Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
ACRL Research Planning and Review Committee	ACRL Research Planning and Review Committee. 2018 top trends in academic libraries: A review of the trends and issues affecting academic libraries in higher education. College & Research Libraries Vol 79, No 6 (2018)	https://crln.acrl.org/index.php/crlnews/article/view/17001/18750	Every other year, the ACRL Research Planning and Review Committee produces a document on top trends in higher education as they relate to academic librarianship. Topics in this edition of ACRL Top Trends will be familiar to some readers who will hopefully learn of new materials to expand their knowledge. Other readers will be made aware of trends that are outside of their experience. This is the nature of trends in our current technological and educational environments: change is continual, but it affects different libraries at different rates. The 2018 top trends share several overarching themes, including the impact of market forces, technology, and the political environment on libraries.

The establishment of data science programs at numerous institutions has led to the need for librarians to adapt and integrate growing management, accessibility, and technical subject expertise to support data scientists.45 Professional associations and information science programs should continue to expand and enhance training in data management and data analytics to prepare librarians in using and addressing big data questions with colleagues and patrons. |
| Nishtha Anilkumar | Anilkumar, N. (2018). Research Data Management in India: A Pilot Study. In EPJ Web of Conferences (Vol. 186, p. 03002). EDP Sciences. | https://epjwoc.epj.org/articles/epjconf/abs/2018/21/epjconf_lisaviii2018_03002/epjconf_lisaviii2018_03002.html | "A survey was done to assess the awareness about data curation, data archival policies, infrastructure required, technologies used, etc. The survey sample consisted of 15 national research / academic institutes in India. The study showed that libraries' role in data management in research / academic institutes was still at a very early stage of development in India.The survey shows that in India, RDM carried out by libraries is still at the nascent stage of development and will take a few years more to become an integral part of RDM activity in research and academic institutes." |
| Chris Awre, Jim Baxter, Brian Clifford, Janette Colclough, Andrew Cox, Nick Dods, Paul Drummond, Yvonne Fox, Martin Gill, Kerry Gregory, Anita Gurney, Juliet Harland, Masud Khokhar, Dawn Lowe, Ronan O'Beirne, Rachel Proudfoot, Hardy Schwamm, Andrew Smith, Eddy Verbaan, Liz Waller, Laurian Williamson, Martin Wolf, Matthew Zawadzki | Awre, Chris, et al. "Research data management as a "wicked problem"." Library Review 64.4/5 (2015): 356-371. | https://www.emeraldinsight.com/doi/full/10.1108/LR-04-2015-0043 | "Participants from ten Higher Education Institutions in Northern England were invited to attend a series of two workshops in the summer of 2014. Library-based contacts were invited to nominate one or two non-library colleagues with RDM roles to participate. Thus, the final mix included librarians, information technology (IT) staff and research administrators." |
| European Commission Open Science Policy Platform | Ayris, P., & Ignat, T. (2018). Defining the role of libraries in the Open Science landscape: a reflection on current European practice. Open Information Science, 2(1), 1-22. | | Abstract: This collaborative paper looks at how libraries can engage with and offer leadership in the Open Science movement. It is based on case studies and the results of an EU-funded research project on Research Data Management taken from European research-led universities and their libraries.

Expresses need for training for researchers and the public (in order to support Citizen Science endeavors) |
| Sarah Barbrow, Denise Brush, and Julie Goldman | Barbrow, S., Brush, D., & Goldman, J. (2017). Research data management and services: Resources for novice data librarians. College & Research Libraries News, 78(5) | https://crln.acrl.org/index.php/crlnews/article/view/16660/18116 | "Often, [RDM] service starts with helping faculty write data management plans, now required by many federal granting agencies. Libraries with more developed services may work with researchers as they decide how to archive and share data once the grant work is complete. As RDM services become more common, academic librarians are often asked by their library administrators to start offering these services locally. Most librarians have no experience in managing research data at any point in the research life cycle. They need ways to educate themselves on the job through targeted professional development programs and self-directed training." |
| Tania P. Bardyn, University of WashingtonFollow
Emily F. Patridge, University of WashingtonFollow
Michael T. Moore, University of WashingtonFollow
Jane J. Koh, University of Washington | Bardyn, T. P., Patridge, E. F., Moore, M. T., & Koh, J. J. (2018). Health Sciences Libraries Advancing Collaborative Clinical Research Data Management in Universities. Journal of eScience Librarianship, 7 (2) | https://escholarship.umassmed.edu/jeslib/vol7/iss2/4/ | Clinical Research Data Management (CRDM)

Need for campus partnerships // services offered in library space include REDCap, mobile app development consulting, cloud-based data storage, "omics" data nexus, EHR data, biomedical informatics consultation, Population health research consultations: A Care Management and Population Health Librarian assists in systematic reviews, searching databases for population health information, and finding datasets

"Medical librarians are developing new skills by supporting and teaching CRDM. Clinical and data librarians better understand the information needs of clinical and translational researchers by being involved in the earlier stages of the research cycle and identifying technologies that can improve healthcare outcomes. At health sciences libraries, leveraging existing resources and bringing services together is central to how university medical librarians will operate in the future." |
| Ángel Borrego, Jordi Ardanuy, Cristóbal Urbano | Borrego, Á., Ardanuy, J., & Urbano, C. (2018). Librarians as Research Partners: Their Contribution to the Scholarly Endeavour Beyond Library and Information Science. The Journal of Academic Librarianship. | https://www.sciencedirect.com/science/article/abs/pii/S009913331830106X | RDM one way for librarians to contribute at their institutions |
| Rebecca Bryant
Anna Clements
Carol Feltes
David Groenewegen
Simon Huggard
Holly Mercer
Roxanne Missingham
Maliaca Oxnam
Anne Rauh
John Wright | Bryant, R., Feltes, C., Clements, A., & Groenewegen, D. (2017). Research Information Management: Defining RIM and the Library's Role. | https://www.oclc.org/research/publications/2017/oclcresearch-defining-rim.html | Research information management (RIM) is the aggregation, curation, and utilization of information about research and is emerging as an area of increasing interest and relevance in many university libraries. RIM intersects with many aspects of traditional library services in discovery, acquisition, dissemination, and analysis of scholarly activities, and does so through the nexus with institutional data systems, faculty workflows, and institutional partners. RIM adoption offers libraries new opportunities to support institutional and researcher goals.

In this paper prepared by Rebecca Bryant, OCLC Research Senior Program Officer, and a working group of librarians representing OCLC Research Library Partnership institutions, learn more about what RIM is, what is driving RIM adoption, and the library's role in RIM.

The publication is intended to help libraries and other institutional stakeholders understand developing research information management practices—and particularly the value add that libraries can offer in a complex ecosystem.

This work is part of a suite of publications and resources around RIM practices. |

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
OCLC	Bryant, Rebecca, Brian Lavoie and Constance Malpas. 2017. A Tour of the Research Data Management (RDM) Service Space. The Realities of Research Data Management, Parts 1&2. Dublin, OH: OCLC Research. https://doi.org/10.25333/C3PG8J.	https://www.oclc.org/research/publications/2017/oclcresearch-rdm-part-one-service-space-tour.html	"This is the first in a series of reports by OCLC Research which examines the context, influences and choices higher education institutions face in building or acquiring RDM capacity—in other words, the infrastructure, services and other resources needed to support emerging data management practices. Our findings are derived from detailed case studies of four research universities, hailing from four distinct national contexts: the University of Edinburgh (UK), the University of Illinois at Urbana-Champaign (US), Monash University (Australia) and Wageningen University & Research (the Netherlands)." "Another important aspect of Education RDM services is to acquaint researchers with the rudiments of good data management practices. This might include tools and advice on crafting effective data management plans, guidelines for creating descriptive metadata to promote discovery of archived data sets, and workshops or training sessions aimed at RDM skill-building." "Another example of Expertise-related RDM services are training programs for internal staff with current or future responsibilities for supporting data management at the institution. Often termed as "train-the-trainer" programs, these initiatives focus on creating the expertise needed to support the kinds of services described above."
Helena Silvennoinen-Kuikka, Tomi Rosti	Building the Research Support and Open Sciences Services at the University of Eastern Finland Library (UEF), LIBER 2018	https://www.uef.fi/en/web/kirjasto/tutkimusdatan-hallinta	The Publishing and Data Policy of the University of Eastern Finland and increasing number of research funders require that good management of research data is a part of the research process. The Academy of Finland, European Commission's Horizon 2020 framework programme and Tekes (the Finnish Funding Agency for Innovation) of the key funders have outlined requirements for the data management. With the help of a meticulously planned data management, a researcher can perceive the entire life cycle of the research data, diminish the risks related to it as well as ensure its ethical, secure and efficient use during and after the research. According to the Data Policy of the University of Eastern Finland, a research data management plan should be made for the research at the planning phase. Especially research funded by public funding should be planned so that it can be made open whenever and to the degree it is possible in view of the agreements concluded, legislation and the principles of research ethics. Archiving data used and produced in the research either to a closed or open data archive ensures its preservation and future availability. In addition, besides the produced research data, in order to secure its findability and usability, descriptive and technical information, i.e. so-called metadata of the content is needed. If you wish to make the research data openly available, a suitable institutional, national or international data archive must be chosen and the usage rights must be defined, e.g. with a Creative Commons licence.
Margaret H. Burnette, University of Illinois at Urbana-Champaign Sarah C. Williams, University of Illinois at Urbana-Champaign Heidi J. Imker, University of Illinois at Urbana-Champaign	Burnette, M. H., Williams, S. C., & Imker, H. J. (2016). From Plan to Action: Successful Data Management Plan Implementation in a Multidisciplinary Project. Journal of eScience Librarianship, 5(1),	https://escholarship.umassmed.edu/jeslib/vol5/iss1/6/	The objective of this study was to document how a multidisciplinary research team, after consultation with the University of Illinois Library, took steps to implement a data management plan. Despite the initial investment that data management requires, researchers report significant benefits. "While data management planning becomes more commonplace, moving from planning into implementation remains a hurdle for many researchers. With little specific guidance from funding agencies and libraries in the early stages of developing services to assist researchers, insights into what contributes to successful data management are sorely needed."
Matt Burton Liz Lyon Chris Erdmann Bonnie Tijerina	Burton, Matt and Lyon, Liz and Erdmann, Chris and Tijerina, Bonnie (2018) Shifting to Data Savvy: The Future of Data Science In Libraries. Project Report. University of Pittsburgh, Pittsburgh, PA.	http://d-scholarship.pitt.edu/33891/	*Project Report* The Data Science in Libraries Project is funded by the Institute for Museum and Library Services (IMLS) and led by Matt Burton and Liz Lyon, School of Computing & Information, University of Pittsburgh; Chris Erdmann, North Carolina State University; and Bonnie Tijerina, Data & Society. The project explores the challenges associated with implementing data science within diverse library environments by examining two specific perspectives framed as 'the skills gap,' i.e. where librarians are perceived to lack the technical skills to be effective in a data-rich research environment; and 'the management gap,' i.e. the ability of library managers to understand and value the benefits of in-house data science skills and to provide organizational and managerial support. This report primarily presents a synthesis of the discussions, findings, and reflections from an international, two-day workshop held in May 2017 in Pittsburgh, where community members participated in a program with speakers, group discussions, and activities to drill down into the challenges of successfully implementing data science in libraries. Participants came from funding organizations, academic and public libraries, nonprofits, and commercial organizations with most of the discussions focusing on academic libraries and library schools.
Jake Carlson – Research Data Services Manager, UM Library	Carlson, J. Analyzing Local Standards of Data Practice to Inform Library Data Services	In folder	Research experiences for master's students 12-week paid summer research experience May 26-August 14, 2015
Jake Carlson, Megan Sapp Nelson, Lisa R. Johnston and Amy Koshoffer	Carlson, J., Nelson, M. S., Johnston, L. R., & Koshoffer, A. (2015). Developing data literacy programs: Working with faculty, graduate students and undergraduates. Bulletin of the Association for Information Science and Technology, 41(6), 14-17.		"Building data information literacy among faculty, graduate students and undergrads was the focus of a 2015 RDAP Summit panel, with panelists describing programs at different institutions geared to each of these target groups. The Data Information Literacy project identified 12 key competencies for graduate students and how librarians could help build those skills. The Data Management Strategies Self-Assessment encourages junior faculty members to objectively consider their research data management practices and to prioritize issues and tasks. Identifying and addressing the data information literacy competencies of undergraduate students is challenging, with their widely diverse backgrounds and needs. Varied creative approaches, such as embedding lessons within a class, presenting workshops and developing partnerships and research mentorships, have been successful."
Denise A. Wetzel	Changing the STEM Librarian Conversation with FSU's STEM Librarians	http://libguides.lib.usm.edu/ld.php?content_id=43346313	*Unpublished -- from a conference* Florida State University's (FSU) STEM Librarians are integral change agents in the academic science librarian conversation. During this data blitz, 4 FSU STEM Librarians share how they are changing the science librarianship conversation from that of passive building watchers, to active participants in the FSU STEM education landscape. With several new, or nearly new, STEM librarians hired over the course of 2 years, FSU developed an atmosphere of change that permeates all aspects of STEM librarianship. Tinkering at the micro-innovation level allowed multiple changes to occur simultaneously, while also moving STEM librarianship forward for the FSU community. Topics discussed during this data blitz presentation will include targeted research data services, departmental level curriculum mapping projects, redesigning STEM instruction for undergraduate students, and cultural reorganization & outreach initiatives.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Xiujuan Chenac Ming Wu	Chen, X., & Wu, M. (2017). Survey on the Needs for Chemistry Research Data Management and Sharing. The Journal of Academic Librarianship, 43 (4), 346-353.	https://www.sciencedirect.com/science/article/pii/S0099133317301209	"This paper aims to reveal the situation of research data in chemistry research process and chemistry researchers' need for data management support from five perspectives, i.e., data generation and collection, data recording and processing, data preservation and backup, data publication and sharing, needs for data management and sharing services. Our survey is based on a questionnaire carried out among 119 subjects, i.e., researchers and graduate students in chemistry of Chinese Academy of Science. The analysis results provide us with a better understanding on the current attitudes and needs of researchers and graduate students about data management and sharing in chemistry. Although this survey was implemented in chemistry, it could provide us with some inspirations for designing a range of library services for other disciplines, particularly in promotion, consulting and training of research data management and sharing, and research data storage."
Josiline Chigwada, Blessing Chiparausha, Justice Kasiroori	Chigwada, J., Chiparausha, B. & Kasiroori, J., (2017). Research Data Management in Research Institutions in Zimbabwe. Data Science Journal. 16, p.31. DOI: http://doi.org/10.5334/dsj-2017-031	https://datascience.codata.org/articles/10.5334/dsj-2017-031/	"The research was aimed at evaluating how research data are being managed in research institutions in Zimbabwe. The study also sought to assess the challenges that are faced in research data management by research institutions in Zimbabwe. Twenty five institutions of higher learning and other organisations that deal with research were selected using purposive sampling to participate in the study. [...] It was found out that proper research data management is not being done. Researchers were managing their own research data. Most of the research data were in textual and spreadsheet format. Graphical, audio, video, database, structured text formats and software applications research data were also available. Lack of guidelines on good practice, inadequate human resources, technological obsolescence, insecure infrastructure, use of different vocabulary between librarians and researchers, inadequate financial resources, absence of research data management policies and lack of support by institutional authorities and researchers negatively impacted on research data management. Authors recommend the establishment of research data repositories and use of existing research data repositories that are registered with the Registry of Research Data Repositories to ensure that research data standards are adhered to when doing research."
Gobinda Chowdhury, Yurdagul Unal, Serap Kurbanoglu, Joumana Boustany, Geoff Walton	Chowdhury, G., Unal, Y., Kurbanoglu, S., Boustany, J., & Walton, G. (2018). Research data management and data sharing behaviour of university researchers.		**Unable to obtain ILL;** Survey
Sheila Corrall Mary Anne Kennan Waseem Afzal	Corrall, S., Kennan, M. A., & Afzal, W. (2013). Bibliometrics and research data management services: Emerging trends in library support for research. Library Trends, 61(3), 636-674.	https://muse.jhu.edu/article/508619/summary	Developments in network technologies, scholarly communication, and national policy are challenging academic libraries to find new ways to engage with research communities in the economic downturn. Librarians are responding with service innovations in areas such as bibliometrics and research data management. Previous surveys have investigated research data support within North America and other research services globally with small samples. An online multiple-choice questionnaire was used to survey bibliometric and data support activities of 140 libraries in Australia, New Zealand, Ireland, and the United Kingdom, including current and planned services, target audiences, service constraints, and staff training needs. A majority of respondents offered or planned bibliometrics training, citation reports, and impact calculations but with significant differences between countries. Current levels of engagement in data management were lower than for bibliometrics, but a majority anticipated future involvement, especially in technology assistance, data deposit, and policy development. Initiatives were aimed at multiple constituencies, with university administrators being important clients and partners for bibliometric services. Gaps in knowledge, skills, and confidence were significant constraints, with near-universal support for including bibliometrics and particularly data management in professional education and continuing development programs. The study also found that librarians need a multilayered understanding of the research environment.
UK Data Service	Corti, L., Van den Eynden, V., Bishop, L., & Woollard, M. (2014). Managing and sharing research data: a guide to good practice. Sage.	https://us.sagepub.com/en-us/nam/managing-and-sharing-research-data/book240297	Research funders in the UK, USA and across Europe are implementing data management and sharing policies to maximize openness of data, transparency and accountability of the research they support. Written by experts from the UK Data Archive with over 20 years experience, this book gives post-graduate students, researchers and research support staff the data management skills required in today's changing research environment. The book features guidance on: how to plan your research using a data management checklist how to format and organize 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 data how to make use of other people's research data, illustrated with six real-life case studies of data use.
Andrew M. Cox Stephen Pinfield	Cox, A. M., & Pinfield, S. (2014). Research data management and libraries: Current activities and future priorities. Journal of Librarianship and Information Science, 46(4), 299-316.	http://journals.sagepub.com/doi/10.1177/0961000613492542	"This paper reports research carried out at the end of 2012 to survey UK universities to understand in detail the ways in which libraries are currently involved in research data management and the extent to which the development of research data management services is a strategic priority for them. The research shows that libraries were offering limited research data management services, with highest levels of activity in large research-intensive institutions. There were major challenges associated with skills gaps, resourcing and cultural change. However, libraries are currently involved in developing new institutional research data management policies and services, and see this as an important part of their future role. Priorities such as provision of research data management advisory and training services are emerging." "there is an argument that providing RDM advice and training could be seen as a natural extension of existing library work in advice services and information literacy training"
Andrew M. Cox Mary Anne Kennan Liz Lyon Stephen Pinfield	Cox, A. M., Kennan, M. A., Lyon, L., & Pinfield, S. (2017). Developments in research data management in academic libraries: Towards an understanding of research data service maturity. Journal of the Association for Information Science and Technology, 68(9), 2182-2200.	https://onlinelibrary.wiley.com/doi/full/10.1002/asi.23781	Landscape maturity model "This article reports an international study of research data management (RDM) activities, services, and capabilities in higher education libraries. It presents the results of a survey covering higher education libraries in Australia, Canada, Germany, Ireland, the Netherlands, New Zealand, and the UK. The results indicate that libraries have provided leadership in RDM, particularly in advocacy and policy development. Service development is still limited, focused especially on advisory and consultancy services (such as data management planning support and data-related training), rather than technical services (such as provision of a data catalog, and curation of active data). Data curation skills development is underway in libraries, but skills and capabilities are not consistently in place and remain a concern. Other major challenges include resourcing, working with other support services, and achieving "buy in" from researchers and senior managers."

