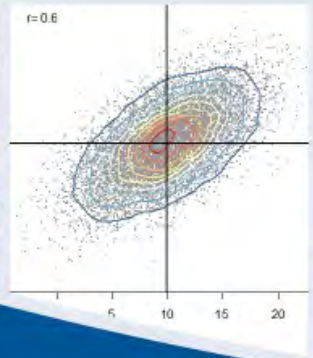
RESEARCH DATA SERVICES

Offering expert data assistance at every stage of the research process.



1: PLANNING

We can assist you with developing a data management plan and designing your planned data analysis, including:

- Implementing plans, using tools, and creating workflows for managing research data
- Advising on study design, power analysis, and choice of statistical methods
- Helping to meet increasingly stringent criteria from funding agencies

2: FINDING & COLLECTING

We have access to thousands of sources of data and experts who will help you:

- Locate, evaluate and format data
- Create metadata and data documentation protocols for new data collection
- Capture data using best practices and appropriate technology

3: ANALYZING

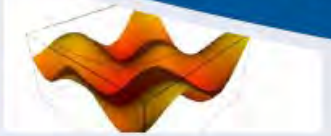
Get expert assistance from statistical, spatial, or media specialists to analyze your data and present your research:

- Learn to use cutting-edge tools and methods
- Experiment with high-resolution visualization technologies
- Develop graphical representations that bring impact to your analysis

4: SHARING & ARCHIVING

We can consult with you on strategies to help others discover or access your research by:

- Adhering to data sharing policies and norms
- Selecting a data-sharing repository
- Making your data easier to discover and reuse

