Mark Wainwright Analytical Centre
Research Data Management Guide – Jan 2014

The Analytical Centre aims to

- Provide all researchers using its facilities with the ability to collect, save and transfer their research data in an effective and efficient manner
- Provide local storage and access to data where further specialist processing and/or specialist software tools are needed
- Provide reliable back-up services to enable all data to be secured until it can be stored, backed-up and archived by the researcher responsible
- Provide tools to enable researchers to connect to centrally-supported resources provided by UNSW IT Services, Faculties and Schools for data storage and archiving

UNSW now provides services for all researchers to manage their research data and new data archiving services are due to come on stream during 2014. The Analytical Centre data services will integrate into UNSW centrally provided systems as these continue to become available.

All researchers must ensure that they safely back-up and archive their research data, as part of their overall project plan.

(1) UNSW Data Management Guidelines and Overview of Resources

Links to relevant guidelines, procedures and tools

Responsible Research Practice
http://research.unsw.edu.au/responsible-research-practice

Procedure for Handling Research Materials and Data
http://www.gs.unsw.edu.au/policy/researchdataproc.html

E-Research Tools and Services
http://research.unsw.edu.au/eresearch-tools-and-services

Student File Storage (home drives)
https://www.it.unsw.edu.au/students/file/index.html

School and Faculty-level storage and file transfer resources
Consult your School or Research Centre IT contact person

(2) Research Data Management and Archiving Resources at UNSW

All UNSW researchers have access to an on-line portal (ResData) to register research project data management plans. Later in 2014 this will also be integrated into the UNSW Long-term Data archive and other storage options. Datasets can be made discoverable by registering them in Research Data Australia.

Researchers are also strongly encouraged to plan for their project data to be deposited in discipline-specific repositories where these are available.

If your project is likely to generate extremely large datasets, please seek specialist IT advice on the best resources to meet your needs.

(i) UNSW ResData Portal

https://resdata.unsw.edu.au/pages/help.faces

ResData is an online catalogue of UNSW datasets and collections of research materials. It records *descriptions* of UNSW research data. ResData records are published to the online portal Research Data Australia (RDA).

RDA is a discovery service for Australian Research Data. Registering your datasets in RDA is one way of making them **discoverable** – and hence **accessible** and potentially available for **re-use** and **sharing**. You retain full control over who has access to your data and under what conditions.

The ResData portal also allows you to set up and document a **Research Data Management Plan** for your project – for grant-funded projects this will be linked on-line to the record in InfoEd.

When the UNSW long-term data archive project comes on stream later in 2014, the Research Data Management Plan will form part of the user-interface to the archive.

(ii) Data Archiving resources

UNSW Long-term data archive

The store is designed to hold large amounts of data for many years, rather than be a fast store for computation or databases. Access to the store is free for UNSW research projects. The Long Term Data Store will provide UNSW researchers with a first class data storage and data management capability.

The Long Term Data Store is due to become available to all researchers, including research students, in the second half of 2014. [The hardware has already been installed and tested.]

RDSI storage

https://research.unsw.edu.au/unsw-intersect-faq

This is hosted by Intersect and is intended for datasets "of national significance", a condition which will apply to many grant-funded projects.

Criteria for storage on RDSI include that data must be made discoverable (through RDA, or a discipline specific repository or otherwise) *and* be made available to be shared by others beyond the immediate project. Restricted access conditions can be applied, including embargo periods.

If your project will have a dependency on RDSI data storage and you plan to request a storage allocation, you are strongly advised to get advice on the criteria and application process to ensure it is a suitable option for your project.

Contacts

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(3) Data collected in MWAC labs

Analytical Centre data back-up and archiving services should be considered additional protection for your data. You should ensure that you set up project-based data management plans and organize archiving for long-term data storage and management as outlined above.

Data file formats and storage protocols, data back-up and data archiving resources vary greatly in different facilities across the Analytical Centre (mainly depending on the magnitude and complexity of the data sets involved).

Most labs provide local resources for off-line data processing, including training in use of specialist software.

During your induction and training, you will be made aware of the data management protocols operating in particular lab environments. You are welcome to discuss your data management needs at any time.

FTP data transfer guide
http://www.analytical.unsw.edu.au/capability/datacentre.htm

Using your home drive (for moderate-size files / datasets)
Separate instructions available for mapping your home drive – ask for help if necessary

Off-Line Data Processing
Off-line processing computers and specialist software are provided in most laboratories of the Analytical Centre. Ask for advice at any time.

In some cases, off-line data processing can be done remotely – ask for advice on setting up your desktop or laptop where this is possible.

General software for processing scientific data is available from UNSW IT services; Analytical Centre staff can also provide advice on other third-party software of value for particular types of data.

UNSW Software for Staff
https://www.it.unsw.edu.au/staff/software/index.html

UNSW Software for Students
https://www.it.unsw.edu.au/students/software/index.html

Other software may be provided (or may be able to be purchased for you) by your School, Faculty or Research Centre.

(4) General Data Management Guides

Australian Code for the Responsible Code of Conduct of Research
http://www.nhmrc.gov.au/guidelines/publications/r39

ANDS – Australian National Data Service
http://www.ands.org.au/researchers/manage-data.html

MANTRA – Free on-line training module from University of Edinburgh
http://datalib.edina.ac.uk/mantra/

The MANTRA course is an online training course intended for PhD students and early career researchers or by anyone interested in learning more about research data management.

'Scientific Data' – an example of a new mechanism for publishing data
http://www.nature.com/scientificdata/about/

"a new open-access, online-only publication for descriptions of scientifically valuable datasets, initially focusing on the life, biomedical and environmental science communities." Provides interesting background information on making scientific data accessible, including meta-data specifications