

LIBRARY AND INFORMATION SERVICES

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Related guiding documents	<ol style="list-style-type: none"> 1. UFS and LIS Strategic Plans 2. Policy for the Management of Intellectual Property 3. Strategic Framework for Research Development 4. Policy on Masters and Doctoral Studies 5. Policy on the Protection, Exploitation, and Commercialisation of Intellectual Property 6. Open Access Policy 7. Standard Operating Procedures and Guidelines by the Health Sciences Research Ethics Committee 8. Protection of Personal Information Act (POPI), Act 4 of 2013 9. NRF Open Access Statement of 2015 10. General Data Protection Regulation (GDPR)

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1. TITLE

Research Data Management (RDM) Policy.

2. PREAMBLE

This Policy is a consequence of new developments in Open Access. This supports the notion of Open Science as a broader term that, among other things, includes the management of research data. The initial open access movement (*Refer to Open Access Policy*) regulated the publication of the final scholarly output on open access platforms, without the need to also avail data used for that output. Open Science calls for more openness that allows for broader collaboration and contribution to the final output. It makes it possible for the use, reuse, distribution and reproduction of research data (such as laboratory notebooks, manuscripts, video or audio recordings, imagery, maps, computer programs, computer-generated results and computer source codes that are required to reproduce results from primary materials). The University of the Free State, as a signatory to the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, commits itself to the comprehensive and free dissemination of data used to produce research/scholarly output. Rules and regulations are thus put in place to respond to this global phenomenon by addressing the following:

- I. Commit to proper recording, maintenance, storage, and security of research data for future availability and use by other researchers.
- II. Acknowledge obligation towards ensuring that appropriate security, ethical, and confidential measures are followed in the preservation of research data.
- III. Acknowledge the responsibility to comply and conform to relevant legislative requirements and regulations regarding research data usage and sharing.
- IV. Adhere to and make use of systems and procedures that follow best practices and approaches to data management, to achieve effective management of research data.
- V. Promote good research practices and procedures.

The support for the preservation, storage, and maintenance of research data, on which research outputs are based, have elicited the need to address matters related to intellectual

property rights, ownership of data, and data authenticity. It became imperative for data to be stored in a secure environment, further provided with sufficient metadata. This metadata is meant to enable all stakeholders (principal investigators, independent bodies of experts, the broader research community, funding agencies and the public) to address questions relating to visibility, discovery, accuracy and authenticity, thus affording the publication and re-use of the data generated from researchers' activities. The need was identified for research data to be managed systematically and transparently. The University of the Free State would therefore like to put processes and infrastructure in place to meet the requirements of this new development, supported by funders such as the National Research Foundation (NRF), that stipulate that data supporting research/scholarly outputs should be deposited in an accredited open access (OA) data repository, with a registered Digital Object Identifier (DOI) for citation and referencing.

3. PURPOSE

- 3.1 To govern the management of research data as assets of the University of the Free State, regulating the effective and efficient curation of data, thereby supporting the University's vision of a research-led university.
- 3.2 To ensure that research data is curated, stored, retained, accessed, and disposed of securely following all legal, statutory, ethical, contractual and funding requirements.
- 3.3 To put measures in place to safeguard against the legal and ethical infringement of the Policy on the Protection, Exploitation, and Commercialisation of Intellectual Property and the Protection of Personal Information Act (POPI), Act 4 of 2013 and/or any other related legislation both local and international.
- 3.4 To put best practices in place, infrastructure, processes, and procedures meant to respond to and address requirements set by funding agencies and publishers, for appropriate planning and use of research data in preparation for publication of research outputs.
- 3.5 To ensure that care is taken in the access, authenticity, availability, collection, confidentiality, integrity, security, storage, and management of research data.