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Lisa R. Johnston	Curating Research Data, Volumes One and Two: Practical Strategies for Your Digital Repository (book)	http://www.ala.org/acrl/sites/ala.org.acrl/files/content/publications/booksanddigitalresources/digital/9780838988596_crd_v1_OA.pdf	These volumes present those tasked with long-term stewardship of digital research data a blueprint for how to curate those data for eventual reuse. Data are becoming the proverbial coin of the digital realm: a research commodity that might purchase reputation credit in a disciplinary culture of data sharing, or buy transparency when faced with funding agency mandates or publisher scrutiny. Unlike most monetary systems, however, digital data can flow in all too great an abundance. This profusion of digital research data challenges library and information science professionals to harness the flow of information streaming from research discovery and scholarly pursuit and preserve the unique evidence for future use. Volume One, "Practical Strategies for Your Digital Repository," explores the concepts of research data and the types and drivers for establishing digital data repositories. Volume Two, "A Handbook of Current Practice," looks across the data lifecycle and into the practical strategies and techniques for curating research data in a digital repository setting. Data curators, archivists, research data management specialists, subject librarians, institutional repository managers, and digital library staff will benefit from these current and practical approaches to data curation.
Digital Curation Center	Curation Checklists	http://www.dcc.ac.uk/sites/default/files/documents/Curation%20Checklists.pdf	Checklists for digital curation
Jake Carlson Lisa R. Johnston	Data Information Literacy: Librarians, Data, and the Education of a New Generation of Researchers (ePub book)	http://www.thepress.purdue.edu/titles/format/9781612493527	Given the increasing attention to managing, publishing, and preserving research datasets as scholarly assets, what competencies in working with research data will graduate students in STEM disciplines need to be successful in their fields? And what role can librarians play in helping students attain these competencies? In addressing these questions, this book articulates a new area of opportunity for librarians and other information professionals, developing educational programs that introduce graduate students to the knowledge and skills needed to work with research data. The term "data information literacy" has been adopted with the deliberate intent of tying two emerging roles for librarians together. By viewing information literacy and data services as complementary rather than separate activities, the contributors seek to leverage the progress made and the lessons learned in each service area. The intent of the publication is to help librarians cultivate strategies and approaches for developing data information literacy programs of their own using the work done in the multiyear, IMLS-supported Data Information Literacy (DIL) project as real-world case studies. The initial chapters introduce the concepts and ideas behind data information literacy, such as the twelve data competencies. The middle chapters describe five case studies in data information literacy conducted at different institutions (Cornell, Purdue, Minnesota, Oregon), each focused on a different disciplinary area in science and engineering. They detail the approaches taken, how the programs were implemented, and the assessment metrics used to evaluate their impact. The later chapters include the "DIL Toolkit," a distillation of the lessons learned, which is presented as a handbook for librarians interested in developing their own DIL programs. The book concludes with recommendations for future directions and growth of data information literacy. More information about the DIL project can be found on the project's website: datainfolit.org.
National Academies of Sciences Engineering Medicine	Data Science for Undergraduates: Opportunities and Options	http://sites.nationalacademies.org/cstb/currentprojects/cstb_175246	*Lots of publicity over this (e.g., webinars)* As our economy, society, and daily life become increasingly dependent on data, work across nearly all fields is becoming more data driven, affecting both the jobs that are available and the skills that are required. At the request of the National Science Foundation, the National Academies of Sciences, Engineering, and Medicine were asked to set forth a vision for the emerging discipline of data science at the undergraduate level. The study committee considered the core principles and skills undergraduates should learn and discussed the pedagogical issues that must be addressed to build effective data science education programs. Data Science for Undergraduates: Opportunities and Options underscores the importance of preparing undergraduates for a data-enabled world and recommends that academic institutions and other stakeholders take steps to meet the evolving data science needs of students.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
			Objectives: Many librarians are taking on new roles in research data services. However, the emerging field of data librarianship, including specific roles and competencies, has not been clearly established. This study aims to better define data librarianship by exploring the skills and knowledge that data librarians utilize and the training that they need to succeed.

Methods: Librarians who do data-related work were surveyed about their work and educational backgrounds and asked to rate the relevance of a set of data-related skills and knowledge to their work.

Results: Respondents considered a broad range of skills and knowledge important to their work, especially "soft skills" and personal characteristics, like communication skills and the ability to develop relationships with researchers. Traditional library skills like cataloging and collection development were considered less important. A cluster analysis of the responses revealed two types of data librarians: data generalists, who tend to provide data services across a variety of fields, and subject specialists, who tend to provide more specialized services to a distinct discipline.

Discussion: The findings of this study suggest that data librarians provide a broad range of services to their users and, therefore, need a variety of skills and expertise. Libraries hiring a data librarian may wish to consider whether their communities will be best served by a data generalist or a subject specialist and write their job postings accordingly. These findings also have implications for library schools, which could consider adjusting their curricula to better prepare their students for data librarian roles.

1. Data management
a. Data management planning
b. Data preservation, curation, or stewardship
c. Developing or applying ontologies and metadata
d. Support for data resources (such as National Center for Biotechnology Information [NCBI] and other molecular biology databases, data repositories, etc.)
e. Support for clinical data management
f. Support for general data management
g. Bioinformatics support
h. Support for data use and analysis
i. Support for institutional repository
j. Development of data services

2. Technology and information technology (IT)
a. Data visualization
b. Scientific programming (such as R, Python, Javascript, etc.)
c. Statistical software (such as SAS, SPSS, MATLAB, etc.)
d. Developing and maintaining websites
e. Geographic information system (GIS) software and data

3. Evaluation and assessment
a. Evaluation of classes or instructional programs
b. Evaluation of services
c. Needs assessment

4. Teaching and instruction
a. Course-integrated instruction
b. Development of course content or curricula
c. Development of online tutorials, course materials, or instructional guides
d. One-on-one consultation or instruction
e. Staff or librarian training

5. Marketing and outreach
a. Data-specific liaison services
b. General library liaison services
c. Social media
d. Developing relationships with researchers, faculty, etc.

6. Library skills
a. Collection development
b. Library and institutional committee service
c. Reference support
d. Literature searching and systematic review support
e. Scholarly communication support (copyright, support for scholarly publishing, etc.)
f. Cataloging

7. Professional involvement
a. Academy of Health Information Professionals membership
b. Participation in continuing education or professional development activities
c. Conducting research and/or writing journal articles

8. Skills and personal attributes
a. Customer service skills
b. Innovation and creativity
c. Oral communication and presentation skills
d. Written communication skills
e. Supervisory skills
f. Teaching skills
g. Teamwork and interpersonal skills
h. Management and leadership skills

9. Education and training
a. American Library Association (ALA)–accredited master's degree
b. Science master's degree
c. Other non-ALA, non-science master's degree
d. Undergraduate science degree
e. Doctorate (PhD)
f. Specialized librarianship certification (such as data or medical library certification) |
| Lisa Federer | Defining Data Librarianship: a survey of competencies, skills and training JMLA 106 (3) 2018 | https://www-ncbi-nlm-nih-gov.ezp-prod1.hul.harvard.edu/pmc/articles/PMC6013124/pdf/jmla-106-294.pdf | |

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Digital Curation Centre (Graham Pryor, Sarah Jones and Angus Whyte, editors)	Delivering Research Data Management Services (book)	http://www.dcc.ac.uk/news/new-book-delivering-research-data-management-services	Step-by-step guidance to setting up and running effective institutional research data management services to support researchers and networks.

This 'how-to' guide includes case studies from the newly emerging service infrastructures in the UK, USA and Australia. Different approaches are highlighted and compared; for example, a researcher-focused strategy from Australia is contrasted with a national, top-down approach, and a national research data management service is discussed as an alternative to institutional services. |
| Susanne den Boer, Lars Holm Rasmussen, Thea Marie Drachen, Asger Væring Larsen, Bertil F. Dorch, Peter Sandøe | den Boer, S., Rasmussen, L. H., Drachen, T. M., Larsen, A. V., Dorch, B. F., & Sandøe, P. (2017). Research data management. In K. K. Jensen, L. Whiteley, & P. Sandøe (Eds.), RCR – A Danish textbook for courses in Responsible Conduct of Researc (2. ed., pp. 52-69). Department of Food and Resource Economics, University of Copenhagen. | https://research.ku.dk/search/?pure=en/publications/research-data-management(be1f8c5a-37a8-4471-a6a6-52ef20965629).html | Research data management
Research output: Chapter in Book/Report/Conference proceeding › Book chapter › Education |
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Claire Stewart Associate University Librarian for Research and Learning University of Minnesota

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Jennifer Darragh Research Data Management Consultant Duke University | Developing and Scaling Research Data Management and Curation (project) | https://www.cni.org/topics/digital-curation/developing-and-scaling-research-data-management-and-curation | Academic libraries have been expanding their research data services in response to growing expectations that research data should be well managed, openly available, reproducible, and FAIR (Findable, Accessible, Interoperable, and Reusable). This presentation will provide an overview of how the Duke University Libraries and the University of Minnesota Libraries have scaled up research data management and curation services to better serve our communities. Background on the foundations of Duke's initiative through engagement with the Provost and faculty, funding and staffing models, current curation workflows, and lessons learned will be discussed. Next steps will also be presented including Duke's plans to join the Data Curation Network (DCN), which enables academic libraries to collectively, and more effectively, curate a wider variety of data types (e.g., discipline, file format, etc.) that expands beyond what any single institution might offer alone. Minnesota's research data services program initiation and growth will be discussed, along with an overview of the Data Curation Network's genesis, goals, and first year activities. Supported by a planning grant from the Arthur P. Sloan foundation, the DCN conducted researcher engagement activities at each of the six original partner institutions and iteratively developed a model for distributed data curation. The Data Curation Network members are University of Minnesota (lead), Cornell University, Duke University, Dryad, Johns Hopkins University, Penn State University, University of Illinois at Urbana-Champaign, University of Michigan, and Washington University-St. Louis. |
Jens Dierkes Ulrike Wuttke	Dierkes, J., & Wuttke, U. (2016). The Göttingen eResearch Alliance: A Case Study of Developing and Establishing Institutional Support for Research Data Management. ISPRS International Journal of Geo-Information, 5(8)	http://www.mdpi.com/2220-9964/5/8/133	The cross-cutting, "horizontal" approach of the Göttingen eResearch Alliance, established by two research-oriented infrastructure providers, a research library and a computing and IT competence center, aims to coordinate Campus-led activities to establish sustainable and innovative services to support all phases of the research data life cycle.
Lise Doucette and Bruce Fyfe	Doucette, L., & Fyfe, B. (2013, April). Drowning in research data: Addressing data management literacy of graduate students. In Imagine, Innovate, Inspire: The Proceedings of the ACRL 2013 Conference (pp. 165-171).	http://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2013/papers/DoucetteFyfe_Drowning.pdf	In this paper we will discuss findings from our research study of social sciences and science graduate students' levels of research data management literacy, which include attitudes and behaviours, and formal and informal education experiences. Using an online survey of Canadian graduate students in the social sciences and science, we were able to reach a large number of students across the country and to gather sufficient responses to allow us to offer some insights on the overall graduate student research data management landscape
Ruth Duerr Rebecca Koskela Amy Nurnberger Yasmeen Shorish Marie-Claire Beaulieu Bridget Almas Sherry Lake Lydia Herring-Harrington Amber Boehnlein Melissa Erlandson Niclas Jareborg Susannah Sabine Julie Goldman	Duerr, R., et. al. [OLD] RDM Educational Efforts - V2	https://docs.google.com/spreadsheets/d/10RTW-nZk0x_mpQw2VAlttcc656MV9EeCaDe2lM4umb4/edit#gid=0	Bibliography
Amany M. Elsayed King Abdulaziz University, Saudi Arabia; Helwan University, Egypt

Emad I. Saleh King Abdulaziz University, Saudi Arabia; Helwan University, Egypt | Elsayed, A. M., & Saleh, E. I. (2018). Research data management and sharing among researchers in Arab universities: An exploratory study. IFLA Journal | http://journals.sagepub.com.ezp-prod1.hul.harvard.edu/doi/pdf/10.1177/0340035218785196 | This study investigates researchers' current practices for managing and sharing research data.

During the past few years, much literature on research data has been devoted to its definition, benefits and barriers, the role of the university library, training, cataloging and technical issues, management, repositories, policies and guidelines, infrastructure, and services.

Interestingly, respondents generally did not choose the university library as an entity responsible for preserving their research data; this may have to do with the fact that the academic libraries in the three universities in the sample are in the very early stages of participating in research data management, as could be gathered from their websites (Cairo University Central Library, 2017; King Abdulaziz University Library, 2017; Library of the University of Jordan, 2017).

The transition towards a culture of data management and sharing among researchers at Arab universities should start with training in data management and sharing practices; encouraging funded research projects to deposit research data in the funding agencies' repositories at least; providing infrastructures, including repositories, policies, guidelines and best practices, and tools supporting backup and accessibility; and finally, rewarding data sharing within and beyond universities. This will require joint efforts among university academic staff, research centers, academic libraries, journal publishers, and universities themselves, which will be in the forefront, playing a pivotal role in this regard. |

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Mark D Wilkinson, Michel Dumontier, Susanna-Assunta Sansone, Luiz Olavo Bonino da Silva Santos, Mario Prieto, Julian Gautier, Peter McQuilton, Derek Murphy, Merce Crosas, Erik Schultes	Evaluating FAIR-Compliance Through an Objective, Automated, Community-Governed Framework Mark D Wilkinson, Michel Dumontier, Susanna-Assunta Sansone, Luiz Olavo Bonino da Silva Santos, Mario Prieto, Julian Gautier, Peter McQuilton, Derek Murphy, Merce Crosas, Erik Schultes bioRxiv 418376; doi: https://doi.org/10.1101/418376	https://www.biorxiv.org/content/early/2018/09/16/418376	With the increased adoption of the FAIR Principles, a wide range of stakeholders, from scientists to publishers, funding agencies and policy makers, are seeking ways to transparently evaluate resource FAIRness. We describe the FAIR Evaluator, a software infrastructure to register and execute tests of compliance with the recently published FAIR Metrics. The Evaluator enables digital resources to be assessed objectively and transparently. We illustrate its application to three widely used generalist repositories - Dataverse, Dryad, and Zenodo - and report their feedback. Evaluations allow communities to select relevant Metric subsets to deliver FAIRness measurements in diverse and specialized applications. Evaluations are executed in a semi-automated manner through Web Forms filled-in by a user, or through a JSON-based API. A comparison of manual vs automated evaluation reveals that automated evaluations are generally stricter, resulting in lower, though more accurate, FAIRness scores. Finally, we highlight the need for enhanced infrastructure such as standards registries, like FAIRsharing, as well as additional community involvement in domain-specific data infrastructure creation.
Fei Yu, Rebecca Deuble & Helen Morgan	Fei Yu, Rebecca Deuble & Helen Morgan (2017) Designing Research Data Management Services Based on the Research Lifecycle – A Consultative Leadership Approach, Journal of the Australian Library and Information Association, 66:3, 287-298, DOI: 10.1080/24750158.2017.1364835	https://www.tandfonline.com/doi/abs/10.1080/24750158.2017.1364835	Research data are a primary research output. Research Data Management (RDM) involves a complex and varying set of processes at each stage of research. Integrated RDM support services can assist researchers to manage their data proactively, and thereby, comply with data-sharing requirements from funding agencies and journal publishers. The strategic long-term benefits of supporting RDM practice by researchers include, increasing individual and institutional research reputations as trusted providers of data. Establishing RDM support services across large academic institutions requires input from multiple organisational units. The library is well positioned to lead this effort, having reach and influence across the institution. The RDM team is able to maximise the benefits for researchers by leading support services in consultation with multiple units across the university. This paper gives an overview of University of Queensland (UQ) Library RDM services provided in the planning and preparing, conducting, archiving, publishing and disseminating stages, using a research lifecycle model. It details the strategies in designing and delivering RDM services, which include preparing guides, designing training programmes for faculty librarians and researchers and engaging stakeholders within and external to the university. We present the impact of these services to-date as an informal selfassessment.
Jodi Reeves Flores, Jason J. Brodeur, Morgan G. Daniels, Natsuko Nicholls, and Ece Turnator	Flores, J. R., Brodeur, J. J., Daniels, M. G., Nicholls, N., & Turnator, E. (2015). Libraries and the research data management landscape. The process of discovery: The CLIR postdoctoral fellowship program and the future of the academy, 82-102	https://www.clir.org/wp-content/uploads/sites/9/RDM.pdf	Taking into consideration these issues, the experiences of library staff from multiple institutions, and our hybrid research/library experiences, we advocate that libraries work to situate themselves in the wider RDM landscape so that they can make strategic decisions about their activities in RDM support development and work with those parties outside of the library best suited to address research needs. In this way, libraries can leverage both their relationship with university leadership and research support units, and their ability to disseminate knowledge regarding requirements, standards, and tools, to assume a leadership role in fostering a more collaborative and navigable RDM landscape for researchers.
Ann Glusker Nina Exner	Glusker, A., & Exner, N. (2018). Responding to Change: Reinventing Librarian Identities in the Age of Research Mandates. In Challenging the "Jacks of All Trades but Masters of None" Librarian Syndrome (pp. 91-115). Emerald Publishing Limited.	https://www.emeraldinsight.com/doi/abs/10.1108/S0732-067120180000039007	This chapter outlines libraries' (and librarians') changing identities in the new world of research mandates from funders, institutions, and publishers. As libraries respond to the demands of these mandates on their users at the individual, departmental, and institutional levels, they need to revise their approaches to relationship building and user engagement, as well as maintain flexibility in the face of changing roles and skill requirements. This chapter will (1) outline the changing scholarly ecosystem; (2) summarize major terms and concepts to understand the process of producing research outputs; (3) discuss the perspectives of the major players in the research enterprise; (4) present some of the challenges that research mandates and the changing research environment have brought to libraries; and finally (5) review ways in which libraries have successfully addressed them. The focus here is on the academic research setting, although many of the strategies outlined can be equally applicable in both non-academic research and non-research funding contexts.
Abigail Goben, Megan Sapp Nelson	Goben, A., & Nelson, M. S. (2018). Teaching librarians about data: The ACRL Research Data Management RoadShow. College & Research Libraries News, 79(7)	https://crln.acrl.org/index.php/crlnews/article/view/17053/18805	As research data management (RDM) has grown into an increasingly familiar service activity in academic libraries, there remains a knowledge gap for liaison and subject librarians attempting to take on these additional responsibilities. As one option to address this, the authors were contracted by ACRL to create a new full-day workshop targeting this specific audience. The result is the ACRL RoadShow, Building Your Research Data Management Toolkit: Integrating RDM into Your Liaison Work.
Wouter Haak, Adrian Mulligan, Hesham Attalla and Ricardo Moreira Elsevier	Haak, W., A. Mulligan, H. Attalla, and R. Moreira. (2017) Research Data Management Stages 1, 2 & 3 – institutional perspectives on RDM. 13 March.	(in folder)	1. Researchers' frustrations indicate a strong need for a centralised RDM solution 2. Current RDM processes are seen as insufficient for researchers' future data needs 3. Librarians and Heads of Research lack knowledge around what is needed in the RDM space
Lotta Haglund, Annikki Roos, Petra Wallgren-Bjork	Haglund, L., Roos, A., & Wallgren-Björk, P. Health science libraries in Sweden: new directions, expanding roles. Health Information & Libraries Journal.	https://onlinelibrary.wiley.com/doi/abs/10.1111/hir.12229	Librarians in Sweden are facing huge challenges in meeting the demands of their organisations and users. This article looks at four key areas: coping with open science/open access initiatives; increasing demands from researchers for support doing systematic reviews; understanding user experiences in Swedish health science libraries; and the consequences of expanding roles for recruitment and continuing professional development. With regard to changing roles, there is an increasing shift from the generalist towards the expert role. The authors raise the issue as to how to prepare those new to the profession to the changing environment of health science libraries.
Frances D. Harrison U.S. Department of Transportation	Harrison, F. D. (2018). Research Management Database Business Analysis, TPF-5 (181) (No. WA-RD 879.1)		This report presents the results of an analysis of business needs for state department of transportation (DOT) research project and program management databases. DOTs currently track their research information in a variety of ways. While a few agencies have implemented full featured research program and project management database systems (RPMDs), many are using spreadsheets or simple desktop databases to manage their information. Many agencies – particularly those with smaller research programs -- seek improvements to research data management and reporting capabilities but are constrained by staffing and information technology resource limitations. This research was conducted to provide a common base of foundational information for agencies wishing to develop or improve an existing RPMD and to explore options for future collective RPMD development activities that could benefit multiple agencies. The research involved synthesis of business, functional, data and transition requirements for an RPMD. Requirements development was based on review of existing research manuals, RPMD documentation, and interviews with research stakeholders at DOTs, universities, the Transportation Research Board (TRB) and the Federal Highway Administration (FHWA). Based on the requirements, the research identifies several future initiatives for consideration to improve research data management and sharing practices. These initiatives include development of a research data exchange standard, creation of a model research data mart, and collaborative development of a basic, web-based RPMD through a collaborative effort by interested agencies.
Kerstin Helbig	Helbig, K. (2016). Research Data Management Training for Geographers: First Impressions. ISPRS International Journal of Geo-Information, 5(4)	http://www.mdpi.com/2220-9964/5/4/40	Therefore, Humboldt-Universität zu Berlin started its research data management initiative in 2012, a joint venture between the Computer and Media Service, Research Service Centre, University Library, and Vice President for Research. In 2015, the initiative began to offer training and support for research data management and launched workshops.

