13 September 2012

The Libraries' Role in Research Data Management: A Case Study from the University of Minnesota

Meghan Lafferty, Chemistry, Chemical Engineering, and Materials Science Librarian, and Lisa Johnston, Research Services Librarian and Co-Director of the University Digital Conservancy, University of Minnesota

The Libraries' Role in Research Data Management: A Case Study from the University of Minnesota

Meghan Lafferty
Librarian for Chemistry, Chemical Engineering, & Materials Science
&
Lisa Johnston
Research Services Librarian & University Digital Conservancy Co-Director

- Learn from others' experiences
- Understand users' needs
- Determine how best to meet needs
- Develop appropriate tools & services
- Rinse & repeat

E-science & Data Services Collaborative
E-scholarship Working Group
GIS Data Group
Data Storage Group
Research Support Services Collaborative

- Data Management, Access, & Archiving
- Research Communities & Networks
- Digital Arts & Humanities

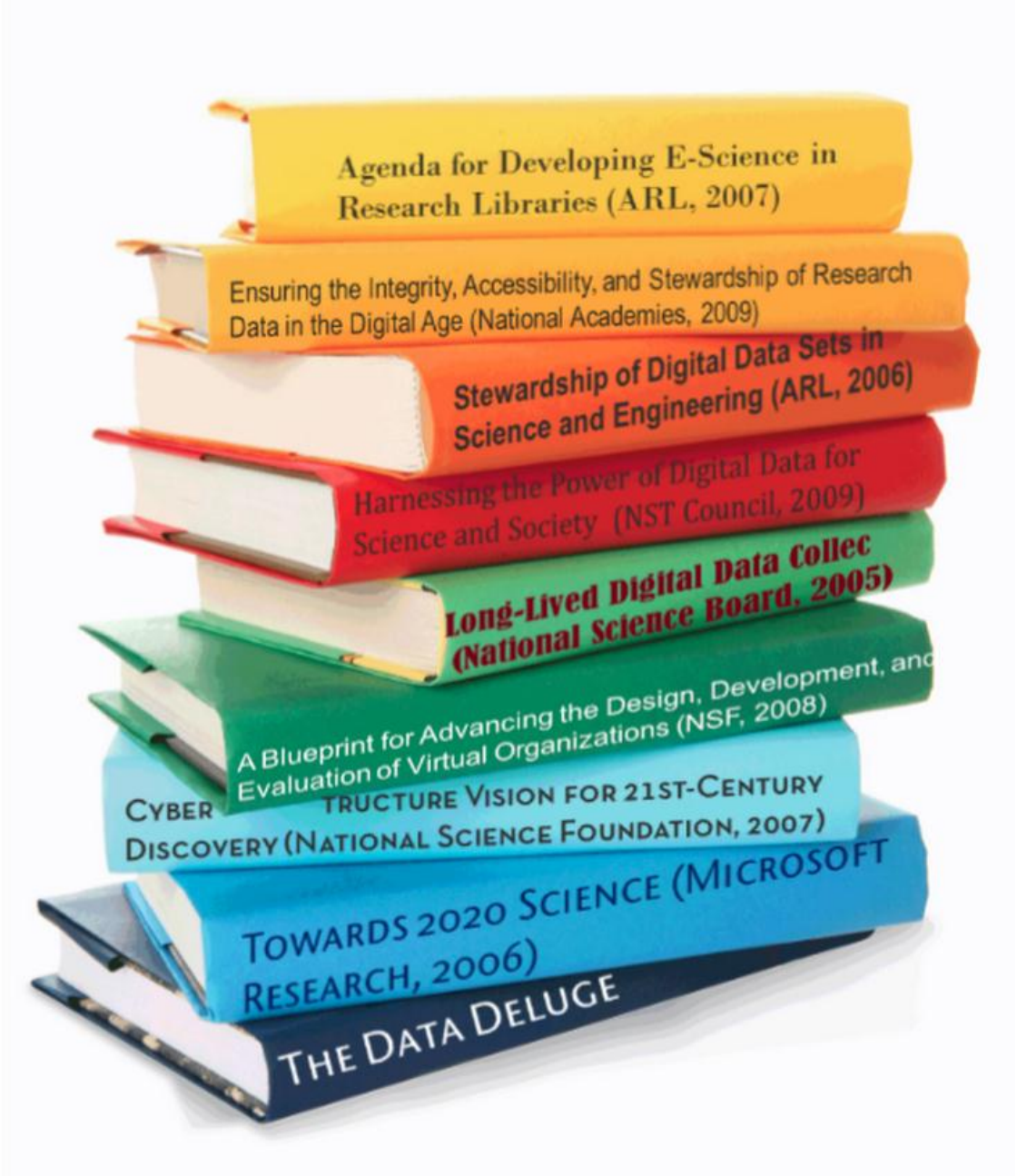
Many Organizational Structures!

