Research Libraries: Now and Forward

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Introduction

- **United States research landscape very distributed**
  - Academic institutions
  - Research institutes
  - Government agencies
  - Funding agencies
  - Other….

    Do not speak with one voice or have one leading body to "standardize" activities or to focus goals and missions

- **Department of Energy – geographically distributed, diverse mission**
  - 21 National Laboratories & Technology Centers
  - 6 Office of Science program
  - Focus broadly on energy and environmental research, national security, and basic science

Los Alamos National Laboratory (LANL)

- **Lab covers ~43 square miles**
- **~10,000 employees**
- **National Security Sciences Mission**
  - Security, safety & reliability of nuclear weapons
  - Global security
- **Multi-disciplinary sciences across:**
  - Bioscience
  - Chemistry
  - Computer science
  - Earth & environmental sciences
  - Materials science
  - Physics

LANL Research Library

- **Leader in the DOE Complex & federal agencies**
  - Work with DOE National Laboratory Libraries Coalition (NLLC) and DOE Office of Scientific and Technical Information (OSTI)
- **National & international reputation in:**
  - digital library technologies
  - information standards and protocols
  - web architecture
- **Professional staff (~45):**
  - Information professionals / Librarians/ programmers & IT / students
  - PhD Information Science / Computer Science Researchers
- **Expertise and experience in:**
  - Metadata
  - Information preservation and stewardship
  - Digital content management
  - Information integration and interoperability
  - Customer services

Emerging Trends & Shifting Focus

- **Requirements for managing federally-funded research assets**
  - Open access to scholarly publications
    - National Institutes of Health
    - Office of Scientific and Technical Policy (OSTP) Request for Information on preservation and access – November 3, 2011
  - Address ALL digital assets (all multimedia – images, videos, etc.)
    - DATA!
- **Changing role of research libraries within institutions**
  - INSTITUTIONAL repositories
  - Crossing lines between “R&D records management” and preservation/access to Scientific and Technical Information
  - Knowledge extraction from institutional silos
  - DATA!

Research libraries within institutions

- **Commercial content - *always* a priority**
  - Continuing (and always increasing) investment
  - Critical engagement on Open Access activities – drive new business models
  - Rapidly developing market solutions for better (?) discovery and access/use
- **Revisiting institutional repositories**
  - Appropriate technologies – how to mesh with enterprise IT?
  - Integration with digital information lifecycles
  - Outward integration & interoperability
    - Collaboration
    - Open science
    - Appropriate security
  - Long-term preservation and curation of institutional digital assets

Local collections problem

- Provide **stewardship** for and **access** to institutional Scientific & Technical Information
- **Library** can help solve THESE institutional problems…

Where is that critical paper?

