

## Research Data Management Procedure

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### 1. PURPOSE

This procedure describes and guides all role-players during the sequential stages of the Research Data Management (RDM) process, distinguishes between different kinds of data, and presents a range of data management options.

Deans of Faculties and Heads of Departments must ensure that all relevant role-players in their departments are aware of, and adhere to, the University's Research Data Management policy.

### 2. GENERATION AND COLLECTION OF DATA

- 2.1 During the first stage of the data lifecycle, (namely the design of the research plan), the Principal Investigator (PI) will be responsible for compiling a Project Research Data Management Plan (DMP).

The DMP must be included in the research proposal for the project and in the application for Ethics approval through the relevant Faculty Ethics Committee. In externally funded research, the DMP must satisfy the requirements of national and/or international funders and should form part of the funding application (where applicable).

The Data Management Plan should take into account the diversity of data that will be generated in the research process, and could include information such as the following:

- description of the study to be conducted and the data collected;
- types of data to be collected;
- formats of the data sets;
- methodology(ies) of data collections;
- data quality and standards;
- short term data management, (maintenance, storage and curation);
- key terms describing the data;
- confidentiality of data and data security;
- sharing of data, governing of access to data, restrictions and/or delays on sharing of data;
- regulations and responsibilities of users.

2.2 The Principal Investigator must collect and store all research data generated in the course of a specific research project, throughout the entire lifecycle of the project, in line with the DMP.

2.3 In the case of students conducting research under the guidance of a supervisor, the supervisor must ensure that the DMP is compiled and implemented. Students must provide their supervisors with access to the data.

2.4 Any other researcher, staff member, student or individual involved in, or responsible for, the creation of research data should have access rights (throughout the data lifecycle) to review and peruse segments of research data that he/she created.

2.5 The Department of Research and Innovation Support (DRIS) can assist researchers with information on funders' requirements with regard to research data management, and Data Management Plans. Information specialists in the Department of Library Services (DLS) are available for consultation and training on data management plans (see section 7 for additional RDM support services rendered by the DLS).

### **3. MAINTENANCE OF DATA**

3.1 Active research data can be captured, recorded and stored, on a day to day basis:

- in laboratory note books (paper or electronic formats);
- on appropriate storing devices (e.g. hard drives, memory sticks);
- using cloud storage solutions supported by the University;
- departmental staging repositories (e.g. HUBzero, Alfresco, etc.); and/or
- an appropriate data management platform for capturing data from instruments.

*Note should be taken of the risks related to the use of public cloud storage as set out in the Policy on the Use of Public Cloud Computing Services.*

3.2 The Principal Investigator of each research project is responsible for securing the related research data for future use. This responsibility is transferred to the Head of Department or a duly appointed research successor if the principal investigator should leave the University.

- 3.3 Principal Investigators and/or supervisors of post-graduate students have the responsibility to obtain and secure the research data generated by students before the students graduate or leave the University.
- 3.4 Measures must be in place to protect data from alteration and loss, including from fires or other emergencies (disaster recovery plan).

#### **4. PRESERVATION OF DATA**

- 4.1 All students and researchers should be aware that the research data produced in the course of any research project belong to the University.
- 4.2 The University requires that data must be stored for a minimum period of ten (10) years after the completion of the original research project. If protected intellectual property is involved, or if there are particular statutory or contractual requirements, a longer period of storage may be required (in accordance with the Intellectual Property Policy and Contract Research and Consulting Policy. In certain cases, and in particular where experiments involve human subjects, funding bodies may require that all raw data be kept indefinitely.
- 4.3 At the conclusion of a research project, the research data which are in digital format should be uploaded, with the associated Data Management Plan, onto the University's institutional Research Data Management System where research data can be secured, preserved through the University's research data management archive system, and made accessible through the University's Research Data Management Repository, as appropriate.

The Department of Library Services will take responsibility for the RDM process, content and training, and the Department of IT Services will take responsibility for the information technology related matters. The Department of IT Services can be contacted for guidance on cloud computing and alternative infrastructure(s) for the management of Big Data.

- 4.4 Heads of Departments should ensure that all non-digital research materials are retained in appropriate storage repositories, which are maintained within the academic departments where the material was generated. A system of recording and cataloging such material must be implemented.
- 4.5 When an academic researcher transfers to another institution he/she may request to obtain a copy of his/her research data from the Data Management System in accordance with, and following the necessary procedures stipulated by, the Intellectual Property Policy of the University of Pretoria.

#### **5. DESTRUCTION OF DATA**

- 5.1 After the end of the retention period (10 years or longer), research data should be considered for destruction. This must be done with prior approval from the relevant Head of Department. The Principal Investigator (or the Head of Department if the Principal Investigator has left the University) should request the Department of IT Services to destroy the research data, which was stored on the institutional Research Data Management System.

ITS will not destroy research data after the retention period without the permission of the Principle Investigator or Head of Department, and the Director of DRIS.

## **6. SHARING OF DATA**

- 6.1 The University (through ITS) should have access to all research data for legal and ethical reasons, and also in cases where technology migration is necessary.
- 6.2 Research funders, in some instances, will have a legal right to access the research data for a specific funded project, and therefore should be allowed access.
- 6.3 Access to the data by any other internal or external parties should be requested and administered in accordance with the relevant University guidelines and procedures regarding the Promotion of Access to Information Act (PAIA) (Act 2 of 2000).
- 6.4 Published data (which is by definition open data), will be considered in accordance with the relevant Creative Commons license. A Creative Commons License is a free, easy-to-use copyright license, which provides a standardised way, that gives others permission to share and use your creative work.
- 6.5 Published data must be supported by accurate citation guidelines, as well as a Digital Object Identifier (DOI), in order to ensure that the data are unambiguously identifiable, and that appropriate attribution and credit are given.

Data (normally the processed data) may be published in the institutional Research Data Management System, or an open data repository, or in an accredited/trusted discipline-specific repository where available (in accordance with funder and/or publisher requirements).

## **7. SUPPORT AND TRAINING**

The Department of Library Services will provide the necessary consultation and training on appropriate file formats for data preservation (e.g. BagIt Specification, pdfa etc.); appropriate metadata standards for publishing and preservation purposes; file naming conventions; data management plans; and accurate citation of data sets, all to ensure quality and accessibility of data for future use.