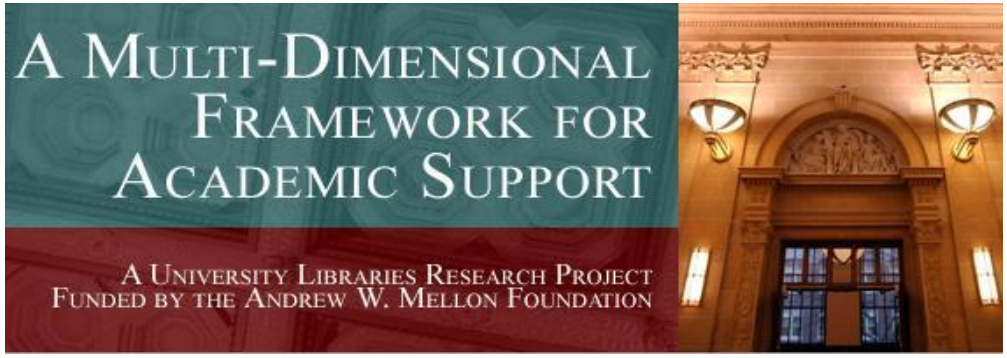
Many People Involved!

Interdisciplinary Sciences Librarians
Data Services Librarian
Translational Sciences Librarian
Metadata Strategist
Digital Preservation Strategist
Liaison's "E-scholarship" role
Research Services Librarian
Digital Arts & Humanities Librarian

