

## SCHOOL OF AGRICULTURE, FOOD AND WINE

### GUIDELINES FOR DATA RECORDING AND RETENTION FOR RESEARCH STUDENTS AND STAFF

*Approved by the AFW Academic Board on 23 November 2010*

#### Introduction

Good practices in data recording and retention:

- facilitate clear thinking about research
- provide researchers and their supervisors and colleagues with accurate records of why and how experiments were performed and what data were obtained
- facilitate the preparation of publications and reports
- enhance the value of materials and data for future research
- make it possible to protect intellectual property
- protect researchers against possible allegations of misconduct

Under the Australian Code for the Responsible Conduct of Research (and similar codes internationally), researchers are expected to:

- Keep clear and clear and accurate records of the research methods and data sources during and after the research process
- Retain research data, including electronic data, in a durable, indexed and retrievable form
- Ensure that research data and primary materials are kept in safe and secure storage
- Provide the same level of care and protection to primary research records as to the analysed research data.

#### Guidelines

1. Each supervisor in the School of Agriculture, Food and Wine shall adopt a system for recording of research methods and primary data that is based on one (or more) of the following:
  - Bound notebooks that are retained by the supervisor
  - Notebooks with a “carbon copy” facility, with the supervisor retaining the original top copy
  - Electronic laboratory notebooks that are kept on a University’s server (not a local hard disk) and automatically backed up
2. Individual researchers (students and staff) will normally be able to retain copies of laboratory notebooks and data, but will be required to hand over original notebooks and data to their supervisors on a regular basis (at least once per year) and at the end of a scholarship or contract. For research students, an annual handover could be done as part of the Annual Review with a requirement to give the supervisor all notebooks from the preceding year. Supervisors will be responsible for ensuring that formal exit procedures are carried out when staff and students leave, to ensure that all notebooks, data and other materials are handed over. For staff this would be one week before they leave and for students one week before the end of their scholarship.
3. New staff and students are to be told about these guidelines at induction.

## Appendix 1: Using Microsoft Office OneNote as an electronic research notebook

Some researchers in the Plant Genomics Centre are now using Microsoft OneNote electronic notebooks instead of, or as supplements to, bound paper laboratory notebooks. The individual researcher is issued a OneNote notebook with a unique serial number (#) as part of its file name ( e.g. #\_firstname\_lastname-labbook.one). The notebook is saved in their home folder. As with other files on the ACPFG servers, it is shadow-copied twice a day and backed up weekly. In addition, permanent archival copies of all numbered electronic notebooks are taken weekly for storage in a secure location under the supervision of ACPFG's IT manager. According to legal advice obtained by the ACPFG, this is adequate for the purpose of intellectual property protection.

OneNote is a regular component of the Microsoft Office software suite, so it should be possible for any research group that uses PCs to implement it now on the University server. Arrangements may need to be made for shared access (for supervisors to review notebooks) and for periodic archiving. The frequency with which notebooks can be archived will depend on the availability of memory for data storage.

Unfortunately, OneNote does not run on Apple hardware. There may be similar software available for Apple hardware, but there is no obvious equivalent to OneNote.

Some features of OneNote electronic notebooks:

- In most cases, each user has a single electronic notebook and organises their work within that notebook in section groups, sections, pages and subpages
- Users can choose whether to organise their electronic notebooks chronologically or in other ways (by project, by type of information, etc.)
- Files from other applications and sources (e.g. SOPs and other documents, data spreadsheets, images, web pages) can be inserted, dragged or printed into electronic notebooks. (Note: This can lead to OneNote files becoming quite large, necessitating considerable storage space if large numbers of notebooks are to be archived frequently.)
- Information within notebooks is searchable, and changes can be tracked
- With shared access to folders, supervisors can view notebooks
- Electronic notebooks can be printed as date-stamped PDF files

## Appendix 2: Standards for laboratory notebooks

For protection of intellectual property, the following standards are generally required for laboratory notebooks:

- Use bound notebooks with pre-numbered pages. No loose pages. Any additional paper-based material should be stuck into the book;
- All entries in English
- Entries should be written in black ink. No blank spaces should be left in the text. Spaces should be ruled through to avoid misinterpretation;
- Any errors should remain legible and crossed out instead of erased, liquid papered or blacked out. A single line through, keeping the previous wording legible is best. This avoids any suspicion of concealment;
- Any changes or additions must be signed and dated;
- Leave the first few pages of the notebook blank so an index of contents can be recorded
- Pre-experimental work, including details of any ideas generated through thinking/discussion sessions with colleagues should be included;
- Entries should be in chronological order without blank pages. Never tear out pages. When starting a new page, a line should be drawn through any unused section of the previous page;
- Later results should be recorded in chronological order and cross reference earlier entries;
- Any additional information, e.g. diagrams, photographs etc, should be printed out and glued into the lab book. These should be signed and dated;
- All non-standard terms, abbreviations and acronyms should be defined;
- References to equipment should refer to manufacturer, model and serial number where possible;
- Sketches of equipment should be used to show any procedures or variations;
- There should be no opinions included on the ability to protect (e.g. patent) the research;
- The conclusion of each work period or experiment should be signed and dated by you and signed by a witness. The witness should be knowledgeable in the area of research but should not be part of the project team;
- Copies should be made and kept secure at several locations. No unauthorized persons should have access to the lab book and it must be kept confidential.