Sharing and secondary analysis of data have become increasingly important for research. Especially in geography, the collection of digital data has grown due to technological changes. Responsible handling and proper documentation of research data have therefore become essential for funders, publishers and higher education institutions. To achieve this goal, universities offer support and training in research data management. This article presents the experiences of a pilot workshop in research data management, especially for geographers. A discipline specific approach to research data management training is recommended. The focus of this approach increases researchers' interest and allows for more specific guidance. The instructors identified problems and challenges of research data management for geographers. In regards to training, the communication of benefits and reaching the target groups seem to be the biggest challenges. Consequently, better incentive structures as well as communication channels have to be established. |

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Margaret E. Henderson & Teresa L. Knott	Henderson, M. E., & Knott, T. L. (2015). Starting a research data management program based in a university library. Medical reference services quarterly, 34(1), 47-59.		As the need for research data management grows, many libraries are considering adding data services to help with the research mission of their institution. The VCU Libraries created a position and hired a director of research data management in September 2013. The position was new to the libraries and the university. With the backing of the library administration, a plan for building relationships with VCU faculty, researchers, students, service and resource providers, including grant administrators, was developed to educate and engage the community in data management plan writing and research data management training.
Amanda Nichols Hess, nichols@oakland.edu Joanna Thielen, jthielen@oakland.edu Oakland University Libraries ALA Annual Conference	Hess, A. N. and J. Thielen (2017). The Impact of Training in Research Data Management on Education Doctoral Students. ALA Annual Conference presentation.	http://www.ala.org/acrl/sites/ala.org. acrl/files/content/acrlsections/ebss/NicholsHessImpactRDMTrainingEdStudents.pptx	Beginning stages of research on RQ: Do research data management (RDM) interventions (workshops, training sessions, individual consultations, etc.) by academic librarians affect the RDM practices of doctoral students in education-focused programs?
Joseph H. Holles Larry Schmidt	Holles, J. H., & Schmidt, L. O. (2018). Implementing a Graduate Class in Research Data Management for Science and Engineering Students. In 2018 ASEE Annual Conference & Exposition.		The goal of this manuscript is to describe a graduate course in RDM for science and engineering students. The course was designed to expose students to both high-level RDM topics and practical, hands-on experience. As part of the course, students were provided the RDM knowledge advocated for by National Academy of Sciences and NSF. This course was cotaught by a research active faculty member and a librarian in an effort to deliver broad knowledge on RDM standards and tools from the expertise of the librarian while allowing research focused examples and experience from the faculty perspective.
UK Data Archive Laurence Horton	Horton, Laurence (2016). UK Higher Education Institution Research Data Management Policies, 2009-2016. [Data Collection]. Colchester, Essex: UK Data Archive. 10.5255/UKDA-SN-851566	http://reshare.ukdataservice.ac.uk/852487/	This dataset compares existing research data policies at UK higher education institutions. It consists of 83 cases. Polices were compared on a range of variables. Variables included policy length in words, whether the policy offers definitions, length of their definition of "data", defines institutional support, requires data management plans, states scope of staff and student coverage, specifies ownership of research outputs, details where external funder rights take precedent, guides on what data and documentation is required to be retained, how long it needs to be retained, reinforces where research ethics prevent open data, finalises where data can be accessed, speaks about open data requirements, includes a statement on funding the costs of Research Data Management, and specifies a review period for the policy. Data also includes the institution's year of foundation and a categorical variable grouping institutions by year of foundation allowing comparison across cohort groups of universities. A further two variables allow for identification of research based universities. Data on total research funding and research council for the year 2014/2015 was added, along with the number of research staff eligible for the 2014 UK Research Excellence Framework (REF). Also included is the institution's Grade Point Average based on its REF score using a Times Higher Education (THES) calculated score.
Richard Hosking Mark Gahegan Gillian Dobbie	Hosking, R., Gahegan, M., & Dobbie, G. (2014, October). An EScience Tool for Understanding Copyright in Data Driven Sciences. In e-Science (e-Science), 2014 IEEE 10th International Conference on (Vol. 1, pp. 145-152). IEEE.	https://ieeexplore.ieee.org/document/6972259/authors	Understanding the impacts of copyright is a challenge for the sharing and reuse of our research data. There is growing recognition of the problem, but the legal knowledge required to navigate through the minefield of restrictions and risks is often too difficult to uncover and understand. As of yet there are no appropriate tools to aid researchers, librarians and research policy makers. To address this gap we present Camden, an automated copyright reasoning tool designed to integrate into existing research workflows. At its core, Camden uses dynamically generated defeasible rules to reason over the legality of a situation of using, combining and publishing data, while additionally suggesting potential licenses by which to safely share derived research outputs. This functionality has been wrapped up into an embedded software library and offered as a web application. In this paper we introduce Camden, describe its model of computational reasoning and discuss how it can be included into existing and future eResearch tools and services.
Michael Witt and Wolfram Horstmann (guest editors)	IFLA Special Issue: Research Data Services	https://www.ifla.org/files/assets/hq/publications/ifla-journal/ifla-journal-43-1_2017.pdf	Two special issues of the International Federation of Library Associations' IFLA Journal are required to adequately represent the quality submissions of a call for papers for research data activities in libraries. This underlines that libraries are indeed tackling the challenge of research data management (Witt and Horstmann, 2016). Libraries are not doing this alone: they collaborate closely with the researcher as well as with other organizations such as IT services, research offices and research funders. The central motivation for the two special issues of IFLA Journal is to provide concrete examples of research data activities in libraries.
Rebecca Cooney	In the Open podcast - Episode 2	http://usa.thelancet.com/blog/2018-04-20-open-podcast-episode-2	In the second episode of In the Open, hosts Brian Byrd, Casey Greene, and Rebecca Cooney talk to Fabio Zanini, winner of the Research Symbiont Award about his experience with data sharing.
Hesham Attalla Elsevier	Institutional RDM needs and drivers	In folder	Of 12 people responsible for RDM at their university, 7 were librarians. The institutions in the EU/USA all had some current tool or repository already in use. ELN were not required.
International Journal of Geo-Information	International Journal of Geo-Information Special Issue "Research Data Management"	http://www.mdpi.com/journal/ijgi/special_issues/research_data	Special Issue on Research Data Management
Si Li	Investigation and analysis of research data management and sharing services by academic libraries. Library Tribune, 2013, No.6	http://admission.whu.edu.cn/faculty/show-2156.html	Unable to access
Dasapta Erwin Irawan Cahyo Darujati Santirianingrum Soebandhi Fierly Hayati Deffy Ayu Puspito Sari	Irawan, D. E., Soebandhi, S., Hayati, F., & Darujati, C. (2018). How to Extend your Data Lifetime: Research Data Management in Indonesia's Contexts. Proceedings of ICLICK 2018 Universitas Padjadjaran.	http://eprints.itb.ac.id/8/	Indonesia's context, the number of problems increases with the low knowledge of data literacy. There are three common barriers in data sharing as the basis of open science: fear, competition, and power, which all three create an inertia . In Indonesia's point of view, we believe national law is the root of the barriers. Abstract— Data is the basis of research. On the other side, the world has a problem of replication. The first problem is we don't really know how to manage our own data to able to reanalyze it at some point after the research has been finished. The lifetime of data is very short, in only one or two fiscal years. In this article we will describe on how to write a research data management in order to extend the lifetime of data. There are seven basic components to remember before writing a proper research data management: (1) Data storage and software, (2) Metadata, (3) Structure, (4) Persistent link, (5) Licensing, (6) Data maintainer, (7) Indexing. In several fields, including medicine, an anomyzation strategy will be needed. We also need to put into account the Intellectual Property Rights and data ownership in the equation, as Indonesian scientists are not properly exposed to those subjects.
Andrew Johnson	Johnson, A. (2016) RDAP Review	https://www.asist.org/publications/bulletin/junejuly-2016/rdap-review/	Longstanding frustration about the single-purpose use of valuable data led author Andrew Johnson to a career in librarianship, a focus on scientific data curation and, ultimately, creation with colleague Megan Bresnahan of the DataQ project. Johnson's concerns about research data management being a silo within the profession were overcome with the realization that many librarians, especially those at smaller institutions, saw the need for effective curation but felt untrained and unequipped to deal with it. DataQ was established as a service and resource for library personnel to ask questions on data curation and learn through expanding group knowledge. Launched in August 2015, the project draws on a team of 15 editors and additional support members and has been widely and positively received. Funding by the Institute of Museum and Library Services, the Greater Western Library Alliance and others will help expand the effort to provide an important service to the library community.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Hans Jørn Nielsen Birger Hjørland	Jørn Nielsen, H., & Hjørland, B. (2014). Curating research data: the potential roles of libraries and information professionals. Journal of Documentation, 70(2), 221-240.	https://www.emeraldinsight.com/doi/abs/10.1108/JD-03-2013-0034	A key issue in the literature about research libraries concerns their potential role in managing research data. The aim of this paper is to study the arguments for and against associating this task with libraries and the impact such an association would have on information professionals, and consider the competitors to libraries in this field.
	Jørn Nielsen, H., & Hjørland, B. (2014). Curating research data: the potential roles of libraries and information professionals. Journal of Documentation, 70(2), 221-240. Chicago		The theme of research data management (RDM) was taken forward in an EU-funded project called LEARN – LEaders Activating Research Networks.17 There were five partners – UCL (University College London), University of Barcelona, University of Vienna, LIBER and ECLAC (Economic Commission for Latin America and the Caribbean). The objective of LEARN was to take the LERU Roadmap for Research Data (Achard et al., 2013) and to see how far stakeholders in the research data landscape were equipped to tackle research data management. (9)

New skills are crucial and, as the High Level Expert Group on the EOSC recommended, a pan-European emphasis on training is needed to deliver the skills base to support Open Science activities such as Research Data Management. (39) |
ACRL Cathryn F. Miller, Rebekah S. Miller, and Gesina A. Phillips	Keeping Up With… Research Data Management	http://www.ala.org/acrl/publications/keeping_up_with/rdm	Overview of RDM
Hammad Rauf Khan Yunfei Du	Khan, H. R., & Du, Y. (2017). What is a Data Librarian?: A Content Analysis of Job Advertisements for Data Librarians in the United States Academic Libraries. Paper presented at: IFLA WLIC 2018 – Kuala Lumpur, Malaysia – Transform Libraries, Transform Societies in Session 139 - Education and Training, Science and Technology, and Continuing Professional Development and Workplace Learning.		This research attempts to understand what is required to be a data librarian from viewing job advertisements by hiring professionals in the United States academic libraries and applying a content analysis approach. This will allow us to understand the amplitude and meaning of what a data librarian is and how it is defined by the hiring managers through the description and qualifications they state and list in their job advertisements. By understanding what employers seek in data librarians, LIS curriculum developers can better implement coursework and pedagogy that will help address employer needs as well as developing successful candidates for these new job titles in academic libraries.
Suntae Kim Myung-Seok Choi	Kim, S., & Choi, M. S. (2016, February). Study on data center and data librarian role for reuse of research data. In Knowledge and Smart Technology (KST), 2016 8th International Conference on (pp. 303-308). IEEE.	https://ieeexplore.ieee.org/document/7440517/	There are new demands for data centers and data librarians to manage and reuse data. In this study, trends of advanced research institutions were investigated and analyzed and implications were derived, in relation to the environment establishment for management, preservation and reuse of research data generated from research processes. New roles required of data centers and data librarians and 5 roles of data librarians that should be performed as a data scientist were proposed: 1) IDR Manager, 2) Policy Maker, 3) DMP Consultant, 4) Data Consultant and 5) Data Publisher.
Masanori Koizumi, Michael Majewski Widdersheim	Koizumi, M., and M. M. Widdersheim, (2018) "Specialties and strategies in academic libraries: a cluster analysis approach", Library Management, https://doi.org/10.1108/LM-10-2017-0114	https://www.emeraldinsight.com/doi/abs/10.1108/LM-10-2017-0114	The purpose of this paper is to examine current specialties in academic librarianship in order to infer what strategies they employ.

Type of librarian: Digital curator/research data: librarians // Definitions: basic roles: Digital curation in e-science, research, and cyberscholarship/Purchase and production of digital data

