

# Libraries as Partners in Research: the UC Curation Center's Tools and Services

#### Patricia Cruse

University of California Curation Center California Digital Library

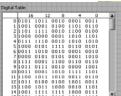
















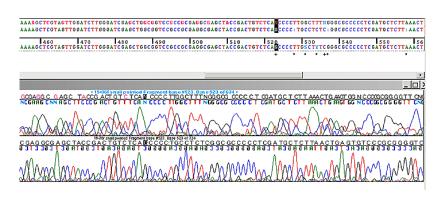
## data intensive research

- Ever increasing number, size, and diversity of content
- Ever increasing diversity of partners, and stakeholders
- Data are the new oil: "the future belongs to those that turn data into products" Mike Loukides



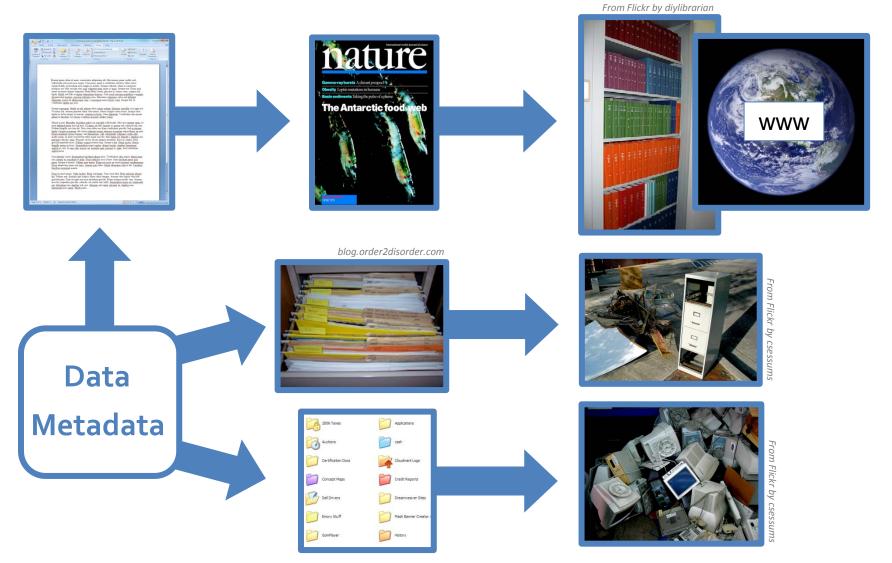
**Hypercities UCLA** 



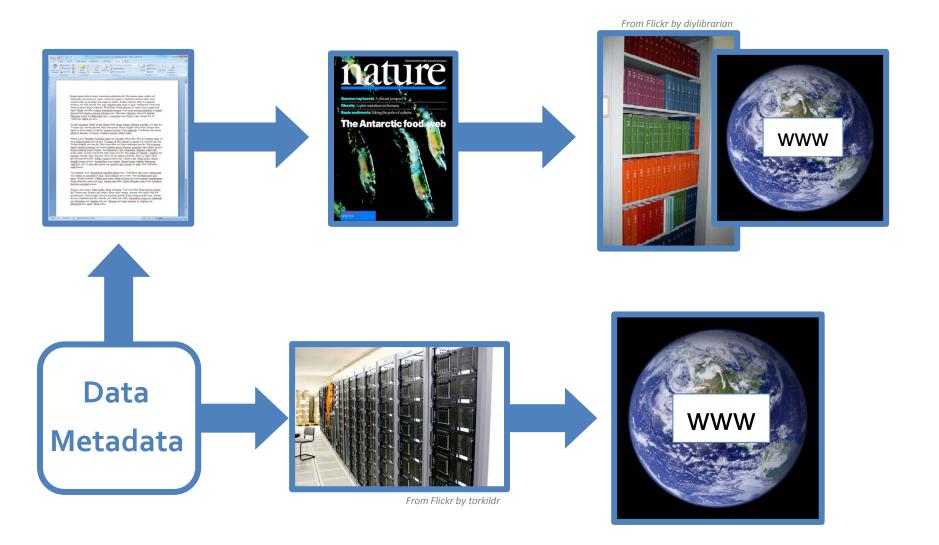






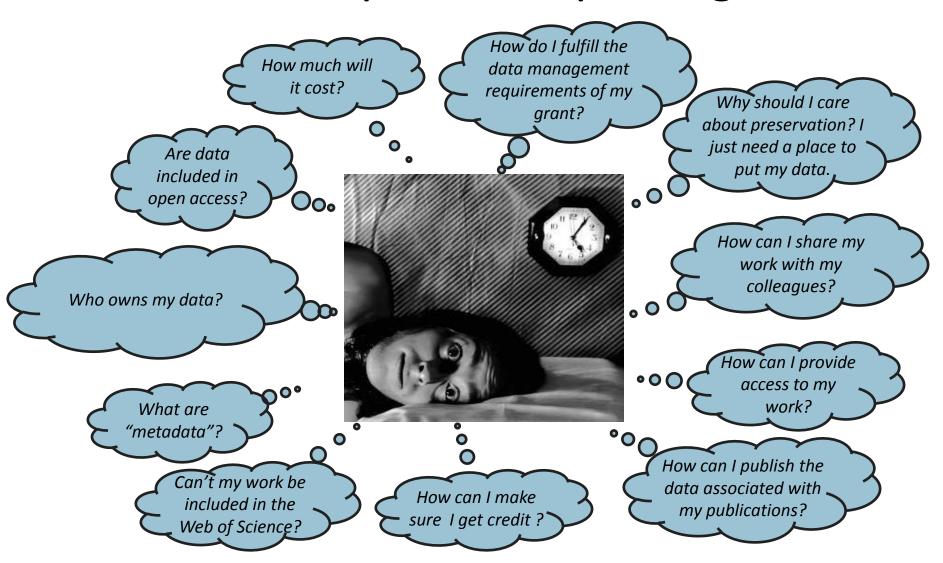








## What keeps users up at night?





## Challenge for Researchers





## Role of libraries

apply library knowledge and expertise to data challenges: manage, organize, describe, disseminate, preserve information

- Neutral service provider: work across the entire institution
- Intellectual Property experts: dealt with copyright, can translate to data
- Ability to advise on preserving research outputs
- Knowledge to advise on data management and curation
- Knowledge on complying with funder mandates, including open access