A Changing Research Landscape

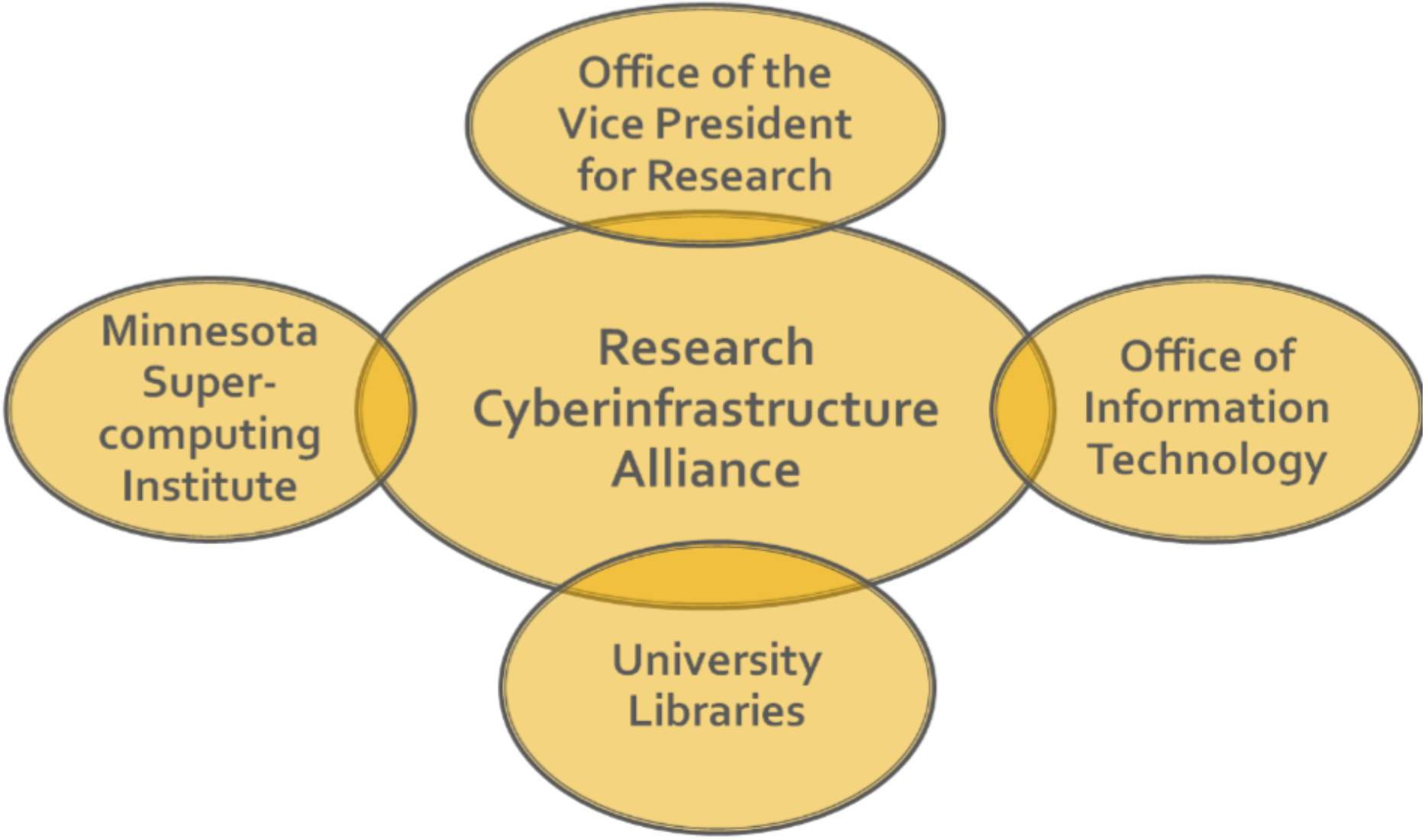
- E-science education
- Policy development
- Digital data stewardship




A Multi-Dimensional Framework for Academic Support
A University Libraries Research Project
Funded by the Andrew W. Mellon Foundation


SUPPORTING THE RESEARCH NEEDS OF SCIENTISTS:
A UNIVERSITY OF MINNESOTA LIBRARIES STUDY

Forming Campus Partnerships



Service Portfolio - Research Cyberinfrastructure Alliance

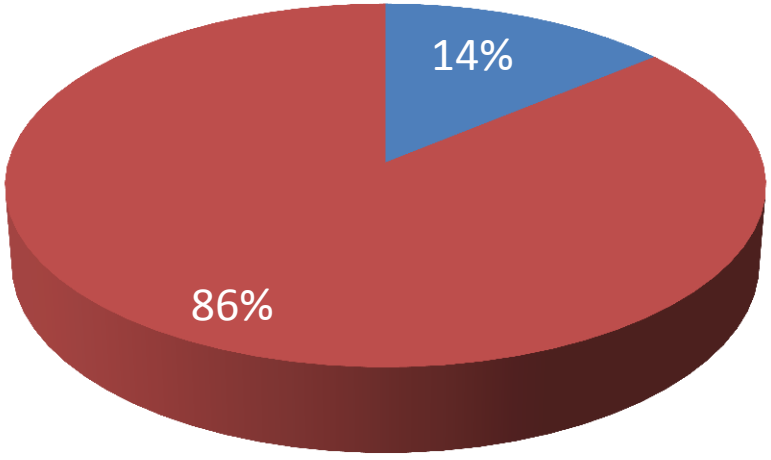
Consulting- Information Services	Web URL	MSI	CLA	Library	OIT
Study design	CLA: https://research.cla.umn.edu/publicwiki/index.php?id=Research+Consulting		✓		
IRB issues	CLA: https://research.cla.umn.edu/publicwiki/index.php?id=Research+Consulting		✓		
Grants information and support	CLA: https://research.cla.umn.edu/publicwiki/index.php?id=Research+Consulting LIB:		✓	✓	
Data access, acquisition and licensing	LIB:			✓	
Assessment and planning services	LIB:			✓	
Performance measurement	OIT: In development- service statements – will be at http://www.umn.edu/oit/planning				✓
Standards advisory	LIB:			✓	
Best practices for metadata, data archiving and preservation	LIB:			✓	
Intellectual property rights issues, open	LIB:			✓	

What's missing?

