Supporting Research:
Transforming Library Roles in Support of Research and Scholarship

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3rd Annual State of Norman Campus Research
University of Oklahoma -- September 17, 2012
Background

Passion: ensuring that libraries thrive in an age of discontinuity
UL: the intellectual commons of the University … preserving history and culture, connecting past and future in the present

✧ Experiences: consortia networks, LANL, MPG, Emory …

✧ Enjoy being at a comprehensive university: ranging from literary arts, visual and performing arts to business and STEM …

✧ Cyclist: “Life is like riding a bicycle. To keep your balance you must keep moving” Albert Einstein
Mission / Vision: OU University Libraries

‘Straw man’ DRAFT 2012 Vision:

The OU Libraries inspire creative expression, scholarship and new knowledge
Deft Balancing Act

*Bifurcated bonding*: single hydrogen atom participates in two hydrogen bonds

New leader: dual drivers

- Articulating vision vs. listening, proper needs assessment
- Pivoting to address unique & strategic vs. fulfilling broad community needs and legacy roles
21st C Research Library

- Role transformation: from service to partnerships
- Change from emphasis on collections space to intellectual commons → dynamic exploratory community spaces
  - Shift from facility optimized for book storage to a multi-dimensional *intellectual commons* optimized for learning & engaged scholarship
  - Multi-functional: exhibitions, digital humanities lab, information science expertise, GIS, ... technology support, writing center ...
- Embrace curatorial role(s) for data stewardship
  - Leverage unique skills in metadata description and preservation
- Success will hinge on sustaining successful partnerships
  - Partner internally with IT & VPR
New Directions: Scholarly Communications

1. Deploy and curate a robust **digital repository**

2. Incubate exploration of new digital scholarship opportunities, and re-examine the role of new publishing paradigms

*The enduring goal of a university is to create and disseminate knowledge. A repository of faculty articles and data will provide a means for faculty to disseminate their work as open access ...*
Scholarly Communications: Open Access

3. Ramp up efforts supporting OA awareness and authors rights
   - Launch Open Access awareness campaign and dialogue
     - OA conference Feb 28th - Mar 1st
   - Intellectual Property - address author / creator rights
     Copyright involves a ‘bundle of rights’ ... reproduction, public display, performance, modification, use, archiving ...
   - Determine appropriate options and policies for IP
     - IP – (a) information acquisition; (b) IP generated within OU; and (c) scholarly output
Special Collections: Rethinking Collecting and Resource Allocation

Exploit strengths in special collections & centers of excellence

- Pivot from collection-centric paradigm to *engagement-centered*
- Collections *collecting* shifts → data, media, born digital
- Reduce the proportion of our budget purchasing commodity information –
  - Focus on unique materials
  - Reinvest in enabling scholarly production
The New Special Collections: Data Publishing

“Most scientific fields do not have systematic means to make data available” (NAS, 2011)

1. Provide consulting services and institutional knowledge aggregation for data management plans

2. Develop systematic annotation – redefines what readers can expect, enables editions to interact directly with larger collections

3. Leverage metadata expertise
   - Optimize for ‘robotic readers’
   - XML - basis for interoperability (higher cost but higher benefits)
   - Reliance on PDF is a disaster – precludes use / reuse
Scholarly Infrastructure

Domain Specific Discovery & Innovation, Teaching & Learning

Chemistry
- Innovation
- Visualization
- Models
- Metadata
- Curation
- Computation & Storage
- Networks

Anthropology
- Innovation Publication
- Visualization
- Searching, Retrieving
- Metadata
- Curation
- Storage
- Networks

Business
- Innovation Publication
- Searching, Retrieving
- Metadata
- Curation
- Storage
- Networks

Particle Physics
- Innovation
- Visualization
- Computation
- Models
- Metadata
- Distributed Storage
- Networks
- Primary Storage
Scholarly Infrastructure

Domain Specific
Discovery & Innovation, Teaching & Learning

Chemistry
Innovation
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Models
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Anthropology
Innovation
Publication
Visualization
Metadata
Curation
Computation & Storage
Networks

Business
Innovation
Visualization
Retrieval & Analysis
Models
Metadata
Curation
Computation & Storage
Networks

Particle Physics
Innovation
Visualization
Computation
Models
Metadata
Distributed Storage
Networks
Primary Storage

Shared Cyberinfrastructure
Line here?

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Line here?
Repositories, Workflow and Data Archiving

Typical dimension of science information provision

- Archived publications
- Pre-published documents
- Access to resources and tools
Repositories, Workflow and Data Archiving

Enabling group-to-group interaction in persistent electronic spaces

Access to resources and tools

- Profiles of scientists & groups
- Information feeds
- Registry of instruments & sensors
- Registry of data sets
- Registry of software toolkits
- Data from instruments & sensors
- Analysis of data
- Harvested information from other sources
- Pre-published documents
- Archived publications

Visualizations of data
Project / problem based science teams:
interdisciplinary & trans-disciplinary

Domain experts, systems and application design, database experts, knowledge architects, ….

Digital library:
information science, library science, domain experts, technologists

IT: network & storage engineers, computer science, technologists, systems experts

Scientific Domains
(Generating workflows)

Applications
(Enabling workflows)

Repository layer
(Support & preserve workflows)

Data and infrastructure
(Enabling infrastructure)
Like a 4 Layer Cake

Scientific domains

Workflow layer

Support layer

Networking

Scientific Domains
(Generating Workflows)

Collaboratories
Applications & hybrid apps.

Toolsets, mashups,
(Workflows)

Digital library repositories

Data repositories
Data replication

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Value-added Workflow: Metadata Capture

- Move metadata capture upstream into research workflow
- Precisely record the semantics of any derived data to maintain provenance of those data sets
- Collect & document at smallest (atomic) level possible
- Time stamp, uniquely tag, geo-reference and deposit into data repositories
  - Integrate instruments, sensors, workflow applications and computer codes
Evaluating New Directions: Workforce

- Develop staffing model that supports inter-disciplinary / trans-disciplinary research
- Hybrid staffing model(s) complimented by deep domain knowledge and technical expertise
  - Research fellows; PostDocs, interns, GRA’s, student experience...
  - Partner to educate next generation of curators and data scientists
Feedback and Questions

- Best path forward for the Libraries to enable and support distinctive research environments?
- Repositories: what would be most valuable to you?
- Enabling workflow support in research processes – how to scale?
- Partnerships – where else should we be looking?
- How best to leverage digital potential of unique History of Science & Western History collections beyond scanning?
Contact

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