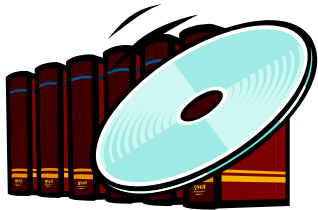


Guide to Data Management and Retention



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Guide to Data Management and Retention for Graduate Students and Post Doctoral Scholars at Purdue University

- As graduate students/postdocs begin to engage in original scholarship and research, they will gather their own data, conduct their own critical analyses, and draw their own conclusions.
- Critical to original scholarship and research in any discipline is the quality of data ...data are the currency of analysis, the basis for conclusions.
- Safeguarding this currency is an investment in a student's future and the future of the discipline.

What are data?

- Francis Macrina¹ describes data as “any form of factual information used for reasoning.”
- Data may be a number resulting from a measurement, a picture documenting an event, an inventory of participants in a meeting, the nucleotide sequence encoding a plant protein, or a digital mass spectrum derived from analysis of a small molecule.
 - Dr. Macrina points out that some data are “intangible,” like a digital series of numbers recorded from an instrument, or responses to a survey or notes from field observations.
 - Other data are “tangible,” like a fixed and stained histological section of tissue dissected from an earthworm. Each of these forms of data has its own unique challenges to ensure accurate recording and preservation.

Why are the management and retention of data important?

¹ Macrina, Francis L. (2000) Scientific Integrity: An Introductory Text With Cases, Chap. 11, ASM Press, Inc, Washington, DC, pp. 231-256.

It is important because:

- Recorded data provide the platform for analysis and interpretation of results from the field, laboratory, or library.
- Data is the basis for many forms of scholarly writings and serve as the definitive source of facts, observations and details of methods, procedures, or analyses.
- Recorded and preserved data foster the norms of accuracy, replication, and reliability in scientific research.
- Data provides the ability to understand precisely how a procedure was performed by someone else, and what was observed months or years before.
- Accurate and authenticated data records are critical for the documentation of inventions and the defense of patents.
- Recorded data are also critical in resolving challenges to data or conclusions, including formal allegations of research misconduct that may arise long after the primary researcher has moved on to another project or institution.

Who is responsible for data management and retention?

- Everyone who collects, analyzes, or reports data is a stakeholder with a personal and professional interest in the quality, accuracy, and preservation of their data.
- Researchers and their mentors share responsibility for data management and retention.

Who has rights to the data gathered by graduate students/post docs?

- The scholar or researcher who is the primary data collector.
- All who collaborate in the design of an experiment or project may have rights to the data collected.

- Purdue University also has rights to data collected by its employees and students using University resources, especially if the project is supported with University funds or with funds from a third party administered by the University.
- The University has an ownership interest in data collected under a sponsoring grant or contract from a third party such as a federal agency.
- Generally, the University's Principal Investigator or the faculty mentor directing the scholarship research has custodial responsibility for data collected under a grant or contract to Purdue University.
- As a result, it is the norm for original data collected under a sponsored project to be retained by the principal investigator/faculty mentor.
- It is customary for students to retain a copy of data collected in the course of their thesis or dissertation research.

How long must original data be maintained and accessible?

- The best answer is as long as possible.
- Practical standards for data retention and archiving of data vary among disciplines and with the form of the data.
- If the data were obtained with sponsorship (funding) from a grant or contract from a U.S. federal agency, regardless of discipline or form of data, it is a requirement that all grant or contract records, including original data, must be retained, preserved and available for review for at least three years after the final financial transaction involving the grant or contract.
- It is generally the responsibility of the Principal Investigator/faculty mentor to ensure that original data are retained, preserved and accessible.

When should data gathering, management, and retention be planned?

Before beginning research, every graduate student/post doc should have a formal discussion with his or her advisor or advisory committee to ensure that together they have planned how data will be recorded to ensure completeness and accuracy, and to ensure that data are preserved for future reference.

Purdue's Statement of Integrity

<http://www.purdue.edu/Purdue/Integrity/index.htm/>

Purdue's Responsible Conduct of Research

<http://www.gradschool.edu/rcr/>

Purdue's Policies and Procedures of Integrity in Research

http://www.purdue.edu/policies/pages/teach_res_out_reach/viii_3_1.html

*This brochure is adapted from The RCR Booklet, Graduate School, Purdue University
http://www.gradschool.purdue.edu/rcr/workshop_files/ResponsibleConductofResearchBooklet191208.pdf

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