iSCHOOLS

… AND THE CHANGING PROFESSION OF LIBRARIANSHIP

International Symposium on Knowledge Communities 2012

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Outline

- Traditional values and principles of librarianship
- The tide of *big data*
- Implications of digitization on scholarship
- The global response by iSchools
- Emerging opportunities in a changing profession
- Reinterpreting traditional values in non-traditional times

Gorman's Central Values of Librarianship*

- *Stewardship* of human record
- *Service* to individuals, communities, and societies
- *Intellectual Freedom* and free expression of thought
- *Privacy* of inquiry
- *Rationalism* in organization and classification
- *Commitment* to literacy and learning
- *Equity* of access to resources and services
- *Democracy* through a well-informed electorate

* Michael Gorman (2000). *Our Enduring Values: Librarianship in the 21st Century*

Gorman's Five New Laws of Librarianship*

- Libraries serve humanity
  - "furtherance of the higher aspirations of mankind"
- Respect all forms by which knowledge is communicated
  - "using whatever is more effective, cost effective, or advantageous"
- Use technology intelligently to enhance service
  - "… rather than adopted for its own sake"
- Protect free access to knowledge
  - "society without uncensored libraries is a society open to tyranny"
- Honor the past and create the future
  - "Balance nostalgia for a pre-digital past with the need to embrace new technologies"

*Crawford, W. and Gorman, M. (1995). *Future Libraries: Dreams, Madness and Reality*

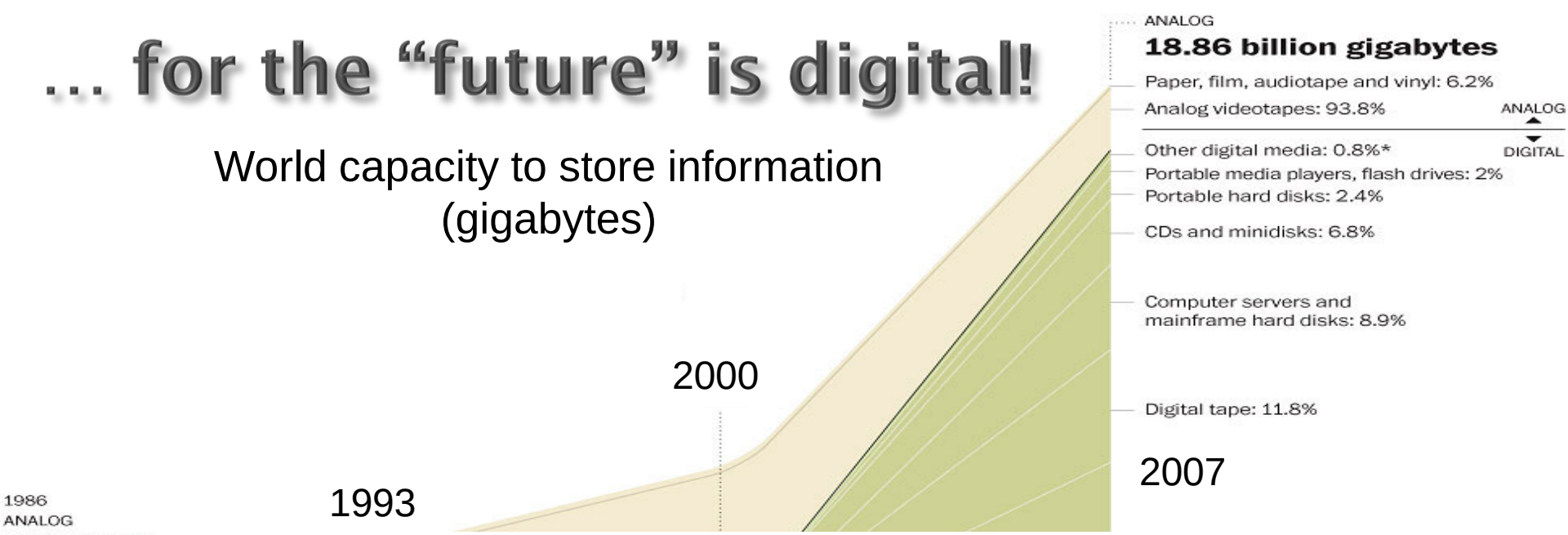
“The future ain’t what it used to be.”
(Yogi Berra)

Come gather 'round people
Wherever you roam
And admit that the waters
Around you have grown
And accept it that soon
You'll be drenched to the bone.
If your time to you
Is worth savin'
Then you better start swimmin'
Or you'll sink like a stone
For the times they are a-changin'.

