

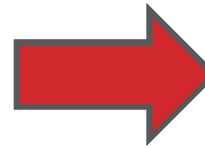
DATA MANAGEMENT **101**

Shea Swauger
Data Management Librarian

DATA MANAGEMENT:

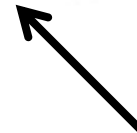
a combination of policies and procedures that make data more accessible, usable and preservable.

How do we do it?



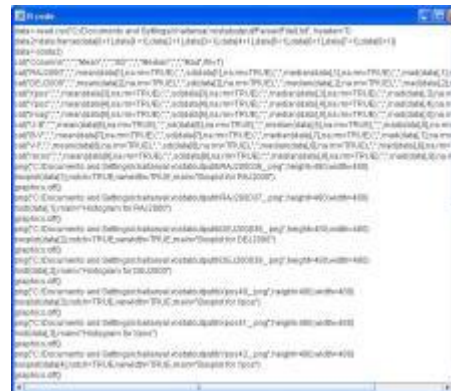
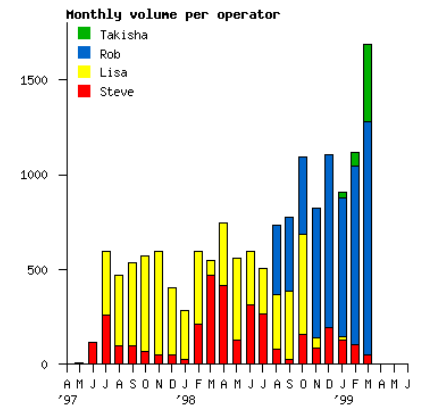
DATA MANAGEMENT WITH THE LIBRARY

STEP 1: DATA MANAGEMENT PLAN



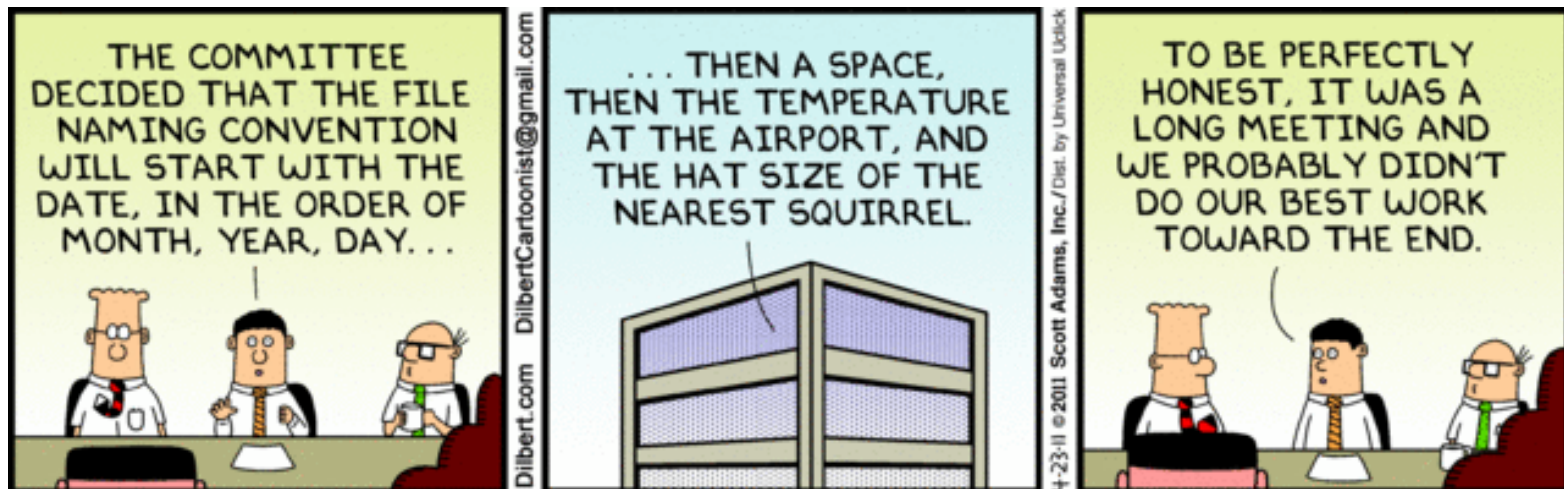
DATA MANAGEMENT WITH THE LIBRARY

STEP 2: METADATA CREATION & DOCUMENTATION

A screenshot of a spreadsheet application showing a large table of data. The table has many columns and rows, with some cells containing text and others containing numbers. The data appears to be organized in a structured format, possibly representing library records or metadata.

