UNC
SCHOOL OF INFORMATION
AND LIBRARY SCIENCE

INLS 751: Advanced Digital Curation
August 22 – December 11, 2019
ONLINE

The Instructor.

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Office Hours.

I am available almost any time for a video chat or we can meet in person at a mutually agreeable time if you are local. Also, feel free to call me at home in the evening before 9:00 PM.

Brief Course Description.

This class will supplement INLS 750 with a range of topics central to digital curation in a wide array of environments including business, government, and academia. After a brief refresher in what digital and data curation are, we will delve into key topics, issues, and techniques that have arisen in the evolving discipline and profession of digital curation for the past 20 plus years. These include the challenges and benefits of big data; what constitutes good data; what is FAIR data (this is not just data that falls between good and poor); the ethics of data collection, analysis, and storage; data sharing and reuse for the academic, government, and business sectors; the roles of data management plans in all data venues; data curation profiles and how to conduct and write one; the services of data repositories and how they can be positioned in a number of environments; data infrastructure, workflows, and tools; key data curation standards; data quality; data governance; document and content management; data maturity models; organizational change management; data management and role expectations, and the blending of data curation and governance.

Course Timeline.

Beginning: August 22, 2019

Ending: December 4, 2019

Final project due: December 11, 2019

Goals and Objectives.

By the end of the course, the student should be able to:

1. Grasp the urgency of and need for long-term data curation in public and private venues.

2. Define data and identify their roles in organizational, technological, legal, cultural, and business contexts.

3. Understand both theoretical and practical issues in data curation from a broad range of perspectives.

4. Describe central data curation concepts, terms, tools, and technologies.

5. Be familiar with the current state of knowledge in the field and its key research issues as well as past trends and emerging priorities.

6. Understand the data curation lifecycle and identify the activities associated with each stage and their social, legal, ethical, and policy implications.

7. Explore the nature of the many forms of data including big, open, and FAIR data.

8. Work with a data creator to create a data profile for his or her work.

9. Be able to discuss the elements of a data management plan and explain why the various parts are important.

10. Be able to manage his or her own data and explain the workflow they developed.

11. Be able to discuss the data curation lifecycle and all its parts.

12. Be able to discuss the intersection of data curation and data governance.

13. Be able to explain the importance of data curation for an array of settings including academia, business, and government.

14. Be able to go to a data curation conference, such as iPRES or IDCC and understand the presentations and be able to discuss key issues with others intelligently.

Class Participation (Forum Posts) 20% of Grade.

- You are expected to participate in the class forum every week. Posts are due on **Tuesday** by **11:55 pm** each week **at the latest** to allow your classmates and me to read all of the posts before the end of the week period.
- Posts may address the readings, lectures, and the other materials that are part of that week's assignments as well as any other source relevant to a given week's content.
- Grades will be assigned based on the quality of the posts not the length of each post.
- Posts will be assessed based on the following criteria:
  - Relevance of the post to the question/conversation, i.e. the degree to which a post advances the discussion (hint – this is easier if you post early before others have made the most obvious points!)
  - Depth of understanding of the material, i.e. the level of preparation shown in the post.
  - Level of insight displayed by the post - does the post reflect the nuances of the question or situation posed?
  - Inclusion of relevant materials outside the assigned readings.

The purpose of the forum discussions is to help students to think critically about issues and challenges related to digital curation and management, and to address ways that the literature

may affect practice. It is helpful, when preparing each week's work, to consider how that session's particular theme and readings may apply to your area of professional interest. You are also encouraged to share current news and events you find informative to issues of data curation through the class listserv.

Please work to stay on top of the forum posts. This is the primary way we will share with each other and act as a class during the semester. Be prepared to give your most thoughtful comments and learn from others' posts.

Assignments & Evaluation.

Assignment	% of Grade	Due Date
Forum Posts	20%	On-going, Tuesday of each week
Curation Profile Progress Report	5%	September 25
Critique Data Management Plan	10%	October 2
Workflow Tool Analysis	10%	October 16
Data Curation Approach for Your Personal Digital Materials	15%	October 30
Curation Profile Presentation (Video to Class)	10%	November 20
Feedback to Classmates on Their DCPs	5%	November 27
Curation Profile Written Report (Post to Class)	25%	December 11, by 4:00 PM

Assignment Nomenclature.

For all assignments or any other items that are emailed to the instructor or added to the assignment dropbox in Sakai, please save your file as "lastname_assignment_751.docx". All assignments should be turned in as word documents, pdf documents or text documents. Please put your name on the first page of your assignments as well.

Graduate Grading Scale. (Pluses and minuses not given for semester grades thus a semester P is 80-94 inclusive)

H (95-100): "Clear excellence," superior work: complete command of subject, unusual depth, great creativity or originality; above and beyond what is required

P+ (90-94): Above average performance: solid work somewhat beyond what was required and good command of the material

P (85-89): Satisfactory performance that meets course requirements (expected to be the median grade of all students in the course)

P- (80-84): Acceptable work in need of improvement

L (70-79): Unacceptable graduate performance: substandard in significant ways

F (< 70): Performance that is seriously deficient and unworthy of graduate credit

IN: Work incomplete (only given under extreme circumstances, such as serious illness)

Academic Policies.

By enrolling as a student in this course, you agree to abide by the University of North Carolina at Chapel Hill policies related to the acceptable use of online resources. Please consult the [Acceptable Use Policy](#) on topics such as copyright, net-etiquette, and privacy protection.

As part of this course, you may be asked to participate in online discussions or other online activities that may include personal information about you or other students in the course. Please be respectful of the rights and protection of other participants under the UNC-Chapel Hill [Information Security Policies](#) when participating in online classes.

When using online resources offered by organizations not affiliated with UNC-Chapel Hill, such as Google or YouTube, please note that the terms and conditions of these companies and not the University's Terms and Conditions apply. These third parties may offer different degrees of privacy protection and access rights to online content. You should be well aware of this when posting content to sites not managed by UNC-Chapel Hill.