Digital curation librarians/archivists/research data librarians. The digital curation librarian/archivist/research data librarian has four types of specialties: digital curators, research data librarians, digital collection archivists, and visual resources curators. Previously, the central role of these librarians was around collecting and preserving documents in physical format, leading to the creation of archivist librarians. However, in response to the newly emerging technologies and digital media, the role has expanded with the creation of the digital curation librarians. The digital curator's focus is on gathering material from a variety of sources and making it available to the library. With the increase in available material and available sources, the research data librarian began playing an important role to ensure that the collected data is able to be used for research purposes. This role has titles such as digital scholarship librarians and science data librarian. |
Angelina Kraft Matthias Razum Jan Potthoff Andrea Porzel Thomas Engel Frank Lange Karina van den Broek Filipe Furtado	Kraft, Angelina, et al. "The RADAR Project—A Service for Research Data Archival and Publication." ISPRS International Journal of Geo-Information 5.3 (2016)	http://www.mdpi.com/2220-9964/5/3/28	Abstract: The aim of the RADAR (Research Data Repository) project is to set up and establish an infrastructure that facilitates research data management: the infrastructure will allow researchers to store, manage, annotate, cite, curate, search and find scientific data in a digital platform available at any time that can be used by multiple (specialized) disciplines. While appropriate and innovative preservation strategies and systems are in place for the big data communities (e.g., environmental sciences, space, and climate), the stewardship for many other disciplines, often called the "long tail research domains", is uncertain. Funded by the German Research Foundation (DFG), the RADAR collaboration project develops a service oriented infrastructure for the preservation, publication and traceability of (independent) research data. The key aspect of RADAR is the implementation of a two-stage business model for data preservation and publication: clients may preserve research results for up to 15 years and assign well-graded access rights, or to publish data with a DOI assignment for an unlimited period of time. Potential clients include libraries, research institutions, publishers and open platforms that desire an adaptable digital infrastructure to archive and publish data according to their institutional requirements and workflows.
Bethany Latham	Latham, B. (2017). Research data management: Defining roles, prioritizing services, and enumerating challenges. The Journal of Academic Librarianship, 3(43), 263-265.	https://www.sciencedirect.com/science/article/pii/S0099133317301453	Given the library's prominence in information literacy and data curation, it is more a theoretical hop rather than leap to instructing researchers in best practices for managing their data, creating metadata, and building digital repositories. These are areas in which many established researchers have received little to no formal training, and thus their approaches to RDM differ widely.
Leaders Activating Research Networks (LEARN)	Leaders Activating Research Networks (LEARN) (2017). Model Policy for Research Data Management (RDM) at Research Institutions/Institutes. In: LEARN, ., (ed.) LEARN Toolkit of Best Practice for Research Data Management (pp. 133-136).	http://discovery.ucl.ac.uk/1546606/	Institutional responsibilities include: Support of established scientific practices from the beginning. This is possible through the drafting and provision of DMPs, monitoring, training, education and support, while in compliance with regulations, third-party contracts for research grants, university/ institutional statutes, codes of conduct, and other relevant guidelines
Leiden University Diana Hicks, professor in the School of Public Policy at Georgia Institute of Technology Paul Wouters, director of CWTS at Leiden University	Leiden Manifesto for Research Metrics	http://www.leidenmanifesto.org/	10 principles to guide research evaluation with 15 translations, a video and a blog. Research evaluation has become routine and often relies on metrics. But it is increasingly driven by data and not by expert judgement. As a result, the procedures that were designed to increase the quality of research are now threatening to damage the scientific system. To support researchers and managers, five experts led by Diana Hicks, professor in the School of Public Policy at Georgia Institute of Technology, and Paul Wouters, director of CWTS at Leiden University, have proposed 10 principles for the measurement of research performance: the Leiden Manifesto for Research Metrics published as a comment in Nature.
Martin Lewis	Lewis, M.J. (2010) Libraries and the management of research data. In: McKnight, S, (ed.) Envisioning Future Academic Library Services. Facet Publishing , London , pp. 145-168. ISBN 978-1-85604-691-6	http://eprints.whiterose.ac.uk/11171/	A discussion of the role of university libraries in the management of digital research data outputs. Reviews some of the recent history of progress in this area from a UK perspective, with reference to international developments.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
NNLM RD3: Resources for Data-Driven Discovery	Library Roles Bibliography	https://nnlm.gov/data/library-roles	Bibliography of library roles from U.S. National Network of Libraries of Medicine
Xia Liu Ning Ding	Liu, X., & Ding, N. (2016). Research data management in universities of central China: Practices at Wuhan University Library. The Electronic Library, 34(5), 808-822.	https://www.emeraldinsight.com/doi/full/10.1108/EL-04-2015-0063	Revealing research data's production and use, the status of research data management (RDM) and researchers' service requirements in universities of Central China; this study aims to investigate the feasibility of university libraries in providing RDM services without any supporting policies from governments or funding agencies.
Stacy Winchester, University of South Carolina Sciences and Engineering Librarian, Thomas Cooper Library	Making a Place at the Table: Research Data Management at the University of South Carolina	http://libguides.lib.usm.edu/ld.php?content_id=43346313	*Unpublished -- from a conference* 1. We surveyed USC PIs on data management needs 2. Made connections around the university and with other libraries to learn how they do things 3. Made some libguides 4. Now giving data management workshops plan to researchers
Mark Dahl	Mark Dahl , (2018), Inside-out Library Services, in George J. Fowler , Samantha Schmehl Hines (ed.) Challenging the "Jacks of All Trades but Masters of None" Librarian Syndrome (Advances in Library Administration and Organization, Volume 39) Emerald Publishing Limited, pp.15 - 34	https://www.emeraldinsight.com/doi/abs/10.1108/S0732-067120180000039003	"Inside-out" library services can include support for special collections, digital scholarship, scholarly communication, and data management. A key characteristic of such services is that an academic library takes on broader information management challenges at their college or university. This chapter will examine what it takes to build successful inside-out library services by looking at their cost, how well they complement existing library expertise and culture, and their impact on teaching, research, and the wider community.
Elaine R. Martin	Martin, E. R.. 2017. "Advancing Data Management Education and Services." Journal of eScience Librarianship 6(1): e1118. https://doi.org/10.7191/jeslib.2017.1118		This issue's editorial focuses on the response of librarians and information professionals to the United States government's open access mandates. Librarians and information professionals realize that developing strong data science education curriculum and data literacy skills, dialoging with each other about shared staffing goals, and discovering which data services an institution needs, are vital in helping institutions be able to meet these mandates.
Co-PIs: Elaine Martin, DA and Tracey Leger-Hornby, Ph.D. Project Coordinator: Donna Kafel, MLIS	Martin, E., T. Leger-Hornby, & D. Kafel (2012). Frameworks for a Data Management Curriculum: Course plans for data management instruction to undergraduate and graduate students in science, health sciences, and engineering programs		The Frameworks for a Data Management Curriculum packet has been developed for teaching research data management to undergraduate and graduate level students in the sciences, health sciences, and engineering disciplines. The curriculum has been designed as a series of seven course modules in order to allow maximum flexibility for customizing instruction. With this framework model, faculty have the option to integrate the entire series of modules into a program of study or select individual modules that target their students" learning needs.
Julie McLeod Sue Childs Elizabeth Lomas	McLeod J, Childs S & Lomas, E. (2013). Research data management. Chapter in: Pickard, AJ. Research methods for information. 2nd ed. Facet.	http://www.facetpublishing.co.uk/title.php?id=048132#.W6z-VllpBQl	Overview of RDM, including its importance Research data management, examined in a new chapter contributed by Professor Julie McLeod, Sue Childs and Elizabeth Loma, which applies evidence from the recent JISC-funded "DATUM" project
Meg Miller	Miller, M. (2016). Research Data Management in Canada: Independent Study.	http://lib.fims.uwo.ca/wp-content/uploads/sites/11/2016/04/LIS9410_Miller.pdf	Literature review with 5 themes: Defining Research Data Management, The Drivers, The Stakeholders, The Role of the Library, and Implementation
Ann Morgan Nel Duffield Liz Walkley Hall	Morgan, A., Duffield, N., & Walkley Hall, L. (2017). Research data management support: sharing our experiences. Journal of the Australian Library and Information Association, 66(3), 299-305	https://www.tandfonline.com/doi/abs/10.1080/24750158.2017.1371911	The role of librarians in supporting researchers is ever changing and expanding. One of the most significant trends is for libraries to work in conjunction with other units in their institutions, for example information technology units and research offices, to support research data management (RDM). This is because RDM is a complex area involving work roles and expertise that librarians have not traditionally engaged with, and which in the past were largely left in the hands of researchers to manage themselves. Examples include data description and storage, data curation, data preservation, licensing and open access. This paper outlines how three South Australian academic institutions (the University of South Australia, University of Adelaide and Flinders University) have responded to this change. We describe how these libraries provide support (workshops, web pages, library guides and appointments); what tools and software packages are used; what additional skills library staff have had to acquire to provide support; and, what the outcomes were, what worked, and what did not work, and future plans.
Ruth Nalumaga	Nalumaga, R. (2016). iSchools and Africa: Trends and Developments. Bulletin of the Association for Information Science and Technology, 42(4), 17-21.		The movement from traditional library schools to iSchools reflects a revised approach toward librarianship and information technologies. For some institutions, embracing a more modern identity and disciplinary approach may be a matter of survival. An examination of library and information schools across Africa indicates that only one has formally adopted the iSchool perspective. Closer scrutiny of 10 other schools shows some shifts in curricular focus and positioning within institutions. Programs tend to be placed under departments of education, social sciences or computer science. The terms library and librarianship are giving way to knowledge and information management, especially at the graduate level. The variety of terminology and placement reflects ongoing philosophical and pedagogical shifts, though the iSchool emphasis on interdisciplinarity remains scarce.
Natsuko H. Nicholls Sara M. Samuel Leena N. Lalwani Paul F. Grochowski Jennifer A. Green	Natsuko H. Nicholls, Samuel, Sara M., Lalwani, Leena, N., Grochowski, Paul F., and Green, Jennifer A. (2014). "Resources to Support Faculty Writing Data Management Plans: Lessons Learned from an Engineering Pilot" International Journal of Digital Curation 9(1) pp. 242-252. doi:10.2218/ijdc.v9i1.315.	http://www.ijdc.net/article/view/9.1.242	Recent years have seen a growing emphasis on the need for improved management of research data. Academic libraries have begun to articulate the conceptual foundations, roles, and responsibilities involved in data management planning and implementation. This paper provides an overview of the Engineering data support pilot at the University of Michigan Library as part of developing new data services and infrastructure. Through this pilot project, a team of librarians had an opportunity to identify areas where the library can play a role in assisting researchers with data management, and has put forth proposals for immediate steps that the library can take in this regard. The paper summarizes key findings from a faculty survey and discusses lessons learned from an analysis of data management plans from accepted NSF proposals. A key feature of this Engineering pilot project was to ensure that these study results will provide a foundation for librarians to educate and assist researchers with managing their data throughout the research lifecycle.
Megan Sapp Nelson Purdue University	Nelson, M. S. (2016). Scaffolding for data management skills: From undergraduate education through postgraduate training and beyond. Purdue University Research Repository. doi:10.4231/R7QJ7F9R	https://purr.purdue.edu/publications/2186/1	This document contains an matrix of existing competencies expanded to 36 competencies, a scaffolding that moves students progressively from undergraduate training to post graduate coursework and research to post-doctoral work. Initial work in identifying data management or data information literacy skills went as far as identifying a list of proposed competencies without further differentiation between those competencies, whether by discipline, complexity, or use case. This document contains an evolution in existing competencies. It identifies a scaffolding built upon existing competencies that moves students progressively from the personal domain of data management through team data management to the research enterprise level of data management. The scaffolding ties together existing research that has been completed in research data management skills and data information literacy with research into the outcomes that are desirable for individuals to present in data management at each of the levels of education. As a result of this document, competencies will be aligned according to application (personal, small group, large group) in such a way that the skills attained at the undergraduate level would give students moving on to graduate work greater familiarity with data management and therefore greater likelihood of success at the graduate and then post graduate and data steward levels.
FOSTER	Open Science Training Handbook	https://open-science-training-handbook.gitbook.io/book	Bringing together methods, techniques, and practices, the handbook aims at supporting educators of Open Science. The result is intended as a helpful guide on how to forward knowledge on Open Science principles to our networks, institutions, colleagues, and students. It will instruct and inspire trainers how to create high quality and engaging trainings. Addressing challenges and giving solutions, it will strengthen the community of Open Science trainers who are educating, informing, and inspiring themselves.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Carole L Palmer, Nicholas Weber, T Munoz, AH Renear	Palmer, C., Weber, N. M., Renear, A., & Muñoz, T. (2013). Foundations of data curation: The pedagogy and practice of" purposeful work" with research data. Archive Journal.	http://www.archivejournal.net/essays/foundations-of-data-curation-the-pedagogy-and-practice-of-purposeful-work-with-research-data/	Increased interest in large-scale, publicly accessible data collections has made data curation critical to the management, preservation, and improvement of research data in the social and natural sciences, as well as the humanities. This paper explicates an approach to data curation education that integrates traditional notions of curation with principles and expertise from library, archival, and computer science. We begin by tracing the emergence of data curation as both a concept and a field of practice related to, but distinct from, both digital curation and data stewardship. This historical account, while far from definitive, considers perspectives from both the sciences and the humanities. Alongside traditional LIS and archival science practices, unique aspects of curation have informed our concept of "purposeful work" with data and, in turn, our pedagogical approach to data curation for the sciences and the humanities.
Dimple Patel	Patel, D. (2016) "Research data management: a conceptual framework", Library Review, Vol. 65 Issue: 4/5, pp.226-241, https://doi.org/10.1108/LR-01-2016-0001	https://www.emeraldinsight.com/doi/full/10.1108/LR-01-2016-0001	Design/methodology/approach – This paper discusses the significance and advantages of sharing research data. In the spirit of open access to publications, freeing research data and making it available openly, with minimal restrictions, will help in not only furthering research and development but also avoiding duplication of efforts. The issues and challenges involved in RDM at the institutional level are discussed. Findings – A conceptual framework for RDM at the institutional level is presented. A model for a National Repository of Open Research Data (NRORD) is also proposed, and the workflow of the functioning of NRORD is also presented. Originality/value – The framework clearly presents the workflow of the data life-cycle in its various phases right from its creation, storage, organization and sharing. It also attempts to address crucial issues in RDM such as data privacy, data security, copyright and licensing. The framework may help the institutions in managing the research data life-cycle in a more efficient and effective manner.
Laure Perrier Erik Blondal Patricia Ayala Dylanne Dearborn Tim Kenny David Lightfoot Roger Reka Mindy Thuna Leanne Trimble Heather MacDonald	Perrier L, Blondal E, Ayala AP, Dearborn D, Kenny T, Lightfoot D, et al. (2017) Research data management in academic institutions: A scoping review. PLoS ONE 12(5): e0178261. https://doi.org/10.1371/journal.pone.0178261		Objective The purpose of this study is to describe the volume, topics, and methodological nature of the existing research literature on research data management in academic institutions. Conclusion Most studies relied on self-reports (interviews, surveys) or accounts from an observer (case studies) and we found few studies that collected empirical evidence on activities amongst data producers, particularly those examining the impact of research data management interventions. As well, fewer studies examined research data management at the early phases of research projects. The quality of all research outputs needs attention, from the application of best practices in research data management studies, to data producers depositing data in repositories for long-term use. We identified a sizable body of literature that describes research data management related to academic institutions, with the majority of studies conducted in the applied or basic sciences.
Stephen Pinfield, Andrew M. Cox, Jen Smith	Pinfield S, Cox AM, SmithJ (2014) Research Data Management and Libraries: Relationships, Activities, Drivers andInfluences. PLoS ONE 9(12): e114734. doi:10.1371/journal.pone.011473		This paper analyses the contribution of academic libraries to research data management (RDM) in the wider institutional context. In particular it: examines the roles and relationships involved in RDM, identifies the main components of an RDM programme, evaluates the major drivers for RDM activities, and analyses the key factors influencing the shape of RDM developments. The study is written from the perspective of library professionals, analysing data from 26 semi-structured interviews of library staff from different UK institutions. Library activity, currently concentrated in areas such as advocacy and policy development, and moving into new areas including the support functions and creation of new systems, still has an important element of provisionality about it. As RDM matures in universities, further quantitative and qualitative work will be needed to understand the shape of activities and the roles of different actors in order to inform ongoing development.
Mary E. Piorun Donna Kafel Tracey Leger-Hornby Siamak Najafi Elaine R. Martin Paul Colombo Nancy R. LaPelle	Piorun, M. E., Kafel, D., Leger-Hornby, T., Najafi, S., Martin, E. R., Colombo, P., & LaPelle, N. R. (2012). Teaching research data management: An undergraduate/graduate curriculum. Journal of eScience Librarianship, 1(1), 8.	https://escholarship.umassmed.edu/jeslib/vol1/iss1/8/	With funding from the Institute of Museum and Library Services, the Libraries of the University of Massachusetts Medical School and Worcester Polytechnic Institute collaborated on a plan to expand the scope of science library practices and promote among medical, graduate, and undergraduate science students the preservation of scientific data in relevant repositories and archives. This paper outlines curriculum frameworks and learning needs for research data management instruction that can be delivered through a variety of methods. Individual modules are based on faculty and student interviews, as well as a comprehensive literature review.
Syopiansyah Jaya Putra, A'ang Subiyakto, Irma Yunita, Muhamad Nur Gunawan, Yusuf Durachman	Putra, S. J., A'ang Subiyakto, I. Y., Gunawan, M. N., & Durachman, Y. (2018). Assessing the User Satisfaction Perspectives of Information System: A Library Case Study in Indonesia. Indonesian Journal of Electrical Engineering and Computer Science 12(1): 95-101. DOI: 10.11591/ijeecs.v12.i1.pp95-101		The success of LIS implementation is indispensable for HEIs in developing countries like Indonesia. It is related to the essential functions of the system for the institutions related to support their research and data management services. In this case study, the findings indicated that majority of the users are the senior students who revealed that LIS is quite helpful and satisfactory for their research works. Despite
Jian Qin	Qin, J. & J. D'Ignazio. (2016). Enhancing scientific data literacy in college students: Experience and lessons learned. Journal of InfoLib and Archives, 8 (1): 1-27. DOI: 10.6575/JILA.2016.88.01		This paper reports our experience from a two-year Science Data Literacy (SDL) project through four areas of activities: (1) survey on faculty's perceptions and practices in data management, (2) design of SDL learning modules, (3) delivery of the course, and (4) assessment of learning outcomes. This paper is in Chinese

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Jian Qin Kevin Crowston Arden Kirkland	Qin, J., Crowston, K., & Kirkland, A. (2017). Pursuing best performance in research data management by using the capability maturity model and rubrics. Journal of eScience Librarianship	http://escholarship.umassmed.edu/jeslib/vol6/iss2/3/	Objective: To support the assessment and improvement of research data management (RDM) practices to increase its reliability, this paper describes the development of a capability maturity model (CMM) for RDM. Improved RDM is now a critical need, but low awareness of – or lack of – data management is still common among research projects. Methods: A CMM includes four key elements: key practices, key process areas, maturity levels, and generic processes. These elements were determined for RDM by a review and synthesis of the published literature on and best practices for RDM. Results: The RDM CMM includes five chapters describing five key process areas for research data management: 1) data management in general; 2) data acquisition, processing, and quality assurance; 3) data description and representation; 4) data dissemination; and 5) repository services and preservation. In each chapter, key data management practices are organized into four groups according to the CMM's generic processes: commitment to perform, ability to perform, tasks performed, and process assessment (combining the original measurement and verification). For each area of practice, the document provides a rubric to help projects or organizations assess their level of maturity in RDM. Conclusions: By helping organizations identify areas of strength and weakness, the RDM CMM provides guidance on where effort is needed to improve the practice of RDM.
Bart Ragon	Ragon, B. (2018). Exploring the Relationship Between Health Sciences Libraries and the Research Lifecycle. Charlottesville, VA: University of Virginia, Curry School of Education, EDD (Doctor of Education), 2018. Retrieved from https://doi.org/10.18130/V3639K49S	https://search.lib.virginia.edu/catalog/gb19f636c	Health sciences libraries have traditional been the gatekeepers of medical knowledge. However, exogenous shocks in information technologies are challenging the role of libraries in supporting biomedical research. To maintain both legitimacy and relevance within the academic health sciences centers, libraries need to adapt quickly to the shifting landscape of academic biomedical research. Research lifecycle models have emerged in an attempt to define the research workflow from project inception to completion. Many libraries are evolving their services to better support biomedical research; yet, questions remain about what roles are appropriate for libraries in supporting biomedical research. This study explored the changing demands on health sciences libraries created through evolutions in biomedical research workflows and investigated avenues for libraries to expand their role in the research lifecycle. The study was guided by the following research questions: • What are the key activities in the research lifecycle for biomedical researchers?; • What aspects of the research lifecycle are evolving, if any, due to emerging practices in biomedical research?; • In what ways do health sciences libraries support the research lifecycle and emerging practices of biomedical research? • What skills and practices might health sciences libraries cultivate in prompting new roles in the research lifecycle? This research strengthens what is known about the research lifecycle and the support provided by libraries. Combined with awareness of organizational needs, results can provide a useful framework for health sciences library leaders to guide their organizations in discovering new roles for libraries in addressing the emerging needs of biomedical research. Within the research lifecycle, some health sciences libraries have sought to more effectively support knowledge creation through new services that include data management planning, funding discovery, federal public access compliance, and metadata support. Because of cultural differences between terminology used by biomedical researchers, the design of the survey instrument did not allow for the quantitative data collected from library leaders to be mapped to the research lifecycle probes used in the qualitative interviews. For example, the concept of data management carries different meaning for researchers than it does for libraries. According to [an established researcher], "the collaboration actually work is to work out some of the details of data management and sharing ahead of time. That doesn't always happen. Often it's just a quick rush of oh, you can do this one thing that I need for my grant; hurry up and send me a letter and we'll push this through." Participants' description of data collection, data management, and data analysis were interconnected and not described as distinct activities by researchers. As researchers spoke of managing their data they addressed concepts of storage, privacy, security, and cleaning. No researcher referred to he need for data management plans, such as the type required by some funders. Instead, the challenges researchers face tended to be logistical in nature.
Shamin Renwick, Marsha Winter, Michelle Gill,	Renwick, S., Winter, M., & Gill, M. (2017). Managing research data at an academic library in a developing country. IFLA journal, 43(1), 51-64	http://journals.sagepub.com/doi/full/10.1177/0340035216688703	Managing research data has become an issue for many universities. In the Caribbean, the St Augustine Campus Libraries at the University of the West Indies are keenly aware of the need to support researchers in this regard. The objectives of this study were to identify current practices in managing research data on the campus and to determine a possible role for the Campus Libraries. A pilot study of 100 researchers on the campus was conducted. Analysis of the 65 valid responses revealed that while researchers owned data sets they had little knowledge or experience in managing such. This low level of awareness is instructive and validates a role for the Campus Libraries to play in supporting researchers on campus. The Campus Libraries need to sensitize researchers about what data planning and managing research data entail as well as provide technical assistance with actual data storage.
Dr. Raj Kumar Bhardwaj Paul Banks	Research Data Access and Management in Modern Libraries, to be published by IGI Global	https://www.igi-global.com/publish/call-for-papers/call-details/3317	The theme of the book shall help the practitioners, research scholars and students to understand the recent developments in data access and management. The book shall also help to comprehend the advancements in data access, management, and preservation. Through the various case studies in the book, it will be easy to understand how information centers are managing the data (research data, textual and audio-video data) in academic and research libraries. Besides this, it will be a guide for information scientists to innovate and learn best practices in the area.
Charles W. Bailey, Jr.	Research Data Curation Bibliography	http://digital-scholarship.org/rdcb/rdcb.htm	The Research Data Curation Bibliography includes over 750 selected English-language articles, books, and technical reports that are useful in understanding the curation of digital research data in academic and other research institutions.
AIP Publishing	Research Data Management A Brief Overview for Physical Sciences Librarians	https://publishing.aip.org/sites/default/files/aippub/files/RDMFlyer.pdf	*Flyer* Scientists at academic and government institutions and corporate laboratories are generating data at unprecedented levels, at an increasingly accelerated pace, and with consistently decreasing costs. This explosion of born-digital research data (data that are created in digital form) means that the era of BIG DATA has arrived. Along with this digital overload comes the growing need for intelligent and effective Research Data Management (RDM).

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
OCLC	Research Data Management materials (bibliography)	https://www.oclc.org/research/themes/research-collections/rdm.html	In recent years, research data management (RDM) has assumed an increasingly prominent place in scholarly communication, funder requirements, codes of academic practice, university research strategy, and even national policy.

OCLC Research has followed these developments and responded with a program of work examining researchers' needs and the role of university libraries in supporting researchers and assisting universities in meeting emerging compliance requirements. OCLC has conducted qualitative and quantitative research and engaged the library community through Research Library Partnership working groups. Published findings position RDM within the broader landscape of an evolving scholarly record.

