The University of Bayreuth's Policy for Research Data Management

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Preamble

The University of Bayreuth pursues the goal of creating and preserving knowledge, providing impulses for creative thinking and making new findings accessible and usable for the scientific community and society as well as for future generations.

At the basis of all scientific work, research data has long-term benefits for research and science and offers the potential for broad reuse in society. The University of Bayreuth considers the responsible and sustainable handling of research data and its documentation to be an essential contribution to the scientific research and knowledge process as well as to scientific integrity and strives for a high standard in this respect. The University of Bayreuth recognizes that structured, comprehensively documented and easily retrievable research data is an essential part of a research project. Well managed research data enable the reproducibility of research processes and their results.

Research Data Management (RDM) is part of the University of Bayreuth's 2025 Structure and Development Plan[1]. It is supported by corresponding measures initiated by the Vice President for Digitalization, Innovation & Sustainability and the Vice President for Research & Junior Scholars, as well as the central institutes IT Service Centre, University Library, and Research Support Office.

The aim of the University of Bayreuth's RDM Policy is to raise awareness of the importance of research data and to provide researchers and early-career scholars at the University of Bayreuth with information on how to handle research data, thereby contributing to a quality-oriented, accessible, and sustainable research environment. The Policy follows the recommendations made by the German Science and Humanities Council (2012)[2] and the German Rectors' Conference (2014)[3] as well as the "Guidelines for Handling Research Data"[4] and the "Guidelines for Safeguarding Good Research Practice"[5] published by the German Research Foundation (DFG).

The University of Bayreuth has formulated the present Policy on the basis of the first version of a RDM Policy published on 8 November 2016[6] and in accordance with **The University of Bayreuth's Statutes for safeguarding the standards of good scientific practice and handling scientific misconduct**[7]. In addition, the Open Access Strategy

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[1] University of Bayreuth 2025 Structure and Development Plan: https://www.uni-bayreuth.de/en/structure-development-plan, https://cdn0.scrvt.com/a534b4b72e47031e7c1755abc55cf709/854fce9cab92ec30/68c7c21b0443/StEP_Englisch.pdf

[2] German Council of Science and Humanities (2012): Recommendations for the further development of scientific information infrastructures in Germany until 2020 (in German). https://www.wissenschaftsrat.de/download/archiv/2359-12.pdf

[3] German Rectors' Conference (2014): Management of research data - a central strategic challenge for university management. Recommendation of the 16th General Assembly of the HRK on 13 May 2014 in Frankfurt am Main (in German). https://www.hrk.de/fileadmin/_migrated/content_uploads/HRK_Empfehlung_Forschungsdaten_13052014_01.pdf

[4] German Research Foundation (2015): Guidelines on the handling of research data: https://www.dfg.de/resource/blob/172098/4ababf7a149da4247d018931587d76d6/guidelines-research-data-data.pdf

[5] Code of the German Research Foundation (2019): Guidelines for Safeguarding Good Research Practice https://www.dfg.de/resource/blob/174052/1a235cb138c77e353789263b8730b1df/kodex-gwp-en-data.pdf

[6] https://www.forschungsfoerderung.uni-bayreuth.de/pool/dokumente/20161108_UBT-Leitlinien-Forschungsdaten-Management.pdf (in German)

[7] The University of Bayreuth's Statutes for safeguarding the standards of good scientific practice and handling scientific misconduct: https://www.amtliche-bekanntmachungen.uni-bayreuth.de/de/amtliche-bekanntmachungen/englischeSatzungen/2023-002-164-kF-EN-Satzung-GWP-Univ-Bayreuth.pdf

of the University of Bayreuth[8] and the University of Bayreuth's Strategy for Handling Intellectual Property (IP) in Knowledge and Technology Transfer[9] needs to be observed as well.

1. Scope of validity

The RDM Policy is aimed at all researchers at the University of Bayreuth. RDM at the University of Bayreuth is carried out in accordance with the applicable laws on the protection of persons and intellectual property, as well as the "Statutes of the University of Bayreuth for safeguarding the standards of good scientific practice and handling scientific misconduct"[7] and is subject to specific agreements with third parties. The Policy is supplemented by the **"Guidelines for Research Data Management at the University of Bayreuth"**[10] .

In the case of research collaborations, this RDM Policy is valid unless equivalent or stricter regulations are applied. If a project-specific policy is developed as part of a research project that contains equivalent or stricter regulations, it takes precedence over this RDM Policy.

