

GRIIDC Compendium of Training Resources

1. **Training Resource:** [Data Management Course for Graduate Students](#)

Organization: University of Minnesota Libraries

Website: <https://sites.google.com/a/umn.edu/data-management-workshop-series/>

Disciplines: All

Audience: Graduate students

Format: Online videos, [recorded session available online](#)

Description from UofMN: This short course on data management is designed for graduate students who seek to prepare themselves as “data information literate” scientists in the digital research environment. Videos and writing activities will prepare trainees for specific and long-term needs of managing research data. Experts share expectations and give advice on how to ethically share and preserve research data for long-term access and reuse.

Seven web based lessons include:

1. Introduction to Data Management (~5 minutes)
2. How to Inventory, Store, and Backup Your Data (~ 5 minutes)
3. How to Create Data that You (and Others) can Understand (~5 minutes)
4. How to Navigate Rights and Ownership of your Research Data (~9 minutes)
5. How to Share Your Data and Ethically Reuse Data Created by Others (~5 minutes)
6. How to Digitally Preserve Your Data for the Future (~5 minutes)
7. Complete your DMP (~5 minutes)

2. **Training Resource:** [Data Management Course –Engineering Section](#)

Organization: University of Minnesota Libraries

Website: https://sites.google.com/a/umn.edu/data-management-course_structures/

Disciplines: Engineering

Audience: Graduate students

Format: Online videos

Description from UofMN: This short course on data management is designed for graduate students in engineering disciplines who seek to prepare themselves as “data information literate” scientists in the digital research environment. Videos and writing activities will prepare trainees for specific and long-term needs of managing research data. Experts share expectations and give advice on how to ethically share and preserve research data for long-term access and reuse.

Seven web based lessons include:

1. Introduction to Data Management (~5 minutes)
2. Data to be Managed (~ 5 minutes)
3. Organization and Documentation (~5 minutes)
4. Data Access and Ownership (~9 minutes)
5. Data Sharing and Reuse (~5 minutes)
6. Preservation Techniques (~5 minutes)
7. Complete your DMP (~5 minutes)

3. **Training Resource:** [USGS Data Management Training Modules](#)

Organization: USGS

Website: <http://www.usgs.gov/datamanagement/training/modules.php>

Disciplines: General Science

Audience: Researchers, Data Stewards, Managers

Format: Online videos

Description from USGS: These three interactive modules help researchers, data stewards, managers and the public gain an understanding of the value of data management in science and provide best practices to perform good data management within their organization.

Three online presentation modules include:

1. Value of Data Management (~ 15 minutes)
2. Planning for Data Management (~ 15 minutes)
3. Best Practices for Preparing Science Data to Share (~ 20 minutes)

Additional reading about data management planning is also available on the USGS website <https://www.usgs.gov/products/data-and-tools/data-management/usgs-data-management-resources>.

4. **Training Resource:** [MANTRA Research Data Management Training](#)

Organization: University of Edinburgh

Website: <http://datalib.edina.ac.uk/mantra/>

Disciplines: All

Audience: Early career researchers, informational professionals, post-graduate students

Format: Online self-paced presentation, with embedded videos

Description from MANTRA: MANTRA is a free, online non-assessed course with guidelines to help you understand and reflect on how to manage the digital data you collect throughout your research. It has been crafted for the use of post-graduate students, early career researchers, and also information professionals. It is freely available on the web for anyone to explore on their own.

Through a series of interactive online units you will learn about terminology, key concepts, and best practice in research data management.

There are nine online units in this course and one set of offline (downloadable) data handling tutorials that will help you:

1. Understand the nature of research data in a variety of disciplinary settings
2. Create a data management plan and apply it from the start to the finish of your research project
3. Name, organize, and version your data files effectively
4. Gain familiarity with different kinds of data formats and know how and when to transform your data
5. Document your data well for yourself and others, learn about metadata standards and cite data properly
6. Know how to store and transport your data safely and securely (backup and encryption)
7. Understand legal and ethical requirements for managing data about human subjects; manage intellectual property rights
8. Recognize the importance of good research data management practice in your own context
9. Understand the benefits of sharing, preserving and licensing data for re-use
10. Improve your data handling skills in one of four software environments: R, SPSS, NVivo, or ArcGIS

Each unit takes up to one hour, plus time for further reading and carrying out the data handling exercises. In the units you will find explanations, descriptions, examples, exercises, and video clips in which academics, PhD students and others talk about the challenges of managing research data. The data handling tutorials assume some experience with each software environment and provide exercises in PDF along with open datasets to download and work through using your own installed software.