When links to sites outside of the unc.edu domain are inserted in class discussions, please be mindful that clicking on sites not affiliated with UNC-Chapel Hill may pose a risk for your computer due to the possible presence of malware on such sites.

Honor Code & Class Conduct.

Honor Code:

The University of North Carolina at Chapel Hill has had a student-administered honor system and judicial system for over 100 years. The system is the responsibility of students and is regulated and governed by them, but faculty share the responsibility. If you have questions about your responsibility under the honor code, please bring them to your instructor or consult with the office of the Dean of Students or the Instrument of Student Judicial Governance. This document, adopted by the Chancellor, the Faculty Council, and the Student Congress, contains all policies and procedures pertaining to the student honor system. **Your full participation and observance of the honor code is expected.**

This class follows the UNC Honor System. Information on the Honor Code can be found at: http://honor.unc.edu/. Please read through The Honor System's Module at: http://studentconduct.unc.edu/students/honor-system-module to become familiar with the UNC Honor Code and to understand the rights and responsibilities defined therein.

The Instrument of Student Judicial Governance, (http://instrument.unc.edu/) which contains the provisions of the Honor Code, states that students have four general responsibilities under the Code:

1. Obey and support the enforcement of the Honor Code;

2. Refrain from lying, cheating, or stealing;

3. Conduct themselves so as not to impair significantly the welfare or the educational opportunities of others in the University community; and

4. Refrain from conduct that impairs or may impair the capacity of University and associated personnel to perform their duties, manage resources, protect the safety and welfare of members of the University community, and maintain the integrity of the University.

   The Instrument (http://instrument.unc.edu/) prohibits giving or receiving unauthorized aid on examinations or in the completion of assignments. **The Honor Code defines plagiarism as "deliberate or reckless representation of another's words, thoughts, or ideas as one's own without attribution in connection with submission of academic work, whether graded or otherwise."** *Whenever you use the words or ideas of others, this should be properly quoted and cited.* You should adopt a style guide – e.g., American Psychological Association, Chicago Manual of Style, MLA, or Turabian – and use it consistently. (I do not care which one you select!) Students who are discovered attempting to take credit for work performed by others will be referred to the Honor Court for resolution.

Please include the following pledge on all submitted work: "On my honor, I have neither given nor received unauthorized aid on this assignment."

Accommodations or Special Needs

If you feel that you may need an accommodation for a disability or have any other special need, please contact me. I will best be able to address special circumstances if I know about them early in the semester.

Diversity Statement

"In support of the University's diversity goals and the mission of the School of Information and Library Science, SILS embraces diversity as an ethical and societal value. We broadly define diversity to include race, gender, national origin, ethnicity, religion, social class, age, sexual orientation, and physical and learning ability. As an academic community committed to preparing our graduates to be leaders in an increasingly multicultural and global society we strive to:

- Ensure inclusive leadership, policies and practices;

- Integrate diversity into the curriculum and research;

- Foster a mutually respectful intellectual environment in which diverse opinions are valued;

- Recruit traditionally underrepresented groups of students, faculty and staff; and

- Participate in outreach to underserved groups in the State.

The statement represents a commitment of resources to the development and maintenance of an academic environment that is open, representative, reflective and committed to the concepts of equity and fairness."~*The faculty of the School of Information and Library Science*

Class Policies:

- Be prepared for each week's lessons by completing the assigned reading and exercises, enabling you to ask questions and participate in class discussion online.

- Be an active and positive participant in online discussions, characterized as:
  - Having a clear command of the readings for the week;
  - Sharing analyses and opinions based on the readings;
  - Respecting other students' views and opinions; and
  - Freely agreeing and disagreeing with others when warranted.
- Follow the netiquette guidelines below.
- Please note: An intellectual exchange of ideas is the cornerstone of education, but any criticism should be limited to an idea and not the person specifically.
- Turn in assignments by the due date unless you make previous arrangements with the instructor. Unexcused late assignments are unfair to your classmates.

Penalty for Late Assignments.

I expect you to pass in assignments on time. This is important for at least two reasons: 1) the need to meet deadlines is a reality of professional life, and 2) giving some people more time for an assignment than others in the class is not equitable. However, life happens to all of us at one time or another. If you cannot meet an assignment deadline please tell me why PRIOR to the due date. I will negotiate a new deadline with anyone who has a valid reason for needing this (i.e., NOT "I just didn't get it done."). Otherwise, late assignments will drop 2 points for each day late.

Online Etiquette Guidelines.

http://www.albion.com/netiquette/

http://www.indiana.edu/~icy/netiquette.html

http://www.brighthub.com/education/online-learning/articles/26946.aspx

Course Readings.

Textbooks.

- You should have Gillian Oliver & Ross Harvey, *Digital Curation* 2nd ed. (Chicago: Neal Schuman, 2016) from INLS 750 if you are a PSM student. If not, make sure you read this text early in the semester.
- DAMA International. *DAMA-DMBOK: Data Management Body of Knowledge.* 2nd ed. (Technics: Basking Ridge, NJ, 2017).
- Henderson, Margaret. *Data Management: A Practical Guide for Librarians.* (Lanham, MD: Rowman and Littlefield, 2017).

Coursera MOOC.

Please complete the following modules of my Coursera MOOC: Research Data Management and Sharing (https://www.coursera.org/learn/data-management#%20) by the following dates:

1: Understanding Research Data	September 3
2: Data Management Planning	October 1
3. Working with Data	October 8
4. Sharing Data	September 24
5. Archiving Data	October 22

The MOOC content will serve as lectures for several of the weeks of the course so it is important to have completed viewing the modules by the above schedule.

Supplemental Resources.

DCC Glossary: http://www.dcc.ac.uk/digital-curation/glossary
DCC Curation Reference Manual: http://www.dcc.ac.uk/resources/curation-reference-manual/completed-chapters
DCC How-To Guides: http://www.dcc.ac.uk/resources/how-guides
DCC Briefing Papers: http://www.dcc.ac.uk/resources/briefing-papers

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Weekly Course Calendar

Module 1: August 22 - 28: Introduction, Framework for This Class, and Review of Digital Curation.