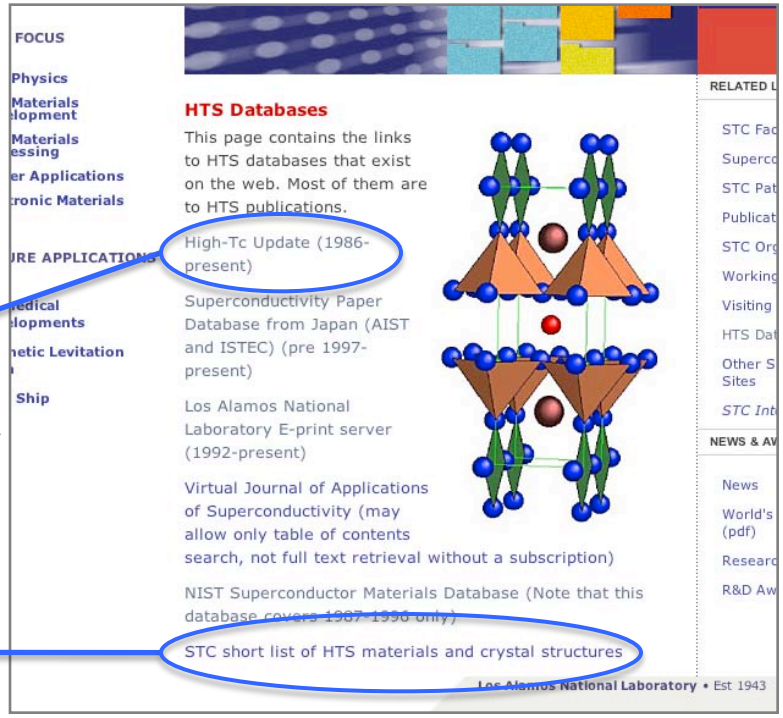
Not Found

The requested URL /htcu/htcu.html was not found on this server.

Apache/2.0.55 (Red Hat) Server at www.iitap.iastate.edu Port 80

404 File Not Found

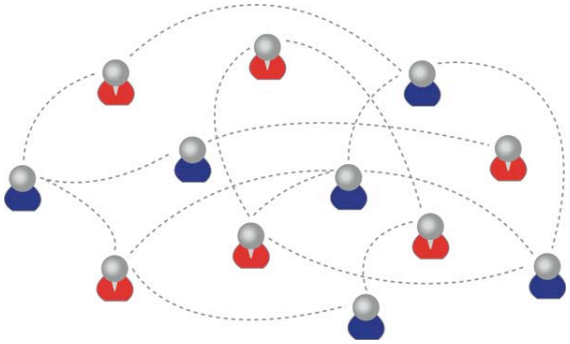
The page you're looking for was not found.



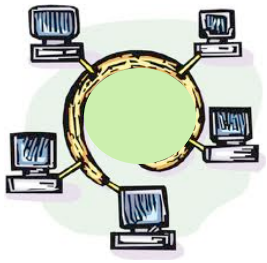
Mission to preserve and curate

- **Essential role of research libraries**
  - Stewardship of scholarly materials
  - Access – discovery, use and re-use
  - Understanding the researchers to provide targeted services
- **NOT dark archives or records centers (R&D records?)**
- **Need to move faster into stewardship of digital assets beyond traditional publications**
- **Facilitators for digital asset management literacy**
  - Translation between communities (research disciplines, managers, administrators, information technology, etc.)
  - Content AND context
  - Knowledge management → Knowledge-base librarians
    - Understand collections AND gaps

Libraries as a central node



People & social networks



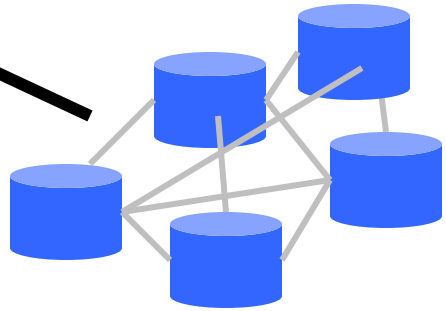
Institutional information

Library

Knowledge

Tools & Technology

The internet



Scholarly digital collections

From silos to knowledge

What questions are being asked?
Where are the answers located (which information?)
What is the quality?

Unit of assessment	Purpose	Output dimensions	Bibliometric indicators	Other indicators
Individual	Allocate resources	Research productivity	Publications	Peer review
Research group	Improve performance	Quality, scholarly impact	Journal citation impact	Patents, licences, spin offs
Department	Increase regional engagement	Innovation and social benefit	Actual citation impact	Invitations for conferences
Institution	Stimulate international collaboration	Sustainability & Scale	International co-authorship	External research income
Research field	Promotion, hiring	Research infrastructure	Citation 'prestige'	PhD completion rates