Bob Dylan - The Times They Are A Changin' (1976)

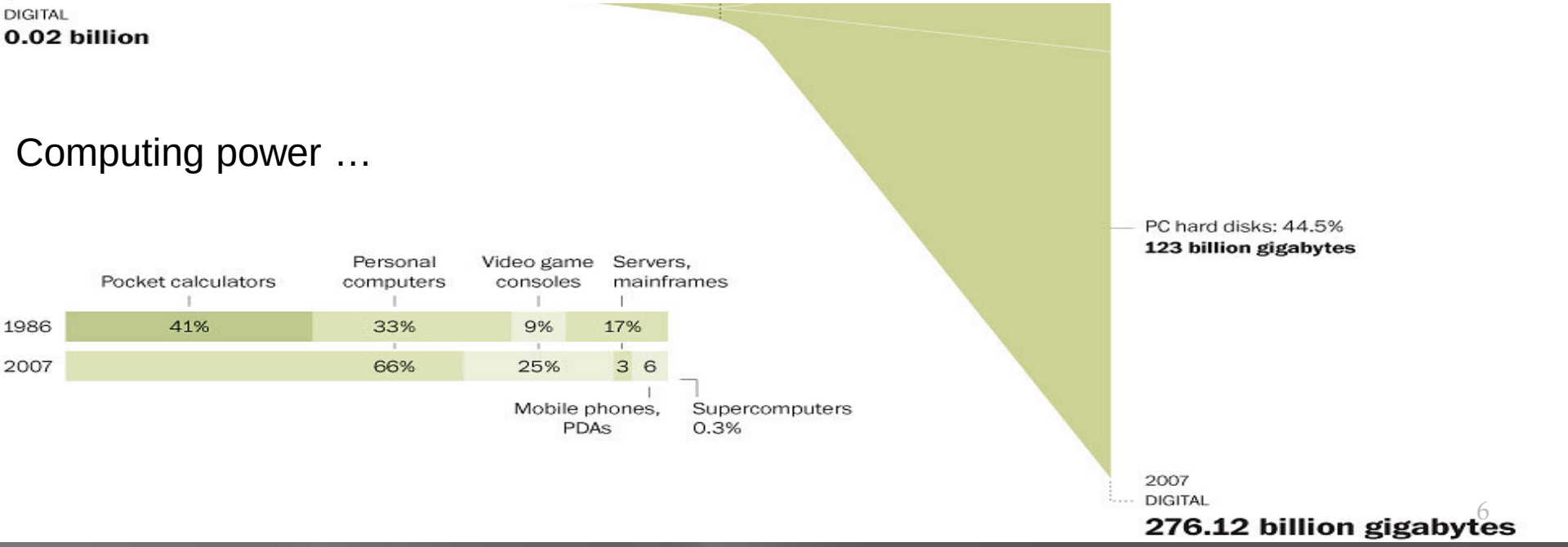
… for the "future" is digital!

World capacity to store information (gigabytes)



So whither libraries and librarians??