Objectives:

❖ Students will be able to identify the goals of the course and understand requirements, readings, assignments, and expectations.

❖ Students will begin to consider the roles and responsibilities of digital curators and be able to list at least four roles and associated responsibilities.

❖ Students will be able to discuss the key points of digital curation and develop a definition of their own.

Forum Questions for the Week: (Please post by August 27 by 11:55 PM).

1. Please introduce yourselves on the forum, tell us what you hope to get out of this class, and make sure you have uploaded your picture to Sakai.

2. Compare Higgins' and Dallas' conceptualizations of digital curation. What are the thee most important similarities and differences?

3. Having read both Dallas and Higgins, which perspective do you like best and why, or do you think they can both coincide side-by-side?

4. Please provide YOUR definition for digital curation that you think will be useful to you in your career.

Welcome and Introduction.

Introduction to the class, instructors, and students. We will discuss through Sakai how we want to conduct the class and the nature of the assignments and the expectations of all of us.

What Is Digital Curation? A Review from INLS 750.

• Dallas, Costis. "Digital Curation Beyond the "Wild Frontier": A Pragmatic Approach." *Archival Science* 16/4 (December 2016): 421-57. https://link-springer-com.libproxy.lib.unc.edu/article/10.1007%2Fs10502-015-9252-6

• DigCurv Project. "What Is Digital Curation?" 2013. Video. 5:16 minutes. https://www.youtube.com/watch?v=6cuOdgvYRGM

• Digital Curation Centre. *Managing Research Data.* Video Documentary. (UK: Piers Video Production, 2012). 12:35 minutes. http://youtu.be/2JBQS0qKOBU

• Henderson, Chapter 1 "What Is Data and Why Should Librarians Be Involved?" p. 1-11.

- Higgins, Sarah. "Digital Curation: The Development of a Discipline within Information Science." *Journal of Documentation*, 74/6 (2018): 1318-1338. https://www-emeraldinsight-com.libproxy.lib.unc.edu/doi/pdfplus/10.1108/JD-02-2018-0024

- ICPSR. What Is Data Curation? https://www.youtube.com/watch?v=ZEkqF8cL2qQ

- Oliver & Harvey. "Part I: Digital Curation: Scope and Incentives." 1-52.

- Patch, Chuck and Helen Tibbo. "Digital Curation: The Next Frontier." Museum Computer Conference, November 2011. Video. 43 minutes. https://www.youtube.com/watch?v=NBRU9r2admI

- Poole, Alex H. "The Conceptual Landscape of Digital Curation." *Journal of Documentation* 72/5 (November 2016): 961-986. https://www-emeraldinsight-com.libproxy.lib.unc.edu/doi/pdfplus/10.1108/JD-10-2015-0123

- Tibbo, Helen. "Placing the Horse before the Cart: Conceptual and Technical Dimensions of Digital Curation." *Historical Social Research* 37 (2012): 187-200. http://www.cceh.uni-koeln.de/files/Tibbo_final.pdf.

- http://www.dataversity.net/data-curation-101/

- https://www.techrepublic.com/article/data-curation-takes-the-value-of-big-data-to-a-new-level/

What Is Data Management?

- DAMA International. "Data Management." *DAMA-DMBOK: Data Management Body of Knowledge.* 2nd ed. (Technics: Basking Ridge, NJ, 2017): 17-48.

Zoos: A Framework for this Class:

- Phillips, Keri. "The Ethical Evolution of Zoos." http://www.abc.net.au/radionational/programs/rearvision/the-ethical-history-of-zoos/6869776

- History Departments. The Ohio State University and Miami University. Current Events in Historical Perspective. "Caged: Humans and Animals at the Zoo." http://origins.osu.edu/sites/origins.osu.edu/files/history-talk/mp3/Caged-Humans%20and%20Animals%20at%20the%20Zoo.mp3

- National Geographic. Zoo. https://www.nationalgeographic.org/encyclopedia/zoo/

Module 2: August 29 – September 4: Data – Big, Little, Good, Bad

Objectives:

- ❖ Students will be able to define data.

- ❖ Students will be able to define good data and cite its characteristics.

- ❖ Student will be able to discuss issues surrounding big data.

Forum Questions for the Week: (Please post by September 3 by 11:55 PM).

1. What is your favorite definition of data and why?
2. What are the characteristics of big data?
3. Why is small data also important?

Readings:

- Bell, G., Hey, T., and Szalay, A. "Beyond the Data Deluge." Science, 323 (5919 6 March 2009), 1297-1298.
  http://www.cloudinnovation.com.au/Bell_Hey%20_Szalay_Science_March_2009.pdf

- Carlson, Samuelle and Ben Anderson, "What are Data? The Many Kinds of Data and The Implications for Data Re-use." Journal of Computer-Mediated Communication, 12/2 (2007): 301-317. https://onlinelibrary-wiley-com.libproxy.lib.unc.edu/doi/epdf/10.1111/j.1083-6101.2007.00342.x

- Harvey, Ross. "Defining Data," in Gillian Oliver & Ross Harvey, Digital Curation (Chicago: Neal Schuman, 2016), 45-52.

- Haider, Murtaza and Gandomi, Amir. "Beyond the Hype: Big Data Concepts, Methods, and Analytics." *International Journal of Information Management*, 35/2 (2015): 137–144. https://ac-els-cdn-com.libproxy.lib.unc.edu/S0268401214001066/1-s2.0-S0268401214001066-main.pdf?_tid=bb2cc77f-b3bd-49e8-a541-c24810d53e7f&acdnat=1547236189_065e6e32890a1303104a162cff92c5a6

- Heidorn, Bryan P. "Shedding Light on the Dark Data in the Long Tail of Science." *Library Trends* 57, no. 2 (2008): 280-299. http://hdl.handle.net/2142/10672

- Henderson, Chapter 2: "Understanding Research and the Role of Data." p. 13-23.