5. **Training Resource:** [New England Collaborative Data Management Curriculum \(NECDMC\)](http://library.umassmed.edu/necdmc/index)

Organization: University of Massachusetts Medical School

Website: <http://library.umassmed.edu/necdmc/index>

Disciplines: Health sciences, sciences, and engineering

Audience: Researchers, graduate students, undergraduates

Format: Downloaded materials including Word documents and PowerPoint Presentations

Description from NECDMC: Each of the curriculum's seven online instructional modules aligns with the National Science Foundation's data management plan recommendations and addresses universal data management challenges. Included in the curriculum is a collection of actual research cases that provides a discipline specific context to the content of the instructional modules. These cases come from a range of research settings such as clinical research, biomedical labs, an engineering project, and a qualitative behavioral health study. Additional research cases will be added to the collection on an ongoing basis. Each of the modules can be taught as a stand-alone class or as part of a series of classes. Instructors are welcome to

customize the content of the instructional modules to meet the learning needs of their students and the policies and resources at their institutions.

Seven modules include:

1. Overview of Research Data Management
 2. Types, Formats and Stages of Data
 3. Contextual Details Needed to Make Data Meaningful to Others
 4. Data Storage, Backup, and Security
 5. Legal and Ethical Considerations for Research Data
 6. Data Sharing & Reuse Policies
 7. Repositories, Archiving, & Preservation
6. **Training Resource:** [Digital Curation 101 Materials](#)
Organization: Digital Curation Centre (DCC)
Website: <http://www.dcc.ac.uk/training/train-the-trainer/dc-101-training-materials>
Disciplines: All
Audience: All
Format: Downloaded pdf documents
Description from DCC: Digital Curation 101 employs the curation lifecycle model sections as a means of presenting content to students. The DCC is keen to support the reuse of our generic training materials as the basis of more specific training aimed at different disciplines and/or institutions. Our generic materials are accessible below for review and tailoring.
Additional Notes: Resources include 52 handouts about different data and digital resource curation and preservation.
7. **Training Resource:** [Research Data Bootcamp](#)
Organization: University of Bristol
Website: <http://data.bris.ac.uk/research/bootcamp/>
Disciplines: All
Audience: Researchers
Format: Webpages with interactive quizzes
Description from Research Data Bootcamp: This online tutorial is appropriate for all members of the University who undertake research with some kind of digital aspect. It will be relevant whether or not your research is funded by an external sponsor. The aim is to enable you to produce high quality data with potential for long-term use.
The bootcamp is designed to:
- Introduce you to the concept of research data, what constitutes research data, and how it differs from other types of information
 - Help you to recognize the importance of good practice in managing research data in general and to apply it to your own research

8. **Training Resource:** [DATUM for Health: Research data management training for health studies](#)

Organization: Northumbria University Newcastle

Website: <http://www.northumbria.ac.uk/datum>

Disciplines: Health focus, but not necessarily registered in a school/faculty of health/medicine

Audience: Postgraduate students

Format: Downloaded materials including PowerPoint slides, Word and pdf documents

Description from Jorum website: The DATUM for Health training program is aimed at postgraduate research (i.e. doctoral) students (PGR) in health studies, including those whose PhD has a health focus but who are not necessarily registered in a school/faculty of health/medicine (e.g. in psychology, social sciences). The program covers both generic and discipline-specific issues, focusing on the management of qualitative, unstructured data, and is suitable for students at any stage of their PhD. It aims to provide PGR students with the knowledge to manage their research data at every stage in the data lifecycle, from its creation to its final storage or destruction. Students learn how to use their data more effectively and efficiently, how to store and destroy it securely, and how to make it available to a wider audience to increase its use, value and impact.

9. **Training Resource:** [Data Management Training for Anthropology](#)

Organization: University of Cambridge

Website: <http://www.lib.cam.ac.uk/dataman/datatrain/socanthintro.html>

Disciplines: Social Anthropology

Audience: Postgraduate students

Format: Materials can be read online; PowerPoint presentations and pdf files are available for download.

Descriptions from Data Train: The DataTrain teaching materials have been designed to familiarize postgraduate students in good practice in looking after their research data. A central tenet is the importance of thinking about this in conjunction with the projected outputs and publication of research projects. This teaching package is focused on data management for Social Anthropology.

The following materials are available for each course:

- Notes and PowerPoint presentations for a series of three course modules. Each is intended to run for 1.5 hours (minimum), and designed to encourage active participation and knowledge sharing from students. The duration might therefore change depending on the expected level of participation, as well as on instructors' preferences. The notes are detailed, providing the course instructors with background information and examples (though these should be supplemented or replaced with examples from the instructor's own department and experience in order to make the course as relevant as possible), while the PowerPoint slides are designed to act as prompts for key concepts and points of discussion.
- A list of useful software; this is a helpful addition to each of the three main modules.

