UNC | SCHOOL OF INFORMATION
AND LIBRARY SCIENCE

INLS 890-046: Digital Curation: Applications and Challenges
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Instructors:

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Office Hours:

Dr. Tibbo will be in her office most Wednesdays & Thursday, days 1-3 PM, although project and committee meetings may change this. Please feel free to drop by for random or chance meetings, or send me an e-mail message for a more definite scheduling opportunity. My door is often closed, but just knock! Dr. Lee's office hours are Monday and Wednesday, 3:15-4:00 (or by appointment).

Course Timeline:

First Class: Thursday, January 10, 2008
Final Paper Topic Due: 5pm on Friday, February 8 (to Blackboard)
Final Papers Due: Thursday, April 17, 2008
Last Class: Thursday, April 24, 2008

Brief Course Description:

Explores a range of issues central to digital curation and trustworthy repositories including history and definition of digital curation; lifecycle management of digital assets; digital collection building; codifying relationships and agreements with contributors and partner institutions; audit and certification; standards development; related aspects of organizational behavior; project and risk management; preservation strategies; policy setting and external policies relevant to repository management.

Goals and Objectives:

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

- Discuss the differences between digital preservation and digital curation.
- Identify and discuss the primary research and professional issues and challenges in digital preservation and curation.

- Discuss the stages of the digital lifecycle and the activities necessary for preservation.
- Discuss what makes a repository "trustworthy."
- Analyze and evaluate the potential repository audit and certification process and the existing tools.
- Understand the standards development process and discuss standards relevant to digital preservation.
- Be familiar with the policy development process and be conversant with policies relevant to digital curation and the digital object lifecycle.
- Understand the role of risk management and risk mitigation in digital preservation.
- Understand how organization theory and behavior influences digital preservation and curation strategies.

Honor Code:

This class strictly follows the Honor Code. Information on the Honor Code can be found at: http://honor.unc.edu/honor/code.html

Class Electronic Mailing Lists:

The Email Address for this list is: inls890-spring2008@listserv.unc.edu

You can find out about UNC list at: http://listserv.unc.edu/ .

We will also send out email announcements out to you (blind carbon copy) using Blackboard.

Blackboard:

You can access the class website at: http://blackboard.unc.edu. Log in with your Onyen and password, and you should see listing of all your classes. Click on: Spring 2008 Advanced Sel Topics.inls890.046.

Course Readings:

There is no requirement to buy a textbook for this course. You should read the materials listed below for each week prior to class. The readings are a combination of those selected by the instructors and those suggested by the guest speakers. This means that not all required readings are available at the start of the semester. Please check the version of the syllabus in Blackboard for the most up-to-date list of readings. We will try our best to ensure you have plenty of advance notice of the readings for a given week.

Assignments and Evaluation:

Due to the nature of this course, positive and active participation is required. Positive and active participation is characterized by having a clear command of the readings for the day, sharing analyses and options based on the readings; allowing other students the opportunity to participate; and freely agreeing and disagreeing with others when warranted. Please note that an intellectual exchange of

ideas is the cornerstone of education, but any criticism should be limited to an idea and not the person specifically.

In addition to active participation, students will turn in a term paper on a relevant topic of their choice, approved by the instructors. Students will present this topic in class. Paper topic to Blackboard by 5pm on Friday, February 8th.

On Thursday, February 28, students will present proposed final paper topics. Papers are due April 17th.

Grade Breakdown:
- Class participation: 30%
- Final paper: 70%

Week 1 – Thursday, January 10

A. Introduction to the class, instructor, and students. We will discuss how we want to conduct the class and the nature of the assignments and the expectations of all of us. What do we value in class participation?

B. Framework for semester. Overseeing digital assets from planning and resource allocation through creation, management, delivery and preservation.

C. "How to Read a Book." http://www.si.umich.edu/~pne/PDF/howtoread.pdf

D. What do we mean by "digital preservation & access" and "digital curation"? David Giaretta from the DCC and the CASPAR Project will be our virtual guest at 8:30.