- 3.6 To put industry-standard storage infrastructure in place that will protect, and reduce the risk of research data getting lost, misused, or becoming inaccessible due to changes in storage formats or damages to data, thus defeating collaboration ventures.
- 3.7 To provide proof in the resolution of any disputes concerning the reproducibility of research results, accusations of falsification of data, and all other issues in which the authenticity of data is questioned, thus protecting the rights of staff and students regarding access to research data.

4. SCOPE

This Policy applies to the following different constituencies who are researching under the auspices of the University of the Free State:

- 4.1 University's community of scholars;
- 4.2 Departments that deliver support services linked to research;
- 4.3 Partners the University collaborates with for inter- and/or multi-disciplinary research; and
- 4.4 Service providers the University uses for putting up systems used to manage research, where parties concerned sign Service Level Agreements or Memoranda of Understanding/Agreement.

5. DEFINITIONS AND ACRONYMS

- 5.1.1 "Community of scholars" means University staff (academics, researchers, and support staff) and students (under- and postgraduate students) engaged in publicly funded research and/or under contractual and/or study obligations per University rules and regulations.
- 5.1.2 "Data life-cycle" refers to the process through which data flows from creation, processing, analysis, preservation, and access to reuse.
- 5.1.3 "Data management plan (DMP)" means a formal document that outlines how research data will be handled both during the research project, and after the project is completed.

- 5.2 “Data preservation” refers to actions taken to ensure that a digital collection remains accessible for future access and re-use.
- 5.3 “Data repository” refers to a central, secure, and trusted place, or digital warehouse, where data together with its metadata is stored and maintained.
- 5.4 “Digital Object Identifier (DOI)” refers to a serial code used to uniquely and persistently identify digital objects.
- 5.5 “Embargoed/closed data” means data to which access is restricted for legal, ethical, privacy and confidentiality and/or commercial purposes.
- 5.6 “Metadata” means structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage information. Examples of metadata are the title of an article, author/creator, date created, description of the content/abstract.
- 5.7 “Postgraduate students” means honours, masters and doctoral students at the University.
- 5.8 “Research data/primary materials” refer to raw data that has not been analysed or processed by the researcher in any form before the research project, and used to produce research/scholarly output (Observations, laboratory notebooks, manuscripts, video or audio recordings, imagery, maps, computer programs, computer-generated results and computer source codes that are required to reproduce results from primary materials).
- 5.9 “Research data management” means looking after research data throughout the research project, including the planning, collecting, organising, managing, storage, security, backing up, preserving, and potential sharing of data, according to legal, statutory, ethical and funding body requirements.
- 5.10 “Research partners” Any external entity from the private or public sector that is involved with research-related projects and represents a collaborative or funding agency of the University in any capacity
- 5.11 “Undergraduate research data” refers to original data that is generated by senior undergraduate students.

6. POLICY CONTENT AND GUIDELINES

6.1 Principles

- 6.1.1 The data created and/or generated through research shall remain the property of the University, except for instances where intellectual property rights are superseded by specific terms of a funding and research partner agreements.
- 6.1.2 Research data to be managed in a manner that will be beneficial to the University's community of scholars and society as a whole, with infrastructure that supports research collaborations, enhance research impact and practices supported by high-performance computing technology, thus contributing to improved research quantity and quality.
- 6.1.3 Research data shall be stored and made accessible securely and systematically, supported by metadata that allow for its visibility and discoverability, and enables its evaluation and re-use.
- 6.1.4 Research data shall be stored from collection/creation and throughout the entire life-cycle of a research project, and according to subject/discipline-specific standards and guidelines, per a project Data Management Plan, as prescribed by the relevant body.
- 6.1.5 The community of scholars shall comply with the preservation of research data as directed by this Policy and those imposed by research funders and partners, with published results including links or references to the supporting data.
- 6.1.6 Best practices shall be applied in the preservation of research data, taking into consideration ethical and legal issues related to confidentiality and commercialisation of research data. To ensure that restrictions on the release of specific research data be embargoed/closed, as per ethical clearance.
- 6.1.7 Rules and regulations of this Policy shall not extend to the external functions of data management by research partners involved, such as collaborators or funding agencies.