Computing power …

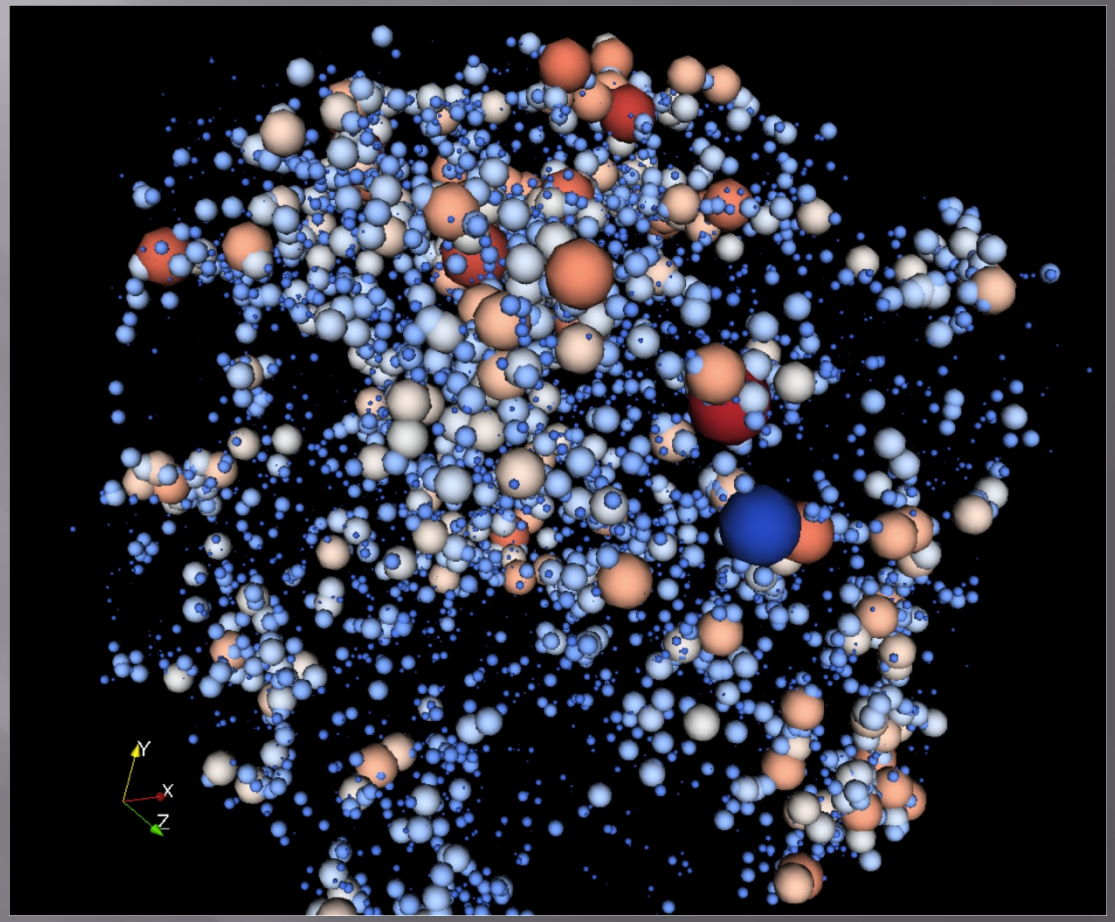


Implications of Digitization

- Qualitatively different opportunities for new forms of research
- Interdisciplinary investigations engage scientists, technologists, and humanities scholars.
- Transformative opportunities and challenges to libraries and the information professions

Let's look at some examples…

Data-Intensive Research: eScience Simulation



Visualization of dark matter clusters using Los Alamos RoadRunner Petaflop Computer

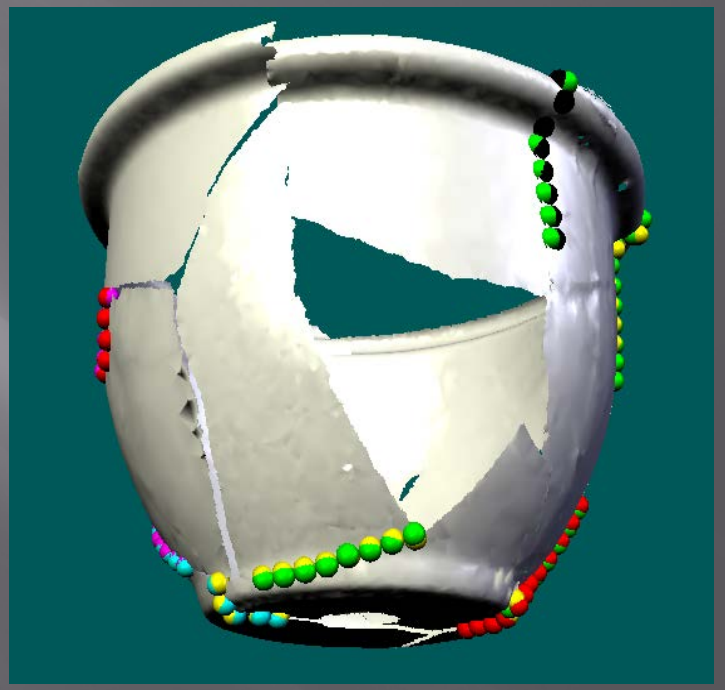
Data-Intensive Research: Digital Surrogates