- A list of references and web-based resources that can be handed out to participants for further reference.

10. **Training Resource:** [Data Train](#) for Archaeology

Organization: Archaeology Data Service

Website: <http://archaeologydataservice.ac.uk/learning/DataTrain>

Disciplines: Archaeology

Audience: Post-graduates

Format: Downloaded materials including PowerPoint presentations, and PDF or RTF documents

Description: The aim of this course is to equip first year post-graduate students with essential skills in looking after their research data for their PhD. By teaching data management as part of core postgraduate research skills training, habits of good practice will be established at an early stage of a researcher's career which they will take forward through the rest of their work.

Beyond and outside of academia, a demonstrable proficiency in data management is a highly valued cross-disciplinary and transferrable skill.

Eight modules include:

1. Creating and managing research data in archaeology: an overview
2. Data lifecycles and management plans
3. Working with digital data
4. Rights and digital data
5. E-Theses and supplementary digital data
6. Archiving digital data
7. Post-graduate data management plans
8. Project and professional data: data management on post-doctoral research projects and beyond

11. **Training Resource:** UK Data Service Training Book [“Managing and Sharing Research Data”](#) and [companion website](#)

Organization: UK Data Service

Website for book: <http://data-archive.ac.uk/media/2894/managingsharing.pdf>

Website: <http://ukdataservice.ac.uk/manage-data/handbook.aspx>

Disciplines: Social sciences

Audience: Researchers

Format: Book available for download (42 pages) and website

Description: Written by experts from the UK Data Archive with over 20 years experience, this book gives postgraduate students, researchers and research support and management staff the data management and sharing skills needed in today's changing research environment.

In this book there is guidance on:

- how to plan data management and data sharing for your research
- how to document and describe content for data

- how to format and organise research data
- how to store and transfer data
- research ethics and privacy in data sharing and intellectual property rights
- data strategies for collaborative research
- how to publish and cite research data
- opportunities and limitations in using other people's research data, illustrated with real-life data reuse cases

Illustrated with exercises and discussions to test your understanding and develop your skills, and numerous real case studies, this book is essential reading for anyone undertaking, managing or supporting research in the wider social and economic sciences.

12. **Training Resource:** [Research Data Management Training Materials](#)

Organization: University of Oxford

Website: http://damaro.oucs.ox.ac.uk/training_materials.xml

Disciplines: All

Audience: Early career researchers and postgraduate research students

Format: Materials for download include PowerPoint presentation and pdf documents

Description: The Data Management Rollout at Oxford (DaMaRO) Project ran a series of face-to-face training events, aimed chiefly at postgraduate research students and early career researchers. The final versions of the teaching materials from these events are available online for download.

13. **Training Resource:** [Data Management Short Course for Scientists](#)

Organization: Earth Science Information Partners (ESIP) Commons, with NOAA and the Data Conservancy

Website: <http://commons.esipfed.org/datamanagementshortcourse>

Disciplines: Scientists

Audience: Scientists, emerging scientists, and data professionals

Format: Videos can be streamed online and PowerPoint presentations are available for download

Description: The ESIP Federation, in cooperation with NOAA and the Data Conservancy, seeks to share the community's knowledge with scientists who increasingly need to be better data managers, as well as to support workforce development for new data management professionals. Four sections include:

1. The Case for Data Stewardship
2. Data Management Plans
3. Local Data Management
4. Responsible Data Use

14. **Training Resource:** [Education Modules](#)

Organization: DataOne

Website: <https://www.dataone.org/education-modules>

Disciplines: All

Audience: All

Format: PowerPoint presentations available for download

Description: A series of education modules in *.ppt format that you can download and incorporate into your teaching materials. Ten modules include:

1. Why Data Management?
2. Data Sharing
3. Data Management Planning
4. Data Entry and Manipulation
5. Data Quality Control and Assurance
6. Data Protection and Backups
7. Metadata
8. How to Write Quality Metadata
9. Data Citation
10. Analysis and Workflows

15. **Training Resource:** [Data Management for Data Providers](#)

Organization: Oak Ridge National Laboratory Distributed Active Archive (ORNL-DAAC)

Website: http://daac.ornl.gov/PI/pi_info.shtml

Disciplines: Science

Audience: Data providers

Format: Website and online webinars

Description: These pages provide an overview of data management planning and preparation and offer practical methods to successfully share and archive your data. Topics covered include planning, managing, and archiving environmental data. Webinars available include good data management practices for tabular data and spatial data, amongst others.