6.2 Storage and Management

All research data in digital, non-digital, and computer-readable format shall be:

- 6.2.1 Stored securely in a durable format appropriate for the type of research data in question.
- 6.2.2 Stored with adequate metadata and/or documentation to facilitate identification, and support effective reuse of research data where this is appropriate.
- 6.2.3 Deposited in the University repository, or an appropriate national or international repository where it is more suited to do so. Where research data is stored in another repository, an entry shall be made in that repository, indicating where the research data is stored.
- 6.2.4 Referenced in associated research papers, which should include a short statement describing how the supporting research data may be accessed, including a Digital Object Identifier (DOI) for datasets held in a repository.
- 6.2.5 Non-digital research data unsuitable for digitisation shall be stored securely, labelled, indexed or categorized appropriately to be identified and support effective access and re-use. An entry shall be made in the repository identifying that the University holds the research data in question.

6.3 Retention

- 6.3.1 All research data which is stored following section 6.2 of this Policy, unless other retention requirements exist (see next bullet), shall be held for a maximum period of ten (10) years from its collection, creation, generation or publication of the research results (whichever occurs later) provided appropriate safeguards are in place to protect any personal data necessary to achieve the research objectives contained within it. For data used in postgraduate research, unless other retention requirements exist (see next bullet), data will be stored no longer than three (3) years.
- 6.3.2 Research data shall be retained **for longer than** three (3) (postgraduate students) and ten (10) (researchers) years in instances where:

- 6.3.2.1 an increased retention period is required to meet the University's statutory obligations, contractual obligations or the guidelines of the body funding the relevant research project;
- 6.3.2.2 the results of the research have resulted in a patent application;
- 6.3.2.3 the results of the study are contentious or subject to challenge at any time during the initial three (3) or ten (10) year retention period, in which case research data shall be retained pending review and not destroyed/disposed of until the matter is fully resolved;
- 6.3.2.4 the research has a public interest or heritage value.
- 6.3.2.5 Research data that is not deemed significant data shall not be retained beyond the end of the research project. This may include early research notes, old versions of later documents, or material which is expensive to store, but quick and easy to collect again. All research data resulting from work undertaken by postgraduate students towards their studies shall also not be retained after the degree has been awarded, unless a publication or further study is planned from the research conducted.

6.4 Disposal and Destruction

- 6.4.1 The disposal and destruction of research data shall be undertaken in compliance with the University's Archives and Records Management Policy.
- 6.4.2 The processes for the timing, manner, and recording of research data disposal and destruction shall be included in data planning and stored with other project information and documentation.
- 6.4.3 Research data due for disposal shall first be reviewed to determine and confirm their suitability for destruction by the appropriate University Faculty or researcher.
- 6.4.4 Research data deemed suitable for destruction and disposal shall be processed in line with any ethics, legal, regulatory and contractual obligations.
- 6.4.5 A record of the disposal or deletion of research data shall be logged in the Repository, stating reasons for the discarding of the research data.

6.5 Access

- 6.5.1 The University recognises the benefits of making research data accessible to the public or broader academic community. However, access shall always be preceded by considerations of the Intellectual Property ownership, legal, ethical, privacy, commercial potential, confidentiality requirements or regulations linked to funding restrictions.
- 6.5.2 Access to research data shall first be restricted to the collaborators on the research project and only made available to other parties if issues such as a). anonymisation; b). data access agreements has been signed by the potential recipient of the research data, and c). the research collaborators have granted permission.
- 6.5.3 Access to research data that is deposited in the repository may be restricted or embargoed by technical means.
- 6.5.4 Researchers who deposit research data in a national or international repository shall do so if the matters in bullet two (2) above have been addressed, and there are no restrictions in place governing the sharing of data.
- 6.5.5 Researchers who receive requests for access to research data shall forward these requests to the Directorate for Research Development for legal advice.

