

# Data management plans 2.0: Helping you manage your data

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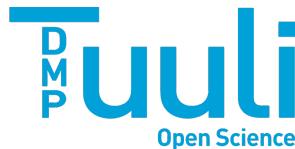
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# Overview

Machine-actionable DMPs

DMPRoadmap project

<https://github.com/DMPRoadmap/roadmap>



New DMPTool!

Planning &  
administration

Create, analyze,  
manage data

Publishing & reuse



Planning &  
administration

Create, analyze,  
manage data

Publishing & reuse



- DMP on periphery
- Often done at grant stage and not looked at again
- Opportunities to (re)use information being missed
- Disconnected & unlinked

Planning &  
administration

Create, analyze,  
manage data

Publishing & reuse

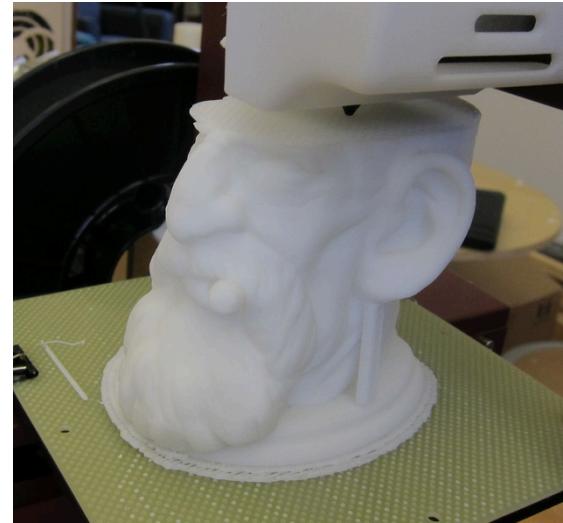


- DMP on periphery
- Often done at grant stage and not looked at again
- Opportunities to (re)use information being missed
- Disconnected & unlinked

# Defining machine-actionable DMPs

This term refers to information that is structured in a consistent way so that machines, or computers, can be programmed against the structure.

[Data Documentation Initiative](#)