  ➢ Digital Curation Center (DCC) http://www.dcc.ac.uk/about/what/

E. Major initiatives and projects in digital curation and preservation.

  ➢ CAMiLEON: Creative Archiving at Michigan & Leeds: Emulating the Old on the New. http://www.si.umich.edu/CAMILEON/
  ➢ CASPAR: Cultural, Artistic and Scientific knowledge for Preservation, Access and Retrieval. http://www.casparpreserves.eu/
  ➢ CEDARS: CURL Exemplars in Digital Archives. http://www.leeds.ac.uk/cedars
  ➢ DELOS: Network of Excellence on Digital Libraries. http://www.delos.info/
  ➢ DigCCurr: Preserving Access to Our Digital Future: Building an International Digital Curation Curriculum. http://www.ils.unc.edu/digccurr/
  ➢ digiCULT: Technology Challenges for Digital Culture. http://www.digicult.info/pages/index.php
  ➢ The Digital Archives at the National Archives (UK). http://www.nationalarchives.gov.uk/preservation/digitalarchive/
  ➢ DCC: Digital Curation Centre. http://www.dcc.ac.uk/index
  ➢ DPE: DigitalPreservationEurope. http://www.digitalpreservationeurope.eu/
  ➢ DPC: Digital Preservation Coalition. http://www.dpconline.org/graphics/index.html

- ➢ ERPANET: Electronic Resource Preservation and Access Network.
  http://www.erpanet.org/about.php
- ➢ IIPC: International Internet Preservation Consortium.
  http://netpreserve.org/about/index.php
- ➢ InterPARES I & II: International Research on Permanent Authentic Records in Electronic Systems. http://www.interpares.org/
- ➢ LOC DP: Library of Congress Digital Preservation division. (Including information on NDIIPP (National Digital Information Infrastructure and Preservation) Program). http://www.digitalpreservation.gov/
- ➢ LOCKSS: Lots of Copies Keep Stuff Safe. http://www.lockss.org/lockss/Home
- ➢ PLANETS (Preservation and Long-term Access through Networked Services). http://www.planets-project.eu/

F. Curation Issues throughout the Lifecycle.

- ➢ Sarah Higgins, "Draft DCC Curation Lifecycle Model," *The International Journal of Digital Curation* 2/2 (2007): 82-87. http://www.ijdc.net/./ijdc/article/view/45/52.

Week 2 – Thursday, January 17

A. History of Digital Curation.

- ➢ Cornell University. "Digital Preservation Management Tutorial: Implementing Short-term Strategies for Long-term Problems."
  http://www.library.cornell.edu/iris/tutorial/dpm/timeline/index.html   Please read "Setting the Stage," look at the timeline, and take the timeline quiz.
- ➢ Peruse and familiarize yourself with the "major initiatives and projects" listed under week 1. Focus particularly on CASPAR, DCC, DPE, NDIIPP and PLANETS.

B. Professionalization of Digital Curation Activities.

Speaker: Cal Lee

Week 3 – Thursday, January 24

A. Evaluation of Digital Curation Functions and Repository Services – Part 1: Introduction to evaluation of systems and services.

Guest speaker: Jeffrey Pomerantz, Assistant Professor, School of Information and Library Science, University of North Carolina at Chapel Hill - http://sils.unc.edu/~jpom/

B. Archival Metrics project and tools.

Speaker: Helen Tibbo

Read:

Duff, Wendy, Sarah Carson, and Jean Dryden. "Developing Standardized Metrics for Assessing Use and User Services for Primary Sources: A Literature Review for the AX-SNet Project." [Available in Blackboard]

Perspectives on Outcome Based Evaluation for Libraries and Museums. Washington, DC: Institute of Museum and Library Services, 2000. http://www.imls.gov/pdf/pubobe.pdf

Westell, Mary. "Institutional Repositories: Proposed Indicators of Success." *Library Hi Tech* 24, no. 2 (2006): 211-26. [Available in Blackboard]

Yakel, Elizabeth, and Elizabeth Goldman. "Archival Metrics: An Overview of Current Practices." [Available in Blackboard]

Week 4 – Thursday, January 31

A. Evaluation of Digital Curation Functions and Repository Services – Part 2: Certification and Criteria for Evaluating Trustworthiness of Repositories.

   1. TRAC
       - Trustworthy Repositories Audit & Certification (TRAC): Criteria and Checklist. http://www.crl.edu/content.asp?l1=13&l2=58&l3=162&l4=91
       - RLG, "Trusted Digital Repositories: Attributes and Responsibilities." Mountain View, CA: Research Libraries Group, 2002. http://www.rlg.org/legacy/longterm/repositories.pdf.

   2. DRAMBORA
       - "Digital Repository Audit Method Based on Risk Assessment" http://www.repositoryaudit.eu/

         Please register and download the toolkit.

