



Creating a Research Data Management Plan for New Research Projects (A Personal Perspective)

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Code for Conduct of Research

- Australian Code for the Responsible Conduct of Research
 - Linked to from:
http://www.arc.gov.au/about_arc/policy.htm
 - ARC-funded research must comply
 - Section 2 is titled:
Management of Research Data and Primary Materials



Management of Research Data

- Policies are required that address:
 - Ownership of research materials & data
 - Their storage
 - Their retention
 - Appropriate access by research community



Retention of the Research Data

- Not always practical to keep primary data
 - Biological Material
 - Recordings
- Durable records derived from them must be retained and accessible
 - Assays
 - Laboratory and field notes



What Should be Retained?

- Usually determined by researcher
 - See next slide
- Sometimes determined by
 - Law
 - Funding agency
 - Publisher
 - Convention in discipline



Guiding Principles

- Central aim is that sufficient materials and data are retained to
 - Justify the outcomes of the research
 - Defend them if they are challenged
- Also consider
 - Potential value of material for further research
 - Especially when difficult or impossible to repeat



Institutional Responsibilities

- Policy on research data retention
 - Duration of retention
 - Disposal (secure and safe)
 - Ownership
 - Storage
- Provide secure research data storage and record-keeping facilities
 - Security and confidentiality



Responsibilities of Researchers

- Retain research data for sufficient time to
 - Allow reference to them by other researchers and interested parties
 - E.g. as long as interest and discussion persist following publication
 - Allow resolution of any pending challenge
- Default position is to make data available for use by other researchers



Responsibilities (2)

- Manage storage of research data
 - Clear and accurate records
 - Research methods
 - Data sources
 - Granted approvals
 - Safe and secure storage
 - Durable, indexed and retrievable
 - Maintain catalogue in an accessible form
 - Maintain confidentiality



Personal Perspective

- Guidelines
 - Maximise usefulness to fellow researchers
 - Ensure research integrity (repeatability)
- Trade-Off
 - Time taken to archive data
 - Ease of recovery
 - Yourself
 - Others



First Steps

- Plan Ahead
 - A stitch in time saves nine
 - Do not rush in
- If data is worth collecting, it is worth archiving well
 - Before collecting data, ask why you are collecting it
- How to archive?
 - Determine objectives
 - Run through different scenarios



Scenarios

- Access/understand data
 - Ten years from now
 - Someone else
- Confidentiality
 - Safe from colleagues?
 - Safe from burglars?
- Safety
 - Fire



Next Step

- Defined 'requirements'
- Seek existing solution
 - Talk with colleagues
 - Look what facilities are available
 - Locally
 - On the market
- Devise own method
 - Time invested now will be rewarded in future
 - Keep it simple but expandable



Simple Examples

- Neuroscience
 - Colleague wrote script to save automatically all keystrokes / sensor outputs
- Version control
 - SVN
- Filing System
 - README files
 - Fixed naming conventions



More Complicated Examples

- Principles are the same!
- Framework
 - Conventions
 - Documentation
- Data
 - Follow framework
 - Documentation (meta-data)
 - Store data itself



E-Research

- Data sharing
 - Where is data stored?
 - How can it be accessed remotely?
 - Back up?
- Access control
 - Authorisation
 - Authentication
- Catalog



Summary

- Framework
 - Objectives / Scenarios
 - Simple as possible but expandable
- Look for available tools
- Develop a System
 - Write down how it works
 - Stick by it!