- Johnson, Jeffrey, Peter Denning, Kemal A. Delic, and David Sousa-Rodrigues. "Big Data: Big Data or Big Brother? That is the Question Now." *Ubiquity* - Association for Computing Machinery Vol. 2018 (August 2018): 1-10.
  https://ubiquity.acm.org/symposia.cfm?volume=all

- Johnson, Jeffrey; Peter Denning; David Sousa-Rodrigues; and Kemal A. Delic. "Big Data, Digitization, and Social Change." Opening Statement *Ubiquity* - Association for Computing Machinery Vol. 2017 (December 2017): 1-8.
  https://ubiquity.acm.org/article.cfm?id=3158335

- Johnson, Jeffrey et al. "Big Data: Business, Technology, Education, and Science *Ubiquity* Association for Computing Machinery Vol. 2018 (July 2018): 1-13.
  https://ubiquity.acm.org/article.cfm?id=3158350

- Odum Institute. "What Are Data?" Video. March 3, 2016. 2:49 minutes.
  https://www.youtube.com/watch?v=HJKFOYBkpBE

- Schroeder, Ralph. "Big Data Business Models: Challenges and Opportunities." *Cogent Social Sciences*; Abingdon 2/1 (December 2016). https://www.cogentoa.com/article/10.1080/23311886.2016.1166924

- Wang, Trica. "The Human Insights Missing from Big Data." TED Talk. (September 2016). https://www.ted.com/talks/tricia_wang_the_human_insights_missing_from_big_data/transcript

Module 3: September 5 - 11: Data: Open and FAIR

Objectives:

- ❖ Students will be able to define Open Data.

- ❖ Students will be able to discuss the infrastructure needed for Open Data.

- ❖ Students will be able to list several challenges associated with Open Data.

- ❖ Students will be able to list and discuss the factors of FAIR Data.

Forum Questions for the Week: (Please post by September 10 by 11:55 PM).

1. What makes open data open and why should we care?

2. What are the key challenges with open data?

3. Explain what is meant by FAIR data.

Readings:

Open Data:

- Ayre, Lori B. and Jim Craner. "Open Data: What It Is and Why You Should Care." *Public Library Quarterly*; 36/2 (April-June 2017): 173-184. https://www-tandfonline-com.libproxy.lib.unc.edu/doi/abs/10.1080/01616846.2017.1313045

- Castro, Eleni et al. "Evaluating and Promoting Open Data Practices in Open Access Journals." *Journal of Scholarly Publishing* 49/1 (Oct2017): 66-88. https://muse.jhu.edu/article/676385

- Colborne, Adrienne and Michael Smit. "Identifying and Mitigating Risks to the Quality of Open Data in the Post-truth Era." EEE International Conference on Big Data (Big Data) (2017). Found in: IEEE Xplore Digital Library. https://ieeexplore.ieee.org/document/8258218 or http://www.mikesmit.com/wp-content/papercite-data/pdf/big-data-open-2017.pdf

- Henderson, Chapter 3: "Best Practice for Working with Research Data." P. 25-35.

- McNutt, John G. et al. "The Diffusion of Civic Technology and Open Government in the United States." *Information Polity* 21 (2016): 153–170. http://web.b.ebscohost.com.libproxy.lib.unc.edu/ehost/pdfviewer/pdfviewer?vid=4&sid=5746ad45-ad8d-4d48-a03d-cf7428e258d1%40pdc-v-sessmgr02

- Obama, Barack H. "Transparency and Open Government. Memorandum for the Heads of Executive Departments and Agencies." (Jan. 21, 2009). https://obamawhitehouse.archives.gov/the-press-office/transparency-and-open-government

- Okamoto, Karen. "Introducing Open Government Data" *The Reference Librarian* 58/2 (2017): 111-123. https://www-tandfonline-com.libproxy.lib.unc.edu/doi/abs/10.1080/02763877.2016.1199005

- Sansone, Susanna-Assunta, Patricia Cruse, and Mark Thorley. "High-quality Science Requires High-quality Open Data Infrastructure." Comment. *Scientific Data* Vol. **5**, Article number: 180027 (2018). https://www.nature.com/articles/sdata201827

FAIR Data:

- Huwe, Terence K. "Libraries and the New Culture of Trust." *Computers in Libraries* 35/5 (June 2015): 21-24. https://search-proquest-com.libproxy.lib.unc.edu/docview/1701826989/fulltextPDF/5044132D47774179PQ/1?accountid=14244

- Mons, Barend, et al. "Cloudy, Increasingly FAIR; Revisiting the FAIR Data Guiding Principles for the European Open Science Cloud." *Information Services & Use*, vol. 37, no. 1, pp. 49-56, March 2017. http://web.b.ebscohost.com.libproxy.lib.unc.edu/ehost/pdfviewer/pdfviewer?vid=4&sid=07b00961-3bb6-409d-865c-614481c28320%40sessionmgr102

- Wilkinson, MD, et al. "Wilkinson, MD, et al. "Comment: A Design Framework and Exemplar Metrics for FAIRness." *Scientific Data*, **5**, Article number: 160018 (2018). https://www.nature.com/articles/sdata201618

- Wilkinson, MD, et al. "The FAIR Guiding Principles for Scientific Data Management and Stewardship." *Scientific Data*, **3**, Article number: 160018 (2016). https://www.nature.com/articles/sdata2018118.pdf

Module 4: September 12 - 18: Data Curation Profiles.

Objectives:

- ❖ Students will become familiar with the structure of Data Curation Profiles.
- ❖ Students will be able to conduct a Data Curation Profile.
- ❖ Students will be able to analyze the effectiveness of the DCP process and outcomes.

Forum Questions for the Week: (Please post by September 17 by 11:55 PM).

