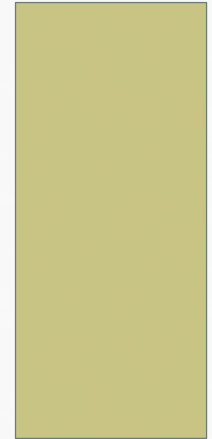# ONE YEAR LATER AT OU:
ARE WE WRANGLING, MANAGING OR MAXIMIZING OUR ORGANIZATIONS' RESEARCH DATA?

MARK LAUFERSWEILER
RESEARCH DATA SPECIALIST
UNIVERSITY OF OKLAHOMA UNIVERSITY LIBRARIES

OU LIBRARIES
The UNIVERSITY *of* OKLAHOMA

WHOAMI

- Mark Laufersweiler
  - BS Physics, University of Kentucky
  - MS, PhD Meteorology, The Pennsylvania State University

  - Employment
    - Research Data Specialist
      - OU Libraries
    - Computer Systems Coordination (20+)
      - OU School of Meteorology
      - FSU Dept of Meteorology
      - DOE Atmospheric Radiation Measurement Program
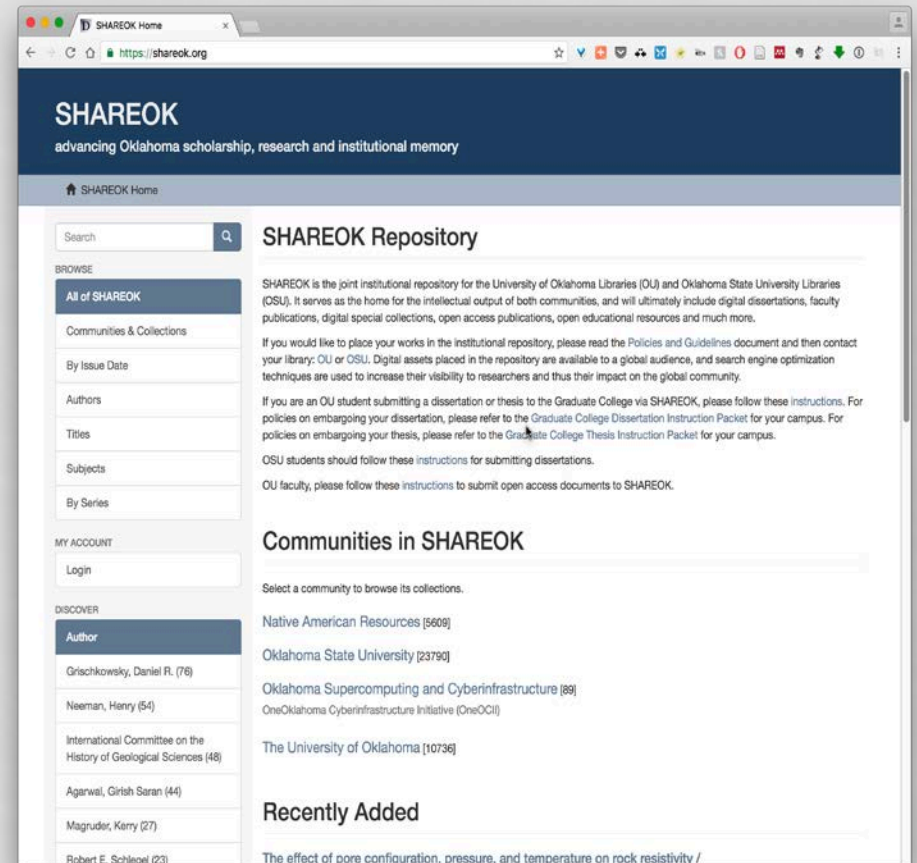
WHY WE ARE HERE: DATA SHARING

Office of Science and Technology 2013

- Increasing Access to the Results of Federally Funded Scientific Research
- Agencies with over $100 million research and development expenditures

INSTITUTIONAL REPOSITORY

- ShareOK
  - Primarily documents
    - Dissertation
    - Thesis
    - Publications
      - Faculty, staff, & student
  - Limited research data
    - Citizen Science
      - specimen sample photos
  - *https://shareok.org*

EDUCATION/TRAINING WORKSHOPS

- Software Carpentry/Data Carpentry Foundation member
    - Software Carpentry 3 per semester
    - REU (Research Experience for Undergraduates)
    - Workshops in support of Oklahoma BioSurvey NRT grant
- Research Data Management classes/hands-on
    - Tips, tricks, and tools
        - Workflow best practices
    - DMPTool (https://dmptool.org)
- ResBaz (Research Bazzar)
    - Focuses on creating opportunities for researchers to share their digital skills
    - Two day event

SOFTWARE/DATA CARPENTRY

Mission
To make researchers in science, engineering, humanities, and medicine more productive by teaching them basic lab skills for scientific computing.