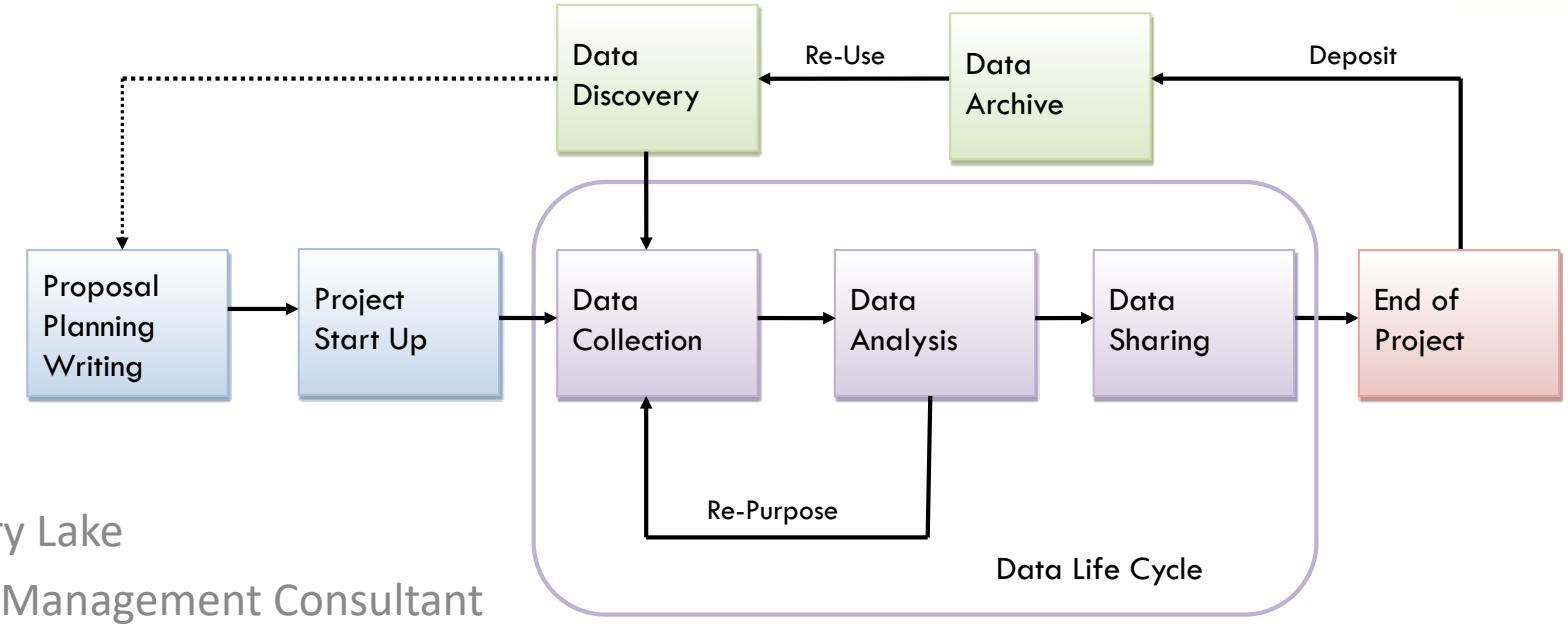


UNIVERSITY of VIRGINIA LIBRARY

Workshops • 1:1 Consultations • Class Presentations

Contact us at researchdataservices@virginia.edu

Creating a Data Management Plan



Sherry Lake
Data Management Consultant
University of Virginia Library
shLake@virginia.edu

November 3, 2014

University of Virginia Library

© 2014 by the Rector and Visitors of the University of Virginia.
This work is made available under the terms of the Creative Commons Attribution-ShareAlike 4.0 International license http://creativecommons.org/licenses/by-sa/4.0/

CC BY SA

Road Map

We'll answer four questions in this workshop:

1. What do we mean by data management?
2. Why should you manage your data?
3. What is a data management plan, and why do you need one?
4. How do you create a data management plan?

https://www.facebook.com/charlottesvillevirginia: Photo Instagrammer ihugtrees05

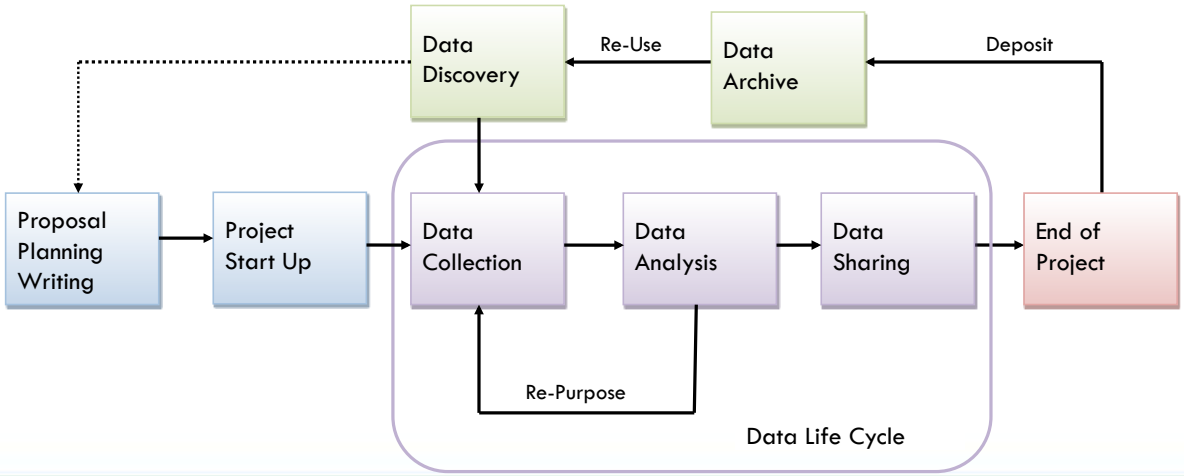
What do we mean by …

Managing your Research

- Ensuring **physical integrity** of files and helping to preserve them
- Ensuring **safety of content** (data protection, ethics, morality, etc.)
- **Describing the data** (via metadata) and recording its history (**provenance**)
- Providing or enabling **appropriate access** at the right time, or restricting access, as appropriate
- **Transferring custody** at some point, and possibly destroying