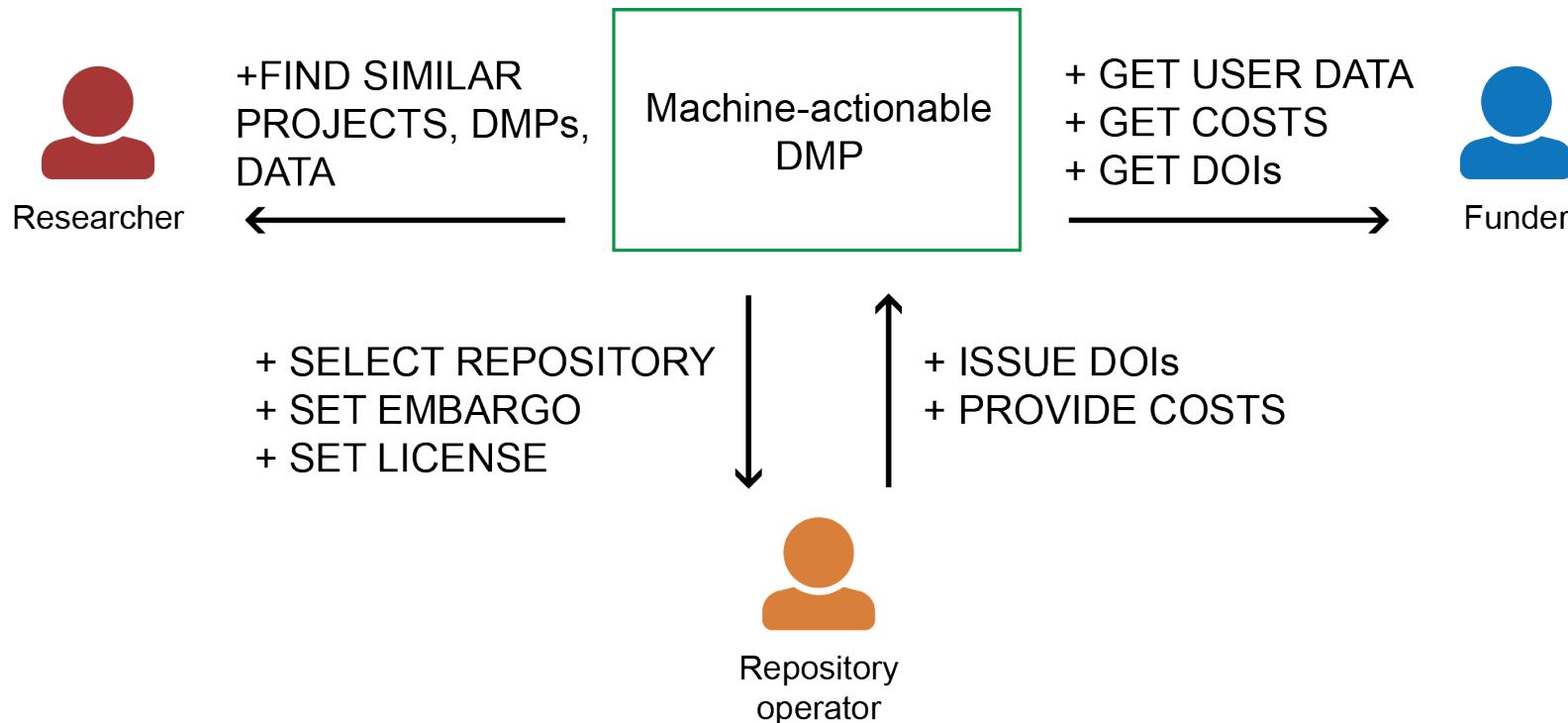


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# Stakeholders



# What do we want machine-actionable DMPs to do?



# The vision:

Machine-actionable DMPs will **make it easier** to manage your data

Parts of the DMP will be automatically generated and shared, thereby  
**alleviating administrative burdens** and **improving the quality** of information

# Our traveling roadshow for machine-actionable DMPs





Assign a DOI to DMP of record. Use this to get award details back into a DMP.

Leverage other PIDs to populate DMP over time:

Researcher IDs ([ORCID iDs](#))

Funder IDs ([Crossref Funder Registry](#))

Grant IDs

Org IDs ([working group](#))

Research Resource IDs ([RRIDs](#))

antibodies, organisms, cell lines, tools

Also enables compliance monitoring





# IDCC17 workshop

47 participants from 16 countries

- Funders
- Developers
- Librarians
- Service providers
- Researchers

Understand research workflows

Develop use cases

Set priorities for future work

PIDapalooza

White paper

RDA P10

IDCC18

activedmps.org

2017

IDCC17

RDA P9

2018

Force17

10  
Simple  
Rules

RDA P11

## Machine-actionable data management plans (maDMPs)

▼ [Stephanie Simms](#), [Sarah Jones](#), [Daniel Miettinen](#), [Tomasz Miksa](#)

### Abstract ▾

This report presents outputs of the International Digital Curation Conference 2017 workshop on machine-actionable data management plans. It contains community-generated use cases covering eight broad topics that reflect the needs of various stakeholders. It also articulates a consensus about the need for a common standard for machine-actionable data management plans to enable future work in this area.

### Keywords ▾

interoperability; persistent identifiers; research data management; research workflows; data discovery; research infrastructure; research policy; research funding; research publishing

### Date and place ▾

The workshop took place on February 20 in Edinburgh, UK, as part of the 12th International Digital Curation Conference (February 20-23, 2017). The workshop materials are available via <http://www.dcc.ac.uk/events/workshops/postcard-future-tools-and-services-perfect-dmp-world>.

### Aims of the workshop ▾

With growing interest in active, actionable data management plans, the Digital Curation Centre (DCC) and University of California Curation Center (UC3) at the California Digital Library took the opportunity of the IDCC17 conference to convene a workshop on the topic. The aim of the workshop was to understand different stakeholder requirements and bring together a diverse international group to develop specific use cases for machine-actionable data management plans. The workshop participants included 47 people from 16 different countries, representing funders, developers, librarians, service providers, and the research community. In practical, brainstorming exercises, the groups discussed use cases focused on interoperability

Interoperability with research systems  
Leveraging PIDs  
Institutional perspective  
Repository use cases  
Data discovery & reuse  
Evaluation & monitoring  
Disciplinary tailoring  
Publishing DMPs

>> Common standards

PIDapalooza

White paper

RDA P10

IDCC18

activedmps.org

2017

IDCC17

RDA P9

2018

Force17

10 Simple Rules

RDA P11



# RDA P9

DMP Common Standards WG  
Exposing DMPs WG  
Domain/infrastructure specialty WG  
Funder liaison WG  
Software management plans WG





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## RDA P10

Active DMPs & Domain Repos joint session

- Bio/FAIRsharing.org
- Data Management Records at UQ
- ...