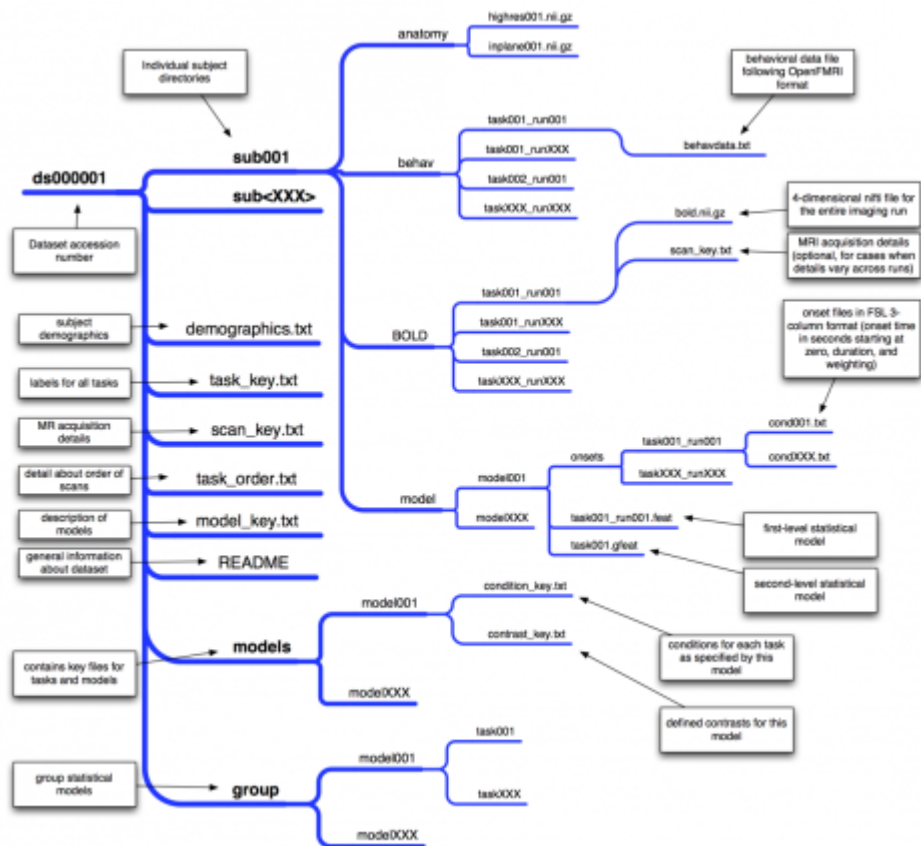
DATA MANAGEMENT WITH THE LIBRARY

STEP 3. FILE NAMING AND ORGANIZATION



DATA MANAGEMENT WITH THE LIBRARY

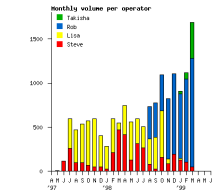
STEP 3. FILE NAMING AND ORGANIZATION



- Folders and tagging
- Transparent names
- Consistency
- Version Control

DATA MANAGEMENT WITH THE LIBRARY

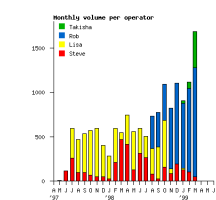
STEP 3: DATA DEPOSITION



<http://hdl.handle.net/10217/81141>

DATA MANAGEMENT WITH THE LIBRARY

STEP 4: DATA CITATION



Media Coverage of this Article

News Media Coverage

- Los Angeles Times: "Can retina information in photographs be used to spot criminals?" 20 Dec 2013
- The Verge: "Iris reflections in photographs could help investigators solve crimes" (The Verge) 29 Dec 2013
- Devlin Cooksey: "Orbital Photo analysis finds faces reflected in eyeballs" (NBC News.com) 29 Dec 2013
- Wired.co.uk: "Iris reflections in photographs can reveal systems" (Wired.co.uk) 29 Dec 2013
- Crashdot: "Scientists: Photos can identify suspects from 'retina eyes'" 31 Jan 2014
- io9: "Hidden faces can be found by scanning iris to see photos of eyes" 30 Jan 2014
- The Telegraph: "Eye reflections in photos could catch criminals" 02 Jan 2014

Blog Coverage

- Doing Things: "Capturing images of bystanders by peering in on pictures of corneas" 01 Jan 2014
- Engadget: "Research shows eye reflections in photos could be used to identify criminals" 02 Jan 2014

Found additional news media or blog coverage for the article? Please let us know.

