

## Preserving and sharing research data<sup>1</sup> to advance, learning, discovery and knowledge

**What?** Good research rests on a foundation of sound data management practices. When data are properly organized and preserved, their accuracy and integrity controlled, the result is saved time and resources, and efficient research resting on high quality data. Ideally, data management is planned from the start of a research project and preferably involves all members of the research team.

**Why?** Both the Social Sciences and Humanities Research Council of Canada (SSHRC) and the Canadian Institutes of Health Research (CIHR) require that recipients of research grant funding preserve and make their data available to other researchers within a reasonable period of time. According to the SSHRC Research Data Archiving Policy<sup>2</sup>, a reasonable time period is “within two years of the completion of the research project for which the research data were collected.” The CIHR Policy on Access to Research Outputs<sup>3</sup> requires that research grant holders “retain original data sets arising from CIHR-funded research for a minimum of five years after the end of the grant.” Costs associated with data management and preparations for archival deposit are considered eligible expenses for research grant programmes. When implemented at the beginning and continued through the entire lifecycle of the research project, good data management practices need not incur major cost or time burdens if the team incorporates them with recognized data management standards.

Researchers themselves benefit greatly when they adopt proper data management practices. Some specific benefits to researchers from sharing data are:

- Promotion of the research that created the data and its outcomes
- A direct credit to the researcher(s) as a research output in its own right
- Encouragement of scientific inquiry and debate
- Facilitation of further research beyond the scope of the original research project
- New collaborations between data users and the data creators
- Support for the expansion of cross-disciplinary research
- Contribution to improved training for graduate and undergraduate students

Sharing data strengthens our collective capacity to innovate by providing opportunities to further analyze, replicate, verify and refine research findings, and to help fuel progress within fields of research. Greater availability of research data will, by way of secondary analysis of existing data, make possible significant economies of scale.

**How?** Researchers can share their data by depositing them in a specialized data archive or centre, in an institutional repository, via an online project or institutional website, or informally on a peer-to-peer basis. Deposit in a specialized data archive or data centre brings additional advantages in terms of ensuring the sustainability of data resources such as :

- A stable, secure environment
- Deposited data meet set quality thresholds
- Adherence to established metadata standards
- Regulated, controlled access to the research data when needed
- Standard citation mechanisms that acknowledge data ownership
- Data rights acknowledged through licensing arrangements when needed
- Long-term preservation

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<sup>1</sup> Research data are the documented units of information necessary to support or validate research findings regardless of the media on which they have been recorded – for example: quantitative social survey data, political and economic data sets, qualitative information such as interview transcripts, experimental research data, still and moving images, sound databases, and any other digital objects used for analytical purposes.

<sup>2</sup> [http://www.sshrc-crsh.gc.ca/site/apply-demande/policies-politiques/edata-donnees\\_electroniques-eng.aspx](http://www.sshrc-crsh.gc.ca/site/apply-demande/policies-politiques/edata-donnees_electroniques-eng.aspx)

<sup>3</sup> <http://www.cihr-irsc.gc.ca/e/34846.html>

- Routine data backups
- Conversion of data formats when needed due to software upgrades/changes, and migration of data to new hardware before technology becomes obsolete

One such example is a 2009 research proposal for a CIHR grant:

- The research team will collaborate with the Data Liberation Initiative (DLI) and a university library data centre.
- Personnel at the library data centre will provide expert advice on data management and documentation practices using state-of-the-art, Web-based technology.
- The data specialist will be an active member of the research team.
- Another data specialist, a recognized expert in the Data Documentation Initiative (DDI), will provide additional technical advice when needed.
- The DLI will provide the dissemination vehicle using its existing infrastructure.
- An archival data set, searchable at the variable level, in a secure environment within Statistics Canada's DLI dissemination network will be the result of this collaboration.

**Where?** Researchers proposing a research project that involves creating/collecting data are encouraged to enquire with their institutions' library data centre or service about archiving the research data. If it is not possible to deposit the data for archiving, the following can receive the data and provide advice and technical assistance:

University of Alberta Data Library  
<http://www.library.ualberta.ca/datalibrary/index.cfm>  
 Contact: Chuck Humphrey,  
[Chuck.Humphrey@ualberta.ca](mailto:Chuck.Humphrey@ualberta.ca)

Simon Fraser University Research Data Library  
<http://www.lib.sfu.ca/research-data-library/maps-data-gis>  
 Contact: Walter Piovesan, [walter@sfu.ca](mailto:walter@sfu.ca)

The University of British Columbia  
 Library Data Services  
<http://data.library.ubc.ca/>  
 Contact: Mary Luebbe, [mary.luebbe@ubc.ca](mailto:mary.luebbe@ubc.ca)

University of Toronto Data Library Service  
<http://www.chass.utoronto.ca/datalib/>  
 Contact: Laine Ruus, [laine.ruus@utoronto.ca](mailto:laine.ruus@utoronto.ca)

Carleton University Library Data Centre  
<http://www.library.carleton.ca/ssdata/>  
 Contact: Wendy Watkins,  
[wendy\\_watkins@carleton.ca](mailto:wendy_watkins@carleton.ca)  
 and Jane Fry, [jane\\_fry@carleton.ca](mailto:jane_fry@carleton.ca)

The University of Western Ontario Data  
 Resources Library  
<http://ssnds.uwo.ca/drl.html>  
 Contact: Vince Gray, [vince@uwo.ca](mailto:vince@uwo.ca)

Data Liberation Initiative (DLI)  
<http://www.statcan.gc.ca/dli-ild/dli-idd-eng.htm>  
 Contact: Michel Seguin, [infostats@statcan.gc.ca](mailto:infostats@statcan.gc.ca)

York University Institute for Social Research  
<http://www.isr.yorku.ca/>  
 Contact: Michael Ornstein, [ornstein@yorku.ca](mailto:ornstein@yorku.ca)

University of Guelph Data Resource Centre  
[http://www.lib.uoguelph.ca/resources/data\\_resource\\_centre/](http://www.lib.uoguelph.ca/resources/data_resource_centre/)  
 Contact: Michelle Edwards,  
[edwardsm@uoguelph.ca](mailto:edwardsm@uoguelph.ca)

International organizations that can also provide assistance:

Inter-university Consortium for Political and  
 Social Research (ICPSR)  
<http://www.icpsr.umich.edu/>

Queen's University Social Science Data Centre  
<http://library.queensu.ca/webdoc/ssdc/>  
 Contact: Jeff Moon, [moonj@queensu.ca](mailto:moonj@queensu.ca)

UK Data Archive (UKDA)  
<http://www.data-archive.ac.uk/>

GESIS – Leibniz Institute for the Social Sciences  
<http://www.gesis.org/en/institute/>

The **Canadian Association of Research Libraries (CARL)** is the leadership organization for Canada's research library community. Our members are the 28 largest Canadian university libraries as well as Canada's three major national libraries (Library and Archives Canada, the Canada Institute for Scientific and Technical Information [CISTI], and the Library of Parliament). CARL member libraries strive to provide researchers, teachers and students with full and authoritative information as quickly and in as cost-effective a manner as possible. As an Association, CARL's role is to facilitate scholarly communication for the benefit of the research community that we serve. <http://www.carl-abrc.ca/>