2. Legal and ethical aspects

Copyright law guarantees the protection of intellectual property. Whether research data are subject to the protection of copyright law depends on whether the requirements for the level of intellectual creation or the requirements of database copyright are met.

Intellectual property rights and rights to research data are generally defined by specific agreements (e.g. work agreements, grant agreements, consortium agreements, or agreements of contract research).

In the area of RDM, the University of Bayreuth and its researchers observe the applicable laws for the protection of persons and intellectual property (General Data Protection Regulation, copyright law) as well as ethical, legal, and confidentiality concerns (e.g. patent law). In particular, this includes any type of collection and processing[11] of personal data, which is only carried out if

- the person concerned has given their consent to the collection or processing of their personal data for one or more specific purposes;
- data collection or processing is necessary for the performance of a contract to which the person concerned is party, or in order to take steps at the request of the person concerned prior to entering into a contract;
- data collection or processing is necessary for compliance with a legal obligation to which the responsible person is subject;
- data collection or processing is necessary in order to protect the vital interests of the person concerned or of another natural person;
- data collection or processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the responsible person.

[8] https://www.ub.uni-bayreuth.de/de/download/openaccess-strategie.pdf (in German)

[9] https://www.forschungsfoerderung.uni-bayreuth.de/pool/dokumente/teaser-gwp/ip-strategie-ubt-oct-2015_en.pdf

[10] Guidelines for Research Data Management at the University of Bayreuth: https://www.fdm.uni-bayreuth.de/pool/dokumente/20230626_FDM-Handlungsempfehlung_UBT_en.pdf

[11] The term 'collection' is covered by the term 'processing' (Art. 4 No. 2 GDPR), but is listed here for reasons of clarification.

3. Handling research data

Throughout the entire research data cycle - from data acquisition to publication and long-term availability - research data should be handled and documented in accordance with the established and recognized rules and standards in the respective subject area. In accordance with the FAIR principles[12], research data should be findable, accessible, interoperable, and reusable.

All researchers at the University of Bayreuth determine within the legal framework when and under what conditions their research data will be made accessible. The University of Bayreuth recommends that its members work towards making research data and software created in the research process, as well as scientific publications, publicly accessible as early as possible in accordance with the statement of the G8 science ministers dated 12 June 2013[13], the information sheet "Research Data Management" of the priority initiative *Digital Information* of the Alliance of German Science Organizations[14], and the Open Access Strategy of the University of Bayreuth[15]. To this end, the scope, timing, and appropriate licensing conditions for research data must be defined in accordance with intellectual property rights and on the condition that no third-party rights, statutory provisions, data rights, or other property rights conflict with this.

Research data should be stored with suitable metadata in a trustworthy, subject-specific repository or data centre/archive system or the institutional research data repository of the University of Bayreuth *RDSpace@UBT*[16] for the long term and made as openly accessible as possible. To ensure long-term citability of research data, the use of persistent identifiers (e.g. DOI) is recommended. This makes the origin of reused data traceable, and the data source or the data provider can be credited.

Research data and documents that ensure the documentation and reproducibility of the results should be stored and kept accessible for as long as is necessary in accordance with legal requirements or the requirements of research funders within the framework of the applicable legal and contractual provisions. The minimum retention period for research data and documents is **10 years** after publication by assignment of a DOI. As a rule, research data should be kept for at least 10 years after publication of the research findings or after completion of the research project (whichever is the later).

If research data and associated documents are to be deleted or destroyed after the retention period has expired, or for legal or ethical reasons, these measures need to take legal and ethical considerations into account. The deletion must be documented and justified. When deciding whether to retain or delete data, the interests and contractual provisions of third-party funders and other parties, in particular contributors and cooperation partners, must be taken into account. Aspects of security and confidentiality must be considered.

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[12] Wilkinson, M. D. *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

[13] G8 Science Ministers Statement (2013). https://www.gov.uk/government/news/g8-science-ministers-statement

[14] Research Data Working Group (2018): Forschungsdatenmanagement. Eine Handreichung [Arbeitsgruppe Forschungsdaten der Schwerpunktinitiative „Digitale Information" der Allianz der deutschen Wissenschaftsorganisationen], Potsdam : GFZ German Research Centre for Geosciences, 14 p. (in German), https://doi.org/10.2312/allianzoa.029

[15] https://www.ub.uni-bayreuth.de/de/download/openaccess-strategie.pdf (in German)

[16] https://rdspace.uni-bayreuth.de

4. Responsibilities

The University of Bayreuth and its researchers are responsible for RDM in accordance with "The University of Bayreuth's Statutes for safeguarding the standards of good scientific practice and handling scientific misconduct"[17].