REASONS FOR SHARING DATA

Increase the impact of your research

Researchers who shared their data were cited almost 10% more than their peers who didn't



“Data reuse and the open data citation advantage”

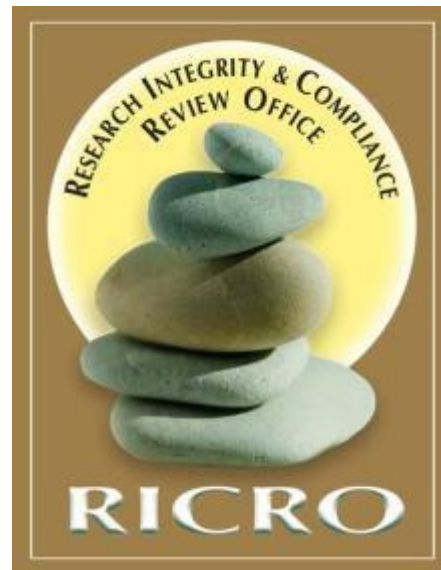
Heather A. Piwowar and Todd J. Vision

(<https://peerj.com/articles/175/>)

REASONS FOR SHARING DATA

Research integrity, reproducibility, verifiability

Allows for new research questions to be asked



“The conundrum of sharing research data”

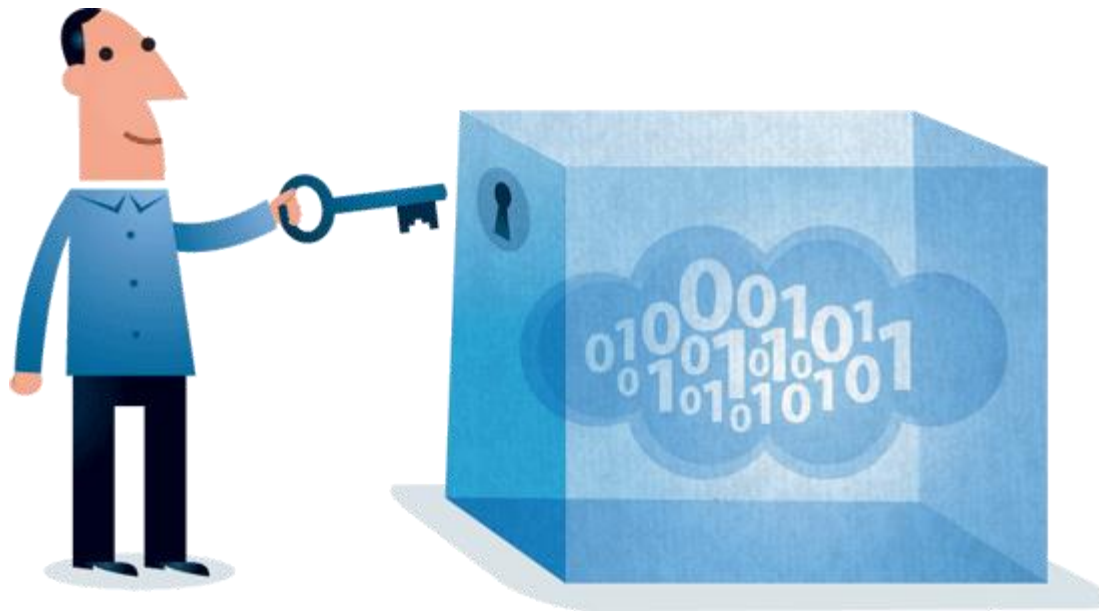
Christine L. Borgman

<http://dx.doi.org/10.1002/asi.22634>

REASONS FOR SHARING DATA

Digital Preservation

The chances of research data being accessible decline by 17% per year.



“The Availability of Research Data Declines Rapidly with Article Age”

Timothy H. Vines, et. al.