1. When would you use a DCP as a repository tool and why?

2. What do you think are the strengths of the DCP tool at this point before you employ it?

3. What do you suspect will be the weaknesses of the DCP tool before you use it?

Readings:

- Bishop, Bradley Wade and Carolyn Hank. "Data Curation Profiling of Biocollections." *Proceedings of the Association for Information Science & Technology* 53/1 (2016): 1-9. https://onlinelibrary-wiley-com.libproxy.lib.unc.edu/doi/full/10.1002/pra2.2016.14505301046

- Henderson, Chapter 4: "Data Interviews." p. 37-49.

- Nelson, Megan Sapp and Katherine Beavis. "Data Curation Profile - History/Sustainable Development." Data Curation Profiles Directory 5/1, (2013): 1-7. http://web.b.ebscohost.com.libproxy.lib.unc.edu/ehost/pdfviewer/pdfviewer?vid=3&sid=6458df6e-3c49-4b3c-94e1-31b5ff8e5882%40pdc-v-sessmgr03

- Pouchard, Line, Amy Barton, and Lisa Zilinski. "Data Narratives: Increasing Scholarly Value." *Proceedings of the Association for Information Science & Technology* 51/1 (2014): 1-4. https://docs.lib.purdue.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1094&context=lib_fsdocs

- Purdue University Libraries. *Data Curation Profiles Toolkit.* http://datacurationprofiles.org/

- Witt, Michael, Jake Carlson, D. Scott Brandt, and Melissa Craigin. "Constructing Data Curation Profiles." *The International Journal of Digital Curation* 3(4) (2009): 93-103. http://ijdc.net/index.php/ijdc/article/viewFile/137/165

- Witt, Michael and Jake Carlson. "Conducting a Data Interview" (poster). http://docs.lib.purdue.edu/lib_research/81/ (2007)

DUE: Data Curation Profile Progress Report: September 25 by 11:55 PM

Module 5: September 19 - 25: Sharing Data.

Objectives:

- ❖ Students will be able to list 3 obstacles to effective data sharing and explain why these issues are obstacles. Students will learn why data curation is vital to effective data sharing.

- ❖ Students will be able to discuss ways of overcoming obstacles to data sharing.

- ❖ Students will be able to propose how/assess how librarians/digital curators may best present the importance of RDM and data sharing to their academic communities.

Forum Questions for the Week: (Please post by September 24 by 11:55 PM).

1. What are the 3 main obstacles to data sharing and why are these problems?
2. How can data curators assist researchers to more easily share data?
3. Are the Web and the proliferation of Open Data facilitating or hindering data sharing?

Readings:

- *Please watch this short video first. This sums up much of what is going on in data sharing and the challenges data curators face on a day-to-day basis. Enjoy. http://www.youtube.com/watch?v=N2zK3sAtr-4

- Alter, George and Richard Gonzalez, "Responsible Practices for Data Sharing." *American Psychologist* 73/2 (2018): 146-156. http://web.b.ebscohost.com.libproxy.lib.unc.edu/ehost/pdfviewer/pdfviewer?vid=3&sid=6e0defd5-8ed1-49ce-b487-f5ca6ab8f976%40sessionmgr101

- Borgman, Christine L. "The Conundrum of Sharing Research Data." *Journal of the American Society for Information Science and Technology* 63, no. 6 (2012): 1059–1078. doi:10.1002/asi.22634. http://onlinelibrary.wiley.com/doi/10.1002/asi.22634/pdf

- Briney, Kristin. "Rethinking Research Data." TED[x] (November 10, 2015). 15:05 min. https://www.youtube.com/watch?v=dXKbkpilQME

- Gerwin. "Data Sharing: An Open Mind on Open Data." *Nature* 529 (07 January 2016): 117–119. https://www.nature.com/naturejobs/science/articles/10.1038/nj7584-117a

- Halbert, Martin. "Prospects for Research Data Management." In Council on Information and Information Resources. *Research Data Management Principles, Practices, and Prospects* Council on Library and Information Resources, 2013). https://www.clir.org/pubs/reports/pub160/ Please read p. 1-15.

- Henderson, Chapter 7: "Publishing and Sharing Data." P. 79-94.

- Kim, Youngseek, and Seungahn Nah, (2018) "Internet Researchers' Data Sharing Behaviors: An Integration of Data Reuse Experience, Attitudinal Beliefs, Social Norms, and Resource Factors." *Online Information Review* 42/1 (2018): 124-142. https://www-emeraldinsight-com.libproxy.lib.unc.edu/doi/pdfplus/10.1108/OIR-10-2016-0313

- Kroll, Rick, and Susan Forsman. *A Slice of Research Life: Information Support for Research in the United States*. https://www.oclc.org/content/dam/research/publications/library/2010/2010-15.pdf

- LeClere, Felicia, "Too Many Researchers Are Reluctant to Share Their Data," *The Chronicle of Higher Education* (3 August 2010). https://chronicle.com/article/Too-Many-Researchers-Are/123749/

- Nelson, Bryn, "Empty Archives," *Nature* 461 (2009): 160-163. http://www.nature.com/news/2009/090909/full/461160a.html

- Yoon, Ayoung; Kim, Youngseek. "Social Scientists' Data Reuse Behaviors: Exploring the Roles of Attitudinal Beliefs, Attitudes, Norms, and Data Repositories." *Library & Information Science Research* 39/3 (July 2017): 224-233. https://www-sciencedirect-com.libproxy.lib.unc.edu/science/article/pii/S0740818816302250

- Please visit the following library Research Data Management websites to see how librarians are presenting the importance of RDM and data sharing to their academic communities.

- University of Edinburgh. Research Data Service. https://www.ed.ac.uk/information-services/research-support/research-data-service

- University of Leicester. "What is Research Data Management?" https://www2.le.ac.uk/services/research-data/rdm/what-is-rdm and "What is Digital Curation?" https://www2.le.ac.uk/services/research-data/rdm/what-is-rdm/digital-curation

- University of North Carolina at Chapel Hill. "Research Data Toolkit." https://guides.lib.unc.edu/researchdatatoolkit

Module 6: September 25 – October 2: Data Management Plans.