       - Ross, Seamus and Andrew McHugh. "The Role of Evidence in Establishing Trust in Repositories." *D-Lib Magazine* 12 7/8 (July/August 2006). http://www.dlib.org/dlib/july06/ross/07ross.html.

       - Digital Repository Audit and Certification Wiki. http://wiki.digitalrepositoryauditandcertification.org/bin/view/Main/WebHome

Guest speaker: Andrew McHugh, Advisory Service Manager, Digital Curation Centre, and Humanities Advanced Technology and Information Institute at the University of Glasgow - http://www.hatii.arts.gla.ac.uk/staff/am.html

   3. ISO Activities

Speaker: Helen Tibbo

Week 5 – Thursday, February 7

A. Standards Development

1. Standards development process

2. ISO standards-setting activities that address digital curation

Guest speaker: Hans Hofman, Senior Advisor at the Nationaal Archief (National Archives) of the Netherlands

Read:

Cargill, Carl F. "A History of Standards" and "A User Perspective on Technical Standardization." *Open Systems Standardization: A Business Approach*, 14-25, 89-96. Upper Saddle River, NJ: Prentice Hall, 1997. [Available in Blackboard]

Hofman, Hans. "ISO RM Standards." Paper presented at the DLM-FORUM 2005: Electronic Records Supporting e-Government and Digital Archives, Budapest, Hungary, October 5-7, 2005. [Available in Blackboard]

Hofman, Hans. "Standards: Not 'One Size Fits All'." *Information Management Journal* 40, no. 3 (2006): 36-45. [Available in Blackboard with formatting and all original text (recommended version), also available in a more simplified form at: http://findarticles.com/p/articles/mi_qa3937/is_200605/ai_n17183430)

West, Joel. "The Economic Realities of Open Standards: Black, White, and Many Shades of Gray." In *Standards and Public Policy*, edited by Shane M. Greenstein and Victor Stango, 87-121. Cambridge: Cambridge University Press, 2007. http://www.joelwest.org/Papers/West2006-WP.pdf

Due: Paper topic to Blackboard by 5pm on Friday, February 8

Week 6 – Thursday, February 14

Codifying Relationships and Agreements.

1. Submission agreements.
2. Service level agreements.
3. Inter-institutional agreements.
4. Requests for proposals.

Guest Speakers:
- **Selden Lamoureux**, Electronic Resources Librarian, Academic Affairs Library, UNC-Chapel Hill
- **Micah Altman**, Senior Research Scientist, Institute for Quantitative Social Science, and Associate Director of Harvard-MIT Data Center, Harvard University - http://maltman.hmdc.harvard.edu/

Read:

Brennan, Patricia, Karen Hersey, and Georgia Harper. "Strategic and Practical Considerations for Signing Electronic Information Delivery Agreements." Washington, DC: Association of Research Libraries, 2002. http://www.arl.org/sc/licensing/licbooklet.shtml

Clegg, Helen and Susan Montomery. "How to write an RFP for information products." *Information Outlook* 10, no.6 (June 2006):23-33. [Available in blackboard and via electronic journals from UNC Libraries]

Hahn, Karla L. "SERU (Shared Electronic Resource Understanding): Opening Up New Possibilities for Electronic Resource Transactions." *D-Lib Magazine* 13, no. 11/12 (2007). http://www.dlib.org/dlib/november07/hahn/11hahn.html

"Producer-Archive Interface Methodology Abstract Standard." Washington, DC: Consultative Committee for Space Data Systems, 2004. (ISO 20652:2006). http://public.ccsds.org/publications/archive/651x0b1.pdf [Focus particularly on "An Overview of the Producer-Archive Interface Methodology" (p.2-1 to 2-5)]

"RLG Guidelines for Creating a Request for Proposal for Digital Imaging Services." Ithaca, NY: Cornell University Library, 1998. http://www.oclc.org/programs/ourwork/past/digimgtools/RFPGuidelines.pdf

Week 7 – Thursday, February 21

Digital Collection Building – Part 1

- Identifying, Locating and Harvest.
- Transfer.
- Ingest.
- Validation and quality control of digital objects/packages.

Guest Speakers:
- **Jon Crabtree**, Assistant Director of Archive and Information Technology Odum Institute for Research in Social Science (8:00-9:30)
- **Raymond Van Diessen**, Managing Consultant, IBM Business Consulting Services, The Netherlands (9:45-10:45).