[From Flickr by Pascal Volk](#)

# Force2017

FAIR DMPs working group  
10 Simple Rules



# #activeDMPs

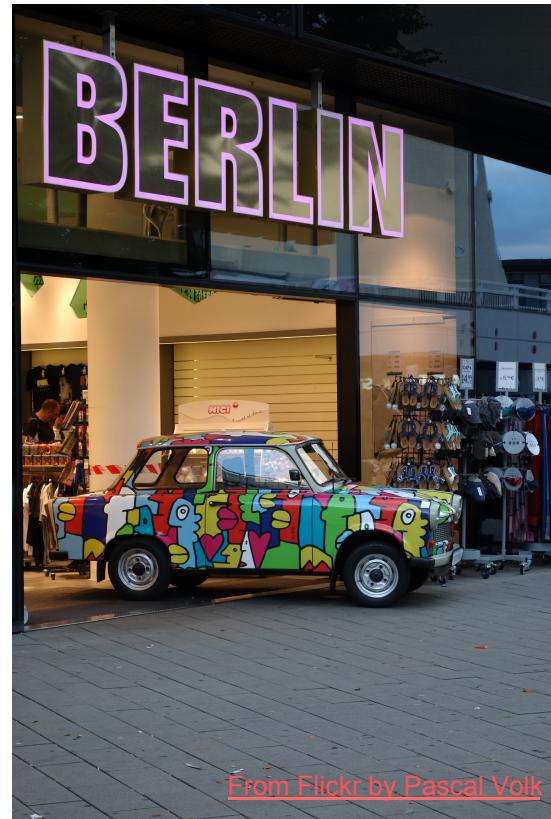
*A place where all DMP ideas meet!*

Find Out More

IDCC18

DMPRoadmap demo  
[activedmps.org](http://activedmps.org)





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# RDA P11

Common Standards WG  
Exposing DMPs WG



# Next steps: machine-actionable DMP pilots



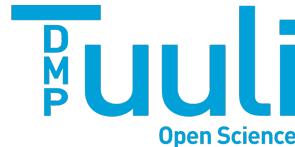
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# DMPRoadmap project

Build a single DMP system to:

