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

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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 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

<table>
<thead>
<tr>
<th>Software Carpentry</th>
<th>Data Carpentry</th>
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<tbody>
<tr>
<td>the Unix shell ⇒ automate repetitive tasks</td>
<td>spreadsheets ⇒ Best practices</td>
</tr>
<tr>
<td>Git &amp; GitHub ⇒ track and share work</td>
<td>OpenRefine ⇒ Tidy Data, data cleaning</td>
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<tr>
<td>Python or R ⇒ build modular code</td>
<td>SQL ⇒ build modular code</td>
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<tr>
<td>SQL ⇒ manage data</td>
<td>Analytics &amp; Visualization (R or Python) ⇒ Code provided for simple plots</td>
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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
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
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