Three Dimensional Data Renderings

Rendering from Laser Scan

Marc Levoy/Stanford University

http://graphics.stanford.edu/



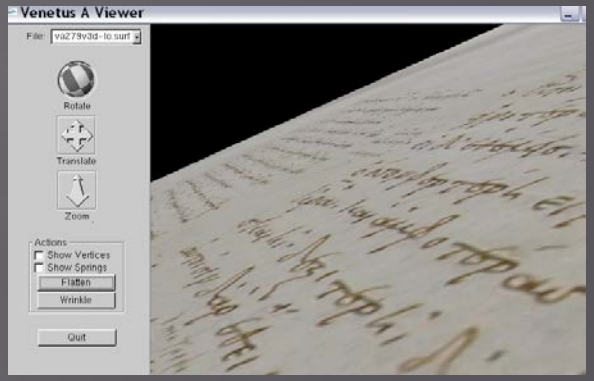
Pot Assembly from Sherds

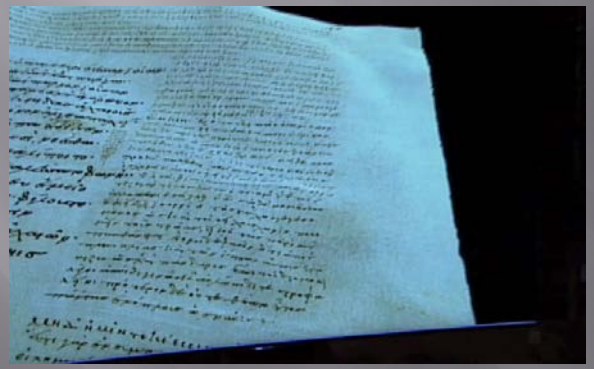
David Cooper/Brown University

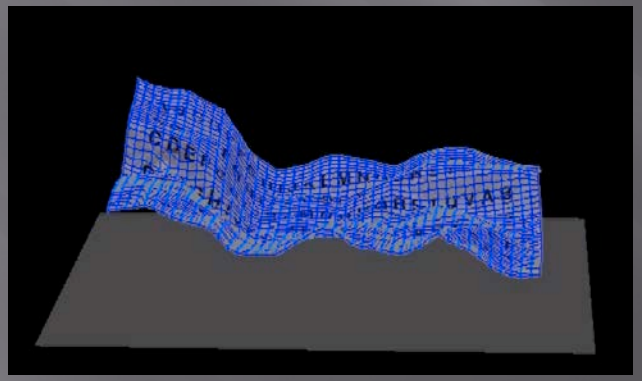
http://www.lems.brown.edu/shape/

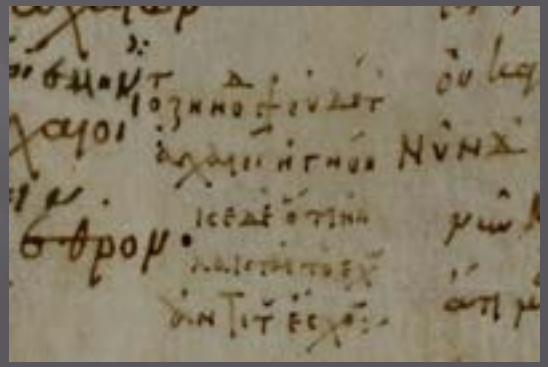
Data-Intensive Research: Digital Correction

Digital Flattening of Non-Planar Manuscripts









Brent Seales/University of Kentucky

www.vis.uky.edu

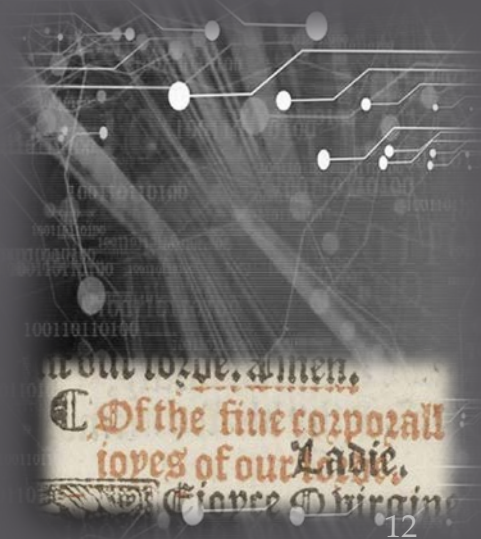
Data-Intensive Research: Immersive Display