16. **Training Resource:** [Data Management Plan Tutorial](#)

Organization: Pennsylvania State University

Website: <https://www.e-education.psu.edu/dmpt/>

Disciplines: Science

Audience: Faculty, students, staff

Format: Website with embedded video

Description: This tutorial is designed to help Penn State faculty, students, and staff involved in grant proposal writing to understand what a DMP is, what it enables for a research project, what goes into a DMP, and how to think through some of the issues that can emerge with data - such as security and protections for restricted data, as well as storage and preservation of data. Running throughout the tutorial is the scenario of a graduate student assisting a faculty member

in writing a data management plan. This scenario-based tutorial consists of modules that provide context and information for each component of a DMP; video interviews with researchers and an archivist who talk about real-world data management challenges; and readings and other resources on data management to inform faculty and students further in the development of their plans.

7 modules include:

1. Introduction to Data Management Plans
2. Data and Data Collection
3. Documenting the Data
4. Policies for Data Sharing and Access
5. Reuse and Redistribution of Data
6. Long-Term Preservation and Archiving of Data
7. Next Steps to Take

17. **Training Resource:** [Guide to Social Science Data Preparation and Archiving: Best Practices Throughout the Data Life Cycle, 5th Edition](#)

Organization: Inter-University Consortium for Political and Social Research

Website: <http://www.icpsr.umich.edu/files/deposit/dataprep.pdf>

Disciplines: Social Sciences

Audience: All

Format: Book, 44 pages available for download

Description: The *Guide to Social Science Data Preparation and Archiving* is aimed at those engaged in the cycle of research, from applying for a research grant, through the data collection phase, and ultimately to preparation of the data for deposit in a public archive. The *Guide* is a compilation of best practices gleaned from the experience of many archivists and investigators. The reader should note that the *Guide* does not attempt to address policies and procedures specific to certain archives, as they vary. Most public social science archives encourage investigators to contact them at any point in the research process to discuss their plans with respect to the design and preparation of public-use datasets.

18. **Training Resource:** [Responsible Conduct of Research Data Management](#)

Organization: Northern Illinois University

Website: http://www.ori.dhhs.gov/education/products/n_illinois_u/flash/rcr.html

Disciplines: All

Audience: Faculty and graduate students

Format: Online self-paced HTML or flash presentations

Description: The module is intended for self-paced learning by faculty and graduate students in the initial stages of their research careers, those involved in providing support for research activities, or by anyone interested in learning more about research data management issues. The module content is organized under seven topics as:

1. Overview of Data Management
2. Data Selection
3. Data Collection
4. Data Handling
5. Data Analysis
6. Data Reporting and Publishing
7. Data Ownership.

It is suggested that users go through the content in the order listed above. However, if a user would like to go through only particular topics, then it is highly recommended that the Overview of Data Management topic be viewed first before the other topics. Each topic includes an outline, quizzes, games, a glossary and case studies.

19. **Training Resource:** [Foster Open Science Free Training Courses](#)

Organization: Foster Open Science

Website: <https://www.fosteropenscience.eu/>

Disciplines: All

Audience: Many different users - from early-career researchers, to data managers, librarians, research administrators, and graduate schools

Format: Online self-paced presentation, with embedded videos

Description: The FOSTER taxonomy defines Open Science as the movement to make scientific research, data and dissemination accessible to all levels of an inquiring society. These courses answer some of the most common questions you might have about putting open science into practice. Each course takes about 1-2 hours to work through and you'll receive a badge upon completion. The courses include practical tips on getting started with OS as well as providing information on discipline specific tools and resources you can use. There is no specified order through the courses – just explore topics that you want to learn more about at your own pace.

Courses include: What is open science?; best practices; managing and sharing research data; OSS and workflows; data protections and ethics; open licensing; open access publishing; sharing preprints; open peer review; and open science and innovation.

20. **Training Resource:** [NOAA NCEI Metadata Training](#)

Organization: NOAA- National Center for Environmental Information (NCEI)

Website: <https://www.ncddc.noaa.gov/metadata-standards/metadata-training/>;

ftp://ftp.ncddc.noaa.gov/pub/Metadata/Online_ISO_Training/Intro_to_ISO/

Disciplines: Marine Science metadata

Audience: Researchers, students, data managers, etc.

Format: Exercises, handouts, presentations, recorded sessions, etc.

Description: Metadata is integral to data management and data archive activities. The National Centers for Environmental Information (NCEI) provides metadata training to help data providers

and data managers accomplish the goal of providing discovery-level, access-level and understanding-level metadata for their geospatial and environmental data. NCEI's metadata training focus is on the development of ISO 19115-2 and related standards in accordance with NOAA's Data Documentation Directive. Other metadata topics can be addressed as needed.