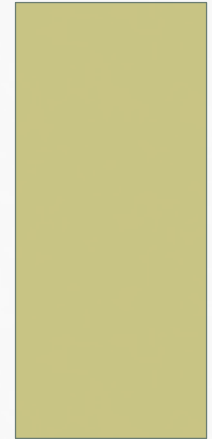




# ONE YEAR LATER AT OU: ARE WE WRANGLING, MANAGING OR MAXIMIZING OUR ORGANIZATIONS' RESEARCH DATA?

MARK LAUFERSWEILER  
RESEARCH DATA SPECIALIST  
UNIVERSITY OF OKLAHOMA UNIVERSITY LIBRARIES



# 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

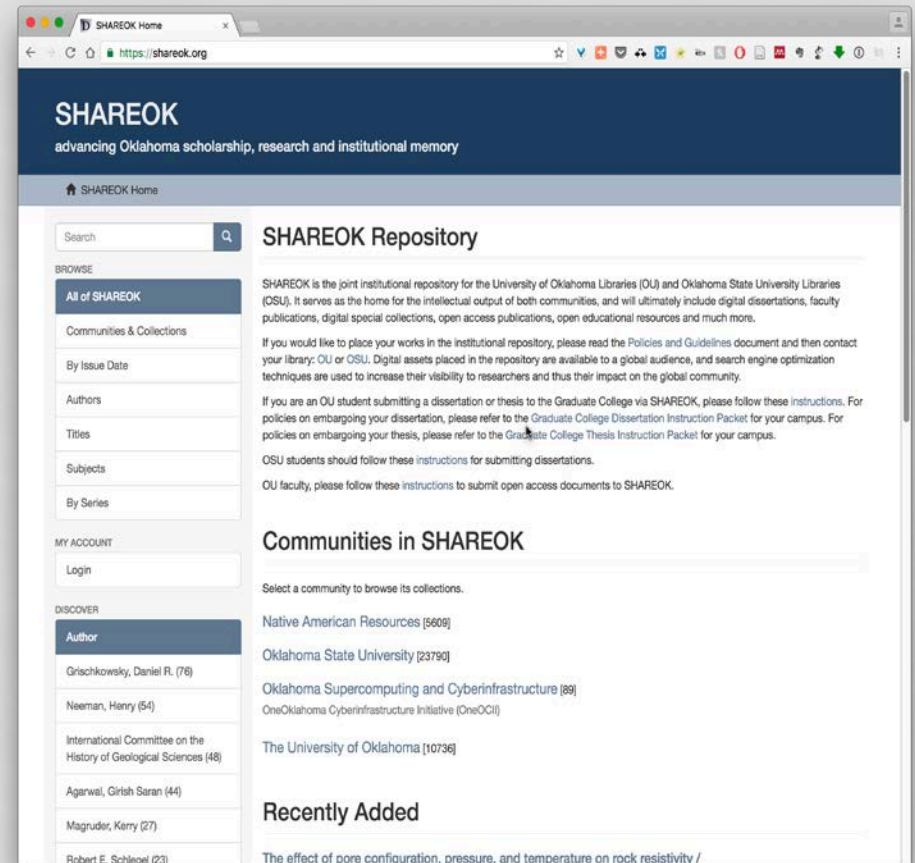
Office of Science and  
Technology 2013

- 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 Bazaar)
  - 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

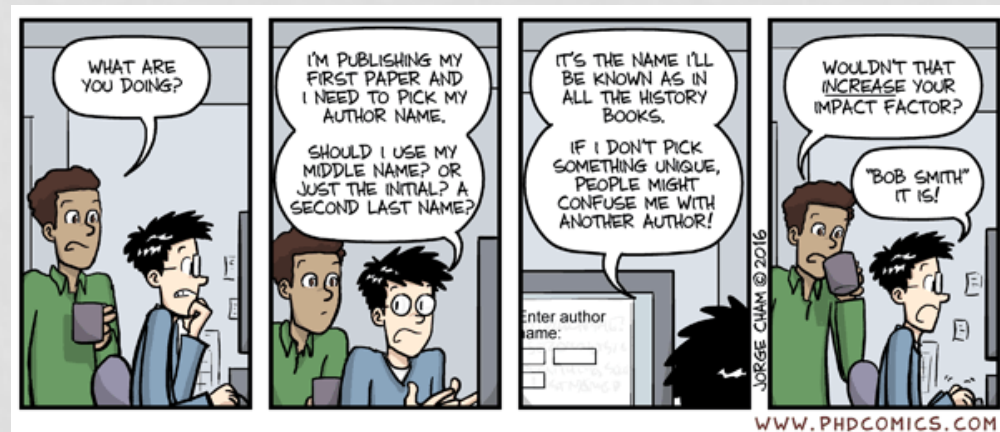
- OU Faculty, staff, and students can schedule appointments with UL staff for DMP consultation
  - Liaison Librarians
  - Research Data Specialist
  - Digital Scholarship Specialists
  - Informatics Specialist
  - CLIR Fellowship postdoc (starting September)
- open office hours @ Digital Scholarship 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