13th Century Buddhist Canon in Immersive Environment

Consequences of digitization

- *Data-driven discovery* as a new research paradigm
- A necessity for *interoperability* at scale
- Transformation of *scholarly communications*
- New *organizational forms* to exploit information
- Evolving *social mores* among individuals

But what does this have to do with iSchools??



Consider the Infrastructure Issues

- Stewarding contemporary scholarship
  - Digital content
  - Web services
  - Workflows
- Curating primary research data
  - Often discarded
  - Rarely accessible
  - Frequently incompatible
- Approaching a tipping point
  - Digital content the norm in most disciplines
  - Infrastructure and professional services lagging

iSchools: Revisiting our Mission

- What we said a decade ago:
  - "… educate high quality information professionals and build the knowledge, resources and tools to create, organize, find, transmit, preserve, integrate, and use information."
  - "… advance the profession and practice of librarianship and information science, to prepare students for careers in the field of information and library science, and to make significant contributions to the study of information."
- What we say now:
  - "… educating students, furthering knowledge, and contributing expertise to advance humankind's progress through information."
  - "… educate innovative and responsible thinkers who will lead the information professions; discover principles and impacts of information; create systems, techniques, and policies to advance information processes and services; and promote information creation, access, use, management, and stewardship to improve the quality of life…"

The mission has changed little…
The environment has changed a lot!

iSchool Challenges & Opportunities

- Refine the LIS curriculum
  - Reach beyond the conventional library
  - Champion digital stewardship
  - Engage with disciplinary researchers
- Recruit students to prospective careers
  - STEM students, business students, …
  - Diversity students
- Explore emerging roles
  - Library as data repository & publisher
  - Embedded librarian/informationist with disciplinary expertise
  - Proactive mediation throughout lifecycle of scholarly workflows
- Partner to define and shape new career paths
  - Data librarian / data scientist (e.g., as Co-PI on major research projects)
  - Dual degree programs (e.g., X-Informatics)

No Dearth of Opportunity*

A SAMPLER …

- Web analytics manager
- Information resources specialist
- Documentation specialist
- Digital reference librarian
- Curator
- Archivist, Archival consultant
- Director of emerging technologies and community services
- Discovery metadata librarian
- Associate archivist for digital initiatives and records management
- Manager, information services
- Metadata analyst
- Data officer
- Digital services manager
- Records management manager
- Data management analyst
- Information management officer
- Intelligence associate
- Wine librarian
- Clinical informatics librarian
- Freelance researcher

* “61 Non-Librarian Jobs for LIS Grads”, Mia Breitkopf, Syracuse iSchool (December 2011 blog posting)
http://infospace.ischool.syr.edu/2011/12/23/61-non-librarian-jobs-for-librarians/

Emerging Roles & Careers for Data Professionals*

- **Data Creator** - Researchers with domain expertise
- **Data Manager** - Computer scientists or information technologists responsible for computing facilities, storage, continuing access, and preservation of data
- **Data Scientist –** Information professionals working with data creators, engaging in creative inquiry and analysis
- **Data Librarian –** Information professionals specializing in digital stewardship, including the curation, preservation and archiving of data

* JISC

Opportunities to Rethink "Collections" and "Services"

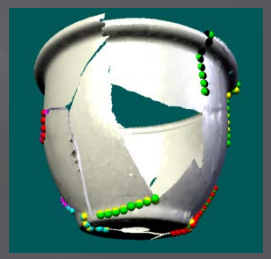
highest

Computational objects & digital rendering of the human record

Value-added experimental data (human involvement)

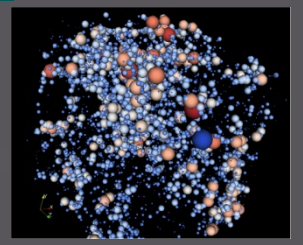
Priority

Irreplaceable sensor data (automated collection and preparation)



