Research data management
Higher Degrees by Research
HDR research data

- Research data has potential value for students (and supervisors)
- Manage the data as seriously as the thesis
- Information and assistance available from the Library, Monash eResearch Centre, eSolutions and others
Characterising research data (1)

- Original material generated by research and/or unpublished resources analysed for research in original ways

- Valuable part of the research
  - Validates the results
  - Enables others to build on findings
Characterising research data (2)

- New (collected or created by the researcher) and/or existing (sourced from somewhere else)
- Qualitative and/or quantitative
- Multiple formats
Common types of research data

- Statistics and measurements
- Results of experiments or simulations
- Observations e.g. fieldwork
- Survey results – print or online
- Interview recordings and transcripts, and coding applied to these
- Images, from cameras and scientific equipment
- Textual source materials and annotations
Effective management of data

- Requires similar effort to organising thesis drafts and bibliographic sources
  - Can save time and effort
  - Reduces the risks of loss, theft or inappropriate use of data
  - Is good research practice, and may affect funding and publishing opportunities
Responsibilities

- **Australian Code for the Responsible Conduct of Research** (2007), Section 2
  

- Monash Research Data Management Policy & Staff procedures in place since late 2010, HDR Procedures endorsed early in 2011
  
  www.researchdata.monash.edu.au/policies.html
Research impact

- Some journals now expect supporting data to be available for peer review and/or publication
- International trend towards open access to data in archives & repositories (sometimes a requirement of funding agencies)
- Increasing use of multimedia as part of publications and presentations
- Reaching out to audiences that do not have access to expensive journals
- Some early evidence that when data is publicly available, the publications get cited more
Sharing Detailed Research Data Is Associated with Increased Citation Rate

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Abstract

Background

Sharing research data provides benefit to the general scientific community, but the benefit is less obvious for the investigator who makes his or her data available.

Principal Findings

We examined the citation history of 85 cancer microarray clinical trial publications with respect to the availability of their data. The 48% of trials with publicly available microarray data received 85% of the aggregate citations. Publicly available data was significantly (p = 0.006) associated with a 69% increase in citations, independently of journal impact factor, date of publication, and author country of origin using linear regression.
Data management: things to think about

Ownership & rights

National & institutional policy frameworks
Copyright & IP in new data
Using existing data
Ethics

File formats
Storage & backup
Sharing & controlling access
Organising & documenting data

Publishing & dissemination
Long-term retention
Secure destruction
Leaving Monash
Guidelines provide advice on common concerns

Research data management

Monash University is committed to improving the way research data in all formats is created, stored, managed and disseminated. This website provides guidance on common research data management issues and highlights the portfolio of advisory and technical support services that are available to researchers.

Guidelines

- Data management planning
- Ownership, copyright and IP
- Ethical requirements
- Durable formats
- Storage and backup
- Sharing data and controlling access
- Documentation and metadata
- Retention and disposal
- Secure destruction
- Deposit in a repository or archive

Latest

- exPERT seminars for HDR students
  1. Introduction to Data Management
     Registrations opening soon for Clayton and Caulfield campus sessions in May-June 2010
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- Seeking a customised session or individual consultation? Contact the University's Data Management Coordinator
Data planning checklist


- Helps you and those you supervise develop a plan to manage research data

- Will be of most benefit completed early, but is a work in progress
## A. OWNERSHIP, COPYRIGHT, INTELLECTUAL PROPERTY (IP)

### Copyright protection

1. **The data is protected by copyright.**
   - This will apply to most research data.
2. **The data will be collected, created or compiled.**
   - **in Australia - Australian copyright applies.**
   - **outside of Australia.**

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**Complete quickly and easily using multi-choice boxes**

**Not sure which option applies to you? Follow the links to relevant resources and people who can help**

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**Attach other documents and add supplementary information to create a more comprehensive data management plan**

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**KEY DOCUMENTS ON THIS TOPIC**

- Research data management guidelines: ownership, copyright and IP
- Intellectual Property Framework
- Statute 11.2 IP and Copyright and IP Regulations
- Explanatory Memorandum for IP Statute and Regulations
- Copyright at Monash website
- Practical Data Management: A Legal and Policy Guide (national guide)

Consult the Copyright Advisers or University Solicitors.

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**Provide a reference number or copy of the agreement.**

A common example is research funded by a company that wants to retain copyright/IP.

- [Assignment and Licensing](Word, 33kb)
- [Provide a copy of MRGS IP and Assignment Forms](Word) to help clarify ownership of the data.
exPERT seminars on research data

Introduction to data planning (2 hours) offered each semester at Clayton and Caulfield, and other campuses on request.

Other useful seminars e.g. IP, ethics, data analysis software.

Monash e-Research Centre

- Researcher-focused technology specialists
- MeRC works with eSolutions (formerly ITS) to provide technical advice and tools
  - Storage and backup
  - Organising and documenting data
  - Collaboration
  - High performance computing (e.g. data analysis, modelling, simulations)

www.monash.edu/eresearch/about/services.html
Large Research Data Store

- Use of LaRDS by HDR students is welcomed and encouraged
- LaRDS can be used many different ways – a number of applications that look very different and offer different functionality depending on needs of the researcher/s
- MeRC staff can assist in providing access to LaRDS to meet storage needs for you and your students
How to get access to LaRDS

- Email merc@monash.edu – include as much of the following information as you can
  - Brief research description
  - Mac / Windows PC / Linux
  - Data size, data type and data security requirements
  - Duration of your project
  - Users – student / student and supervisor / group?
    Anyone outside Monash?
  - How often data will be accessed, and from where – Monash office, lab, home, in the field?
Recent emailed LaRDS request

I'm a HDR student in [department name] and I would like to put some data on LARDS. Currently there are 2 other students (both HDR) working on the same project who would also be putting data on. If possible we would need around 3TB-4TB of disk space but this will likely increase throughout the project. Access to the data would include ourselves as well as 3 supervisors.

The majority of the data is video files in AVI and MTS formats, of which there are approx 1,600 files totalling 470GB. There is also about 4GB of jpg and png images as well... At the moment there are 6 people in our group who are all running different operating systems (Windows, Mac, Linux-Ubuntu) and would be the only people required to have access.
Things to remember

- Research data is an asset, not just a by-product
- Monash has many services and people that can help – but it’s up to you and your students to make the most of them
- Find out more through further exPERT seminars, web resources and getting in touch
Contacts

- Data Management Coordinator
  researchdata@monash.edu

- Contact librarians
  http://www.lib.monash.edu/contacts/faculty/

- Monash e-Research Centre
  merc@monash.edu