Managing Data in the Data Life Cycle

- Choosing file formats
- File organization & naming conventions
- Version control
- Access control & security
- Backup & storage
- File format conversions
- Document all project/file details
- Sharing and preservation



(Good) Data Management…

…helps research to be:

Replicated and verified
Preserved for future use
Linked with other research products
Shared and reused

…helps researchers:

Meet funding requirements
Increase visibility of research
Save time and effort (avoid data loss)
Deal with an ever-increasing amount of data

http://www.healthcare-informatics.com/article/guest-blog-data-management-challenge-unlocking-value-clinical-data-many-times-requires-enter

Who Cares about Data Management?

From Flickr by Redden-McAllister

www.rba.gov.au

From Flickr by AJC1

What is a Data Management Plan?

- A comprehensive plan of how you will manage your research data throughout the lifecycle of your research project

AND

- Brief description of how you will comply with funder's data sharing policy
- Reviewed as part of a grant application

Types of Data Management Plans

- Document that is created to manage the data in you lab or project
- Document that is created at the start of a research project (required by funders or publishers)
  - Plan for data sharing
  - Plan based on funder specifications on how to manage your data

Who's Requiring Data Management?

Require a Data Management Plan (DMP)	Require Sharing of Results – per a Data Policy
• National Science Foundation (NSF) • National Institutes of Health (NIH) • National Oceanographic and Atmospheric Research (NOAA) • Institute of Museum and Library Services (IMLS) • National Endowment of Humanities – office of digital humanities (NEH)	• Andrew W. Mellon • NASA • NEH – Preservation & Access • IES – Institute of Education Sciences • Wellcome Trust

This list is not inclusive.

What is in a Data Management Plan?

NATIONAL ENDOWMENT FOR THE
Humanities

Parts of a (Generic) NSF Data Management Plan

I. **Products of the Research:** The types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project.

II. **Data Formats:** The standards to be used for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies).

III. **Access to Data and Data Sharing Practices and Policies:** Policies for access and sharing including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements.

IV. **Policies for Re-Use, Re-Distribution, and Production of Derivatives.**

V. **Archiving of Data:** Plans for archiving data, samples, and other research products, and for preservation of access to them.

Grant Proposal Guide (GPG) Chapter II.C.2.j
http://www.nsf.gov/pubs/policydocs/pappguide/nsf13001/gpg_2.jsp#dmp

Department Of Energy Data Management Plan

I. **Data Types and Sources:** A brief, high-level description of the data to be generated or used through the course of the proposed research and which of these are considered digital research data necessary to validate the research findings.

II. **Content and Format:** A statement of plans for data and metadata content and format including, where applicable, a description of documentation plans, annotation of relevant software, and the rationale for the selection of appropriate standards.

III. **Sharing and Preservation:** Means for sharing and the rationale for any restrictions and a timeline for sharing and preservation