<http://dx.doi.org/10.1016/j.cub.2013.11.014>

REASONS FOR SHARING DATA

Major funding agencies now require it

**NATIONAL INSTITUTE OF HEALTH
(2003)**



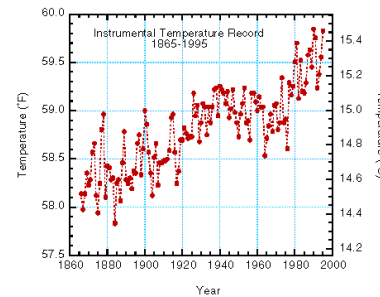
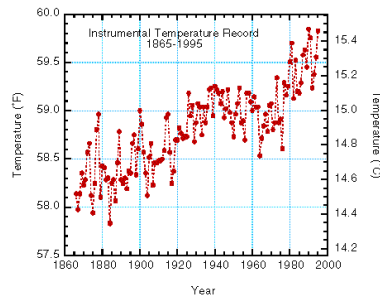
**NATIONAL SCIENCE FOUNDATION
(2011)**



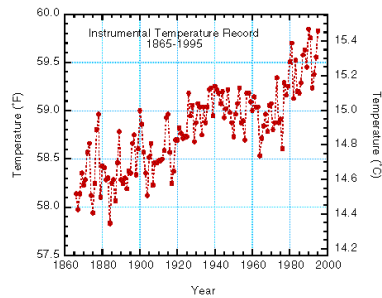
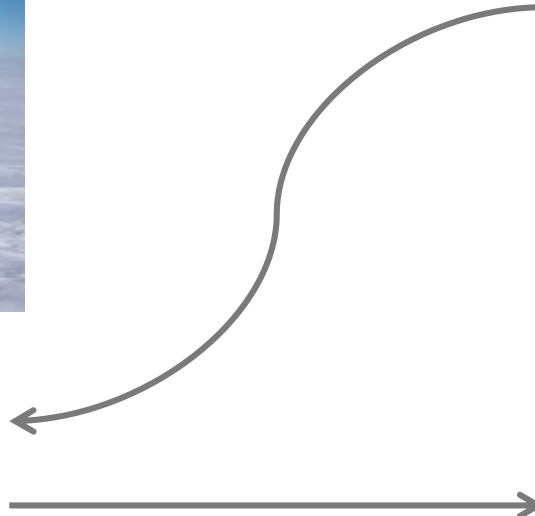
**OFFICE OF SCIENCE & TECHNOLOGY POLICY
(2013)**



THE FUNDER'S PERSPECTIVE



AN ALTERNATIVE



BUILDING A CULTURE OF OPENNESS



REASONS FOR NOT SHARING DATA

DATA OWNERSHIP AND RIGHTS ISSUES



- **CSU owns the data**
- **Typically, you can still share it**
- **Always ask and give credit**

REASONS FOR NOT SHARING DATA

RETAIN THE ABILITY TO PUBLISH FIRST



- EMBARGO THE DATA UNTIL PUBLICATION

REASONS FOR NOT SHARING DATA

FEAR OF OTHERS FINDING ERRORS IN THE WORK



- PERFORM DATA CLEANING
- HAVE A PEER LOOK OVER THE DATA

REASONS FOR NOT SHARING DATA

FEAR OF OTHERS MISINTERPRETING THE DATA



- METADATA
- README FILES
- PROVIDE CURRENT CONTACT INFORMATION

REASONS FOR NOT SHARING DATA

**DATA CONTAINS SENSITIVE OR PERSONALLY
IDENTIFIABLE INFORMATION**



- **ANONIMIZATION**
- **BREAK APART
TABLE
RELATIONSHIPS**

CSU'S INSTITUTIONAL REPOSITORY

Digital Collections of Colorado

Research, scholarly and creative works, and historical materials provided by a partnership of Colorado institutions of higher education. [About Us](#)

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Guest

[Simple Search](#) [Advanced Search](#)

A word or phrase: Contains Exact Starts With

Search

Select collection: [All Collections - Digital Collections of Colorado](#)

Browse Collections



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[Colorado State University, Pueblo](#) (74 items)



[University of Colorado Anschutz Medical Campus](#) (395 items)



[University of Colorado Colorado Springs](#) (338 items)