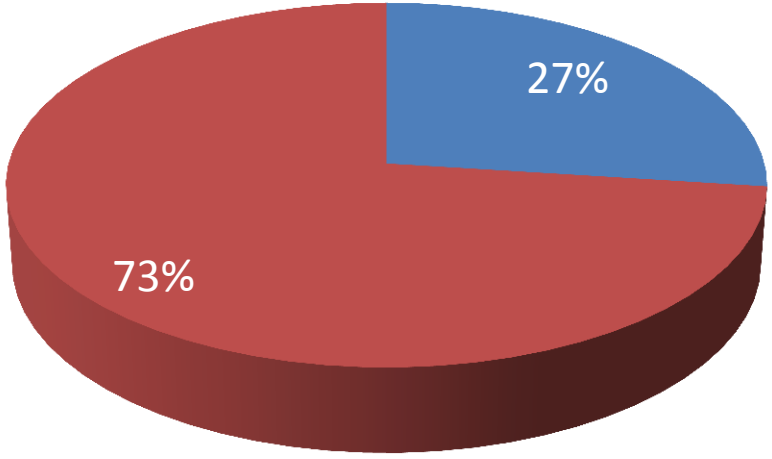
Potential & Existing Library Roles

- Metadata, data archiving & preservation best practices
- Metadata description and advisory services
- Advising on intellectual property rights, open access models, & standards
- Tutorials & hands-on workshops
- Repository services for archiving, access & data re-use

Surprising Findings



- Use centralized campus data storage
- Do not use centralized campus data storage



- Have lost data due to lack of backup
- Have not lost data due to lack of backup

"We evaluated the file sharing service from central IT but found it too cumbersome to use…."
- Post-doc, College of Science and Engineering

"…beyond the basics it's not clear who to contact for what." - Faculty Member, College of Liberal Arts.

"I feel as if I'm living on borrowed time, no confidence in having access to adequate data storage for research in the future." -Faculty Member, College of Education & Human Development.

"If infrastructure exists for sharing data, the knowledge has not been imparted on me."
Post-doc, College of Science & Engineering

Core Areas of Research Data Management Program

Library Staff Education

Data Archiving

Campus Training and Outreach

Access and Preservation

Library Staff Education

From Liaison Position Description Framework

Example research data –related liaison roles:

Campus Engagement: Seeking opportunities to collaborate with data producers and repository contributors

Collection development: Systematically select material in all formats including data sets and multimedia

Scholarly Communication: Recruiting institutional scholarly output such, as research data, for inclusion in the University Libraries' digital archiving initiatives.

https://www.lib.umn.edu/datamanagement

How does this affect my job? Help!

Educational Events:

- Coffee clubs
- Listening sessions
- Speaker series

Tools & Resources

- Guidelines for discussions with faculty/students
- Liaison toolkit, with data audit questions
- Presentations to faculty with Research Services Librarian

Campus Training and Outreach

Slides:

Details: http://escholarship.umassmed.edu/cgi/viewcontent.cgi?article=1012&context=jeslib

Tools for sharing data with collaborators

Tools for creating data management plans for grant applications

Service: Automatic back-up for data

Service: Preservation to enable long-term access

Consultation on new data management and collaboration tools

Consultation on appropriate research data repositories

Tools for creating persistent URLs for data (e.g., DOIs)

Service: Data Archiving in repositories on campus (e.g., for GIS data)