## Resulting service landscape

Create, edit, share, and save data management plans



Create, share, archive, publish data



Create and manage persistent identifiers



Curation repository: store, manage, preserve, and share research data



An infrastructure to publish and get credit for sharing research data



A service to collect, manage and preserve Web-published content





### **DMPTool**

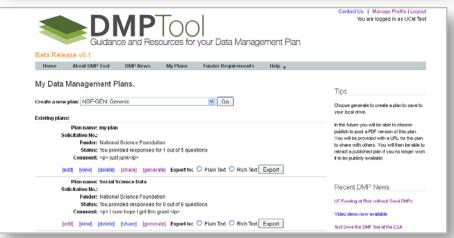
#### Meeting funding agencies data management plan requirements

- Connect researchers to resources to create a data management plan
- NSF and directorates, NIH, NEH, IMLS, foundations plus
- Customizable



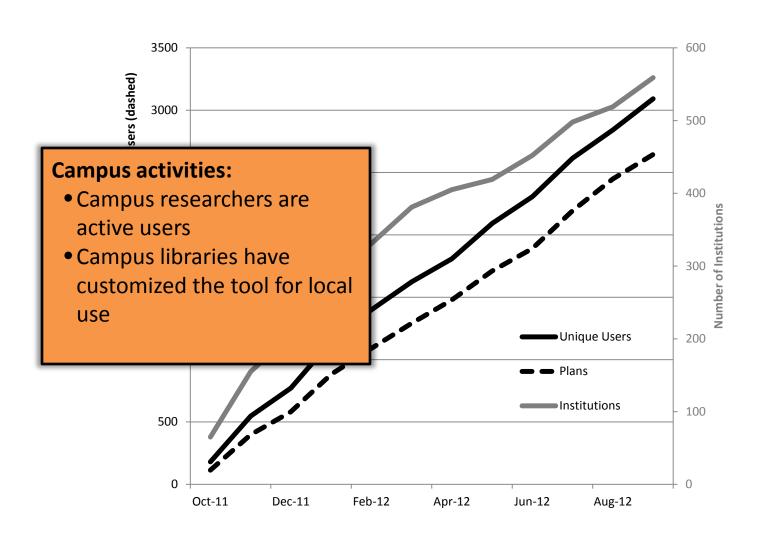
#### **Primary Functions**

- 1. Step-by-step "wizard"
- 2. Templates and examples
- 3. Links to institutional resources and agency information
- 4. Plan publication and sharing





## DMTool usage





### Create, share, archive, connect, publish data

### Excel is the database of choice for many researcher

#### **Primary Functions**

- 1. An Excel 1) add-in and 2) cloud application
- 2. Document data
- 3. Check for good data practices
- 3. Obtain identifier and citation
- 4. Archive and share