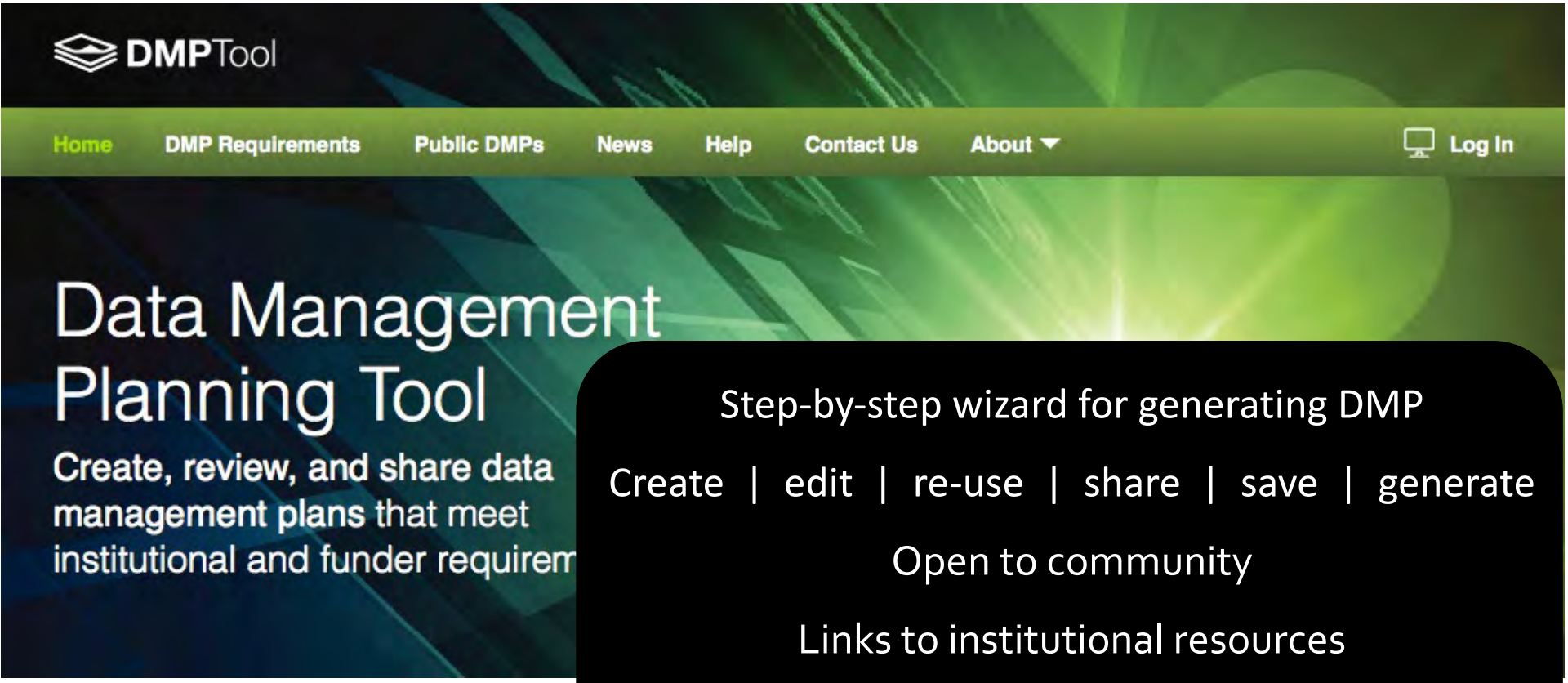
IV. **Protection:** A statement of plans, where appropriate and necessary, to protect confidentiality, personal privacy, Personally Identifiable Information

V. **Rationale:** A discussion of the rationale or justification for the proposed data management plan

VI. **Software**: Software and data created by funded research must be released with sufficient descriptions to facilitate the validation of research results. *(Optional)*

Suggested Elements for a Data Management Plan
http://science.energy.gov/funding-opportunities/digital-data-management/suggested-elements-for-a-dmp/

How to Create a Data Management Plan?