Tools for describing data with appropriate

Service: Metadata creation for better discovery of data

Training on sharing sensitive data appropriately

Training on data-related intellectual property issues

Training on managing data specific to my field

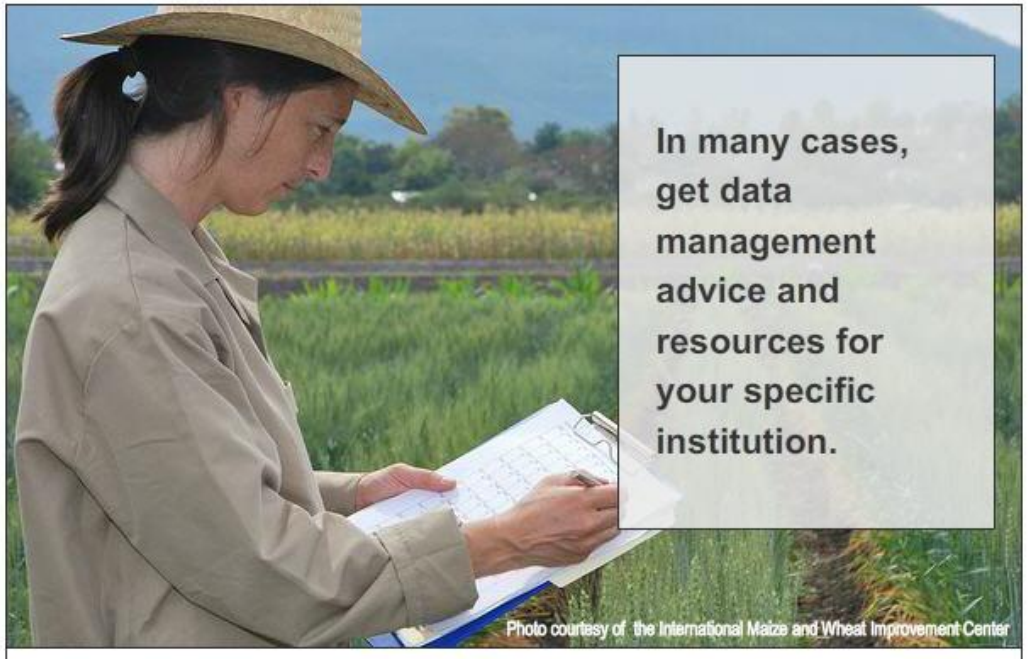
Tools for creating data citations for citing

Contact Us | Get Started | Login

DMPTool

Guidance and Resources for your Data Management Plan

Home | About DMP Tool | DMP News | My Plans | Funder Requirements | Help



The DMP Tool allows you to: 1 2 3 4

Get Started!

Data Management Plan: Sample Plan Created at the DataONE Best Practices Workshop - Santa Fe NM 7/2011

Atmospheric CO2 Concentrations, Mauna Loa Observatory, Hawaii, 2011-2013

1. Types of data produced

See a plan created with the DMP Tool

Recent DMP News

DMPTool user stats, August 2012

De-Mystifying Data Management Requirements

DMPTool unavailable, Sunday Aug 26

More news >

https://dmp.cdlib.org/

Open Access Week 2011
E-mail to faculty

University of Minnesota
LIBRARIES

Celebrate Open Access Week and "Make Your Data Open"

Top Ten Ways to Make Your Research Data Open

10. Make data available upon request (e.g., by email).
9. Publish data as a supplement to your journal article in **journals that support data supplements.**
8. Post data sets to your project web site like the **Cedar Creek Ecosystem Science Reserve**.
7. Publish in a data repository for your discipline, e.g. **arXiv**, **ICPSR** and others.
6. Publish in the **University's Digital Conservancy** like the **Department of Aerospace Engineering & Mechanics**.
5. Ensure the openness of your shared data with a **Creative Commons Zero license**.
4. Use **proper citation techniques** for the data you reference in journal articles.
3. Don't limit data sets to short-term, proprietary formats like Microsoft Excel: **Learn more about file formats for long-term access**.
2. For private data, use **anonymization techniques** before sharing.
1. **Manage your data** throughout the research process.

Data Information Literacy Grant with Purdue

Data Management Course

https://sites.google.com/a/umn.edu/data-management-course_structures/

UNIVERSITY OF MINNESOTA
Driven to Discover℠

Search this site

Data Management Course

Data Management Course

Modules

1. Introduction to Data Management
2. Data to be Managed
3. Organization and Documentation
4. Data Access and Ownership
5. Data Sharing and Re-use
6. Preservation Techniques
7. Complete Your DMP

Resources

Data Analysis
UMN Services

About

Instructors
News & Updates
Syllabus

Structures Section

This short course on data management is designed for graduate students in the structural and civil engineering disciplines who seek to prepare themselves as "data information literate" scientists in the digital research environment. Detailed videos and writing activities will help you prepare for the specific and long-term needs of managing your research data. Experts in digital curation will describe current sharing expectations of federal funding agencies (like NSF, NIH) and give advice on how to ethically share and preserve research data for long-term access and reuse.