7. ROLES AND RESPONSIBILITIES

7.1 Library and Information Services (LIS)

- 7.1.1 Assist the community of scholars in complying with funders' data management plans (*See LibGuides on Research Data Management Plans¹*).
- 7.1.2 Provide consultation and training services for researchers on research data management.
- 7.1.3 Provide metadata services as per research metadata standards.
- 7.1.4 Provide reference support for finding and citing of datasets.
- 7.1.5 Provide support in data publishing.

¹ <https://ufs.libguides.com/rdm>

- 7.1.6 Market and communicate information related to developments in research data management, using different platforms and media.
- 7.1.7 Develop and manage a dedicated guide, and other promotional materials, guiding the University's researchers in good data management practice.
- 7.1.8 The Digital Scholarship Centre (DSC)² provides administrative support for the maintenance of this Policy.
- 7.1.9 Build infrastructure related to professional services linked to research data management services.
- 7.1.10 Retain data during the research life-cycle and for a period specified by the university/funder.

7.2 Directorate for Research Development (DRD)

- 7.2.1 Assist researchers with information on funders' requirements about research data management.
- 7.2.2 Maintain the content of this Policy as delegated by the Vice Rector: Research, Internationalisation and Innovation, with content related to the mandate of the Directorate.
- 7.2.3 Provide legal advice to researchers who receive requests for access to research data, confirming its suitability for protection and/or transfer under the University's Intellectual Property Regulations.
- 7.2.4 Assist in processing requests for the disposal of research data.
- 7.2.5 Ensure that the integrity and security of data are maintained.
- 7.2.6 Abide by the terms of the contract governing the use of research data owned or controlled by a third party, who is not a collaborating party, and ensure that the use of this data shall not place the University in breach of its contractual or funding obligations.
- 7.2.7 Intellectual property rights ownership and rights of use of research data, in instances where research involves external funding and/or collaborations with other partners, shall be dealt with in the relevant contract before commencement

² <https://ufs.libguides.com/digitalscholar>

of the project, and adhered to by the researchers. It is recommended that where possible, the agreement identifies a process for research data management which is consistent with the broad objectives of this Policy.

7.3 Information and Communication Technology Services (ICTS)

- 7.3.1 Put in place technical infrastructure required to support professional services, e.g. data storage, repository management and maintenance.
- 7.3.2 Enhance software approved by the University as the primary storage repository for research data. Work with researchers in determining other means of storage, depending on the type and size of the research data.
- 7.3.3 Extend the use of national infrastructure in cases where research data is vast and cannot be stored locally for different reasons.
- 7.3.4 Budget for and manage costs related to putting technological systems in place.
- 7.3.5 Ensure that data is backed-up regularly following best practice in the relevant field of research.

7.4 Faculties

The Vice Rector: Research, Internationalisation and Innovation shall delegate responsibility for the application of this Policy to the Deans and Heads of Departments, and/or senior staff, with researchers adhering to their obligations under this Policy.

- 7.4.1 Adhere to a data management plan submitted as part of the research proposal and adhere to the contractual obligations governing research data as defined in the relevant research contract (which could discipline specific or generic), and the application of this Policy.
- 7.4.2 Be aware of all legal obligations and potential liability when processing data relating to people, to ensure compliance with the Protection of Personal Information Act 4 of 2013.

- 7.4.3 Obtain an ORCID identifier that helps in recording and reporting their work; and can be used in publications, grant applications, funder reporting, and in KovsieScholar.
- 7.4.4 Define essential data to be produced on the research project.
- 7.4.5 Identify and give guidance on the data that should be curated and preserved in the University data repository

8. DOCUMENT MANAGEMENT AND CONTROL

- 8.1 Document owner:** Ms Jeannete Molopyane (Director: LIS)
- 8.2 Content manager:** Mr. CM Molepo (Deputy Director: Research and Scholarly Communications)