4(a) Responsibilities of the researchers

All researchers at the University of Bayreuth

- comply with good scientific practice and observe the applicable legal provisions and research ethics requirements in addition to the present Policy when conducting RDM;
- collect, document, store, and archive research data and associated relevant documents in accordance with the FAIR principles and subject-specific standards. This also includes agreements on processes and responsibilities in joint research projects. Such information can be part of a data management plan (DMP) that documents the collection, management, storage, use, and publication of the data used;
- plan, if necessary in coordination with the project managers, the (subsequent) re-use of their data, especially after the project has been completed. This includes both the determination of usage and exploitation rights, including the granting of corresponding licenses, as well as the agreement regarding data storage and archiving after leaving the University of Bayreuth.

4(b) Responsibilities of the University of Bayreuth

The University of Bayreuth

- promotes compliance with the standards of good scientific practice. To this end, it offers training and continuing education measures for members of the university as well as support and advice in the context of RDM;
- develops strategies and provides services and infrastructures for saving, securely storing, and long-term archiving of research data in order to ensure access to research data during and after the completion of research projects;
- supports its organizational units in implementing RDM and provides appropriate resources for RDM and related services, infrastructure, and employee training;
- provides access to the services and infrastructures described above so that researchers can comply with the requirements of third-party funding bodies and other legal entities and fulfill their responsibilities as described in the present RDM Policy. Specific requirements must be coordinated and, if necessary, additionally financed.

5. Validity and verification

The University of Bayreuth's Policy for Research Data Management was adopted by the Senate of the University of Bayreuth on 13 December 2023 in Bayreuth. It comes into force immediately and is valid for five years after coming into force. The Policy will be reviewed by the responsible university committees at the end of the five years at the latest and updated if necessary.

[17] The University of Bayreuth's Statutes for safeguarding the standards of good scientific practice and handling scientific misconduct: https://www.amtliche-bekanntmachungen.uni-bayreuth.de/de/amtliche-bekanntmachungen/2022/2022-050.pdf

Glossary

FAIR principles

The FAIR principles were drawn up by a stakeholder group consisting of representatives from science, industry, funding organizations, and scientific publishers and were first published in 2016.[18] They define international principles for sustainable reusable research data with the main aim of optimizing the preparation of research data so that they are **f**indable, **a**ccessible, **i**nteroperable, and **r**eusable.

Researchers

Researchers are all members of the University of Bayreuth who are actively conducting research. In addition to academic staff, this also includes students and non-academic staff, insofar as they are active in research.

The term also includes persons who are not directly affiliated with the University of Bayreuth, but who use the facilities and infrastructure of the University of Bayreuth for research projects. This group of persons includes visiting researchers, freelance staff, scholarship holders, cooperation partners, and persons who are pursuing a doctoral or postdoctoral thesis supervised by a member of the University of Bayreuth, even if they are not members of the University of Bayreuth themselves.

Research data

All data that are generated, collected, observed, simulated, or derived in the research process are regarded as research data. Typical examples of research data are measurement data, laboratory values, audiovisual information, texts, survey results, objects from collections, methodological test procedures or simulations, source code, and protocols. The range of data types reflects the diversity and methodological development of scientific disciplines and research procedures. Research data can arise in various forms during the research project (different format variants of primary data, processed data including negative or ambiguous results, shared data, published data) and can be provided with different access authorizations, e.g. as open, restricted, or non-public data. For the provision and subsequent use of research data, it is necessary to document the context in which the data were generated and to document (as metadata) the tools and methods used in this process.

Research data management

Research data management encompasses all measures for the quality assurance of research data during their life cycle; from the planning and implementation of the research project, to the generation, documentation and processing of data, to the assigning of metadata, to data storage during the research project, and to long-term data storage after the research has been completed. RDM also sets out how accountability, completeness, authenticity, integrity, confidentiality, publication, registration, and access to data are ensured and managed.

Metadata

Metadata is descriptive or contextual information about the associated primary research data. Metadata can be indexed, making it easier to archive and find the described data. Metadata can be divided into different categories. Repositories distinguish, for example

- bibliographic metadata (e.g. title, author, abstract),

- structural metadata (relationships between objects; e.g. references, versions),

- administrative metadata (authorizations/status; e.g. access authorizations, embargo), and

- technical metadata (data analyzed by the system; e.g. file size and format, checksums, modification date).

[18] Wilkinson, M. D. *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