1. Harness community development efforts
2. Create next-generation, machine-actionable DMPs

<https://github.com/DMPRoadmap/roadmap>



# Bigger team, bigger voice



# DMPRoadmap themes

Used to tag questions with guidance

## Mapping to other vocabularies

# Text mining

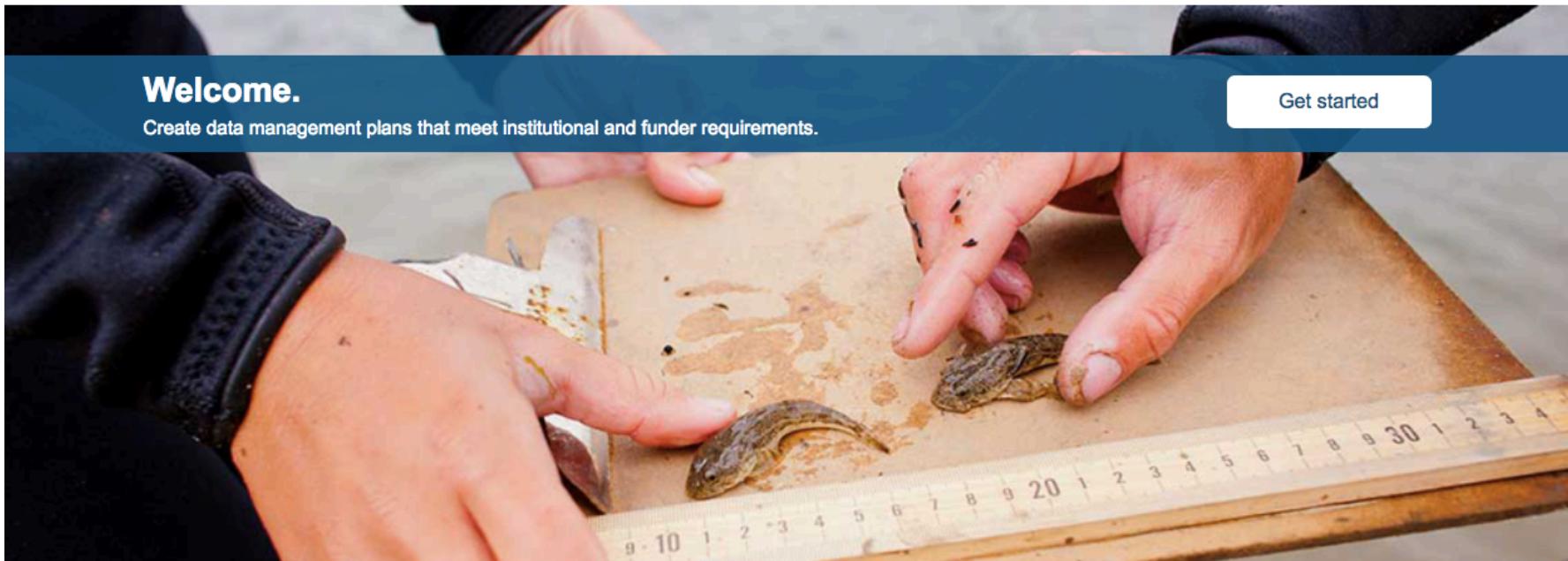


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# Welcome.

Create data management plans that meet institutional and funder requirements.

[Get started](#)

## DMPTool by the numbers



28,324  
Users



24,524  
Plans  
[More](#)



228  
Participating institutions  
[More](#)

## Top 5 templates

NSF-GEN: Generic

NSF-SBE: Social, Behavioral, Economic Sciences

NIH-GEN: Generic

NSF-BIO: Biological Sciences (2015- )

Digital Curation Centre

[More](#)

# Funder requirements

Templates for data management plans are based on the specific requirements listed in funder policy documents. The DMPTool maintains these templates, however, researchers should always consult the program officers and policy documents directly for authoritative guidance. Sample plans are provided by a funder or another trusted party.

Search

| Template ^   | Download                                    | Funder ▾                          | Last edited | Funder links  | Sample plans (if available) |
|--|---|-----------------------------------|-------------|---|-----------------------------|
| BCO-DMO NSF OCE: Biological and Chemical Oceanography      | <a href="#">DOCX</a><br><a href="#">PDF</a> | National Science Foundation (NSF) | 02-28-2018  | <a href="#">NSF OCE Sample and Data Policy</a><br><a href="#">NSF GEO Directorate Guidance</a>        |                             |
| NSF-AGS: Atmospheric and Geospace Sciences                 | <a href="#">DOCX</a><br><a href="#">PDF</a> | National Science Foundation (NSF) | 02-28-2018  | <a href="#">NSF Grant Proposal Guide (PAPPG)</a><br><a href="#">NSF-AGS Advice to PIs on DMPs</a>     |                             |
| NSF-AST: Astronomical Sciences                             | <a href="#">DOCX</a><br><a href="#">PDF</a> | National Science Foundation (NSF) | 02-13-2018  | <a href="#">NSF Grant Proposal Guide (PAPPG)</a><br><a href="#">NSF-AST Advice to PIs on DMPs</a>     |                             |
| NSF-BIO: Biological Sciences                               | <a href="#">DOCX</a><br><a href="#">PDF</a> | National Science Foundation (NSF) | 03-02-2018  | <a href="#">NSF Grant Proposal Guide (PAPPG)</a><br><a href="#">NSF-BIO Guidance on DMPs</a>          |                             |
| NSF-CHE: Chemistry Division                                | <a href="#">DOCX</a><br><a href="#">PDF</a> | National Science Foundation (NSF) | 02-13-2018  | <a href="#">NSF Grant Proposal Guide (PAPPG)</a><br><a href="#">NSF-CHE Advice to PIs on DMPs</a>     |                             |
| NSF-CISE: Computer and Information Science and Engineering | <a href="#">DOCX</a><br><a href="#">PDF</a> | National Science Foundation (NSF) | 02-13-2018  | <a href="#">NSF Grant Proposal Guide (PAPPG)</a><br><a href="#">NSF-CISE Data Management Guidance</a> |                             |
| NSF-DMR: Materials Research                                | <a href="#">DOCX</a><br><a href="#">PDF</a> | National Science Foundation (NSF) | 02-13-2018  | <a href="#">NSF Grant Proposal Guide (PAPPG)</a><br><a href="#">NSF-DMR Advice to PIs on DMPs</a>     |                             |