Step-by-step wizard for generating DMP

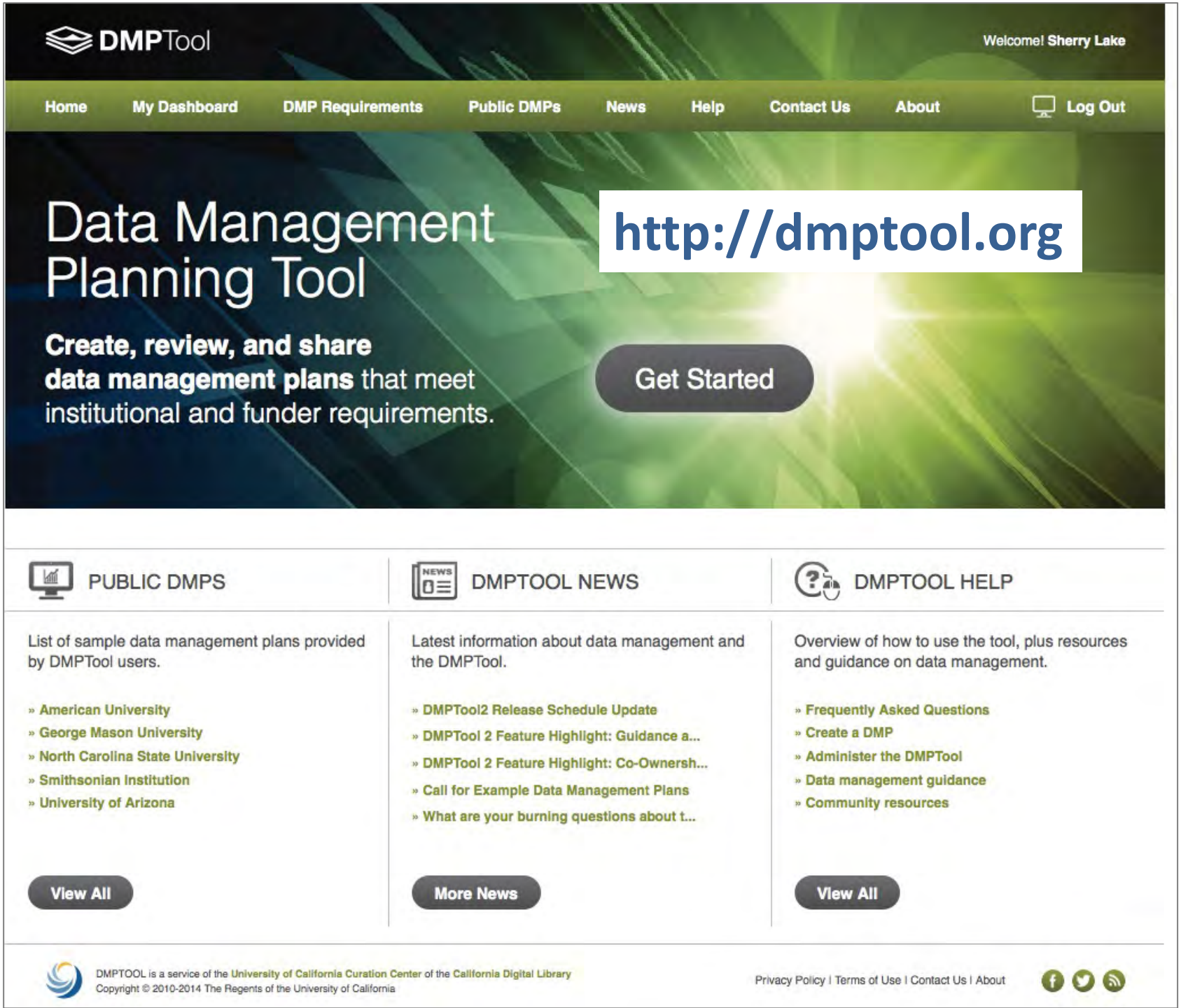
Create | edit | re-use | share | save | generate

Open to community

Links to institutional resources

Directorate information & updates

http://dmptool.org


DMPTool
Welcome! Sherry Lake
Home
My Dashboard
DMP Requirements
Public DMPs
News
Help
Contact Us
About
Log Out
Data Management Planning Tool
http://dmptool.org
Create, review, and share data management plans that meet institutional and funder requirements.
Get Started
PUBLIC DMPS
List of sample data management plans provided by DMPTool users.
» American University
» George Mason University
» North Carolina State University
» Smithsonian Institution
» University of Arizona
View All
DMPTOOL NEWS
Latest information about data management and the DMPTool.
» DMPTool2 Release Schedule Update
» DMPTool 2 Feature Highlight: Guidance a...
» DMPTool 2 Feature Highlight: Co-Ownersh...
» Call for Example Data Management Plans
» What are your burning questions about t...
More News
DMPTOOL HELP
Overview of how to use the tool, plus resources and guidance on data management.
» Frequently Asked Questions
» Create a DMP
» Administer the DMPTool
» Data management guidance
» Community resources
View All
DMPTOOL is a service of the University of California Curation Center of the California Digital Library
Copyright © 2010-2014 The Regents of the University of California
Privacy Policy | Terms of Use | Contact Us | About

