Preparing Future Digital Curators:
An Overview of Digital Curation Curriculum Development at Carolina

Carolyn Hank
School of Information and Library Science
University of North Carolina at Chapel Hill

CeRch Research Seminar
King’s College London
November 30, 2009
Digital Curation Education

• Developing sustainable and evolving digital curation educational programs for:
  – Professional, continuing, life-long education
  – Graduate, professional education
  – Doctoral education

• Programs need to be:
  – Integrated
  – International
  – Interdisciplinary
  – Linked to practical experiences, internships, etc.
E.g., IMLS-Funded Curriculum Projects in the U.S.

- Common theme: Prepare students for digital curation with wide variety of organizations, contexts & types of resources:

- **University of Illinois at Urbana-Champaign:**
  - Data Curation Education Program (DCEP): 2006
  - Extending Data Curation to the Humanities (DCEP+): 2008

- **University of North Carolina at Chapel Hill:**
  - Preserving Access to Our Digital Future: Building an International Digital Curation Curriculum (DigCCurr I): 2005
  - “Extending an International Digital Curation Curriculum to Doctoral Students and Practitioners (DigCCurr II): 2008
DigCCurr Project
say: dij-seeker

- IMLS Grant # RE-05-06-0044
- Collaboration of School of Information & Library Science (SILS), University of North Carolina at Chapel Hill (UNC-CH) & U.S. National Archives & Records Administration (NARA)
- Runs July 1, 2006 – December 31, 2009
DigCCurr Goal

- Build a growing and evolving network of international experts;
- Develop an evolving curricular framework and content, field experience exemplars, and enriching activities;
- Raise public awareness of the need for and nature of digital curation;
- Explore the creation, cost, and sustainability of a certificate in digital/data curation;
- Attract the best possible students to this emerging area of study using the IMLS-funded Carolina Digital Curation Fellowships.
DigCCurr Components

**Curriculum:** To prepare students for digital curation with wide variety of organizations, contexts & types of resources:
- Graduate-level curricular framework
- Course modules
- Course development
- Experiential components
- International guest speakers

**Two International Symposia:**

Carolina Digital Curation Fellowship program
DigCCurr 2009
Proceedings

Available as free download or in print for nominal fee:
http://stores.lulu.com/DigCCurr2009

ISBN 978-0-578-02215-4
# DigCCurr Partners

NARA, UNC Libraries, UNC ITS, Odum Institute, ibiblio, and 17 international expert Advisory Board members from:

<table>
<thead>
<tr>
<th>Cornell University</th>
<th>SDSC, now SILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard University</td>
<td>SUNY-Albany</td>
</tr>
<tr>
<td>IBM (The Netherlands)</td>
<td>University of California-Santa Cruz</td>
</tr>
<tr>
<td>NASA</td>
<td>UCLA</td>
</tr>
<tr>
<td>Nationaal Archief of the Netherlands</td>
<td>Universita Degli Studi di Urbino</td>
</tr>
<tr>
<td>National Archives &amp; Records Administration</td>
<td>University of Glasgow</td>
</tr>
<tr>
<td>National Library of Australia</td>
<td>University of Michigan</td>
</tr>
<tr>
<td>National Library of New Zealand</td>
<td>University of Toronto</td>
</tr>
</tbody>
</table>
Guiding Questions

• What knowledge and competencies do professional need in order to do digital curation work?

• What should students learn in the classroom?

• What should students learn through field experiences?
Guiding Principles

• Build on work of others
• Digital curation activities span entire life of digital resources
• Build from and for modules rather than entire courses
• Emphasize core, generalizable modules
• Avoid tying curriculum to specific institution types
Carolina Digital Curation Fellows

- 5 Digital Curation Fellows pursuing degrees at SILS - began fall 2007; funded through 2009

- UNC partners providing practical experience opportunities: ibiblio, ITS, Odum Institute, and University Library

- 4 additional Fellows supported by UNC partners for 2008-09
“In this practicum setting, I was able to carry out the entire spectrum of digital curation on a small scale, from researching best practices, to trying out different tools and writing suggested policies.”