[Colorado School of Mines](#) (1313 items)



[Colorado Mesa University](#) (28 items)



[University of Colorado Boulder William A. Wise Law Library](#) (513 items)

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EXAMPLE DATA

Search 'System Number= 000029940' in 'General Silo' Collection [Sorted by: Ranking]

Guest

[Refine](#)

[Brief view](#) [Table view](#) [Full view](#)

Sort by: Ranking ▼

Record 1 of 1

1



Object	View this item View this item View this item	SGS_LTER_Bouteloua_gracilis.zip - ZIP file (52 M) BOGRRmvDnsty.txt - Text Document (257 K) BOGRRmvPntIntropt.txt - Text Document (52 K)
Bookmarkable URL	http://hdl.handle.net/10217/77676	
Authors	Lauenroth, William K.	
Title	SGS-LTER Bouteloua gracilis Removal Experiment Vegetation Data (ARS #155) on the Central Plains Experimental Range, Nunn, Colorado, USA 1997-2008	
Keywords	populations ; blue grama ; population dynamics ; density ; plants ; disturbance	
Abstract	Six sites approximately 6 km apart were selected at the Central Plains Experimental Range in 1997. Within each site, there was a pair of adjacent ungrazed and moderately summer grazed (40-60% removal of annual aboveground production by cattle) locations. Grazed locations had been grazed from 1939 to present and ungrazed locations had been protected from 1991 to present by the establishment of exclosures. Within grazed and ungrazed locations, all tillers and root crowns of <i>B. gracilis</i> were removed from two treatment plots (3 m x 3 m) with all other vegetation undisturbed. Two control plots were established adjacent to the treatment plots. Plant density was measured annually by species in a fixed 1m x 1m quadrat in the center of treatment and control plots. For clonal species, an individual plant was defined as a group of tillers connected by a crown (Coffin & Lauenroth 1988, Fair et al. 1999). Seedlings were counted as separate individuals. In the same quadrat, basal cover by species, bare soil, and litter were estimated annually using a point frame. A total of 40 points were read from four locations halfway between the center point and corners of the 1m x 1m quadrat. Density was measured from 1998 to 2005 and cover from 1997 to 2006. All measurements were taken in late June/early July.	
Award	NSF Grant Number DEB-0823405.	
Publisher	Colorado State University. Libraries	
Date	1997 - 2008	
Type	Dataset ; Text ; Still image ; Metadata	
Language	English eng	
Spatial	The Short Grass Steppe site encompasses a large portion of the Colorado Piedmont Section of the western Great Plains. The extent is defined as the boundaries of the Central Plains Experimental Range (CPER). The CPER has a single ownership and landuse (livestock grazing). The PNG is characterized by a mosaic of ownership and land use. Ownership includes federal, state or private and land use consists of livestock grazing or row-crops. There are NGO conservation groups that exert influence over the area, particularly on federal lands.	
Temporal	1997 - 2008	
Referenced By	Munson, Seth M. (2009). Plant community and ecosystem change on conservation reserve program lands in northeastern Colorado. (Unpublished doctoral dissertation). Colorado State University. http://hdl.handle.net/10217/76822	
Referenced By	Munson, S. M. and Lauenroth, W. K. (2009). Plant population and community responses to removal of dominant species in the shortgrass steppe. <i>Journal of Vegetation Science</i> , 20: 224-232. http://dx.doi.org/10.1111/j.1654-1103.2009.05556.x	
References	Species list of plants, http://hdl.handle.net/10217/80451	
Contributor	University of Wyoming. Dept. of Botany.	
Rights	Data sets are open. Please include tag line in report or manuscript: Data sets were provided by the Shortgrass Steppe Long Term Ecological Research group, a partnership between Colorado State University, United States Department of Agriculture, Agricultural Research Service, and the U.S. Forest Service Pawnee National Grassland. Significant funding for these data was provided by the National Science Foundation Long Term Ecological Research program.	
Related collections	Colorado State University, Fort Collins > CSU Colleges > Warner College of Natural Resources > Natural Resource Ecology Laboratory (NREL) > Shortgrass Steppe - Long Term Ecological Research (SGS-LTER) > Datasets	