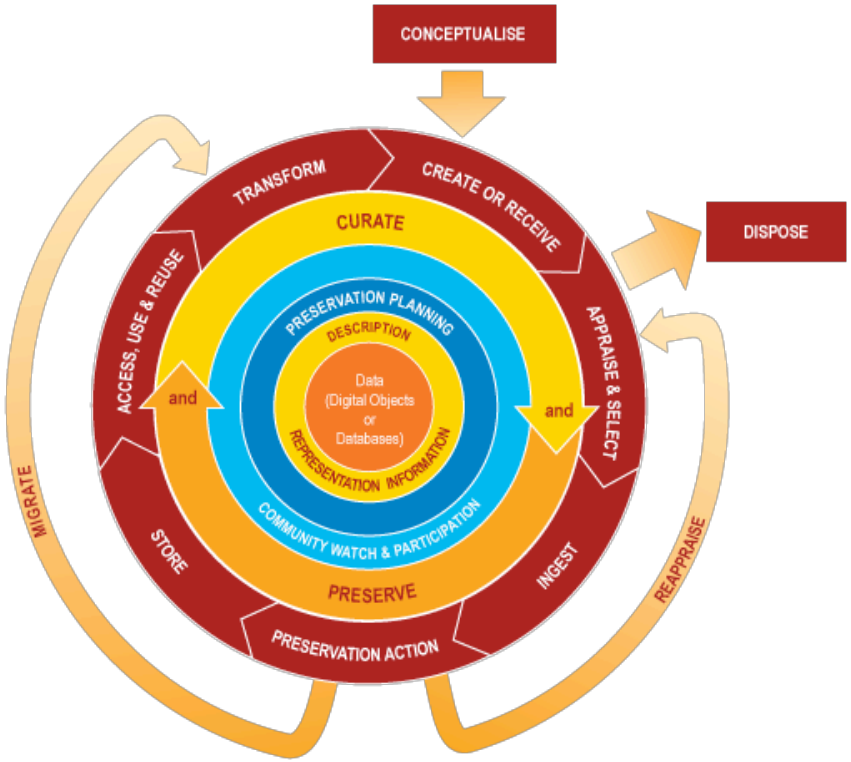
Henk Moed and Andrew Plume. *The multi-dimensional research assessment matrix.* Research Trends, May 2011. http://www.researchtrends.com/issue23-may-2011/the-multi-dimensional-research-assessment-matrix/

Role in management of DATA

- **Newest, most complex type of digital asset**
- **Critical to answering all complex questions in the future**
- **Skills to help address the problem**
  - Organize, classify, categorize
  - Education and training
  - Sharing and connecting people & information
- **Start by addressing basic needs**
  - Data literacy and data reference
  - Bring tools to projects early and participate in the lifecycle

Digital asset lifecycle

Data is a digital asset.



Digital Curation Lifecycle Model. Digital Curation Centre, UK. http://www.dcc.ac.uk/resources/curation-lifecycle-model

Digital asset lifecycle

Data is a digital asset.

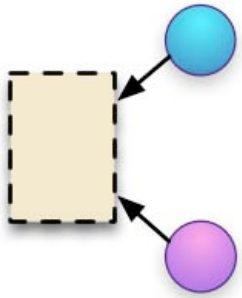
- **Data needs preservation and curation, like other scholarly resources.**
- **Data also needs robust policies and practices developed**
  - Sharing and re-use
  - Standards & methods for metadata, transport, ingestion, etc.
  - Practices for assessment and credit – citation, etc.
- **Cyberinfrastructure and social/cultural areas will evolve**
- **Libraries can:**
  - Facilitate
  - Educate
  - Curate
  - **PARTICIPATE!**

Final word about LANL Research Library R&D….

Information Science R&D helps build on the architecture of the web and influences scholarly communication

Memento "Time travel for the web"

- Winner of the 2010 DPC Digital Preservation Award
- Being used by web archives internationally
- http://mementoweb.org



OAC (Open Annotation Specification)

- Web-centric annotation environment
- Beta data model released Sept. 2011

SharedCanvas

- Distributed collaboration canvas rendered from Linked Data Annotations
- http://www.shared-canvas.org/

Thank You!

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http://library.lanl.gov