“I was working with a 10 year old collection of jpeg files and I learned firsthand how important early interception is to archiving. It was too late to suggest that the creator create tiff images from his pictures; the images only existed as jpegs, they had been compressed, so some detail was lost.”

It's a good setting for recognizing the need to steward born-digital materials, since a good number of departments are calling and asking for guidance on this topic.
Supervisors

“Her work will be invaluable to us as we develop the necessary policies and procedures for capture and storage of historically valuable university web sites.”

“Thrilled with Fellow. Effective, serves purposes we haven’t been able to get to.”

“If we could accept more, we would happily accept more”

“… developing aspects of what she is learning with what we are doing. Nothing but superlatives for how things have gone.”

“Many unmet needs across many projects.”
Fellows to Graduates


• S. Guss, “The Effects of Institutional Review Boards in Social Science Data Archiving in Digital Repositories.” Helen Tibbo, Advisor.


• M. Swails, “A Content Analysis of Migration and Emulation Approaches from 1980 through 2005.” Helen Tibbo & Carolyn Hank, Advisors
Curriculum Development

- High-Level Categories of Digital Curation Functions
- Matrix of Digital Curation Knowledge and Competencies
- Certificate in Digital Curation (under review)
- Module Development
- New Course Offerings
Sources of Data

- Literature review
- Interviews from 17-member expert Advisory Board
- Two surveys of digital curation professionals
- Review of syllabi and materials from existing courses and workshops
- Review of digital curation-related job postings
- Course evaluations
- Fellowship evaluations
New Courses in Support of Digital Curation

- INLS 890: Special Topic Seminars in Digital Curation (Tibbo, Lee, Hank)
- INLS 465: Understanding Information Technology for Managing Digital Collections (Lee)
- INLS 490-161: iRODS Rule Construction (Moore, Marciano, Rajasekar & Lee)
“The practical nature of the materials is very useful … my tech fluency (or at least comprehension) is improving significantly.”

“I like the exposure to the variety of topics … I'm learning a vocabulary I knew little about. When I encounter issues/ideas we've mentioned in class elsewhere I feel like I have a good point of reference for understanding other material.”

“…this course is precisely filling the goal of being able to converse more intelligently about system-level functions.”

“The most relevant thing I am learning is how relevant this stuff is for digital curation.”
“The instructors' knowledge/experience.”

“I am learning a lot about repositories and how iRODS can be used to set up one. Lectures and readings are very informative.”

“Interactive -- I've learned a lot from my group and working together on assignments.”

“Hands-on time in conjunction with lecture.”
Matrix of Digital Curation
Knowledge & Competencies

• Tool for thinking about, planning for, identifying & organizing curriculum

• Each unit of curriculum content can address one or more dimensions

• Helping to address fundamental issue: core vs. specialized (optional) education elements
1) Mandates, Values and Principles

- Professional ethics
- Legal requirements
- Standards
- Interoperability and sustainability requirements
2) Professional, Disciplinary or Institutional/Organizational Context

- **Professional context:**
  - History of professional activities
  - Professional development

- **Disciplinary and Institutional/Organizational Contexts**
  - Characteristics of information and record keeping environments
3) Transition Point in Life of Digital Object

- Pre-creation design and planning
- Creation
- Primary use environment (active use)
- Transfer to archives
- Archives (preservation environment)
- Transfer copies or surrogates to secondary use environment
- Secondary use environment
4) Type of Resource

- Types of storage media
- Types of digital objects
  - Format, genre
- Level of aggregation
  - Component, object, collection
- Level of abstraction
  - Work, expression, manifestation, item
5) Prerequisite Knowledge

- Terminology
- Characteristics of information communication technologies (ICTs)
6) Functions and Skills

- 24 High-level functional categories across six activity areas:
  - Technical infrastructure
  - Information resource treatment
  - Metadata treatment
  - Human interaction
  - Strategies, prioritization, and judgments
  - Administration
High-Level Functions