Problem
- Researchers spend more and more time building, using software
- Most are primarily self-taught
- Hard to measure how well they do things
- But anecdotal evidence suggests "not very"

SOFTWARE/DATA CARPENTRY

Solution
- Scientists teaching scientists
- Two days of hands-on learning
- Multiple topics and domains

Software Carpentry

the Unix shell	⇒	automate repetitive tasks
Git & GitHub	⇒	track and share work
Python or R	⇒	build modular code
SQL	⇒	manage data

Data Carpentry

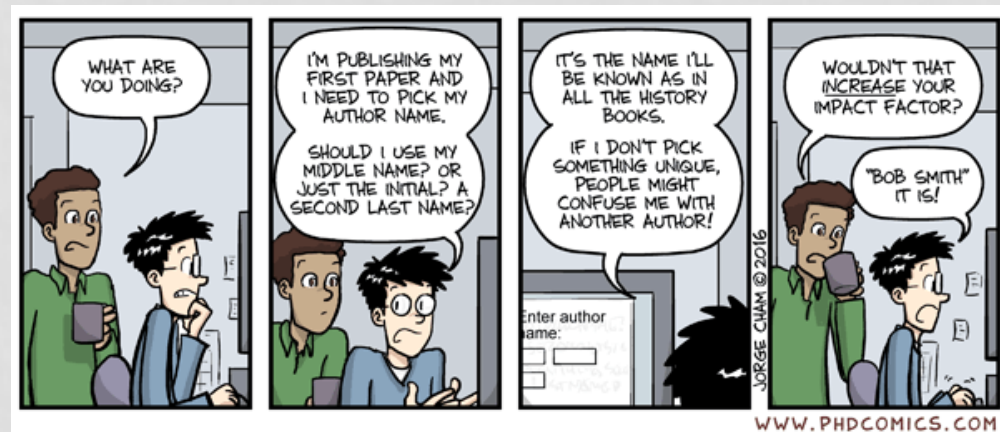|		
spreadsheets	⇒	Best practices
OpenRefine	⇒	Tidy Data, data cleaning
SQL	⇒	build modular code
Analytics & Visualization (R or Python)	⇒	Code provided for simple plots

RDM CONSULTATION

- OU Faculty, staff, and students can schedule appointments with UL staff for DMP consultation
  - Liaison Librarians
  - Research Data Specialist
  - Digital Scholarship Specialists
  - Informatics Specialist
  - CLIR Fellowship postdoc (starting September)
- open office hours @ Digital Scholarship Lab
- Innovation HUB
  - Innovation @ EDGE
  - Virtual Reality
  - 3D printing
  - Circuits

SCHOLARLY COMMUNICATIONS

Digital Identity
ORCID iD

- Adoption increasing with publishers and large repositories
  - Integrations with
    - SCOPUS, CrossRef, ResearcherID
    - Dryad, PLOS
    - AGU, APS
- UL and OU is an ORCID member
  - Integration with
    - ShareOK
    - Digital Object Identifiers

SCHOLARLY IP

Digital Object Identifiers

DOI def: unique alphanumeric string assigned by a registration agency (International **DOI** Foundation) to identify content and provide a persistent link to its location on the Internet.

- UL assists researchers with registering
  - South Central Climate Science Center (5)
  - OK Mesonet (3)
  - The Anthropocene Biosphere (21) symposium series
- Promotes sharing of research output
  - Citable reference
    Dataset authors/producers, data release date: Dataset title, version. Data archive/distributor, access date in standard AMS format, data locator/identifier (doi or URL).

DATA REPOSITORY NEED

- Systems better suited for data formats
  - CSV, NetCDF, GRIBB, HD5, Excel, SQL
  - Systems to consider
    - CKAN/DKAN
    - IRODS
- Build what community needs
  - Research Computing and Data Advisory Group
    - Survey
    - Data interviews
    - Use case based
    - Best practices

HOW IS OU LIBRARIES DOING?
A GOOD START AND MORE TO DO

✓ Curatorial role for data stewardship

✓ Establish a robust digital repository

✓ Advocacy for open access and appropriate IP policies

✓ Consulting services to the community regarding data management plans

✓ New unit – not a traditional library but rather an information hub for research

✓ Educational opportunities

✓ Open access/copyright