

Technische
Universität
Berlin



Research Data Policy of the Technische Universität Berlin

adopted by the Academic Senate
on 23 October 2019

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1. Preamble

The goal of TU Berlin is to further develop science and technology for the benefit of our society. The members of the university are wholly committed to the principle of sustainable development. TU Berlin carries out basic and application-oriented research at top international level and promotes cross-faculty research activities and networks with external actors as well as knowledge and technology transfer between the university and practical applications. To this goal, TU Berlin forms strategic alliances with companies as well as university and non-university research facilities.

Research data is a valuable resource and a basis for scientific knowledge and has a long-term value for research and science, with the potential for widespread use in society. Research data is all information (regardless of form or representation) that arise during a research process or is its result, including the information necessary to verify and reproduce the results. Research data includes measurement data, lab values, audiovisual information, texts, objects from collections or samples, surveys, and interviews, but also notes, time histories/recordings, calculations, software and code. TU Berlin is aware of the fundamental significance of research data for maintaining the quality of research and scientific integrity and is committed to follow recognized standards that meet the highest requirements. TU Berlin acknowledges that correct and easily retrievable research data is the foundation and integral part of every research activity as it is necessary for the verification and reproducibility of research processes and results.

With this policy, TU Berlin wants to provide its current and future researchers with an orientation for handling research data. The policy refers in particular to the recommendations of the German Council of Science and the Humanities (2012)¹ and the German Rectors' Conference (2014)² as well as to the "Guidelines on the Handling of Research Data" (2015)³ of the German Research Foundation. TU Berlin formulates this policy according to the "Statute on the Safeguarding of Good Academic Practice at TU Berlin"⁴ and the "Open Access Policy of TU Berlin"⁵.

2. Scope of Application

This policy on the management of research data principally applies to all researchers active at TU Berlin. In cases where research is carried out with third parties, arrangements with the third party regarding intellectual property rights, access rights, and the storage of research data precede this policy as long as they do not contradict the "TU Berlin Transfer Strategy"⁶, the "Recommendations for Action Regarding Knowledge and Technology Transfer within the Context of Open Science"⁷ and the "Code of Conduct for Research Involving Commercial Enterprises"⁸. As a rule, contractual regulations deviating from the Research Data Policy are given priority.

¹ German Council of Science and the Humanities (2012): Empfehlungen zur Weiterentwicklung der wissenschaftlichen Informationsinfrastruktur in Deutschland bis 2020. <https://www.wissenschaftsrat.de/download/archiv/2359-12.pdf> (in German).

² German Rectors' Conference (2014): Management of research data – a key strategic challenge for university management. Recommendation by the 16th General meeting of the HRK on 13 May 2014 in Frankfurt/Main. https://www.hrk.de/uploads/tx_szconvention/HRK_Empfehlung_Forschungsdaten_13052014_EN.pdf.

³ German Research Foundation (2015): DFG Guidelines on the Handling of Research Data. https://www.dfg.de/download/pdf/foerderung/antragstellung/forschungsdaten/guidelines_research_data.pdf.

⁴ https://www.tu-berlin.de/menue/ueber_die_tu_berlin/gesetze_richt_leitlinien/grundsaeetze_zur_sicherung_guter_wissenschaftlicher_praxis_an_der_tu_berlin/parameter/en/.

⁵ https://www.tu-berlin.de/menue/ueber_die_tu_berlin/gesetze_richt_leitlinien/open_access_policy_der_tu_berlin/parameter/en/.

⁶ Transferstrategie TU Berlin. https://www.forschung.tu-berlin.de/fileadmin/f22/Transferstrategie_TU_Berlin.pdf (in German).

⁷ ZfgE/VD Handlungsempfehlungen Wissens- und Technologietransfer im Kontext von Open Science – Stand Dezember 2018. https://www.forschung.tu-berlin.de/fileadmin/f22/Einrichtungsdaten/V_D_allgemein/Handlungsempfehlungen_WTT_Open-Science_1811_KB.pdf (in German).

⁸ https://www.forschung.tu-berlin.de/fileadmin/f22/Einrichtungsdaten/V_D_allgemein/Code_of_Conduct-english.pdf.

3. Legal Aspects

Intellectual property rights and rights to research data shall be defined through specific agreements (e.g. research contracts such as grant or consortium agreements and contract research agreements). In cases where the rights to the research data belong to TU Berlin, TU Berlin decides how the research data will be published, shared, and reused. If research data belongs to a researcher, the researcher will decide how to proceed with the data.

In research data management, TU Berlin and its researchers observe ethical and legal issues such as data protection and patent law. Priority shall be given to rules on confidentiality.

4. Handling Research Data

Maintaining the integrity of research data is essential: Research data must be stored in a correct, complete, unadulterated, and reliable manner. Furthermore, according to the FAIR principles, research data must also be identifiable, accessible, verifiable, interoperable, and, whenever possible, available for subsequent use.