- Administration
- Advocacy & outreach
- Analysis & characterization of digital objects/packages
- Analysis & evaluation of producer information environment
- Archival storage
- Common services
- Collaboration, coordination & contracting with external actors
- Data management
- Description, organization & intellectual control
- Destruction & removal
- Identifying, locating, & harvesting
- Ingest

- Management
- Preservation planning & implementation
- Production
- Purchasing & managing licenses
- Reference & user support
- Selection, appraisal & disposition
- Systems engineering & development
- Transfer
- Transformation of digital objects/packages
- Use, reuse & adding value to accessed information
- Validation & quality control of digital objects/packages
Meta-level Functions

• Analysis and documentation of curation functions
• Evaluation and audit of curation functions
• R&D to support curation functions
• Education and sharing of expertise and guidance on curation functions
Professional Competencies

• Personal attributes
• Interpersonal skills
• Technical skills
• Administration and management skills
• Core ILS course background
• Practical experience
“Extending an International Digital Curation Curriculum to Doctoral Students and Practitioners.”
http://www.ils.unc.edu/digcccurr.

This project is funded through IMLS Laura Bush funds.

A collaboration of the School of Information and Library Science (SILS) at the University of North Carolina at Chapel Hill (UNC-CH) and the U.S. National Archives and Records Administration (NARA).

DigCCurr II Key Activities

• PhD Fellowships
• Digital Curation Exchange (DCE)  
  – http://digitalcurationexchange.org/
• Professional Institutes
  – Week-long summer workshop for practitioners.
  – Follow-up session held approximately six months later.
  – http://www.ils.unc.edu/digccurr/institute.html
  – First held June 21-26, 2009 (31 participants)
• Public Symposia with Advisory Board
  – First to be held January 8, 2010
  – Engaging Communities for the Curation of Digital Products of Scholarly Endeavors
IDEA

• Has built an international network of Digital Curation educators, the IDEA Working Group.
• IDEA (International Digital curation Education and Action) WG is a collaboration of SILS, HATII at the University of Glasgow, and the UK Digital Curation Center.
• Fourth meeting to be held December 1st, in conjunction with 5th International Digital Curation Conference
• See D-Lib report (March/April 2009) for more info:
  – [http://www.dlib.org/dlib/march09/hank/03hank.html](http://www.dlib.org/dlib/march09/hank/03hank.html)
Closing the Digital Curation Gap (CDCG)

- Years: 2009-2011
- Partners: IMLS, JISC, DCC
- Goals:
  - Establish and support a **network** of digital curation practitioners, researchers, and educators through face-to-face meetings, web-based communication, and various other information and communication technology (ICT) tools;
  - Establish a **baseline of digital curation practice/knowledge**, especially in small to medium-sized cultural heritage institutions in the US and UK, through surveys, interviews and case studies;
ESOPI 21

- Years: 2009-2012
- Partners: UNC School of Government, National Archives, NC State Archives, UNC
- Goals:
  - Dual Degree Program
  - Fund 8 master’s students for 2 years leading to both a Masters of Science in Library Science (MSLS)/Masters of Public Administration (MPA) or a Masters of Science in Information Science (MSIS)/MPA.
ESOPI 21 Goals, Continued

• Integrate
  – Policy development;
  – Issues of legal compliance;
  – extensive knowledge of government structures and information …
  – With archival principles, digital curation fundamentals, and electronic records management workflows and information technologies.

• SILS and the SOG are uniquely positioned for this educational challenge as these are the only MSIS/MSLS/MPA dual degree programs in the United States.
THANK YOU

Questions?
Resources…
http://www.ils.unc.edu/digccurr/
Feedback…
hcarolyn@email.unc.edu
DigCCurr Professional Institute: Curation Practices for the Digital Object Lifecycle

May 16-21, 2010 & January 6-7, 2011
Chapel Hill, NC, USA
http://www.ils.unc.edu/digccurr/institute.html