By examining the needs of stakeholders engaged throughout the data lifecycle, we aim to show the interconnectedness among needs and actions and provide practical guidance that improves data creation, management, curation and reuse experiences. Our research outputs also provide models for understanding RDM capacity acquisition as well as practical guidance for supporting researchers, and builds upon previous foundational work that situates RDM within the larger Evolving Scholarly Record. |
| University of Minnesota | Research Data Management: Archiving, Ownership, Retention, Security, Storage, and Transfer | https://policy.umn.edu/research/researchdata | Management of research data is a shared responsibility among: the Office of the Vice President for Research (OVPR); the Office of the Vice President and Chief Information Officer (OVPCIO); the Academic Health Center (AHC); the University Libraries and system campus libraries; the colleges, schools and system campuses; and the Principal Investigator (PI).

University ownership and stewardship of research data that are generated or acquired by faculty, staff, and students through the use of University facilities and resources are based on applicable laws and regulations, sponsorship agreements, University policies, and sound management principles.

Ensuring that (i) research data management needs and regulatory obligations, including preservation and long-term accessibility, are met for critical, high-value research data, and (ii) operational considerations with respect to the various types of research data are captured is the joint responsibility of the Vice President for Research, the Vice President and Chief Information Officer, the Vice President for Clinical Affairs, and the University Librarian and Dean of Libraries (Twin Cities campus),/Director of Libraries (Duluth, Crookston, Morris, and Rochester campuses). |
| Purdue University Press edited by Joyce Ray, served US Institute of Museum and Library Services (IMLS) | Research Data Management: Practical Strategies for Information Professionals (book) | http://www.thepress.purdue.edu/titles/format/9781557536648 | It has become increasingly accepted that important digital data must be retained and shared in order to preserve and promote knowledge, advance research in and across all disciplines of scholarly endeavor, and maximize the return on investment of public funds.

To meet this challenge, colleges and universities are adding data services to existing infrastructures by drawing on the expertise of information professionals who are already involved in the acquisition, management and preservation of data in their daily jobs. Data services include planning and implementing good data management practices, thereby increasing researchers' ability to compete for grant funding and ensuring that data collections with continuing value are preserved for reuse.

This volume provides a framework to guide information professionals in academic libraries, presses, and data centers through the process of managing research data from the planning stages through the life of a grant project and beyond. It illustrates principles of good practice with use-case examples and illuminates promising data service models through case studies of innovative, successful projects and collaborations. |
| SPARC (the Scholarly Publishing and Academic Resources Coalition) | Research Funder Data Sharing Policies (bibliography - list) | https://sparcopen.org/our-work/research-data-sharing-policy-initiative/funder-policies/ | List of researcher funders that have data sharing polices in place (linked below, if available) or are in the process of developing a data sharing policy. |
| Cristina Ribeiro, João Rocha da Silva, João Aguiar Castro, Ricardo Carvalho Amorim, João Correia Lopes, Gabriel David | Ribeiro, C., da Silva, J. R., Castro, J. A., Amorim, R. C., Lopes, J. C., & David, G. (2018). Research Data Management Tools and Workflows: Experimental Work at the University of Porto. IASSIST Quarterly, 42(2) | https://www.iassistquarterly.com/index.php/iassist/article/view/925 | Our work aims to promote data publication in research institutions, considering that researchers are the core stakeholders and need straightforward workflows, and that multi-disciplinary tools can be designed and adapted to specific areas with a reasonable effort. For small groups with interesting datasets but not much time or funding for data curation, we have to focus on engaging researchers in the process of preparing data for publication, while providing them with measurable outputs. In larger groups, solutions have to be customized to satisfy the requirements of more specific research contexts.

We describe our experience at the University of Porto in two lines of enquiry. For the work with long-tail groups we propose general-purpose tools for data description and the interface to multi-disciplinary data repositories. For areas with larger projects and more specific requirements, namely wind infrastructure, sensor data from concrete structures and marine data, we define specialized workflows. In both cases, we present a preliminary evaluation of results and an estimate of the kind of effort required to keep the proposed infrastructures running. |
Rybkina, A., Hodson, S., Gvishiani, A., Kabat, P., Krasnoperov, R., Samokhina, O., & Firsova, E.	Rybkina, A., Hodson, S., Gvishiani, A., Kabat, P., Krasnoperov, R., Samokhina, O., & Firsova, E. (2018). CODATA and global challenges in data-driven science. Russ. J. Earth Sci, 18.	http://elpub.wdcb.ru/journals/rjes/v18/2018ES000625/2018ES000625.pdf	This synthesis report presents the scientific results of the international conference "Global Challenges and Data-Driven Science" which took place in St. Petersburg, Russian Federation from 8 October to 13 October 2017. This event facilitated multidisciplinary scientific dialogue between leading scientists, data managers and experts, as well as Big Data researchers of various fields of knowledge. The St. Petersburg conference covered a wide range of topics related to data science. It featured discussions covering the collection and processing of large amounts of data, the implementation of system analysis methods into data science, machine learning, data mining, pattern recognition, decision-making robotics and algorithms of artificial intelligence. The conference was an outstanding event in the field of scientific diplomacy and brought together more than 150 participants from 35 countries. It's success ensured the effective data science dialog between nations and continents and established a new platform for future collaboration.
Megan R. Sapp Nelson, Purdue University	Sapp Nelson, M. R. A (2017) Pilot Competency Matrix for Data Management Skills: A Step toward the Development of Systematic Data Information Literacy Programs. Journal of eScience Librarianship 6 (1)	https://escholarship.umassmed.edu/jeslib/vol6/iss1/1/	Initial work in identifying data management or data information literacy skills generally went as far as identifying a list of proposed competencies without further differentiation between those competencies, whether by discipline, complexity, or use case. This article describes a significant innovation upon existing competencies by identifying a scaffolding (built upon existing competencies) that moves students progressively from undergraduate training through post graduate coursework and research to post-doctoral work and into the early years of data stewardship. The scaffolding ties together existing research that has been completed in research data management skills and data information literacy with research into the outcomes that are desirable for individuals to present in data management at each of the levels of education. Competencies are aligned according to application (personal, team, research enterprise) in such a way that the skills attained at the undergraduate level give students moving on to graduate work greater familiarity with data management and therefore greater likelihood of success at the graduate and then post graduate and data steward levels.
Mary C. Schlembach and Carol A. Brach	Schlembach, M. C., & Brach, C. A. (2012) Research data management and the role of libraries. In Special issues in data management. American Chemical Society (ACS) Symposium Series (Vol. 11102012, pp. 129-44).		Academic research libraries in the US and abroad are already playing roles as leaders in areas where libraries and librarians can bring significant value to data management efforts. With new data management stewardship mandates by national government agencies in place, libraries need to take advantage of new opportunities in data stewardship and curation. Focusing on e-science and the management of scientific data, this chapter highlights many of the data management programs developed at academic libraries.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Birgit Schmidt Kathleen Shearer	Schmidt, B., & Shearer, K. (2016). Librarians' competencies profile for research data management. Joint task force on librarians' competencies in support of e-research and scholarly communication.	https://www.coar-repositories.org/files/Competencies-for-RDM_June-2016.pdf	
Birgit Schmidt Pascal Calarco Iryna Kuchma Kathleen Shearer	Schmidt, B., Calarco, P., Kuchma, I., & Shearer, K. (2016, May). Time to Adopt: Librarians' New Skills and Competency Profiles. In ELPUB (pp. 1-8).	http://ebooks.iospress.nl/publication/42887	This paper presents findings of the joint Task Force on Librarians' Competencies in Support of E-Research and Scholarly Communication. Not surprisingly, a number of other new areas could benefit from librarians' support – and this again comes with a need for developing/expanding skills to fulfill these new roles. One area which is evolving very fast is text and data mining (TDM), and libraries might already have a range of subscriptions and collections which come with appropriate licenses but have not yet stepped up to provide practical support for researchers to exploit these riches (Okerson, 2013). It should be noted that job descriptions can be excessively demanding in terms of experiences and skills, as if the search is for the "Unicorn Librarian – that magical creature who can be all things to all people" (Johnson, 2014). Therefore, individuals and employers should consult the task force's competency profiles with some caution.
Joachim Schöpfel Hélène Prost Cécile Malleret	Schöpfel, J., Prost, H., & Malleret, C. (2017, October). Research and Development in the Field of Research Data and Dissertations. In Conference on Grey Literature and Repositories		The paper presents the research project D4Humanities conducted by the GERIICO laboratory at the University of Lille in the field of research data management (RDM). In particular, it describes the development of a local workflow for the submission of research data related to PhD dissertations and the connection to the national RDM infrastructure Huma-Num (deposit, preservation and dissemination of research data via the NAKALA service), along with the RDM training program for PhD students provided by the Graduate School in Social Sciences and Humanities at the University of Lille.
Ana Sesartić Andreas Fischlin Matthias Töwe	Sesartić, A., Fischlin, A., & Töwe, M. (2016). Towards Narrowing the Curation Gap—Theoretical Considerations and Lessons Learned from Decades of Practice. ISPRS International Journal of Geo-Information, 5(6)	http://www.mdpi.com/2220-9964/5/6/91	Research as a digital enterprise has created new, often poorly addressed challenges for the management and curation of research to ensure continuity, transparency, and accountability. There is a common misunderstanding that curation can be considered at a later point in the research cycle or delegated or that it is too burdensome or too expensive due to a lack of efficient tools. This creates a curation gap between research practice and curation needs. We argue that this gap can be narrowed if curators provide attractive support that befits research needs and if researchers consistently manage their work according to generic concepts consistently from the beginning. A rather uniquely long-term case study demonstrates how such concepts have helped to pragmatically implement a research practice intentionally using only minimalist tools for sustained, self-contained archiving since 1989. The paper sketches the concepts underlying three core research activities. (i) handling of research data, (ii) reference management as part of scholarly publishing, and (iii) advancing theories through modelling and simulation. These concepts represent a universally transferable best research practice, while technical details are obviously prone to continuous change. We hope it stimulates researchers to manage research similarly and that curators gain a better understanding of the curation challenges research practice actually faces.
Klaas Sijtsma	Sijtsma, K. (2016). Playing with data—or how to discourage questionable research practices and stimulate researchers to do things right. Psychometrika, 81(1), 1-15.		Recent fraud cases in psychological and medical research have emphasized the need to pay attention to Questionable Research Practices (QRPs). Deliberate or not, QRPs usually have a deteriorating effect on the quality and the credibility of research results. QRPs must be revealed but prevention of QRPs is more important than detection. I suggest two policy measures that I expect to be effective in improving the quality of psychological research. First, the research data and the research materials should be made publicly available so as to allow verification. Second, researchers should more readily consider consulting a methodologist or a statistician. These two measures are simple but run against common practice to keep data to oneself and overestimate one's methodological and statistical skills, thus allowing secrecy and errors to enter research practice.
Helena Silvennoinen-Kuikka Tomi Rosti	Silvennoinen-Kuikka, H. & T. Rosti (n.d.) Building Research Support and Open Science Services at the University of Eastern Finland Library (UEF)		Steps, objectives, and outcomes including research data management plans and open data management
Si Li Zhuang Xiaozhe Wang Simin Wu Fangzhi Qian Qiqi	Simin, S. L. Z. X. W., & Qiqi, W. F. Q. (2013). The Progress and Enlightenment of Scientific Data Management and Sharing Research in Abroad Since 2005 [J]. Journal of the National Library of China, 3, 009.	http://en.cnki.com.cn/Article_en/CJFDTotal-BJJG201303009.htm	This article sorts out the hot topics in the research of scientific data management and sharing in abroad since 2005, summarizing the progress in the practice of scientific data management in different disciplines, the methods and tools of scientific data management, scientific data sharing, scientific data management services in libraries, and the education/training of scientific data management specialists. Accordingly, the author puts forward some suggestions for promoting the scientific data management undertaking in China.
John Southall & Catherine Scutt	Southall, J. & C. Scutt (2017) Training for Research Data Management at the Bodleian Libraries: National Contexts and Local Implementation for Researchers and Librarians, New Review of Academic Librarianship, 23:2-3, 303-322, DOI: 10.1080/13614533.2017.1318766	https://www.tandfonline.com/doi/abs/10.1080/13614533.2017.1318766	This article outlines the involvement of the Bodleian Libraries at the University of Oxford in developing new services for research data management. It offers reflections on what such additional support means for academic librarians, specifically considering support offered by subject consultants and a series of research data management (RDM) training workshops. The need to reshape library roles, teams and collections to accommodate developments in support for research data and its management is discussed. Additional actions being carried out within the Bodleian Libraries to help further meet these needs are outlined and include the development of the role of a Data Librarian and engagement of a network of librarians with this expanding area of professional knowledge. This review of what has been achieved so far provides fellow practitioners with valuable lessons and pointers to consider when reviewing the support required within their own institutions.
Collection and Curation	Special Issue: Data as Collections	http://emeraldgrouppublishing.com/products/journals/call_for_papers.htm?id=8002	Guest editor Ayoung Yoon, PhD. Indiana University Purdue University Indianapolis (IUPUI)
Anthony Stamatoplos Tina Neville Deborah Henry	Stamatoplos, A., Neville, T., & Henry, D. (2016). Analyzing the Data Management Environment in a Master's-level Institution. The Journal of Academic Librarianship, 42(2), 154-160.	https://www.sciencedirect.com/science/article/pii/S0099133315002761	The data management environments at research-intensive institutions have been studied extensively. Few studies, however, have assessed the environments at institutions that are not classified as research-intensive, where scholarship and obtaining external funding is still highly encouraged. Using results from semi-structured interviews with faculty from an array of disciplines, the authors describe the research processes and data concerns at a Master's-level institution. A comparison of the results illustrate that, at least at this institution, faculty face very similar issues as those identified at research-intensive organizations and many of the same practices and services could be implemented on a smaller scale.
Gail Steinhart Jian Qin	Steinhart, G. & Qin, J. (2013). Mentoring for emerging careers in eScience librarianship: An iSchool – Academic Library Partnership. Journal of eScience Librarianship	http://escholarship.umassmed.edu/jeslib/vol1/iss3/1/	Mentorship program to students enrolled in the eScience Librarianship program at Syracuse Survey instrument is available

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Gail Steinhart Eric Chen Florio Arguillas Dianne Dietrich Stefan Kramer (all Cornell)	Steinhart, Gail; Chen, Eric; Arguillas, Florio; Dietrich, Dianne; and Kramer, Stefan. (2012). "Prepared to Plan? A Snapshot of Researcher Readiness to Address Data Management Planning Requirements." Journal of eScience Librarianship 1(2): Article 1. http://dx.doi.org/10.7191/jeslib.2012.1008.	https://escholarship.umassmed.edu/jeslib/vol1/iss2/1/	Objective:Cornell University's Research Data Management Service Group (RDMSG) surveyed NSF principal investigators (PIs) at Cornell in order to understand how well-prepared researchers are to meet the new NSF data management planning requirement, to build our own understanding of the potential impact on campus services, and to identify service gaps. Methods: We administered a 43-question online survey, which included questions about the respondents' research and research data, their interest in assistance with the creation of data management plans, and questions for each of the five general areas cited in the NSF's Grant Proposal Guide (2011) section on data management plans. Results and Discussion: Respondents produce a wide variety of types and formats of data, although most expect to share relatively small amounts of data. Respondents are generally uncertain as to whether the data they produce conforms to disciplinary standards. The majority create no metadata; of those that do, most do not create metadata according to a particular standard. Most researchers do not express a need for advice regarding intellectual property issues. Researchers report using a variety of strategies (on-campus and commercial) for backing up and for providing access to their data sets. Conclusions: The overarching finding from our survey is that there is much uncertainty about what the new requirement means and how to meet it, and researchers welcome offers of assistance. To the extent that Cornell researchers are representative of NSF PIs, our findings reveal something about researchers' readiness to meet the new requirement, and their attitudes towards it.
Armin Straube (UCL Qatar, London, UK)	Straube, A. "Records management and data management quite literally mean the same thing."– The Integration of Archives, Records and Data Management into the MLIS Programme at UCL Qatar	http://feis2018.di.unipi.it/programme	*Unpublished -- from a conference* Quote is a reference to John McDonald, (2010) "Records management and data management: closing the gap", Records Management Journal, Vol. 20 Issue: 1, pp.53-60, https://doi.org/10.1108/09565691011039825
Alisa Surkis, PhD, MLS; Kevin Read, MLIS, MAS	Surkis, A., & Read, K. (2015). Research data management. Journal of the Medical Library Association: JMLA, 103(3)	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4511058/pdf/mlab-103-03-154.pdf	This paper is a primer on research data management for librarians who have little or no experience in this topic. It includes general background about research data, an overview of what is meant by data management, and suggestions for how to begin to move into this service area. Data management presents a new opportunity for librarians to support the research process. While on the surface, data management may seem daunting, librarians' experience with organizing information and making it discoverable are the skills needed to provide data management services. Librarians can take on a number of roles with a solid grounding in the principles of data management and work done to bridge the gaps between librarians and researchers.
Cedrik Zellmann and Ina Blümel (German National Library of Science and Technology & University of Applied Sciences and Arts, Hannover, Germany)	Systems librarian, IT librarian, data librarian – Demand for graduates in Germany, Austria and Switzerland: a quantitative job advertisement analysis	http://feis2018.di.unipi.it/programme	*Unpublished -- from a conference*
Rong Tang Watinee Sae-Lim	Tang, R., & Sae-Lim, W. (2016). Data science programs in US higher education: An exploratory content analysis of program description, curriculum structure, and course focus. Education for Information, 32(3), 269-290.	https://content.iospress.com/articles/education-for-information/efi977	In this study, an exploratory content analysis of 30 randomly selected Data Science (DS) programs from eight disciplines revealed significant gaps in current DS education in the United States. The analysis centers on linguistic patterns of program descriptions, curriculum requirements, and DS course focus as pertaining to key skills and domain knowledge. The results show that a range of unique terms was used in individual program descriptions, with common terms being shared across disciplines. DS programs required varying numbers of credit hours, including practicum and capstone. Most DS courses covered the basic level of analytical skills, but upper-level skills were inadequately addressed. Programs in eight disciplines delivered information skills through their core courses, and four addressed communication skills. Six disciplines covered visualization skills through their core courses, yet just three in elective courses. The course offering on mathematics/statistics was rather weak in iSchools.While core courses in iSchools provided communication and visualization skills, their electives courses did not address such skills. These findings have implications for improving DS education in iSchools and across other disciplines.
Lindsey Sikora Helen Brown Marlene Dorgan Martin Morris Alexandra Cooper Leslie Barnes Melissa Cheung Ursula Ellis K-Lee Fraser Katherine Miller	Telling Canadian Research Data Management (RDM) Stories in the Health Sciences JCHLA / JABSC 39: 105-118 (2018) doi: 10.29173 /jchla29379	In folder	Introduction: Canadian funding agencies' anticipated requirements around data sharing, data preservation, and the creation of data management plans (DMPs) have prompted the development of a national research data management strategy. Academic librarians are contributing to this conversation by developing new services and infrastructure that help researchers manage their data throughout the project life cycle. To better understand how academic libraries can best further the national RDM agenda and support researchers, librarians at 9 Canadian universities have collaborated to survey researchers in medicine and health sciences regarding their RDM needs and practices, generating both institutional and national results. Methods: To examine the RDM practices and needs of health sciences and medical researchers, representatives from each library distributed a standard, multi-institutional survey. The survey results will generate a richer understanding of disciplinary practices and the state of RDM both locally and nationally. Results: Results will be available by May 2018. Discussion: The present study focuses on the RDM practices and future needs of health and medical researchers and expands on two previous surveys: one of the social sciences and humanities, and another of the physical sciences and engineering. This national partnership will help to inform libraries, researchers, and other stakeholders across Canada on the national, provincial, and local level to help them build a cohesive and reflective data service.
Carol Tenopir Suzie Allard Priyanki Sinha Danielle Pollock Jess Newman Elizabeth Dalton Mike Frame Lynn Baird	Tenopir, C., Allard S., Sinha P., Pollock D., Newman J., Dalton E.D., Frame, M., & L. Baird (2016). Data Management Education from the Perspective of Science Educators. International Journal of Digital Curation. 11(1), 232-251	http://www.ijdc.net/article/view/11.1.232	Has research instrument for data management by scientists, including what they teach and barriers to teaching In order to better understand the current state of data management education in multiple fields of science, this study surveyed scientists, including information scientists, about their data management education practices, including at what levels they are teaching data management, which topics they covering, and what barriers they experience in teaching these topics. We found that a handful of scientists are teaching data management in undergraduate, graduate, and other types of courses, as well as outside of classroom settings. Commonly taught data management topics included quality control, protecting data, and management planning. However, few instructors felt they were covering data management topics thoroughly, and respondents cited barriers such as lack of time, lack of necessary expertise, and lack of information for teaching data management. We offer some potential explanations for the existing state of data management education and suggest areas for further research.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Carol Tenopir Ben Birch Suzie Allard	Tenopir, C., Birch, B., & Allard, S. (2012). Academic libraries and research data services. Current practices and plans for the future; an ACRL white paper. Chicago: Association of College and Research Libraries.	http://www.ala.org/acrl/sites/ala.org.acrl/files/content/publications/whitepapers/Tenopir_Birch_Allard.pdf	As science becomes more collaborative, data-intensive, and computational, academic researchers are faced with a range of data management needs. Combine these needs with funding directives that require data management planning, and there is both a need and an imperative for research data services in colleges and universities. Academic libraries may be ideal centers for research data service activities on campuses, providing unique opportunities for academic libraries to become even more active participants in the knowledge creation cycle in their institution. Recently the academic library community has identified data curation as one of the top ten trends in 2012. Some academic libraries are already engaged in these activities, and others are examining ways they can best provide a range of research data services. This study surveyed a cross section of academic library members of the Association of College and Research Libraries (ACRL) in the United States and Canada to provide a baseline assessment of the current state of and future plans for research data services in academic libraries in these countries.
Carol Tenopira Robert J.Sandusky Suzie Allard Ben Bircha	Tenopir, C., Sandusky, R. J., Allard, S., & Birch, B. (2014). Research data management services in academic research libraries and perceptions of librarians. Library & Information Science Research, 36(2), 84-90.	https://www.sciencedirect.com/science/article/pii/S0740818814000255	Surveyed library directors (subset of a larger study that surveyed all types and sizes of academic libraries in the U.S. and Canada) The emergence of data intensive science and the establishment of data management mandates have motivated academic libraries to develop research data services (RDS) for their faculty and students. Here the results of two studies are reported: librarians' RDS practices in U.S. and Canadian academic research libraries, and the RDS-related library policies in those or similar libraries. Results show that RDS are currently not frequently employed in libraries, but many services are in the planning stages. Technical RDS are less common than informational RDS, RDS are performed more often for faculty than for students, and more library directors believe they offer opportunities for staff to develop RDS-related skills than the percentage of librarians who perceive such opportunities to be available. Librarians need opportunities to learn more about these services either on campus or through attendance at workshops and professional conferences.