Objectives:

- ❖ Students will be able to list and discuss elements that constitute an effective data management plan.

- ❖ Students will be able to discuss the need for a data management plan, citing at least 3 reasons.

- ❖ Students will be able to analyze the strengths and weaknesses of various data management plans and suggest improvements.

Forum Questions for the Week: (Please post by October 1 at 11:55 PM).

1. Why is having a good data management plan important whenever a research plans a project, whether in academia, business, or the government?

2. What are the 3 most important elements of a data management plan and why?

3. What are the 3 most common weaknesses of data management plans as instituted in academia for grant purposes?

Readings:

- Harvey, Ross, "Preservation Planning and Policy," in Gillian Oliver & Ross Harvey, *Digital Curation* (Chicago: Neal Schuman, 2016), 83-92.

- Haywood, Jeff. *Research Data Management Policies*. Video. Edinburgh, UK: University of Edinburgh. http://youtu.be/V8IIdfBAr_0

- Henderson, Chapter 8: "Writing Data Management Plans." Pp. 95-104.

- *Nature.* "Everyone Needs a Data-Management Plan." Editorial. 555, 286 (March 13, 2018). https://www.nature.com/articles/d41586-018-03065-z

- Schiermeier, Quirin. "Data Management Made Simple: Keeping Your Research Data Freely Available is Crucial for Open Science — and your Funding Could Depend on It." *Nature* 555 (March 13, 2018): 403-405. https://www.nature.com/articles/d41586-018-03071-1?utm_source=twt_na&utm_medium=social&utm_campaign=NNPnature

- University of North Carolina at Chapel Hill. Provost's Taskforce on the Stewardship of Digital Research Data." "Research Data Stewardship at UNC: Recommendations for

Scholarly Practice and Leadership." Chapel Hill: UNC, February 15, 2012. http://sils.unc.edu/sites/default/files/general/research/UNC_Research_Data_Stewardship_Report.pdf

- Williams, Mary, Jacqueline Bagwell, and Meredith Nahm Zozus. "Data Management Plans: The Missing Perspective." *Journal of Biomedical Informatics* Vol. 71 (July 2017): 130-142. https://www-sciencedirect-com.libproxy.lib.unc.edu/science/article/pii/S1532046417300990

Tools to Explore:

- DataOne. Data Management Plans. https://www.dataone.org/data-management-planning

- DCC. Data Management Plans. http://www.dcc.ac.uk/resources/data-management-plans

- DPM Tool. https://dmptool.org/.

- ICPSR. "Guidelines for Effective Data Management Plans." http://www.icpsr.umich.edu/icpsrweb/ICPSR/dmp/index.jsp

- MIT Libraries. "Data Management: Helping MIT Faculty and Researchers Manage, Store, and Share Data They Produce." https://libraries.mit.edu/data-management/

- NASA. "Data Management Plans." https://www.nasa.gov/open/researchaccess/data-mgmt

- NSF. Dissemination and Sharing of Research Results https://www.nsf.gov/bfa/dias/policy/dmp.jsp

- NSF Guide to Grant Applications (effective January 18, 2011). http://www.nsf.gov/pubs/policydocs/grantsgovguide0111.pdf?WT.mc_id=USNSF_179

- UC3. https://www.cdlib.org/services/uc3/

- UK Data Archives. "Managing and Sharing Data." May 2011. http://www.data-archive.ac.uk/media/2894/managingsharing.pdf

- UNC University Libraries. "Research Data Toolkit: Resources for Writing a Data Management Plan." https://guides.lib.unc.edu/researchdatatoolkit

- University of California Curation Center of the California Digital Library. "DMPTool: Guidance and Resources for Your Data Management Plan." *DMPTool: Guidance and Resources for Your Data Management Plan*, 2013. https://dmp.cdlib.org/.

- University of Edinburgh. EDINA. MANTRA: Research Data Management Training. https://mantra.edina.ac.uk/

DUE: Data Management Plan Critique: October 2 by 11:55 PM.

Module 7: October 3 - 9: Data Repositories, Standards, Services, and Archiving.

Objectives:

- ❖ Students will be able to list and discuss minimum requirements for data repositories.

- ❖ Students will be able to list and discuss a selection of metadata standards.

- ❖ Students will be able to discuss the process and requirements of setting up a data management service.

Forum Questions for the Week: (Please post by February 22 by 11:55 PM).

1. Why are metadata standards so important to data management?

2. Besides metadata standards, what other types of standards are essential to data management and why? Discuss 2.

3. What are the greatest challenges in setting up a data management service?

Readings:

- Austin, Claire C.; Brown, Susan; Humphrey, Chuck; Leahey, Amber; Webster, Peter; Fong, Nancy. "Research Data Repositories: Review of Current Features, Gap Analysis, and Recommendations for Minimum Requirements." *IASSIST Quarterly*, Winter 2015, Vol. 39 Issue 4, p24-38, Marks, 68. https://www.rdc-drc.ca/wp-content/uploads/Review-of-Research-Data-Repositories-2015.pdf

- DAMA-DMBOK. Chapter 12: Metadata Management, p. 417-448.

- Digital Preservation Coalition. "Metadata and Documentation." In *Digital Preservation Handbook*. https://www.dpconline.org/handbook/organisational-activities/metadata-and-documentation

- Crawford, Erica, Rebecca D. Frank, Elizabeth Yakel, Chen, Zui, and Kara Suzuka. "Trust in Qualitative Data Repositories." *Proceedings of the Association for Information Science & Technology*, 54/1 (2017): p102-111. https://onlinelibrary-wiley-com.libproxy.lib.unc.edu/doi/full/10.1002/pra2.2017.14505401012

- Henderson, Chapter 9: "Starting Data Management Services." Pp. 105-120; Chapter 10: "Leveraging Partnership." Pp. 121-130; Chapter 11: "Expanding RDM Services." Pp. 131-142; and Chapter 12: "Teaching Data." Pp. 143-158.