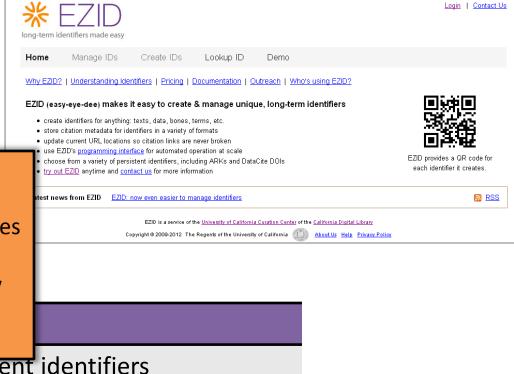
lite

## EZID: Long term identifiers made easy

- Precise identification of a dataset (DOI or ARK)
- Credit to data producers and data publishers
- A link from the traditional

Campus library activities:

 Nine out of ten campus libraries
 subscribe to the service
 Campus libraries monitor how to expand / index



- 1. Create persistent identifiers
- 2. Manage identifiers (and associated metadata) over time
- 3. Resolve identifiers



## Merritt Repository







- Curation repository open to the UC community and beyond
- Discipline / content agnostic
- New kind of cost model: pay as you go or pay once and store for X

#### **Primary Functions**

- 1. Deposit
- 2. Manage (metadata, versions, etc)
- 3. Access (expose)
- 4. Share (with other researchers)
- 5. Preserve



## Merritt's Diverse Service Offering: Meeting Campus Needs

for

ery

ent

Dark archive for important digital assets





Bright archive with direct

#### **Campus library activities:**

- Use the service to archive library content
- Reach out to researchers
- Help grow the service















systems

Integration with distributed data grids





#### **DataShare**

Open Data for the global scientific community

Home About Browse Upload

#### 

e.g. HIV, radiology

Search

#### Browse by:

All Records
Lab/Department
Researcher

#### Recently uploaded research data

- Progression of white matter degeneration in amyotrophic lateral sclerosis: A diffusion tensor imaging study.
- White matter damage in frontotemporal dementia and Alzheimer's disease measured by diffusion MRI.
- Patterns of age-related water diffusion changes in human brain by concordance and discordance analysis.

#### **▲** Share data

Upload research data

#### Learn more:

About DataShare
Why share research data?
FAQ

#### Researcher voices



"Making data transparent and available is going to accelerate all of science. It's a relatively inexpensive way to get more value out of all of the work that we do." —Dr. Michael Weiner, UCSF









## Vision for a "data paper"

- Wrap the unfamiliar in a familiar façade
- Minimally, a cover sheet and a set of links to archived artifacts
- Cover sheet contains familiar elements: title, date, authors, abstract, identifiers
- Just enough metadata to permit basic exposure to and discovery
  - Indexing by services such as Web of Science, Google Scholar
  - Instilling confidence in the identifier's stability

#### Multi-decade, spatially explicit population studies of canopy dynamics in Michigan old-growth forests

Data Paper. 2009. doi:10.5060/D2E090/251

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#### Abstract

Established in 1935, a regular grid of 256 permanent plots includes about 20% of a 100-ha oldgrowth forest at the Dukes Research Natural Area in northern Michigan, USA. Woody stems have been remeasured 3–7 times providing extensive quantitative records of population and community dynamics over periods of up to 72 years. Woody stems in upland hemlock—northern hardwood stands, about half of the study plots, have been mapped and individually tracked since about 1990. Remaining plots are in swampy stands dominated by Fraxinus nigra and Thuja occidentalis. Detailed, long-term demographic data for late-successional forests are rare in general; this data set is both of exceptional duration and unusual in spatial intensity and detail. Because sample plots are in a regular array over the stand, they can support analyses of spatiotemporal pattern at various scales. A major wind disturbance in 2002 provides a unique opportunity to compare disturbance response to baseline dynamics. Several publications based on this data set have already provided new insights into late-successional processes, but general availability of the data set with metadata should permit a range of further comparative and integrative analyses. The study is ongoing, and new measurements will be added to the archived data set. Several ancillary data sets are available from the author.

Key words: Acer saccharum; Betula alleghaniensis; Fagus grandifolia; Fraxinus nigra; long-term studies; northern hardwood forest; old-growth forest; permanent plots; succession; Thuja occidentalis; tree mapping; Tsuga canadensis.

#### Data Files

Files are ASCII text, tab-delimited. No compression schemes were used.

all plots 1935 1948.txt - data for all stems measured in 1935 and 1948.

all plots 1974-1980.txt - data for all stems measured in 1974 through 1980.

upland plots 89-07.txt - data for upland plots mapped and measured two or more times,
1989 through 2007.

<u>swamp all modern.txt</u> -- data for wetland plots censused from 1992 through 2007.
<u>species codes.txt</u> -- four-letter codes and full names for all species.
<u>sampling history.txt</u> -- table summarizing sampling history for all plots.