Robin Rice
John Southall
	The Data Librarian's Handbook	https://www.alastore.ala.org/content/data-librarians-handbook	The Data Librarian's Handbook, written by two data librarians with over 30 years' combined experience, unpicks the everyday role of the data librarian and offers practical guidance on how to collect, curate and crunch data for economic, social and scientific purposes.
			
			With contemporary case studies from a range of institutions and disciplines, tips for best practice, study aids and links to key resources, this book is a must-read for all new entrants to the field, library and information students and working professionals. Key topics covered include:
			    the evolution of data libraries and data archives;
			    handling data compared to other forms of information;
			    managing and curating data to ensure effective use and longevity;
			    how to incorporate data literacy into mainstream library instruction and information literacy training;
			    how to develop an effective institutional research data management (RDM) policy and infrastructure;
			    how to support and review a data management plan (DMP) for a project, a key requirement for most research funders;
			    approaches for developing, managing and promoting data repositories;
			    handling and sharing confidential or sensitive data; and
			    supporting open scholarship and open science, ensuring data are discoverable, accessible, intelligible and assessable.
			
			This title is for the practicing data librarian, possibly new in their post with little experience of providing data support. It is also for managers and policy-makers, public service librarians, research data management coordinators and data support staff. It will also appeal to students and lecturers in iSchools and other library and information degree programs where academic research support is taught.

Force11 RDA	The FAIRsharing Registry and Recommendations: Interlinking Standards, Databases and Data Policies	https://docs.google.com/document/d/16YIwpPHHSHI8qo0nKxLu455j_82pOBdu6UMAlvffJf4/edit#	This document describes the outputs of a joint RDA and Force11 Working Group (WG), supported by a number of adopters (see signatories in section 1). These outputs are: The FAIRsharing registry (https://fairsharing.org) of interlinked records on standards (for identifying, reporting, and citing data and metadata), databases (repositories and knowledge-bases) and data policies (from journals, publishers, funders and other organizations), ranging from the generic and multi-disciplinary, to those from specific domains. The related FAIRsharing recommendations, to guide users and the producers of standards and databases to select and describe these resources, or to recommend them in data policies.
Justin Kitzes Daniel Turek Fatma Deniz (Eds.)	The Practice of Reproducible Research: Case Studies and Lessons from the Data-Intensive Sciences	https://www.practicereproducibleresearch.org/	This book contains a collection of 31 case studies of reproducible research workflows, written by academic researchers in the data-intensive sciences. Each case study describes how the author combined specific tools, ideas, and practices in order to complete a real-world research project. Emphasis is placed on the practical aspects of how the author organized his or her research to make it as reproducible as possible.

Digital Curation Center	The role of data management for various professions	http://www.dcc.ac.uk/training/data-management-courses-and-training/career-profiles	As part of our work on the JISC/RIN funded Data Management Skills Support Initiative (DaMSSI), the DCC and RIN have produced a series of career profiles that aim to demonstrate how data management skills contribute to and underpin high-quality performance in a number of professions. These profiles can be helpful for:
			
			    illustrating potential career paths for both undergraduate and graduate programmes
			    promoting professional development training courses
			    engaging with professional bodies

Camille V.L. Thomas and Richard J. Urban	Thomas, C. V., & Urban, R. J. (2018). What Do Data Librarians Think of the MLIS? Professionals' Perceptions of Knowledge Transfer, Trends, and Challenges. College & Research Libraries, 79(3), 401.	https://crl.acrl.org/index.php/crl/article/view/16726	There are existing studies on data curation programs in library science education and studies on data services in libraries. However, there is not much insight into how educational programs have prepared data professionals for practice. This study asked 105 practicing professionals how well they thought their education prepared them for professional experience. It also asked supervisors about their perceptions of how well employees performed. After analyzing the results, the investigators of this study found that changing the educational model may lead to improvements in future library data services.
Andrea Thomer, Karen Wickett, Karen S. Baker, Bruce Fouke, Carole L. Palmer	Thomer, A. K., Wickett, K. M., Baker, K. S., Fouke, B. W., & Palmer, C. L. (2018). Documenting provenance in noncomputational workflows: Research process models based on geobiology fieldwork in Yellowstone National Park. Journal of the Association for Information Science and Technology.	https://doi-org.ezp-prod1.hul.harvard.edu/10.1002/asi.24039	UW iSchool A comprehensive record of research data provenance is essential for the successful curation, management, and reuse of data over time. However, creating such detailed metadata can be onerous, and there are few structured methods for doing so. In this case study of data curation in support of geobiology research conducted at Yellowstone National Park, we describe a method of "Research Process Modeling" for documenting noncomputational data provenance in a structured yet flexible way. Themethod combines systems analysis techniques to model research activities, the World Wide Web Consortium Provenance (PROV) ontology to illustrate relationships between data products, and simple inventory methods to account for research processes and data products. It also supports collaborative data curation between information professionals and researchers, and is therefore a significant step toward producing more useable and interpretable research data. We demonstrate how this method describes data provenance more robustly than "flat" metadata alone and fills a critical gap in the documentation of provenance for field-based and noncomputational workflows. We discuss potential applications of this approach to other research domains.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Helen R. Tibbo	Tibbo, H. R. (2016) Teaching the Masses about Research Data Management	https://www2.archivists.org/sites/all/files/Tibbo-ResearchForumAbstractBio2016.pdf	This poster will discuss the Research Data Management MOOC (Massively Open Online Course), a product of the CRADLE project
Manorama Tripathi Archana Shukla Sharad Kumar Sonker	Tripathi, M., Shukla, A., & Sonkar, S. K. (2017). research data Management Practices in university libraries: a study. DESIDOC Journal of Library & Information Technology, 37(6),	https://www.researchgate.net/profile/Manorama_Tripathi2/publication/320978256_Research_Data_Management_Practices_in_University_Libraries_A_Study/links/5a053eaa458515eddb83ef36/Research-Data-Management-Practices-in-University-Libraries-A-Study.pdf	Research data is the data which is generated when the researchers undertake or execute any research activity or project. The data may be textual, quantitative, qualitative, images, recordings, musical compositions, verbal communication, experimental readings, simulations, codes and so on. It needs to be preserved for future use.In this context, the paper has studied the research data management (RDM) services implemented by different university libraries for managing, organising, curating and preserving research data generated at their universities' departments and laboratories, for reusing and sharing. It has surveyed the central university libraries and the best 20 university libraries of the world to highlight how RDM is extended to the researchers. Further, it has suggested a model for the university libraries in the country to follow for actually deploying RDM services.
Amy Trost	Trost, A. (2018). The Role of Practitioners in LIS Scholarship: A Case Study from the University of Maryland.	https://drum.lib.umd.edu/handle/1903/21100	Librarians who practice bibliometrics are often asked to document the contribution of an academic department or research group to a larger body of scholarship. Here I explore techniques to address these requests with a case study examining Library and Information Science (LIS) scholarship at the University of Maryland (UMD) Libraries. This analysis relied on bibliographic data from three sources: - Work produced by librarians at the University of Maryland since 2008 collected from Google Scholar. - 8,924 records related to the "academic libraries" subject heading in EBSCO's Library and Information Science Source (LISS) database; and - The 5,000 most commonly used records in the "Information Science Library Science" research area in the Web of Science (WoS) core collection. Technologies used to access, analyze and visualize the records included the tm and bibliometrix packages in R, VOSViewer, and Gephi. This study found that practitioner scholarship at the University of Maryland overlaps with much of the work in the larger field of LIS. A few topics in the broader collection LIS documents—reference services, access, and social media, for example—were not found in the UMD title analysis. Without a more careful documentation of the scope of each data source, however, it is difficult to draw any firm conclusions.
Cyprian Ifeanyi Ugwu Justina Ngozi Ekere	Ugwu, C. I., & Ekere, J. N. (2018). The role of knowledge management in providing innovative services in university libraries in Nigeria: A structural equation modeling approach. Global Knowledge, Memory and Communication.		Purpose – Previous studies have shown that knowledge management (KM) plays a role in service innovation or that there is a positive relationship between them. However, this role or relationship is yet to be established quantitatively through empirical evidence within the context of university libraries in Nigeria. The purpose of this study is to determine how knowledge management affects innovative services in university libraries in Nigeria.

Design/methodology/approach – The study adopted a quantitative approach and used questionnaire to collect data from 250 librarians who participated in the study. A structural equation modeling approach was used to validate the research model.

Findings – It was found that KM affected service innovation positively. The three measures of KM cycle, namely, knowledge capture/creation, knowledge sharing/transfer and knowledge application/use were found to have positive and significant effect on service innovation in university libraries in Nigeria. In conclusion, university libraries in Nigeria with high activities in knowledge capture, knowledge sharing and knowledge use are more likely to provide innovative services to their users.

Practical implications – The study suggests that libraries with high level of activities in knowledge capturing, sharing and application are more likely to engage in innovative services. The study is also capable of encouraging students to take courses on KM and library and information science educators to place more emphasis onKM in their curricular.

Originality/value – The paper offers a unique empirical direction for service innovation in universitylibraries in Nigeria. As there is a dearth of quantitative empirical evidence in the area of service innovation in libraries, the empirical evidence obtained in this paper will not only contribute to the body of knowledge in this area but also be used to create an environment for innovative library services. |
| Damian Ulbricht Kirsten Elger Roland Bertelmann Jens Klump | Ulbricht, D., Elger, K., Bertelmann, R., & Klump, J. (2016). panMetaDocs, eSciDoc, and DOIDB—An Infrastructure for the Curation and Publication of File-Based Datasets for GFZ Data Services. ISPRS International Journal of Geo-Information, 5(3) | http://www.mdpi.com/2220-9964/5/3/25 | *(This article belongs to the Special Issue Research Data Management)*

The GFZ German Research Centre for Geosciences is the national laboratory for Geosciences in Germany. As part of the Helmholtz Association, providing and maintaining large-scale scientific infrastructures are an essential part of GFZ activities. This includes the generation of significant volumes and numbers of research data, which subsequently become source materials for data publications. The development and maintenance of data systems is a key component of GFZ Data Services to support state-of-the-art research. A challenge lies not only in the diversity of scientific subjects and communities, but also in different types and manifestations of how data are managed by research groups and individual scientists. The data repository of GFZ Data Services provides a flexible IT infrastructure for data storage and publication, including minting of digital object identifiers (DOI). It was built as a modular system of several independent software components linked together through Application Programming Interfaces (APIs) provided by the eSciDoc framework. Principal application software are panMetaDocs for data management and DOIDB for logging and moderating data publications activities. Wherever possible, existing software solutions were integrated or adapted. A summary of our experiences in operating this service is given. Data are described through comprehensive landing pages and supplementary documents, like journal articles or data reports, thus augmenting the scientific usability of the service. |
| Ashley Sands | Understanding and Sustaining the Role of Academic Libraries in Research Data Management | https://www.imls.gov/blog/2016/10/understanding-and-sustaining-role-academic-libraries-research-data-management | IMLS recently announced 41 awards made through the National Leadership Grants for Libraries program (NLG), the Laura Bush 21st Century Librarian program (LB21), and Sparks! Ignition Grants for Libraries program (Sparks). Among these awards, we are pleased to support a number of projects seeking to understand and sustain the role of academic libraries in research data management. The three projects highlighted in this post represent a total investment of nearly $200,000. |
| University of Melbourne | University of Melbourne Research Data Management Plan | | The purpose of the Data Management Plan (DMP) is to define the basis for successful management of the project data, records, and all related information. This document contains instructional text which should be removed prior to finalising the DMP. Place 'N/A' in sections which are not applicable to your DMP – your plan is a living document and should be updated throughout the course of your project. |