- Fear, Kathleen and Devan Donaldson. "Provenance and Credibility in Scientific Data Repositories." *Archival Science*, 12/3 (September 2012): 319-339.

- Hess, Sophia Lafferty and Thu-Mai Christian. "More Data, Less Process? The Applicability of MPLP to Research Data." *IASSIST Quarterly*, 40/4 (Winter 2016):6-13. https://link-springer-com.libproxy.lib.unc.edu/content/pdf/10.1007%2Fs10502-012-9172-7.pdf

- OCLC. *The Realities of Research Data Management*. Four-part report series. 2017-2018. Please read through each of these reports.

https://www.oclc.org/research/publications/2017/oclcresearch-research-data-management.html

- Rice, Robin. "Essentials of Data Repositories." In Robin Rice and John Southall, *The Data Librarian's Handbook.* (London: Facet, 2016). In Sakai.

- UNC-Chapel Hill Libraries. (2017). "Metadata for Data Management: A Tutorial" (2017) https://guides.lib.unc.edu/metadata

Module 8: October 10 – 16: Ethical and Appropriate Use of Data (e.g., GDPR, laws, compliance)

Objectives:

- ❖ Students will be able to discuss the GDPR and its potential impact on corporations, both in the US and abroad.
- ❖ Students will be able to discuss the challenges of ethical and appropriate use of data in the world of Open Data.
- ❖ Students will learn about data protection laws in the US that govern the use of data.

Forum Questions for the Week: (Please post by October 15 by 11:55 PM).

1. What are the goals of the GDPR?

2. What impact is the GDPR likely to have?

3. Discuss two key challenges of ethical and appropriate use of data in the age of data science?

4. What rights are afforded to individuals in the US regarding data protection?

Readings:

- Chalcraft, Jennette. "Drawing Ethical Boundaries for Data Analytics*." Information Management Journal* 52/1 (Jan/Feb2018): 18-22. https://search-proquest-com.libproxy.lib.unc.edu/docview/2015723271?pq-origsite=summon

- Childs, Sue et al. "Opening Research Data**:** Issues and Opportunities." *Records Management Journal* 24/2 (2014): 142-162. https://www-emeraldinsight-com.libproxy.lib.unc.edu/doi/pdfplus/10.1108/RMJ-01-2014-0005

- Clobridge, Abby and Hinsdale, Eric. "Challenges With Anonymization and De-Identification in Open Data." *Online Searcher*, 42/5 (Sept/Oct2018): 66-68. https://search-proquest-com.libproxy.lib.unc.edu/docview/2111594277/fulltextPDF/96E12AD817834B3BPQ/1?accountid=14244

- DAMA International. "Chapter 2: Data Handling Ethics." In *DAMA-DMBOK: Data Management Body of Knowledge.* 2nd ed. (Technics: Basking Ridge, NJ, 2017): 49-66.

- Etlinger, Susan. "The Trust Imperative: A Framework for Ethical Data Use." Altimeter Publication. (2015). https://bigdata.fpf.org/wp-content/uploads/2015/11/Etlinger-The-Trust-Imperative.pdf

- General Data Protection Regulation (GDPR) https://gdpr-info.eu/

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- PBS. Frontline. "The Facebook Dilemma: A Two-Night Special Event."
  https://www.pbs.org/wgbh/frontline/film/facebook-dilemma/ Please watch both
  segments.

- Tufecki, Zeynep. "We're Building a Dystopia Just to Make People Click on Ads."
  (September 2017).
  https://www.ted.com/talks/zeynep_tufekci_we_re_building_a_dystopia_just_to_make_people_click_on_ads?language=en

- What is GDPR? The summary guide to GDPR compliance in the UK
  https://www.wired.co.uk/article/what-is-gdpr-uk-eu-legislation-compliance-summary-fines-2018

- Wallace, Marie. "The Ethics of Data Collection." TED Talk. (September 2014).
  https://www.ted.com/talks/marie_wallace_the_ethics_of_collecting_data

DUE: Workflow Analysis: October 16 by 11:55 PM

Module 9: October 17 - 23: Data Quality

Objectives:

- ❖ Students will be able to list and explain the components of data quality.

- ❖ Students will be able to discuss the need for data quality to their organizational stakeholders.

Forum Questions for the Week: (Please post by October 22 by 11:55 PM).

1. How does data quality relate to the data management lifecycle?
2. What are the most important drivers of data quality?
3. Pick one of the Strong-Wang categories of data quality and discuss what is involved with one or two of the subcategories.
4. How do you convince others in your organization that data quality is important?

Readings:

- DAMA International. "Chapter 13: Data Quality." In *DAMA-DMBOK: Data Management Body of Knowledge.* 2nd ed. (Technics: Basking Ridge, NJ, 2017): 449-495.

- Data Management - Data Quality. https://www.youtube.com/watch?v=kDOelMaTOuM

- Data Quality Management https://www.youtube.com/watch?v=Ku1DvSoSCCQ

- DQ vs. MDM. Video. 6:14 min. https://www.youtube.com/watch?v=dspdToaROn8

- Implementing Effective Data Quality. https://www.youtube.com/watch?v=OKLeAitmCcU

- Moore, Susan. How to Create a Business Case for Data Quality Improvement (June 19, 2018) https://www.gartner.com/smarterwithgartner/how-to-create-a-business-case-for-data-quality-improvement/

Module 10: October 24 – 30: Data Governance

Objectives:

- ❖ Students will be able to discuss the intersection of data governance and digital curation.
- ❖ Students will be able to explain how good data curation enhances effective data governance.
- ❖ Students will be able to analyze the impacts of new digital technologies and infrastructures on data curation and data governance.

Forum Questions for the Week: (Please post by March 26 by 11:55 PM).

1. How does data governance interact with and relate to data curation?
2. What are the potential problems with lack of data curation as it relates to data governance?
3. How might new digital technologies for data creation (such as Machine Learning, AI, and the Cloud) impact the relationship between data curation and data governance?