Read:

Glick, Kevin, and Eliot Wilczek. "Ingest Guide." Tufts University and Yale University, 2006. http://dca.tufts.edu/features/nhprc/reports/ingest/overview.html

Vardigan, Mary, and Cole Whiteman. "OAIS Meets ICPSR: Applying the OAIS Reference Model to the Social Science Archive Context." *Archival Science* 7 (2007): 73–87.

Week 8 – Thursday, February 28

A.   Mid-Semester Review and Synthesis.

B.   Students present proposed final paper topics.

Week 9 – Thursday, March 6

Digital Collection Building

- Analysis and characterization of digital objects/packages
- Representation information
- File formats and format registries
- Transformation of digital objects/packages

Read:

Abrams, Stephen L. "The Role of Format in Digital Preservation." *VINE* 34, no. 2 (2004): 49-55. [Available in Blackboard]

Curtis, J., P. Koerbin, P. Raftos, D. Berriman, and J. Hunter. "AONS - an Obsolescence Detection and Notification Service for Web Archives and Digital Repositories." *New Review of Hypermedia and Multimedia* 13, no. 1 (2007): 39-54. http://www.informaworld.com/index/780448483.pdf

Hitchcock, Steve, Tim Brody, Jessie M.N. Hey , and Leslie Carr. "Digital Preservation Service Provider Models for Institutional Repositories Towards Distributed Services." *D-Lib Magazine* 13, no. 5/6 (2007). http://dlib.org/dlib/may07/hitchcock/05hitchcock.html

Guest Speaker: Adrian Brown, Head of Digital Preservation, National Archives (UK), http://www.nationalarchives.gov.uk/preservation/digital.htm

(Helen will join via Skype from WebWise conference).

Week 10 – Thursday, March 13: NO CLASS - Spring Break

Week 11 – Thursday, March 20

Implications of Organizational Theory and Organizational Behavior Research for Digital Curation

Speaker: Cal Lee

Read:

Argote, Linda. "Organizational Memory." In *Organizational Learning: Creating, Retaining, and Transferring Knowledge*, 67-97. Boston, MA: Kluwer Academic Publishers, 1999. [Available in Blackboard]

Birnholtz, Jeremy P., and Matthew J. Bietz. "Data at Work: Supporting Sharing in Science and Engineering." *In Group '03: Proceedings of the 2003 International ACM SIGGROUP Conference on*

Supporting Group Work: November 9-12, 2003, Sundial Resort on Sanibel Island, Florida, USA, edited by Mark Pendergast, 339-48. New York, NY: Association for Computing Machinery, 2003. http://doi.acm.org/10.1145/958160.958215

Week 12 – Thursday, March 27

Policy – Part 1 – Processes and strategies for setting policies.

Guest Speakers:
- **Kelly Eubank**, Electronic Records Archivist, North Carolina State Archives
- **Shannon Schelin**, Lecturer and Director of Center for Public Technology - http://www.sog.unc.edu/about/directory/schelin.html

Read:

Smith, Catherine F. "Public Policy Making," "Communication in the Process," "Definition: Framing the Problem," "Position Paper: Know the Arguments," and "Written Public Comment: Influence Administration." *Writing Public Policy: A Practical Guide to Communicating in the Policy-Making Process,* 1-7 8-18, 19-41, 62-75, 125-138. New York: Oxford University Press, 2005. [Available in Blackboard]

Week 13 – Thursday, April 3

Policy – Part 2 - Overview of many relevant policies

- HIPAA
- FERPA
- FOIA
- DMCA
- Sarbanes-Oxley

Speakers:
- **Helen Tibbo**
- **David Stephens**, Vice President, Records Management Consulting, Zasio Enterprises - http://www.zasio.com/consult_david.asp

Read the following in detail:

Anderson, B. "A Primer on Copyright Law and the DMCA." *The Reference Librarian* 93 (2006): 59-71. [Available in Blackboard]

Brown, Adrian. "Legal Issues." In *Archiving Websites: A Practical Guide for Information Management Professionals*, 146-162. London: Facet, 2006. [Available in Blackboard]

Sinclair, Gwen. "No Secrets @ your library: How Government Secrecy Affects Libraries." *DttP Documents to the People.* 35/2 (Summer 2007): 38-44. [Available in Blackboard]