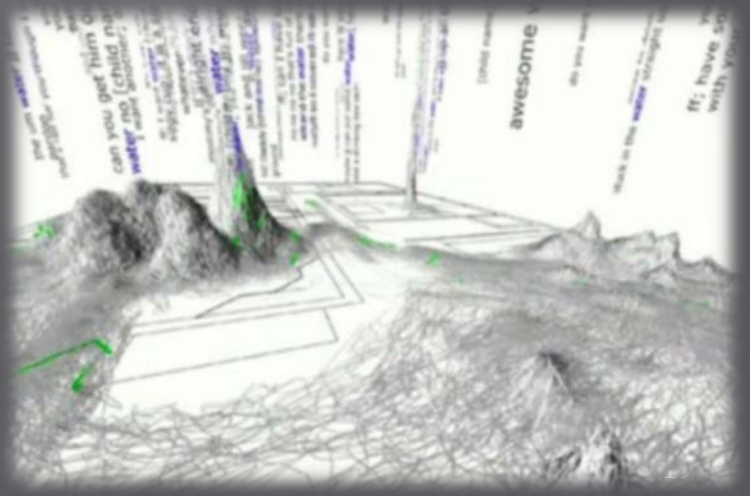
lowest

Re-generable (e.g., simulation) data



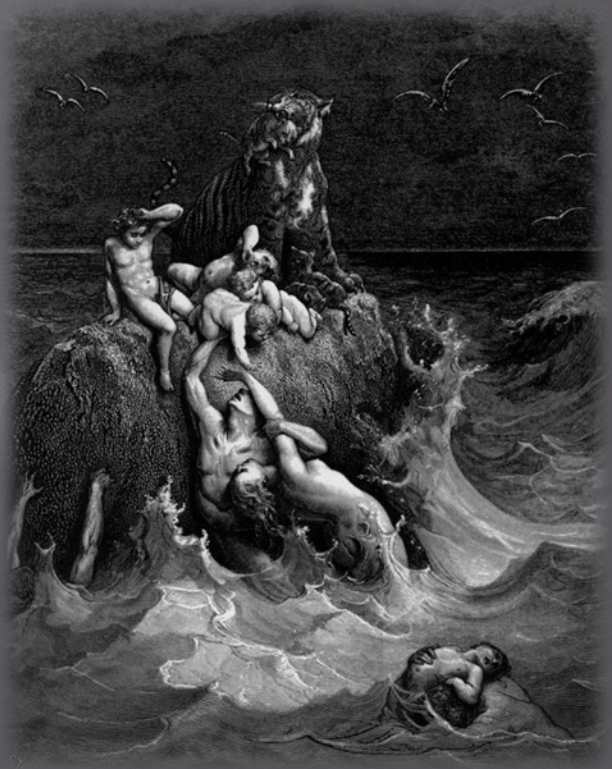
Leading the Charge… Following the Money

- 1990's – Digital library research targeted largely at enabling technology
- 2000's – Development of institutional repositories & disciplinary digital collections
- 2010's - Development of interoperable strategies to collect & curate primary data
  - Data Management Plans
  - Linked open data
  - Metadata



iSchools in Turbulent Times

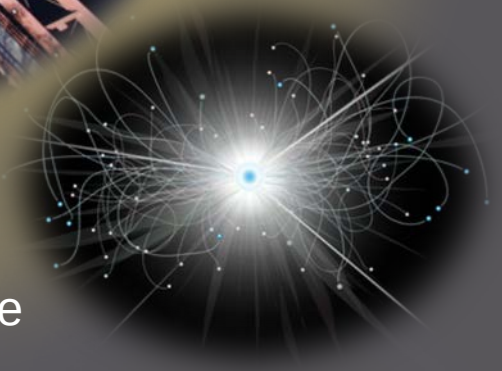
- Seeking the high ground
- Sustaining linkage to institutional mission
- Creating new value-added services
- Supporting disciplinary research teams
- Assuring stewardship of the scholarly record



The "New" Librarian – Reinterpreting a Mission of Educating, Collecting, Connecting & Preserving

Curation

Access



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