<http://hdl.handle.net/10217/77676>

THE FINE PRINT

- The data has to relate to/be referenced in some kind of scholarly product (paper, poster, book, presentation, etc.)
- -or-
- The data has to be part of a data management plan
- You can get up to 200 GB of storage for free
- You can pay for more (\$4,000 per TB, one time cost) 2 refreshes, best efforts, estimated 10 years

DATA MANAGEMENT SERVICES AT CSU:

DATA MANAGEMENT PLAN WRITING



Templates

One-on-one
consultations

MP/DM DATA MANAGEMENT PLAN TEMPLATE (For SMALL Data Sets Up to 200 GB in Size)
For Use by CSU Faculty and Researchers

For questions about the information below, feel free to contact the links to contact their
Manager, Data Management Librarian at CSU, at: 970-477-3179 librarian@lib.arsu.edu

MP/DM templates that the content of an appropriate Data Management Plan will be determined
by your review and approval that represent best practices for a discipline. However, MP/DM
requires the inclusion of the following basic categories of content:

1. Types of data, samples, physical collections, software, curriculum materials, and
other materials to be produced in the course of the project.

Provide a detailed description of data sets and other materials generated, specify how
MP/DM will be produced and whether it will change or be updated. If data that will be
collected are sensitive in nature, include here.

2. The standards to be used for data and materials format and common (where existing
standards are absent or deemed inadequate, this should be documented along with
any proposed solutions or remedies).

Identify the format in which the data will be stored as well as the type(s) of metadata that
will be included. These standards will often be determined by the accepted best practices of
your discipline. In those cases where standards are nonexistent or lacking, you may specify
the following:

The CSU's Core Metadata standard used by the library and information science community
will be used (CSU).

For additional assistance, Policies for access and sharing including provisions for
appropriate protection of privacy, confidentiality, security, intellectual property, or
other rights or requirements.

Final specifications/protocols that will be utilized to provide the required level of access. For
data of a sufficiently sensitive nature, describe the means by which granular control and
access will be achieved. Sample text may include:

The availability of the data sets will be unrestricted to research peers, and all conferences,
and international publications. The appropriate copyright and copyright and licensing
provisions are stated here for your data sets, and are expected to and will be
submitted to CSU's Digital Repository. The materials will be made available via persistent
URLs configured for discoverability at major web searches.

DATA MANAGEMENT SERVICES AT CSU:

**CURATION:
DATA APPRAISAL, SELECTION,
METADATA, FORMATING**



DATA MANAGEMENT SERVICES AT CSU:

LONG-TERM DIGITAL PRESERVATION



DATA MANAGEMENT SERVICES AT CSU:

DATA ACCESSABILITY AND SEARCH ENGINE OPTIMIZATION



DATA MANAGEMENT SERVICES AT CSU:

**OPEN-ACCESS REPOSITORY
MEETS GRANT FUNDER'S
REQUIREMENTS**

OPEN  **ACCESS**



WEB RESOURCES

Colorado State University
Libraries

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Data Management

What is data management?

Data management is a combination of policies and procedures that make data more accessible, usable and preservable. It often involves sharing your data, or making it publically available, by depositing it into a digital repository. This video from the [Digital Curation Centre](#) is a nice introduction to the value of research data management.



PLAYLIST 1 / 8 DCC: Managing Research Data.mov

Why is it important?

- Sharing your research data has shown to increase the impact of your research. One study found that researchers who shared their data were cited almost 10% more than their peers who didn't. [Read Data Reuse and the Open Data Citation Advantage](#).
- Sharing your data promotes research integrity, reproducibility, verifiability and allows new research questions to be asked. [Read The Conundrum of Sharing Research Data](#).
- Placing your data in a repository increases its lifespan. One study found that without proper data management, the chance of research data being accessible declines by 17% per year. [Read The Availability of Research Data Declines Rapidly with Article Age](#).

Borrowing & Renewal
Course Reserves
Research
Electronic Theses & Dissertations
Data Management
Data Management Plans
Data Management Services
Metadata
The Digital Repository
Data Management Best Practices
Concerns about Sharing Research Data
Open Access and Open Data
Computers & Technology
Instruction & Training
Study Areas & Rooms
Meeting & Event Reservations
InterLibrary Loan & Local Document Delivery
Services for You



QUESTIONS?



Shea Swauger
Data Management Librarian
Morgan Library, 210 E
shea.swauger@colostate.edu
970-491-5785