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Kara Suzuka	University of Michigan School of Education Research Experience for Master's Students Proposal		Teaching and Learning Exploratory (TLE), a new digital library of education records of practice, housed within the University of Michigan School of Education ● What types of records of practice datasets have been created that focus on teaching and learning practices? By whom? For what purposes? ● How do data producers work with their data? Are they sharing and/or collaborating around their data? If so, how? ● What, if any, plans have data producers made for preserving their collections and making them available for reuse? How do considerations about human subjects research and student (or teacher) privacy affect what they are able and willing to share? ● What issues, challenges, and unmet needs are data producers – and data users – facing in their efforts to work with these types of collections? ● What metadata is critical for these types of collections and for assets within the collections (and at what granularity)? What other types of information, education, or resources are needed to enable – and perhaps encourage – productive use and reuse of these collections?
Otrel-Cass, Kathrin (PI) Dirckinck-Holmfeld, Lone (CoI) Ryberg, Thomas (CoI) Purushothaman, Aparna (CoI) Offersgaard, Lene (CoI) Eckardt, Max Roald (PI) Gasser, Katrine Hofmann (CoI) Christiansen, Kåre Fiedler (CoI) Lund , Frank (CoI) Bertelsen , Erik (CoI) Andersen , Bjarne (CoI) Hansen, Karsten Kryger (CoI)	Video Life Cycle Data Management (VDM) This projects explores how to support researchers working in educational studies and who are using video for data collection to identify sustainable systems that support the data lifecycle of the video data. Part of this pilot project will be to produce guidelines for a video data management plan to provide a structured way of thinking about video research data collection and processing, including the type of research data a research project will produce, the format it will will use, the storage it will require and how the data can be accessed. Such a data management plan will require considerations regarding: Data description; Establishment of existing data; Format of data; Metadata; Storage and backup requirements; Security; Responsibility; Intellectual and property rights; Access and sharing; Audience; Selection and retention periods; Archiving and preservation; Ethics and privacy. Since issues of video-based research are common in several fields, the pilot project's outcomes will be disseminated as a technical and organizational model for research cooperation in these other fields. StatusFinished Effective start/end date01/08/2016 → 30/06/2018	http://vbn.aau.dk/en/projects/video-life-cycle-data-management (f1564732-05ae-4928-a934-59abd5b2fa1c).html	This projects explores how to support researchers working in educational studies and who are using video for data collection to identify sustainable systems that support the data lifecycle of the video data. Part of this pilot project will be to produce guidelines for a video data management plan to provide a structured way of thinking about video research data collection and processing, including the type of research data a research project will produce, the format it will use, the storage it will require and how the data can be accessed. Such a data management plan will require considerations regarding: Data description; Establishment of existing data; Format of data; Metadata; Storage and backup requirements; Security; Responsibility; Intellectual and property rights; Access and sharing; Audience; Selection and retention periods; Archiving and preservation; Ethics and privacy. Since issues of video-based research are common in several fields, the pilot project's outcomes will be disseminated as a technical and organizational model for research cooperation in these other fields.
Lin Wang	Wang, L. (2018). Twinning data science with information science in schools of library and information science. Journal of Documentation, 74 (6), 1243-1257.		Purpose – As an emerging discipline, data science represents a vital new current of school of library and information science (LIS) education. However, it remains unclear how it relates to information science within LIS schools. The purpose of this paper is to clarify this issue. Design/methodology/approach – Mission statement and nature of both data science and information science are analyzed by reviewing existing work in the two disciplines and drawing DIKW hierarchy. It looks at the ways in which information science theories bring new insights and shed new light on fundamentals of data science. Findings – Data science and information science are twin disciplines by nature. The mission, task and nature of data science are consistent with those of information science. They greatly overlap and share similar concerns. Furthermore, they can complement each other. LIS school should integrate both sciences and develop organizational ambidexterity. Information science can make unique contributions to data science research, including conception of data, data quality control, data librarianship and theory dualism. Document theory, as a promising direction of unified information science, should be introduced to data science to solve the disciplinary divide. Originality/value – The results of this paper may contribute to the integration of data science andinformation science within LIS schools and iSchools. It has particular value for LIS school development and reform in the age of big data.
Wei Min Wang Tobias Göpfert Rainer Stark	Wang, W., Göpfert, T., & Stark, R. (2016). Data management in collaborative interdisciplinary research projects—Conclusions from the digitalization of research in sustainable manufacturing. ISPRS International Journal of Geo-Information, 5(4)	http://www.mdpi.com/2220-9964/5/4/41	As research topics become increasingly complex, large scale interdisciplinary research projects are commonly established to foster cross-disciplinary cooperation and to utilize potential synergies. In the case of the Collaborative Research Center (CRC) 1026, 19 individual projects from different disciplines are brought together to investigate perspectives and solutions for sustainable manufacturing. Beside overheads regarding the coordination of activities and communication, such interdisciplinary projects are also facing challengs regarding data management. For exchange and combination of research results, data from individual projects have to be stored systematically, categorized, and linked according to the logical interrelations of the involved disciplinary knowledge domains. In the CRC 1026, the project for information infrastructure observed and analysed collaboration practices and developed IT-supported solutions to facilitate and foster research collaboration. Data management measures in this period were mainly focused on building a shared conceptual framework, and the organization of task related data. For the former aspect, an ontology basesd apporach was developed and prototypically implemented. For the latter aspect, a message board integrated task management system was developed and applied.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Andreas Weber Claudia Piesche	Weber, A., & Piesche, C. (2016). Requirements on long-term accessibility and preservation of research results with particular regard to their provenance. ISPRS International Journal of Geo-Information, 5 (4)	http://www.mdpi.com/2220-9964/5/4/49	Since important national and international funders of research projects require statements on the long-term accessibility of research results, many new solutions appeared to fulfil these demands. The solutions are implemented on various scopes, starting from specific solutions for one research group up to solutions with a national focus (i.e., the RADAR project). While portals for globally standardized research data (e.g., climate data) are available, there is currently no provision for the large amount of data resulting from specialized research in individual research foci, the so called long-tail of sciences. In this article we describe the considerations regarding the implementation of a local research data repository for the Collaborative Research Centre (CRC) 840. The main focus will be on the examination of requirements for, and an agenda of, a possible technical implementation. Requirements were derived from a more theoretical examination of similar projects and relevant literature, diverse discussions with researchers and project leaders, by analysis of existing publication data, and finally the prototypical implementation with refining iterations. Notably, the discussions with the researchers lead to new features going beyond the challenges of the mere long-term preservation of research data. Besides the need for an infrastructure that permits long-term preservation and retrieval of research data, our system will allow the reconstruction of the complete provenance of published research results. This requirement is a serious diversification of the problem, because it creates the need to qualify additional transformation data, describing the transformation process from primary research data to research results.
Si Li Xing Wenming	Wenming, S. L. X. (2013). Scientific Data Management and Sharing Policies in Foreign Countries: Investigation and Inspiration to Us [J]. Information and Documentation Services, 1, 016.	http://en.cnki.com.cn/Article_en/CJFDTOTAL-QBZL201301016.htm	This paper takes U.S.A,United Kingdom,and Australian as the cases,to study the character and enlightenment of these countries' data management/sharing policies made by research management institutions and universities,and the open data policies made by governments,aiming at providing experiences to learn when formulating and perfecting data management/sharing policies as well as promoting data management/sharing policies as well as promoting data sharing practices in China.
Greg Wilson, Jennifer Bryan, Karen Cranston, Justin Kitzes, Lex Nederbragt, Tracy K. Teal	Wilson, G., Bryan, J., Cranston, K., Kitzes, J., Nederbragt, L., & Teal, T. K. (2017). Good enough practices in scientific computing. PLoS computational biology, 13(6), e1005510.	https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1005510	Computers are now essential in all branches of science, but most researchers are never taught the equivalent of basic lab skills for research computing. As a result, data can get lost, analyses can take much longer than necessary, and researchers are limited in how effectively they can work with software and data. Computing workflows need to follow the same practices as lab projects and notebooks, with organized data, documented steps, and the project structured for reproducibility, but researchers new to computing often don't know where to start. This paper presents a set of good computing practices that every researcher can adopt, regardless of their current level of computational skill. These practices, which encompass data management, programming, collaborating with colleagues, organizing projects, tracking work, and writing manuscripts, are drawn from a wide variety of published sources from our daily lives and from our work with volunteer organizations that have delivered workshops to over 11,000 people since 2010. Data within a project may need to exist in various forms, ranging from what first arrives to what is actually used for the primary analyses. Our recommendations have 2 main themes. One is to work towards ready-to-analyze data incrementally, documenting both the intermediate data and the process. We also describe the key features of "tidy data", which can be a powerful accelerator for analysis.
Liu Xia Ding Ning	Xia, L. & D. Ning. Research On Scientific Data Management In Academic Libraries: The Practice Of Wuhan University Library	http://pr-rla.org/2012/11/research-on-scientific-data-management-in-academic-libraries-the-practice-of-wuhan-university-library/	
Li Xiaohui	Xiaohui, L. (2011). Research Data Management and Service Pattern in Libraries [J]. Journal of Library Science in China, 5, 004.	http://en.cnki.com.cn/Article_en/CJFDTotal-ZGTS201105004.htm	Based on the research data management experience in foreign libraries,this article explores the pattern of research data management and service in libraries from five aspects:the technology support,data organization,data services,user information literacy education and department and human resource configuration.Technology support includes infrastructure construction and soft tool design;the ways of research data organization include institutional repositories and data portal;research data service includes data access and data analysis.Research data management should be brought into users' information literacy education in order to provide researchers with necessary training on awareness,knowledge and skills regarding research data management. Research data management and service need to be guaranteed by relevant departments and personnel.
Akhilesh K.S. Yadav	Yadav, A. K. S. (2018). "Trends, challenges and opportunities for LIS education: an interview with Carol Tenopir" Akhilesh K.S. Yadav, Tata Institute of Social Sciences	Mar 23, 2018	https://libraryconnect.elsevier.com/articles/trends-challenges-and-opportunities-lis-education-interview-carol-tenopir	Brief overview; some information
Ayoung Yoon and Teresa Schultz	Yoon, A., & Schultz, T. (2017). Research data management services in academic libraries in the US: A content analysis of libraries' websites.	https://crl.acrl.org/index.php/crl/article/view/16788/18346	Examining landscapes of research data management services in academic libraries is timely and significant for both those libraries on the front line and the libraries that are already ahead. While it provides overall understanding of where the research data management program is at and where it is going, it also provides understanding of current practices and data management recommendations and/or tool adoptions as well as revealing areas of improvement and support. This study examined the research data (management) services in academic libraries in the United States through a content analysis of 185 library websites, with four main areas of focus: service, information, education, and network. The results from the content analysis of these webpages reveals that libraries need to advance and engage more actively to provide services, supply information online, and develop educational services. There is also a wide variation among library data management services and programs according to their web presence.
Ayoung Yoon Teresa Schultz	Yoon, A., & Schultz, T. (2017). Research data management services in academic libraries in the US: A content analysis of libraries' websites. College & Research Libraries 78 (7).	https://crl.acrl.org/index.php/crl/article/view/16788/18346	Examining landscapes of research data management services in academic libraries is timely and significant for both those libraries on the front line and the libraries that are already ahead. While it provides overall understanding of where the research data management program is at and where it is going, it also provides understanding of current practices and data management recommendations and/or tool adoptions as well as revealing areas of improvement and support. This study examined the research data (management) services in academic libraries in the United States through a content analysis of 185 library websites, with four main areas of focus: service, information, education, and network. The results from the content analysis of these webpages reveals that libraries need to advance and engage more actively to provide services, supply information online, and develop educational services. There is also a wide variation among library data management services and programs according to their web presence
Jilong Zhang, Anna Fu, Hao Wang, and Shenqin Yin	Zhang, J., Fu, A., Wang, H., & Yin, S. (2017). The development of data science education in China from the LIS perspective. International Journal of Librarianship, 2(2), 3-17. https://doi.org/10.23974/ijol.2017.vol2.2.29	https://ojs.calaijol.org/index.php/ijol/article/view/29	The aim of this paper is to introduce the development of data science in higher education in China, including the policy and educational programs at various levels. We investigated the data science education of five LIS (Library and Information Studies) schools in China, using Fudan University's Data Management and Application Master's Program as an example for more specific information about the curriculum structure, course focus and teaching methods in data science education. The paper further describes the action of promoting data science and data science education in the field of LIS by the China Academic Library Research Data Management Implementation Group.
Zhou Qi	Zhou, Q. (2018). Academic Libraries in Research Data Management Service: Perceptions and Practices. Open Access Library Journal, 5(06)	http://www.scirp.org/journal/PaperInformation.aspx?paperID=85393	Purpose: Explore the process of conducting research data management ser-vices and provide effective recommendations for academic libraries to con-duct data management services. Design/methodology/approach: On the pre-mise of summarizing and analyzing the connotation of research data man-agement, this paper discusses the characteristics of university research data management. By sorting out many cases of research data management, we summed up several major elements of research data management service practice in universities: policy formulation, infrastructure, service content, funding model, and staffing. Findings/value: Systematically sort out the basic elements and development status of university research data management service practice and provide reference for the university to carry out research data management service.

Author/Organization	Publication Title/Citation	Link(s)	Abstracts/Quotes/Notes
Zhou Qi	Zhou, Q. (2018). Research on Scientific Data Literacy Education System. Open Journal of Social Sciences, 6(06).	http://www.scirp.org/journal/PaperInformation.aspx?paperID=85418	This article analyzes the connotation of scientific data literacy, uses literature research methods and case analysis methods to investigate and analyze the scientific data literacy education practices of universities or institutions, and proposes the scientific data literacy teaching objectives, teaching objects, education models and education strategies. It has important theoretical value and practical reference. In 2014, led by Fudan University, nine domestic university libraries jointly initiated the establishment of the "China University Library Research Data Management Promotion Working Group". In December of the same year, the social science data platform of Fudan University was ormally launched to provide universities, research institutes, and government agencies with functions for storing, publishing, exchanging, sharing, and online analysis of scientific research data. Some university libraries in China try to implement the scientific data literacy education practice, which is mainly reflected in the training of data statistics databases and analysis software. The formation of an intensive data environment has caused the scientific data produced by universities to grow in volume in terms of quantity, variety, and speed. Researchers face a series of data management issues, such as data management planning, data citation, data publishing, and ethical use of data, etc. Scientific data literacy, as a key concept of data management, has become one of the necessary capabilities for academic researchers to research and communicate.

Organization	Publication Title	Link(s)	Notes
ACRL Science and Technology Section	Issues in Science and Technology Librarianship	http://www.istl.org/	publishes substantive content of interest to science and technology librarians. It serves as a vehicle for sci-tech librarians to share successful initiatives and innovative ideas, and to publish peer-reviewed or board-accepted papers, including case studies, practical applications, theoretical essays, web/bibliographies, and research papers relevant to the functions and operations of science and technology libraries in all settings. Through its columns ISTL also publishes reviews, opinions, and best practices.
	Archive Journal	http://www.archivejournal.net/essays/foundations-of-data-curation-the-pedagogy-and-practice-of-purposeful-work-with-research-data/	
	ASIS&T Bulletin	https://www.asist.org/publications/bulletin/junejuly-2016/rdap-review/	
	CIDR 2007	http://www-db.cs.wisc.edu/cidr/cidr2007/papers/cidr07p21.pdf	
	CIDR 2017	https://pdfs.semanticscholar.org/hasaf1cad62e9c3b9a6602935902ee2b3004d203.pdf	
Ubiquity Press	CODATA Data Science Journal	https://datascience.codata.org/	
	Collection and Curation	http://emeraldgrouppublishing.com/products/journals/call_for_papers.htm?id=8002	Guest editor Ayoung Yoon, PhD, Indiana University Purdue University Indianapolis (IUPUI)
ACRL	College & Research Libraries	https://crl.acrl.org/index.php/crl/article/view/16726 https://crl.acrl.org/index.php/crl/article/view/16788/18346	
	College & Research Libraries News		
Purdue University	Data Information Literacy: Librarians, Data, and the Education of a New Generation of Researchers (ePub)	http://www.thepress.purdue.edu/titles/format/9781612493527	
Digital Curation Centre	DCC Blog	http://www.dcc.ac.uk/news/reflections-research-data-management	
	Education for Information Special Issue on Engaging with Open Science in Learning and Teaching	https://www.iospress.nl/journal/education-for-information/	heck@dipf.de or carina.bossu@utas.edu.au "One important element of openness is open science, which is the movement to make scientific research, data and dissemination accessible to all levels of an inquiring society, amateur or professional. It encompasses practices such as publishing open research, campaigning for open access, encouraging scientists to practice open notebook science, and generally making it easier to publish and communicate scientific knowledge (Wikipedia, 2018). Although open science is frequently seen as related to research, its philosophical foundations and dilemmas are very similar to other aspects of openness closely associated to learning and teaching, such as open education (Schuwer, 2017). However, recent developments and studies have realised the potential of open science to enhance many aspects of learning and teaching (some examples are Open Data as OER, Study on Open Science, Open access scholarly publications as OER, Open science, open access and open educational resources: Challenges and opportunities, Data in Education, Open Data in Schools. Despite the examples above, the application of open science in learning and teaching is still very limited. In addition, most of the work conducted in open science is focused on data, infrastructure and publications rather than practices. This the main rational for this call for contributions to a Special Issue on Engaging with Open Science in Learning and Teaching."
	EPJ Web of Conferences	https://epjwoc.epj.org/articles/epjconf/abs/2018/21/epjconf_lisavii2018_03002/epjconf_lisavii2018_03002.html	
	FEIS 2018 Proceedings	http://feis2018.di.unipi.it/programme	
	Global Knowledge, Memory and Communication		
	Health Information & Libraries Journal	https://onlinelibrary.wiley.com/doi/abs/10.1111/hir.12229	
	IASSIST Quarterly	https://www.iassistquarterly.com/index.php/iassist/article/view/925	
	IEEE	https://ieeexplore.ieee.org/document/6972259/authors https://ieeexplore.ieee.org/document/7440517/	
	Information and Documentation Services	http://en.cnki.com.cn/Article_en/CJFDTOTAL-QBZL201301016.htm	
University of Edinburgh for the Digital Curation Centre	International Journal of Digital Curation	http://www.ijdc.net/about http://www.ijdc.net/article/view/11.1.232	Papers address policy, strategic, operational, experimental, infrastructural, or tool-based aspects of digital data and other objects of value to research, cultural heritage or society. Peer-reviewed papers cover original research supported by significant evidence. General articles are descriptive of some relevant event, activity, research project in progress, or approach. They may present a proposal for an architecture, an implementation, a service, or a project, for example. General articles may also be opinion pieces, reviews, or surveys of existing work in some particular area. The journal is published in electronic form on a rolling basis, with content collected into two issues a year. IJDC is published by the University of Edinburgh for the Digital Curation Centre.
	ISIC 2018: The Information Behaviour Conference		
ACRL Science and Technology Section	Issues in Science and Technology Librarianship	http://www.istl.org/	publishes substantive content of interest to science and technology librarians. It serves as a vehicle for sci-tech librarians to share successful initiatives and innovative ideas, and to publish peer-reviewed or board-accepted papers, including case studies, practical applications, theoretical essays, web/bibliographies, and research papers relevant to the functions and operations of science and technology libraries in all settings. Through its columns ISTL also publishes reviews, opinions, and best practices.
	JCHLA / JABSC	In folder	
	JMLA	https://www.ncbi-nlm-nih-gov.ezp-prod1.hul.harvard.edu/pmc/articles/PMC6013124/pdf/jmla-106-294.pdf	
	Journal of Documentation		
UMass Medical School	Journal of eScience Librarianship (JeSLIB)	https://escholarship.umassmed.edu/jeslib/about.html https://escholarship.umassmed.edu/jeslib/vol5/iss1/6/ https://escholarship.umassmed.edu/jeslib/vol6/iss1/1/ https://escholarship.umassmed.edu/jeslib/vol7/iss2/4/ http://escholarship.umassmed.edu/jeslib/vol6/iss2/3/ https://escholarship.umassmed.edu/jeslib/vol1/iss3/1/ https://escholarship.umassmed.edu/jeslib/vol1/iss1/8/	Focusing on services related to data-driven research in science, technology, engineering, math, social sciences, medicine, and public health
	Journal of Library Science in China	http://en.cnki.com.cn/Article_en/CJFDTotal-ZGTS201105004.htm	
	Journal of the Association for Information Science & Technology	https://doi-org.ezp-prod1.hul.harvard.edu/10.1002/asi.24039	
	Journal of the National Library of China	http://en.cnki.com.cn/Article_en/CJFDTotal-BJUG201303009.htm	
Leiden University	Leiden Manifesto for Research Metrics	http://www.leidenmanifesto.org/	
	LIBER 2018	https://www.uef.fi/en/web/kirjasto/tutkimusdatan-hallinta	
	LIBRA LogoOnline Archive of University of Virginia Scholarship	https://libraetd.lib.virginia.edu/public_view/pr19f636c	
	Library & Information Science Research	https://www.sciencedirect.com/science/article/pii/S0740818814500255	Surveyed library directors (subset of a larger study that surveyed all types and sizes of academic libraries in the U.S. and Canada)
	Library Connect blog	https://libraryconnect.elsevier.com/articles/trends-challenges-and-opportunities-lis-education-interview-carol-tenopir	Brief overview; some information
	Library Management	https://www.emeraldinsight.com/doi/abs/10.1108/LM-10-2017-0114	
	Library Trends	https://muse.jhu.edu/article/508619/summary	
	Library Tribune	http://admission.whu.edu.cn/faculty/show-2156.html	
	Open Access Library Journal	http://www.scirp.org/journal/PaperInformation.aspx?paperID=85393	
UMass Medical School	Journal of eScience Librarianship (JeSLIB)	https://escholarship.umassmed.edu/jeslib/about.html	Focusing on services related to data-driven research in science, technology, engineering, math, social sciences, medicine, and public health
University of Edinburgh for the Digital Curation Centre	International Journal of Digital Curation	http://www.ijdc.net/about	Papers address policy, strategic, operational, experimental, infrastructural, or tool-based aspects of digital data and other objects of value to research, cultural heritage or society. Peer-reviewed papers cover original research supported by significant evidence. General articles are descriptive of some relevant event, activity, research project in progress, or approach. They may present a proposal for an architecture, an implementation, a service, or a project, for example. General articles may also be opinion pieces, reviews, or surveys of existing work in some particular area. The journal is published in electronic form on a rolling basis, with content collected into two issues a year. IJDC is published by the University of Edinburgh for the Digital Curation Centre.
European Commission Open Science Policy Platform	Open Information Science		
	Open Journal of Social Sciences	http://www.scirp.org/journal/PaperInformation.aspx?paperID=85418	
Pacific Rim Research Libraries Alliance	Pacific Rim Research Libraries Alliance Annual Meeting 2012	http://prr-rla.org/2012/11/research-on-scientific-data-management-in-academic-libraries-the-practice-of-wuhan-university-library/	
	Proceedings of ICLICK 2018 Universitas Padjadjaran	http://eprints.itb.ac.id/	
	Proceedings of the 2013 ACM SIGMOD International Conference on Management of Data	https://homes.cs.washington.edu/~magda/papers/upadhyaya-sigmod13.pdf	
	Proceedings of the ACRL 2013 Conference	http://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2013/papers/Doucett eFyfe_Drowning.pdf	
	Purdue University Research Repository	https://purr.purdue.edu/publications/2186/1	
University of Southern Mississippi	Russian Journal of Earth Sciences	http://elpub.wdcb.ru/journals/rjes/v18/2018ES000625/2018ES000625.pdf	
	Science Boot Camp for Librarians Southeast 2018	http://libguides.lib.usm.edu/ld.php?content_id=43346313	
	The Electronic Library	https://www.emeraldinsight.com/doi/full/10.1108/EL-04-2015-0063	
	The Journal of Academic Librarianship	https://www.sciencedirect.com/science/article/pii/S009913331830106X	
Society of American Archivists	Tibbo Research Forum	https://www2.archivists.org/sites/all/files/Tibbo-ResearchForumAbstractBio2016.pdf	