In accordance with its Open Access Policy, TU Berlin supports open access to research data. In compliance with intellectual property rights and if no third-party rights, data protection rights, and legal or contractual provisions prohibit it, TU Berlin recommends that research data should be assigned a license for open use, such as Creative Commons, to enable the reuse of the research data.

Research data shall be stored in a suitable repository or archive system, shall be assigned a persistent identifier and metadata, and if possible, made openly accessible. The applicable research ethics and data privacy regulations are to be considered.

The minimum storage period for research data is ten years after either the assignment of a persistent identifier or the publication of the related work following research project completion, whichever is later.

Adherence to citation rules and requirements regarding publication and future use of the research data must be ensured. When research data is reused, the origin of the data must clearly be verifiable and the original sources must be named.

If research data is to be deleted or destroyed after the expiration period of the storage, this will be carried out only after considering all legal and ethical aspects. When making a decision about the retention and destruction of data, the interests and contractual stipulations of third-party funders and other stakeholders, employees, and partners, as well as the aspects regarding confidentiality and safety must be taken into consideration. Any action must be documented.

5. Responsibilities

The responsibility for research data management during and after a research project lies with TU Berlin and its researchers and should be compliant with the codes of TU Berlin for responsible conduct of research. The researchers are in particular responsible for:

- a) Management of research data in adherence with the principles and requirements laid out in this policy. This includes specifications made by the principal investigator regarding the handling of research data in the framework of projects;
- b) Collection, documentation, access to, and storage or proper destruction of research data and research-related records;
- c) Planning to enable the continued use of data even after the completion of a research project. This includes defining usage rights, with the assignment of appropriate licenses. This also includes the clarification of data storage and archiving if the researcher leaves TU Berlin;

- d) Creation and updating of Data Management Plans that explicitly define the collection, administration, integrity, confidentiality, storage, use, and publication of the research data.

TU Berlin commits itself to creating the conditions which enable the fulfillment of the principles laid out in this policy.

6. Validity

The Research Data Policy of TU Berlin was adopted by the Academic Senate on 23 October 2019. This policy will be reviewed every three years by the Academic Senate and updated if necessary.

Glossary

Contract research is scientific research carried out on behalf of a private or public funding organization. The task is predefined and the rights to the research results generally belong to the principal, whereby the University is granted a non-exclusive right of use for the purpose of research and teaching.

A **data management plan** (DMP) is a structured guideline on how to handle research data both during and after a research project. It documents the process how the research data is generated and how it is stored appropriately so that it can be interpreted and verified, and remains available, authentic, citable, and reusable in later years. To this end, clearly defined legal parameters and appropriate security measures (such as contracts and licenses) shall also be included in the DMP. To optimize research data management and as a basis for institutional support, a DMP should be created before the start of a research project and updated in the course of the project.

A **repository** is a storage platform for the archiving and worldwide publication of scientific publications, research data, or cultural heritage data. Storage of research results in a repository ensures that they are sustainably accessible, verifiable, citable, and reusable.

The **FAIR principles** are international principles for sustainably reusable research data. The main objective of the principles is to ensure that research data is optimally prepared so that it is findable, accessible, interoperable, and reusable. The FAIR principles were created and first published in 2016 by a broad-based interest group consisting of representatives from science, industry, funding organizations, and scientific publishers.⁹

Researchers include all members of TU Berlin active in research including employees and doctoral candidates. People who are not directly connected with TU Berlin but use its infrastructure or are physically present at the University for research purposes are included in this term. Visiting researchers and external cooperative partners are expected to comply with the Research Data Policy.

Research Data Management (RDM) encompasses all measures for the quality assurance of research data with regard to storage, access, and preservation of research data in order to make research results sustainably reproducible and available for reuse. The activities cover the entire research data lifecycle,

⁹ 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>.

starting with the planning and execution of the research project, through the creation and storing of data to the long-term storage of the results after the research project is completed. Specific tasks in RDM include quality control and quality assurance, documentation, metadata creation, archiving, data exchange and reuse as well as measures for data integrity and data security.

Cooperative research is cooperation on equal terms between partners pursuing a common goal. In principle, the rights to the results belong to the partner who developed them.

A **licence for free use** (or free license) is a standardized license agreement which allows research data to be reused. It regulates which rights of use the author/originator grants to the general public that go beyond the applicable copyright law. Depending on the data type, a license is selected. Established free licenses in software are the GNU General Public License (GPL), the MIT license, or the Apache license. Creative Common licenses (CC) apply to texts, images, music and videos.

Metadata is data about data. It is data which provides descriptive or contextual information about other data, can be indexed, and facilitates archiving and retrieval. There are different types or categories of metadata. Metadata in a repository, for example, can be classified in four types of content: bibliographic metadata (e.g. title, author, abstract), structural metadata (relationships between and within objects, e.g. links, references), administrative metadata (authorizations/status, e.g. access rights, embargo), technical metadata (data evaluated by the system, e.g. size of files, checksums, modification date).

A **persistent identifier** is a constant Internet address for digital objects. It guarantees that a dataset remains permanently findable, accessible, and citable, even if its physical location changes. Well known examples are DOI (digital object identifier) or URN (uniform resource name).