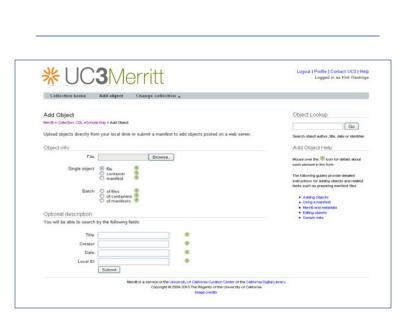




## Data Publishing at the CDL

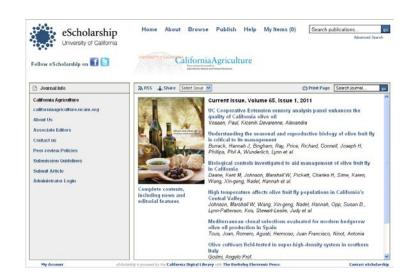
#### **UC Curation Center**

- Merritt Curation repository
- EZID: Persistent id management and resolution (ARKs, DOIs, et al.)



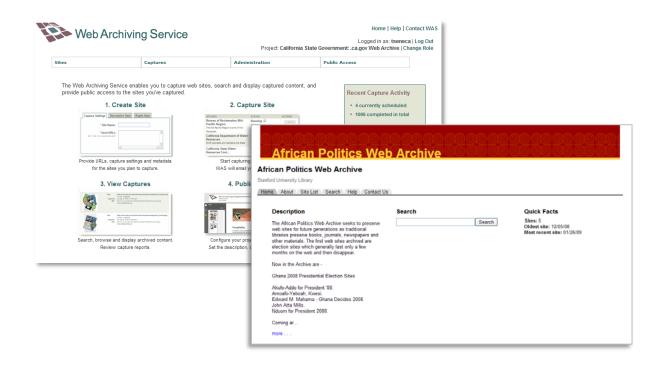
#### **Publishing Services Program**

- Online journals, with peer review
- Scholarly communication: grey literature to post-prints
- Search and display tools (XTF)





University of California Curation Center Web Archiving Service

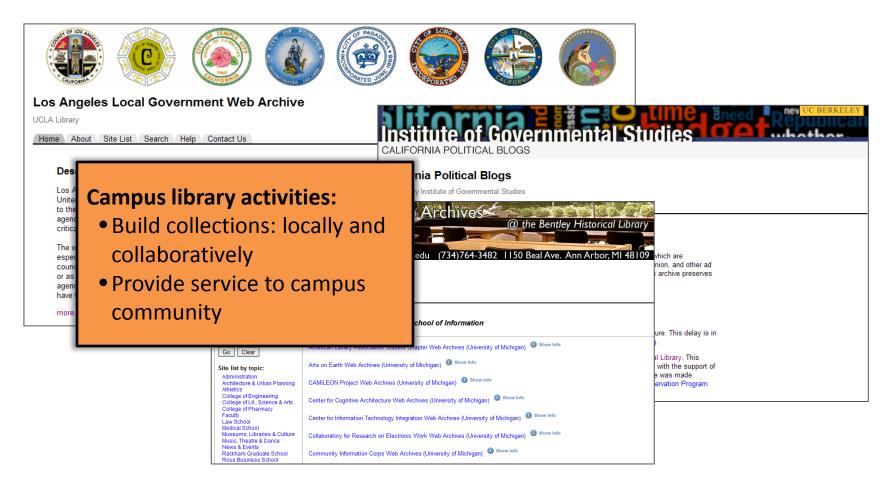


53 public archives 120+ archives total 58K crawls 7,500 + sites 600 million + URLs 60+ TB 24 institutions



## What are people using WAS for?

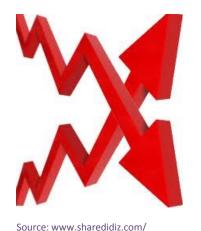
Archiving at-risk websites and publications
Archiving their own university domains
Building web archives to complement library collections
Documenting web coverage of significant events





## New kind of cost model

- Understand costs in order to plan for and implement sustainable preservation services
- Investigate paid-up pricing in order to address
  - Boom-or-bust budget cycles
  - Fixed-term, grant funded projects



| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--------|---------|-----------|----------|--------|----------|
|        |        | 1       | 2         | 3        | 4      | 5        |
| 6      | 7      | 8       | ate! 9    | 10       | 11     | 12       |
| 13     | 14     | and a   | ate! 9    | 17       | 18     | 19       |
| 20     | 21     | 22      | 23        | 24       | 25     | 26       |
| 27     | 28     | 29      | 30        | 31       |        |          |



## For more information

### **UC Curation Center**

http://www.cdlib.org/uc3

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Greg Janée Carly Strasser

John Kunze Marisa Strong

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David Loy Perry Willett