Readings:

- DAMA-DMBOK. Chapter 3: Data Governance: p. 67-96.

- The Data Governance Institute. "Data Governance: The Basic Information," "Definitions of Data Governance," "Goals and Principles for Data Governance," "Governance and Stewardship," "Governance, Stewardship, and Quality Roles and Responsibilities," and "Data Governance Glossary." http://www.datagovernance.com/

- Intricity101. "What Is Data Governance?" https://www.youtube.com/watch?v=sHPY8zIhy60

DUE: Personal Data Management: October 30 by 11:55 PM.

Module 11: October 31 – November 6: Document and Content Management

Objectives:

- ❖ Students will be able to list and explain the primary business drivers for document and content management.
- ❖ Students will be able to discuss how the data lifecycle relates to document and content management.
- ❖ Students will be able to discuss a variety of response types to litigation.

Forum Questions for the Week: (Please post by April 2 by 11:55 PM).

1. Provide and discuss three reasons why document and content management is so important to businesses.

2. What are the key issues associated with enterprise content management systems? Please discuss your top two.

3. How does an organization assess its risk level regarding document management?

Readings:

- DAMA-DMBOK. Chapter 9: Document and Content Management, p. 303-346.

- https://www.washingtonpost.com/wp-srv/national/longterm/tobacco/stories/memos1.htm?noredirect=on

- https://www.pbs.org/wgbh/pages/frontline/shows/settlement/timelines/fullindex.html

Module 12: November 7 – 13: Data Management Maturity Assessment

Objectives:

❖ Students will be able to list and explain the components of a Data Management Maturity Assessment (DMMA).

❖ Students will be able to discuss the need and drivers for DMMAs.

❖ Students will be able to analyze and suggest remedies for barriers to conducting a DMMA.

Forum Questions for the Week: (Please post by November 12 by 11:55 PM).

1. How do you build buy-in for conducting a Data Management Maturity Assessment?

2. You are in charge of conducting a Data Management Maturity Assessment, but find conversations with staff turn to "systems" rather than "data". What approach do you take to get employees focused on data and data quality rather than computer systems?

Readings:

- DAMA-DMBOK. Chapter 15: Data Management Maturity Assessment, p. 531-550.

- CMMI Institute. "What is the Data Management Maturity (DMM) Model?" https://cmmiinstitute.zendesk.com/hc/en-us/articles/216335388-What-is-the-Data-Management-Maturity-DMM-model- Also, please explore resources listed here: https://cmmiinstitute.com/resources?searchtext=Tags:%22DMM%22.

- Dataversity. "Assessing Data Management Maturity Using the DAMA DMBOK Framework – Part 1." https://www.dataversity.net/assessing-data-management-maturity-using-the-dama-dmbok-framework-%E2%80%93-part-1/ and Part 2: https://www.dataversity.net/assessing-data-management-maturity-using-the-dama-data-management-book-of-knowledge-dmbok-framework-part-2/

- Dataversity, "The Case for the Data Management Maturity Model." https://www.dataversity.net/case-data-management-maturity/.

- Enterprise Data Management Council. https://edmcouncil.org/ Please visit website and explore.

- Gorball, Jeff. " DMM Webinar Series Part 1: Why Do You Need Maturity in Data Management." Video. https://vimeo.com/176641752

<mark>**DUE: DCP Presentation: November 20, by 11:55 PM**</mark>

Module 13: November 14 – 20: Data Management Organization and Role Expectations

Objectives:

- ❖ Students will be able to discuss how to ascertain the role of data in an organization.

- ❖ Students will be able to discuss the importance of organizational culture to data governance and data curation.

- ❖ Students will be able to analyze the strengths and weaknesses of various data management organizational constructs including the decentralized operating model, the network operating model, the centralized operating model, the hybrid operating model, and the federated operating model vis-à-vis data curation and governance.

- ❖ Students will be able to list and discuss 10 critical success factors in setting up a data management organization.

- ❖ Students will be able to discuss how a Chief Data Office may relate to a Chief Information Office and a Chief Technology Officer in an organization.

Forum Questions for the Week: (Please post by November 19 by 11:55 PM).

1. You have been hired as the first CIO in an organization. How do you best go about gaining support for data curation and governance throughout the organization?
2. How do data repositories support data sharing?
3. Why are data repositories important for data credibility?

Readings:

- DAMA-DMBOK. Chapter 16: Data Management Organization and Role Expectations, p. 551-572.

<mark>**DUE: DCP Presentation Feedback to Class: November 27 by 11:55 PM**</mark>

Module 14: November 21 - 27: Organizational Change Management

Objectives:

❖ Students will be able to explain by change fails in organizations.

❖ Students will be able to discuss the triggers for effective change.

❖ Students will be able to discuss the barriers to change.

❖ Students will be able to list and explain the five "Laws of Change."

❖ Students will be able to analyze the strengths and weaknesses of Kotter's Eight Errors of Change Management.

Forum Questions for the Week: (Please post by November 26 by 11:55 PM).

1. You have been hired as a CIO and are tasked with setting up a Data Management Organization (DMO) with a data governance and curation program. What do you do first and why?

2. Pick one of the 5 Laws of Change and discuss how you have experienced it in your own life (this does not have to be data related).

3. Why is change so hard for so many so much of the time?

Readings:

- DAMA-DMBOK. Chapter 17: Data Management Organization Change Management, p. 573-610.

Module 15: November 28 – December 4: Blending Data Governance and Data Curation Final Projects Due

Objectives:

❖ Students will be able to list and explain points of convergence between data curation and data governance.

❖ Students will be able to discuss how data curation enhances data governance and traditional data management.

❖ Students will reflect on what they found most valuable from this class.

Forum Questions for the Week: (Please post by December 3 by 11:55 PM).

1. List and discuss 2 key points of convergence between data governance and digital curation.

2. How does digital curation enhance data management and governance?

3. Discuss the two most important things you learned from this class.

December 11, 11:55 PM: Final Project Due.