Stephens, David O. "Business Recordkeeping and the Law" and "Records Retention and the Law." *Records Management: Making the Transition from Paper to Electronic*, 83-102, 103-125. Lenexa, KS: ARMA, 2007. [Available in Blackboard]

Briefly familiarize yourself with the following:

HIPAAAdvisory. http://www.hipaadvisory.com/ [Focus particularly on the section on the "Electronic Health Record"]

NACUBO. *The Sarbanes-Oxley Act of 2002. Recommendations for Higher Education.* http://www.unc.edu/finance/controller/fc/nacubo_advrept2003_3.pdf

National Academic Advising Association. *FERPA: Basic Guidelines for Faculty and Staff : A Simple Step-by-Step Approach For Compliance.* http://www.nacada.ksu.edu/Resources/FERPA-Overview.htm

National Institutes of Health. *HIPAA Privacy Rules.* http://privacyruleandresearch.nih.gov/

NIST. National Institute of Standards and Technology. *Freedom of Information Act.* http://www.nist.gov/admin/foia/foia.htm

UNC. HIPAA Home. http://www.unc.edu/hipaa/

UNC Office of the Registrar. Student Information Systems. FERPA Training. http://regweb.unc.edu/faculty/ferpa_training.php.

US Department of Health and Human Services. Office for Civil Rights – HIPAA. http://www.hhs.gov/ocr/hipaa/

US Department of Education. *Family Educational Rights and Privacy Act (FERPA).* http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html

Week 14 – Thursday, April 10

Project Management

Guest Speaker: Mark Winston, Associate Professor, School of Information and Library Science, University of North Carolina at Chapel Hill - http://www.ils.unc.edu/~winstonm/

Read:

Wysocki, Robert K. *Effective Project Management: Traditional, Adaptive, Extreme*. 4th ed. Indianapolis, IN: Wiley, 2007. [What is a Project (p.3-16) and Identifying Project Activities (p.75-96).

Skelton, Karen. "Designing an Electronic Recordkeeping System." In *Selected Essays in Electronic Recordkeeping in Australia*, edited by Judith A. Ellis, 51-70. O'Connor, ACT, Australia: Australian Society of Archivists, 2000. [Available in Blackboard]

Week 15 – Thursday, April 17

Managing Risk: Organizational and Technological Readiness
Guest Speaker: Nancy McGovern, Associate Archivist and Digital Preservation Officer, Inter-University Consortium for Political and Social Research (ICPSR) -
http://www.icpsr.umich.edu/ICPSR/staff/mcgovern.html

Read:

McGovern, Nancy Y., Anne R. Kenney, Richard Entlich, William R. Kehoe, and Ellie Buckley. "Virtual Remote Control: Building a Preservation Risk Management Toolbox for Web Resources." *D-Lib Magazine* 10, no. 4 (2004). http://dlib.org/dlib/april04/mcgovern/04mcgovern.html

Institute of Risk Management, Association of Insurance and Risk Managers, ALARM (The National Forum of Risk Managers in the Public Sector). *A Risk Management Standard* (2002). http://www.theirm.org/publications/documents/Risk_Management_Standard_030820.pdf

Price, Laura, and Abby Smith. "Managing Cultural Assets from a Business Perspective." Washington, DC: Council on Library and Information Resources, and Library of Congress, 2000. http://www.clir.org/pubs/abstract/pub90abst.html

Stonebruner, Gary, Alice Goguen, and Alexis Feringa. *Risk Management Guide for Information Technology Systems.* Recommendations of the National Institute of Standards and Technology.NIST Special Publication 800-30. U.S. Dept. of Commerce. http://csrc.nist.gov/publications/nistpubs/800-30/sp800-30.pdf [Browse through this document, paying particular attention to Figure 3-1 on p.9 and Figure 4-2 on p.31].

Treasury Board of Canada. *Integrated Risk Management Framework.* (2001). http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/RiskManagement/rmf-cgr_e.asp [Browse through this document].

UK Treasury. *Orange Book. Management of Risk – Principles and Concepts.* (2004). http://www.hm-treasury.gov.uk./media/3/5/FE66035B-BCDC-D4B3-11057A7707D2521F.pdf [Focus particularly on The Risk Management Model (p.13)].

Due: Final papers to be turned in at beginning of class in paper AND posted to Blackboard

Week 16 – Thursday, April 24

Synthesis and Wrap Up.