexing of Research Data and to ensure they are preserved and accessible, also in an automatic form. FAIR is an acronym that stands for the criteria that Research Data need to meet – they must be Findable, Accessible, Interoperable and Reusable. Under the FAIR Principles, Datasets must be

---

<sup>1</sup> FAIR principles definition: Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* *The FAIR Guiding Principles for scientific data management and stewardship*. *Sci Data* 3, 160018 (2016). <https://doi.org/10.1038/sdata.2016.18>



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

registered in infrastructures (Repositories) that ensure their indexing and traceability by adopting interoperability protocols and assigning unique and persistent identifiers and structured and standardised bibliographic and administrative Metadata, which describe their provenance and conditions for accessibility and reuse (access levels and licences). The FAIR Principles encourage Researchers to manage their Research Data in an accurate, complete and reliable manner. They also recommend that the Datasets in the Repositories are accompanied by all necessary documentation to ensure their intelligibility and describe their production and processing methods, the quality assurance measures adopted and, if applicable, their compliance with domain standards to facilitate quality assessment and reproducibility of research.

“Open Access to Research Data”<sup>2</sup> means the transfer and sharing of Research Data, such to ensure that anyone is free to access, use, modify and share Research Data – subject, at most, to measures that preserve provenance and openness.

“Metadata” means structured information (e.g. bibliographical, administrative, management, provenance information) that describes Research Data and allows them to be identified and indexed by search engines and aggregator portals, facilitates their arrangement, management and intelligibility, certifies provenance and authorship, and defines conditions for access and reuse. Metadata are usually structured according to standard schemas, often subject-specific, consolidated at an international level and implemented by long-term storage and access infrastructures (Repositories).

“Repository” means a digital infrastructure in which Data are deposited by Researchers to ensure their identification, discovery, accessibility and storage in the long term. Repositories meet internationally recognised technical and organisational requirements for data storage and are preferably entered in registers that verify and certify certain technical and organisational characteristics, including (but not limited to) the assigning of unique and persistent identifiers, standard Metadata, Data Management and long-term preservation policies, and the adoption of open licences for Metadata and Research Data to facilitate reuse, also in an automatic form.

“Researcher(s)” are members of the University of Bologna’s scientific community who create, collect and/or manage Research Data (including professors, assistant professors, technical and administrative staff, grant holders, research fellows, students enrolled in first and second cycle degree programmes, in PhD programmes, in specialisation schools and professional master’s programmes, professional and consulting appointees, visiting scholars).

### 3) Scope of Application

This Policy applies to all University Researchers involved in Research Data creation, collection and/or Management.

Where research is funded by third parties, the corresponding funding agreements should include Research Data Management, access and storage, in accordance with this Policy.

Research Data Management complies with current regulations on personal data protection and on intellectual property (including copyright), with the University Statute, Regulations and Policies, without prejudice to specific research funding agreements with third parties.

---

<sup>2</sup> Open Definition: <https://opendefinition.org/od/2.1/en/>



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

## 4) Research Data Management

Each Researcher manages Research Data in accordance with the FAIR Principles.

In the initial stage of research, Researchers should outline which data they intend to process, whether originally created and/or collected or reused from third parties.

In the event of Data originally created and/or collected, Researchers act in accordance with privacy and copyright regulations, and consistently with ethical principles. Any actions to protect and exploit research results also for commercial purposes, in order to promote knowledge transfer for the development of new products, processes and services on the market, should be planned by Researchers since the initial stages of research. In these instances, Researchers refrain from any actions, such as dissemination, that could reduce exploitation opportunities for Research Data.

In the event of reuse, feasibility should be checked beforehand. Researchers are required to verify whether a user licence exists and the uses permitted under the licence, and to make sure that reuse does not breach copyright or any other restrictions under privacy law.

While drafting a DMP is not always explicitly required by research funding bodies, it is a recommended practice to support and ensure proper Research Data Management from the outset.

During research, the Data are processed in such a way as to ensure their quality and integrity, in accordance with University Regulations or any agreements with third parties in terms of accessibility and confidentiality. Proper Data storage throughout all active stages of research relies on infrastructures capable of backing up Data and protecting, if necessary, their sensitivity in accordance with current regulations. Data are arranged in Datasets, accompanied by Metadata and appropriate documentation that describes creation and/or collection methods, as well as the protocols and tools adopted to facilitate accessibility and reuse.

At the end of research, and in any case before publishing results, the Data relevant for research verifiability, accuracy and reproducibility are deposited and made accessible. These Data are deposited in an accurate, complete and reliable manner, which protects their integrity. The Data are also accessible, identifiable, traceable, interoperable and, where possible, available for subsequent use.

Deposited Data are accompanied by the information necessary for their identification and, where possible, they are published in Open Access. This means that they are distributed under licences that allow any type of reuse, to encourage open and collaborative research, unless there are opportunities for commercial exploitation, third-party rights or other restrictions under the law preventing Data from being disseminated as Open Access. In such cases, the Data relevant for the reproducibility of research should still be deposited in a Repository that allows controlled access to Data, while ensuring Open Access to Metadata and supporting documentation.

Researchers deposit their Data in a Repository, preferably a disciplinary or institutional one. The University of Bologna makes the AMS Acta<sup>3</sup> and AMS Historica<sup>4</sup> institutional Repositories available to its Researchers.

---

<sup>3</sup> AMS Acta: <https://amsacta.unibo.it/>

<sup>4</sup> AMS Historica: <https://historica.unibo.it/>



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

## 5) Roles and Responsibilities

Researchers and the University, each within their competence, share responsibility for proper Research Data Management:

### 5.1) Researcher Role and Responsibility

Researchers have responsibility for:

- Managing Research Data in accordance with this Policy, current regulations and any contractual obligations to third parties, including in terms of ethics, privacy and intellectual property protection;
- Knowing and applying the FAIR Principles for Research Data Management, also through the support services and information offered by the University;
- Setting their own Research Data Management strategy, preferably by drafting a DMP and keeping it up to date;
- Selecting Data to be preserved in the long term (based on their relevance in ensuring research verifiability and reproducibility), as well as identifying and adopting practices that protect the security and integrity of selected Data over time;
- Identifying the most suitable Repository for their Research Data, in accordance with this Policy, also through the support of University services;
- Ensuring that recognition is given to those who contribute to create, collect and analyse Data, both individuals and the institution for which they work.

### 5.2) University Role and Responsibilities

The University has responsibility for:

- Providing Researchers with support to access resources and infrastructures for proper Research Data Management and to comply with this Policy;
- Arranging and offering Researchers support services for proper Research Data Management (including assistance in designing and drafting a DMP), through suitable and well-trained professionals;
- Arranging and offering support services for depositing materials in and accessing institutional Repositories, through suitable and well-trained professionals;
- Ensuring management and maintenance of the University's institutional infrastructures for Research Data;
- Exploring solutions to develop the University's Research Data Management infrastructure ecosystem;
- Providing basic education and advanced training opportunities on Research Data Management.