Organization	Publication Title	Link(s)	Notes
Education for Information	Education for Information Special Issue on Engaging with Open Science in Learning and Teaching	https://www.iospress.nl/journal/education-for-information/	heck@dipf.de or carina.bossu@utas.edu.au "One important element of openness is open science, which is the movement to make scientific research, data and dissemination accessible to all levels of an inquiring society, amateur or professional. It encompasses practices such as publishing open research, campaigning for open access, encouraging scientists to practice open notebook science, and generally making it easier to publish and communicate scientific knowledge (Wikipedia, 2018). Although open science is frequently seen as related to research, its philosophical foundations and dilemmas are very similar to other aspects of openness closely associated to learning and teaching, such as open education (Schuwer, 2017). However, recent developments and studies have realised the potential of open science to enhance many aspects of learning and teaching (some examples are Open Data as OER, Study on Open Science, Open access scholarly publications as OER, Open science, open access and open educational resources: Challenges and opportunities, Data in Education, Open Data in Schools. Despite the examples above, the application of open science in learning and teaching is still very limited. In addition, most of the work conducted in open science is focused on data, infrastructure and publications rather than practices. This the main rational for this call for contributions to a Special Issue on Engaging with Open Science in Learning and Teaching."
Ubiquity Press	CODATA Data Science Journal	https://datascience.codata.org/	The CODATA Data Science Journal is a peer-reviewed, open access, electronic journal, publishing papers on the management, dissemination, use and reuse of research data and databases across all research domains, including science, technology, the humanities and the arts. The scope of the journal includes descriptions of data systems, their implementations and their publication, applications, infrastructures, software, legal, reproducibility and transparency issues, the availability and usability of complex datasets, and with a particular focus on the principles, policies and practices for open data. All data is in scope, whether born digital or converted from other sources. Data become an important part of libraries collection in addition to the traditional information sources like books or journals. With the growing curricular and research interest in data, libraries are now expected to build a data collection that is useful to their user communities. However, developing, managing, and preserving data collection require different considerations than traditional information sources (e.g., scope, cost license agreement, acquisition policies, quality assessment, formats, technology and infrastructure, etc.), while providing unique challenges. Previous work in this area focuses a lot on research data management (RDM) at the libraries, particularly helping researchers address needs throughout the research data lifecycle. This special issue will add a new perspective by addressing libraries efforts to build data collections and the issues around these efforts. Topics of interest include, but are not limited to: - Strategies and challenges for developing data collections - Data collection development policies - Data management/curation practices in libraries - Issue relevant to access and sustainability to manage data as collection - Metadata for data collections - Impact of data on future collection development - New users? need - Training and staffing librarians - User education/service/outreach - Institutional, journal, and funder policies relevant to the development of data collections - Licensing and legal concerns

Publication	Link	Notes	Located by (search)	Date Found
Aditi Bandyopadhyay, Adelphi University-Survey	https://www.surveymonkey.com/r/CitationDataSurvey.	Adelphi University-Survey Aditi Bandyopadhyay Science Librarian Swirbul Library Adelphi University Garden City, NY 11530 E:mail:bandyopa@adelphi.edu Telephone:(516)877 4166		Closed
Akers, K. G., & Doty, J. (2013). Disciplinary differences in faculty research data management practices and perspectives. International Journal of Digital Curation, 8(2), 5-26.	http://www.ijdc.net/index.php/ijdc/article/view/8.2.5	Academic librarians are increasingly engaging in data curation by providing infrastructure (e.g., institutional repositories) and offering services (e.g., data management plan consultations) to support the management of research data on their campuses. Efforts to develop these resources may benefit from a greater understanding of disciplinary differences in research data management needs. After conducting a survey of data management practices and perspectives at our research university, we categorized faculty members into four research domains—arts and humanities, social sciences, medical sciences, and basic sciences—and analyzed variations in their patterns of survey responses. We found statistically significant differences among the four research domains for nearly every survey item, revealing important disciplinary distinctions in data management actions, attitudes, and interest in support services. Serious consideration of both the similarities and dissimilarities among disciplines will help guide academic librarians and other data curation professionals in developing a range of data-management services that can be tailored to the unique needs of different scholarly researchers.	Google Scholar "research data management" library faculty survey	2018-06-26
Anderson, N. R., Lee, E. S., Brockenbrough, J. S., Minie, M. E., Fuller, S., Brinkley, J., & Tarczy-Hornoch, P. (2007). Issues in biomedical research data management and analysis: needs and barriers. Journal of the American Medical Informatics Association, 14(4), 478-488.	https://academic.oup.com/jamia/article/14/4/478/788143	Results: Three major themes were identified: 1) there continues to be widespread use of basic general-purpose applications for core data management; 2) there is broad perceived need for additional support in managing and analyzing large datasets; and 3) the barriers to acquiring currently available tools are most commonly related to financial burdens on small labs and unmet expectations of institutional support. Conclusion: Themes identified in this study suggest that at least some common data management needs will best be served by improving access to basic level tools such that researchers can solve their own problems. Additionally, institutions and informaticians should focus on three components: 1) facilitate and encourage the use of modern data exchange models and standards, enabling researchers to leverage a common layer of interoperability and analysis; 2) improve the ability of researchers to maintain provenance of data and models as they evolve over time though tools and the leveraging of standards; and 3) develop and support information management service cores that could assist in these previous components while providing researchers with unique data analysis and information design support within a spectrum of informatics capabilities.	Google Scholar "research data management" library faculty survey	2018-06-26
Antell, K., Foote, J. B., Turner, J., & Shults, B. (2014). Dealing with data: Science librarians' participation in data management at Association of Research Libraries institutions. College & Research Libraries, 75(4), 557-574.	https://crl.acrl.org/index.php/crl/article/view/16374	As long as empirical research has existed, researchers have been doing "data management" in one form or another. However, funding agency mandates for doing formal data management are relatively recent, and academic libraries' involvement has been concentrated mainly in the last few years. The National Science Foundation implemented a new mandate in January 2011, requiring researchers to include a data management plan with their proposals for funding. This has prompted many academic libraries to work more actively than before in data management, and science librarians in particular are uniquely poised to step into new roles to meet researchers' data management needs. This study, a survey of science librarians at institutions affiliated with the Association of Research Libraries, investigates science librarians' awareness of and involvement in institutional repositories, data repositories, and data management support services at their institutions. The study also explores the roles and responsibilities, both new and traditional, that science librarians have assumed related to data management, and the skills that science librarians believe are necessary to meet the demands of data management work. The results reveal themes of both uncertainty and optimism—uncertainty about the roles of librarians, libraries, and other campus entities; uncertainty about the skills that will be required; but also optimism about applying "traditional" librarian skills to this emerging field of academic librarianship.	Google Scholar "research data management" library faculty survey	2018-06-26

Publication	Link	Notes	Located by (search)	Date Found
Corrall, S., Kennan, M. A., & Afzal, W. (2013). Bibliometrics and research data management services: Emerging trends in library support for research. Library trends, 61(3), 636-674.	https://muse.jhu.edu/article/508619/summary	Developments in network technologies, scholarly communication, and national policy are challenging academic libraries to find new ways to engage with research communities in the economic downturn. Librarians are responding with service innovations in areas such as bibliometrics and research data management. Previous surveys have investigated research data support within North America and other research services globally with small samples. An online multiple-choice questionnaire was used to survey bibliometric and data support activities of 140 libraries in Australia, New Zealand, Ireland, and the United Kingdom, including current and planned services, target audiences, service constraints, and staff training needs. A majority of respondents offered or planned bibliometrics training, citation reports, and impact calculations but with significant differences between countries. Current levels of engagement in data management were lower than for bibliometrics, but a majority anticipated future involvement, especially in technology assistance, data deposit, and policy development. Initiatives were aimed at multiple constituencies, with university administrators being important clients and partners for bibliometric services. Gaps in knowledge, skills, and confidence were significant constraints, with near-universal support for including bibliometrics and particularly data management in professional education and continuing development programs. The study also found that librarians need a multilayered understanding of the research environment.	Google Scholar "research data management" library faculty survey	2018-06-26
Cox, A. M., & Pinfield, S. (2014). Research data management and libraries: Current activities and future priorities. Journal of Librarianship and Information Science, 46(4), 299-316.	http://journals.sagepub.com/doi/abs/10.1177/0961000613492542	This paper reports research carried out at the end of 2012 to survey UK universities to understand in detail the ways in which libraries are currently involved in research data management and the extent to which the development of research data management services is a strategic priority for them. The research shows that libraries were offering limited research data management services, with highest levels of activity in large research-intensive institutions. There were major challenges associated with skills gaps, resourcing and cultural change. However, libraries are currently involved in developing new institutional research data management policies and services, and see this as an important part of their future role. Priorities such as provision of research data management advisory and training services are emerging. A systematic comparison between these results and other recent studies is made in order to create a full picture of activities and trends. An innovation hype-cycle framework is deployed to understand possible futures and Abbott's theory of professions is used to gain an insight into how libraries are competing to extend their jurisdiction whilst at the same time working collaboratively with other stakeholders.	Google Scholar "research data management" library faculty survey	2018-06-26
Gold, A. K. (2007). Cyberinfrastructure, data, and libraries, part 2: Libraries and the data challenge: Roles and actions for libraries. D-Lib Magazine 13 (9/10): September/October.	http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1016&context=lib_dean	Overview	Google Scholar "research data management" library faculty survey	2018-06-26
Peters, C., & Dryden, A. R. (2011). Assessing the academic library's role in campus-wide research data management: A first step at the University of Houston. Science & Technology Libraries, 30(4), 387-403.	https://www.tandfonline.com/doi/abs/10.1080/0194262X.2011.626340	In an effort to support the University of Houston's goal of becoming a Carnegie-designated Tier One research university, several science librarians within the Department of Liaison Services have undertaken a study to assess current data management practices on campus. The goal of this study was to determine if data management needs are being met on campus and how the library might help meet those needs. We found that rather than physical storage capacity, researchers need assistance with funding agencies' data management requirements, the grant proposal process, finding campus data-related services, publication support, and targeted research assistance attendant to data management.	Google Scholar "research data management" library faculty survey	2018-06-26
Qin, J. & J. D'Ignazio. (2016). Enhancing scientific data literacy in college students: Experience and lessons learned. Journal of InfoLib and Archives, 8 (1): 1-27. DOI: 10.6575/JILA.2016.88.01	https://experts.syr.edu/en/publications/enhancing-scientific-data-literacy-in-college-students-experience	This paper reports our experience from a two-year Science Data Literacy (SDL) project through four areas of activities: (1) survey on faculty's perceptions and practices in data management, (2) design of SDL learning modules, (3) delivery of the course, and (4) assessment of learning outcomes. This paper is in Chinese.	Google Scholar "research data management" library faculty survey	2018-06-26

Publication	Link	Notes	Located by (search)	Date Found
Scaramozzino, J. M., Ramírez, M. L., & McGaughey, K. J. (2012). A study of faculty data curation behaviors and attitudes at a teaching-centered university. College & Research Libraries, 73(4), 349-365.	http://digitalcommons.calpoly.edu/lib_fac/78/	Academic libraries need reliable information on researcher data needs, data curation practices and attitudes in order to identify and craft appropriate services that support outreach and teaching. This paper describes information gathered from a survey distributed to the College of Science and Mathematics faculty at California Polytechnic State University, San Luis Obispo (Cal Poly), a Master's-granting, teaching-centered institution. There was a 60%+ response rate to the survey. The survey results provided insight into the science researchers' data curation awareness, behaviors and attitudes, and what needs they exhibited for services and education regarding maintenance and management of data. It is important that professional librarians understand what researchers both inside and outside of their own institutions know so that they can collaborate with their university colleagues to examine data curation needs.	Google Scholar "research data management" library faculty survey	2018-06-26
Tenopir, C., Sandusky, R. J., Allard, S., & Birch, B. (2014). Research data management services in academic research libraries and perceptions of librarians. Library & Information Science Research, 36(2), 84-90.	https://www.sciencedirect.com/science/article/pii/S0740818814000255	Research data management services (RDS) in academic libraries are explored, along with librarian perceptions. North American libraries do not frequently offer RDS, but many are being planned. Technical (hands-on) RDS are less common than informational (consulting) RDS. Over half of academic libraries do not collaborate with any other RDS provider. Many librarians in academic research libraries feel the need for more RDS training.	Google Scholar "research data management" library faculty survey	2018-06-26
Whitmire, A. L., Boock, M., & Sutton, S. C. (2015). Variability in academic research data management practices: implications for data services development from a faculty survey. Program: electronic library and information systems, 49(4), 382-407.	https://www.emeraldinsight.com/doi/full/10.1108/PROG-02-2015-0017	In this paper, the authors reviewed a subset of survey findings that included data types, volume, and storage locations, RDM roles and responsibilities, and metadata practices. The authors found that Oregon State University (OSU) researchers are generating a wide variety of data types, and that practices vary between colleges. The authors discovered that faculty are not utilizing campus-wide storage infrastructure, and are maintaining their own storage servers in surprising numbers. Faculty-level research assistants perform the majority of data-related tasks at OSU, with the exception of data sharing, which is primarily handled by the professorial ranks. The authors found that many faculty on campus are creating metadata, but that there is a need to provide support in how to discover and create standardized metadata.	Google Scholar "research data management" library faculty survey	2018-06-26

Individual/Organization	Blog Title	Link	Notes
Databrarians	Databrarians	http://databrarians.org/	
Data @ Libs	Data @ Libs	http://data.blogspot.com/	
California Digital Library	Data Pub	http://uc3.cdlib.org/	
University of Washington	Twitter list of data people in libraries	https://twitter.com/UWLibsData/lists/data-in-libraries	
OCLC	Hanging Together	http://hangingtogether.org/?p=6709	
SAA	Archival Elements	https://www2.archivists.org/groups/science-technology-and-health-care-section/new-issue-of-archival-elements	
Inna Kouper	DIKW: Data, Information, Knowledge, Wisdom	https://inkouper.blogspot.com/	
Kristin Briney	Data Ab Initio Blogger Kristin Briney has a PhD in physical chemistry and an MIS. Her posts cover various topics related to research data management.	http://dataabinitio.com/?page_id=6	https://nnlm.gov/data/staying-informed
Data Conservancy	Data Conservancy blog Posts by partners of the Data Conservancy partners. Focus on collaborative efforts to build cyberinfrastructure that address data curation and management challenges.	http://dataconservancy.org/blog/	https://nnlm.gov/data/staying-informed
California Digital Library	Data Pub California Digital Library's Conversations about Data blog.	http://uc3.cdlib.org/	https://nnlm.gov/data/staying-informed
Celia Emmelhainz, Social Science Data Librarian at Colby College	Databrarians A collaborative blog [...] Sharing resources and ideas to help bring data librarians together to build services.	http://databrarians.org/	https://nnlm.gov/data/staying-informed
Jill Hurst-Wahl, faculty member of Syracuse University's iSchool	Digitization 101 Covers topics related to digital libraries, digitalization, management and preservation of digital assets.	http://hurstassociates.blogspot.com/	https://nnlm.gov/data/staying-informed
Fedora Repository and DSpace communities	DuraSpace Blog	https://duraspace.org/tag/blog/	https://nnlm.gov/data/staying-informed
Kevin Read, NLM Fellow	Kevin the Librarian	https://kevinthelibrarian.wordpress.com/	https://nnlm.gov/data/staying-informed
Sally Gore, Research Evaluation Analyst for the UMass Center for Clinical and Translational Science	A Librarian by any other Name Thoughts and ideas related to libraries, information and knowledge management, health sciences, evaluation, and translational science.	https://librarianhats.net/	https://nnlm.gov/data/staying-informed
Kiyomi Deards, Science librarian and Associate Professor at the University of Nebraska-Lincoln	The Library Adventures of Kiyomi Includes subject specific resources on various sciences.	http://libraryadventures.com/	https://nnlm.gov/data/staying-informed
Lisa Federer, Research Data Informationist at the NIH Library.	Librarian in the City Shares musings about biomedical research data, librarianship, and science.	http://www.librarianinthecity.com/	https://nnlm.gov/data/staying-informed
Lorcan Dempsey, Vice President of OCLC Research and Chief Strategist	Explores how library organizations, services and technologies support changing research and learning needs	http://orweblog.oclc.org/	https://nnlm.gov/data/staying-informed
Science Online	Science Seeker A collection of over 1200 blogs and science news sources aggregated by Science Online.	http://www.scienceseeker.org/	https://nnlm.gov/data/staying-informed
Data Science Central	Follow @analyticbridge on Twitter for all things big data, machine learning, predictive modeling, R, Hadoop, Python, business analytics, data mining, IoT and operations research. Tweeting out tons of resources, tutorials and more.	https://twitter.com/analyticbridge	https://nnlm.gov/data/staying-informed
#datalibs	Follow #datalibs on Twitter to see what librarians are talking about and for new resources and trends related to data science.	https://twitter.com/hashtag/datalibs?src=hash&lang=en	https://nnlm.gov/data/staying-informed
#medlibs	Follow #medlibs on Twitter to see what medical librarians are talking about related to health sciences and the challenges they face.	https://twitter.com/search?f=tweets&vertical=default&q=%23medlibs&src=typd&lang=en	https://nnlm.gov/data/staying-informed
Anna Lauren Hoffmann		http://annaeveryday.com/	

Organization	Listserv	Link	Notes
IASIST (International Association for Social Science Information Services and Technology)	discuss@lists.iassistdata.org (former IASST-L)	http://iassistdata.org/publications/iasst-l.html	
RDAP		https://www.asis.org/rdap/	
CANLIB-DATA Listserv		https://researchdata.library.ubc.ca/learn/canlib-data-listserv/	
JiscMail	RESEARCH-DATAMAN	https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=RESEARCH-DATAMAN	
University of Melbourne Library	andsUP	http://ands.us7.list-manage1.com/subscribe?u=b542ef52e49302569068046d9&id=22b849a4ee&ct=t (andsUP_24_June_20146_10_2014)	http://blogs.unimelb.edu.au/researcher-library/2014/08/05/are-you-interested-in-research-data-have-you-signed-up-for-andsup-yet/
DataLibs	DataLibs Distribution List The DataLibs Distribution List is intended to serve as both a bulletin board for news, upcoming events, and continuing education/job opportunities as well as a forum that librarians can use to post questions or to initiate and engage in discussions.	https://nnlm.gov/data/staying-informed	

Organization	Author(s) - if specified	Title	Link	Notes
Northwestern University	Cunera Buys		http://libguides.northwestern.edu/datamanagement	
Syracuse University	Research Data Services		http://researchguides.library.syr.edu/dataservices	
University of South Carolina Libraries	Stacy Winchester		http://guides.library.sc.edu/rdm	
Australia National Data Service	ANDS		https://www.ands.org.au/guides/a-z-for-ands-guides	
USGS Data Management	USGS		https://www2.usgs.gov/datamanagement/why.php	
Digital Curation Centre	Digital Curation Centre	Data management and curation educatio	http://www.dcc.ac.uk/training/data-management-courses-and-training	
U.S. Geological Survey's Community for Data Integration, the Earth Sciences Information Partnership (ESIP), and DataONE	Data Management Training (DMT) Clearinghouse		http://dmtclearinghouse.esipfed.org/	
University College London		Research Data Management	https://www.ucl.ac.uk/library/research-support/research-data	
University of Strathclyde		Research Data Managment	https://www.strath.ac.uk/openaccess/researchdatamanagment/	
WebJunction		Opioid Crisis: Libraries, Resources, Context and Data	https://www.webjunction.org/news/webjunction/opioid-crisis-libraries.html	
Simmons College		Research Data Management	https://simmons.libguides.com/c.php?g=814790&p=5814574	
NNLM		Courses and Workshops	https://nnlm.gov/data/courses-and-workshops	
University of Southampton	Research Engagement Team http://library.soton.ac.uk/research/contacts	Research Data Management	http://library.soton.ac.uk/researchdata	
University of Washington Libraries		Data Resources: Research Data Management Curriculum Guide Includes information & resources for finding & visualizing data.	http://guides.lib.uw.edu/research/data/rdm	
University of Washington	Jenny Muilenburg	Guide for Data Services	http://guides.lib.uw.edu/research/data/dataresources	
University of Pittsburgh Library System		Research Data Management @ Pitt	https://pitt.libguides.com/managedata	This guide will assist researchers in planning for the various stages of managing their research data and in preparing data management plans required with funding proposals.
	University of Turku (Finland)	Research Data Libguide	http://libguides.utu.fi/researchdata	