DMPTool

Welcome! **Sherry H Lake**

Home | My Dashboard | DMP Requirements | Public DMPs | News | Help | Contact Us | About

University of Virginia

University of Virginia Library

Contact Data Management Consulting Group

My Dashboard | My DMPs | Create New DMP | My Profile

OVERVIEW

My DMPs	My DMPs under Review (where applicable)
0 plans I own	No DMPs are under review.
0 plans I co-own	

Create New DMP

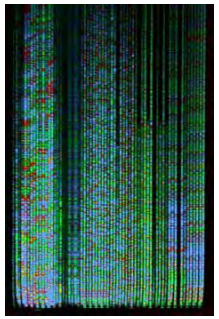
DMPTOOL is a service of the University of California Curation Center of the California Digital Library
Copyright © 2010-2014 The Regents of the University of California

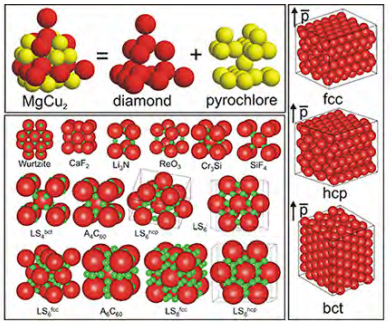
Types of Data & Other Information

- **Types of data** produced
- Relationship to **existing data**
- How/when/where will the data be **captured or created**?
- How will the data be **processed**?
- **Quality** assurance & quality control measures
- **Security**: version control, backing up
- **Who will be responsible** for data management during/after project?

```
/**
 * Simple HelloButton() method.
 * @version 1.0
 * @author john doe <doe.j@example.com>
 */
HelloButton()
{
  JButton hello = new JButton( "Hello, wor
  hello.addActionListener( new HelloBtnList

  // use the JFrame type until support for t
  // new component is finished
  JFrame frame = new JFrame( "Hello Button"
  Container pane = frame.getContentPane();
  pane.add( hello );
  frame.pack();
  frame.show();           // display the fra
}
```





Data & Metadata Standards

- Identify the **formats of data files** created over the course of the project
- What **metadata are needed** to make the data meaningful?
- How will you **create or capture** these metadata?
- Why have you chosen **particular standards** and approaches for metadata?

Policies for Access & Sharing
Policies for Re-use & Re-distribution

- Are you under any **obligation to share** data?
- How, when, & where will you **make the data available**?
- What is the process for **gaining access** to the data?
- Who owns the **copyright** and/or **intellectual property**?
- Will you **retain rights** before opening data to wider use? How long?
- Are **permission restrictions** necessary?
- **Embargo periods** for political/commercial/patent reasons?
- **Ethical** and **privacy** issues?
- Who are the **foreseeable data users**?
- How should your data be **cited**?

Plans for Archiving & Preservation

- **What data** will be preserved for the long term? For how long?
- **Where** will data be preserved?
- What **data transformations** need to occur before preservation?
- What **metadata** or **documentation** will be submitted alongside the datasets?
- **Who will be responsible** for preparing data for preservation? Who will be the main contact person for the archived data?

Questions and Discussion?

Follow-up

Contact the Data Management Consulting Group for help with

- DMP preparation
- Data Management during your project

http://data.library.virginia.edu/data-management/dmp-support/

Email: DMConsult@virginia.edu