Students will get out of this course:

- Seven web-based lessons that you can watch anytime online or download to your device.
- A Data Management Plan (DMP) template with tips on how to complete each section. Your completed DMP can be used in grant applications or put into practice as a protocol for handling data individually or within your research group or lab.
- Feedback and consultation on your completed DMP by research data curators in your field.

Data Management Course Enrollment

Fall 2012 course ends Dec 7th, 2012
* Required

Name *

Email *

Submit

Powered by Google Docs

Report Abuse - Terms of Service - Additional

Participants may join at anytime. Upon registering, you will receive a time-table and reminder emails for completing the course. If you have any questions please contact the instructors.

Photo: The Juscelino Kubitschek Bridge in Brasila, Brazil. Credit: JK_Bridge_2 by chris.diewald on Flikr

Data Archiving

digitalconservancy

UNIVERSITY OF MINNESOTA

University of Minnesota Digital Conservancy >
University of Minnesota - Twin Cities >
Unmanned Aerial Vehicle (UAV) Research Group >
Control Law Flight Data >

Please use this permanent URL to cite or link to this item: `http://purl.umn.edu/107827`

Title: Thor Flight 15
Authors: Murch, Austin
Issue Date: 22-Jun-2011
Description: Flight test data, Thor Flight 15 on 06/06/11, in two formats: MATLAB and plain text
Permanent URL: http://purl.umn.edu/107827
Appears in Collections: Control Law Flight Data

Files in This Item:

File	Description	Size	Format	
flight_data_dictionary_thor.pdf	Metadata	196Kb	PDF	View/Open
FlightReports_2011_06_06.txt	Flight Report for Test Date	2Kb	Text	View/Open
thor_flight15_loworderAW_2011_06_06.txt	Flight Data, plain text format	11441Kb	Text	View/Open
thor_flight15_loworderAW_2011_06_06.mat	Flight Data, MATLAB format	1113Kb	MATLAB	View/Open

- Data archiving
- Open access to research data
- Easy to cite
- Preserved

Access & Preservation

University of Minnesota Libraries' Roles in Research Data Management

Current

- Data management plan consultation & training
- *Managing Your Data* web site
- Promoting best practices
- Cultivating graduate student data literacy skills
- Data archiving via existing services (e.g., University Digital Conservancy, UMedia Archive)

Future

- Speaker series on emerging fields (e.g., data visualization)
- Metadata guidelines for researchers
- Data archiving services for specialized data (e.g., U-Spatial)
- Lots more possibilities!

Continued needs assessment

Please feel free to reuse our web site & workshop content!

Website: "Managing Your Data"
https://www.lib.umn.edu/datamanagement

Workshop: "Creating a data management plan"
https://www.lib.umn.edu/datamanagement/workshops

Questions?

Lisa Johnston ljohnsto@umn.edu
Meghan Lafferty mlaffert@umn.edu

Selected References

Johnston, L (2010a). “E-Science at the University of Minnesota: a collaborative approach” http://docs.lib.purdue.edu/iatul2010/conf/day2/3

Johnston, L (2010b). “User-needs Assessment of the Research Cyberinfrastructure for the 21st Century” http://docs.lib.purdue.edu/iatul2010/conf/day1/5/

Lougee, W. et al. (2007). Agenda for Developing E-Science in Research Libraries: Final Report and Recommendations. Association of Research Libraries. http://www.arl.org/bm~doc/ARL_EScience_final.pdf

Marcus, C. et al. (2007). Understanding research behaviors, information resources, and service needs of scientists and graduate students: A study by the University of Minnesota libraries. http://www2.lib.umn.edu/about/scieval/documents.html

University of Minnesota Libraries (2006). A Multi-Dimensional Framework for Academic Support: Final Report. http://conservancy.umn.edu/handle/5540.