# Public plans

Public plans are plans created using the DMPTool and shared publicly by their owners. They are not vetted for quality, completeness, or adherence to funder guidelines.

 usda 

| Project title   | Template  | Organization                                      | Owner              | Download            |
|---|---|---|--------------------|---------------------|
| Pawan Takhar UIUC DMP   | USDA - NIFA: National Institute of Food and Agriculture | University of Illinois at Urbana-Champaign (UIUC) | Pawan Takhar       | <a href="#">PDF</a> |
| Data Management Plan_Cong Liu   | USDA - NIFA: National Institute of Food and Agriculture | University of Connecticut (UConn)                 | Cong Liu           | <a href="#">PDF</a> |
| Integrating heat stress metabolome with tissue function in swine, implication for growth and carcass quality            | USDA - NIFA: National Institute of Food and Agriculture | Purdue University                                 | Kolapo Ajuwon      | <a href="#">PDF</a> |
| Data Management Plan  | USDA - NIFA: National Institute of Food and Agriculture | Oklahoma State University                         | Babajide Ojo       | <a href="#">PDF</a> |
| Seedling establishment and woody-plant encroachment in Southwest Rangelands   | USDA - NIFA: National Institute of Food and Agriculture | Arizona State University (ASU)                    | Luis Weber-Grullon | <a href="#">PDF</a> |
| Investigating the Genetic Diversity of <i>Pantoea ananatis</i> strains endemic to Georgia                               | USDA - NIFA: National Institute of Food and Agriculture | University of Georgia (UGA)                       | Spencer Stumpf     | <a href="#">PDF</a> |
| Testing of the non-target effects of RNAi, siRNA, and miRNA: Unintended molecular impacts and life-history consequences | USDA - NIFA: National Institute of Food and Agriculture | Michigan State University (MSU)                   | Susan L. Balfe     | <a href="#">PDF</a> |

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## Public Data Management Plans created with the DMPTTool

Sort by: Publication date new ↗

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### Machine-actionable data management plans (maDMPs)

Stephanie Simms, Sarah Jones, Daniel Mietchen, Tomasz Miksa

[Workshop Report](#)

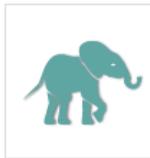
doi: 10.3897/rio.3.e13086



05-04-2017

Unique: 1021 | Total: 1831

Reprint: € 4,80

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### Data Management Plan for Moore Investigator in Data Driven Discovery Grant

Ethan White

[Data Management Plan](#)

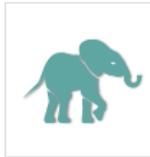
doi: 10.3897/rio.2.e10708



04-10-2016

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Reprint: € 2,60

[HTML](#) [XML](#) [PDF](#)

### Data Management Plan for PhD Thesis "Climatic Limitation of Alien Weeds in New Zealand: Enhancing Species Distribution Models with Field Data"

Jennifer Pannell

[Data Management Plan](#)

doi: 10.3897/rio.2.e10600



27-09-2016

Unique: 563 | Total: 1165

Reprint: € 2,60

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### Migration of legacy data to new media formats for long-time storage and maximum visibility: Modern pollen data from the Canadian Arctic (1972/1973)

Harvey Nichols, Susann Stolze

[Data Management Plan](#)

doi: 10.3897/rio.2.e10269



25-08-2016

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# Participating institutions

Participating institutions/organizations can configure the tool to point to their resources and services, provide customized help, and provide suggested answers to the questions asked by funding agencies. DMPTool users affiliated with participating institutions can log in with their own institutional accounts. For more information visit the [About](#) page.

| Institution  | Institutional sign-in enabled |
|--|-------------------------------|
| American University (AU)   | ✓                             |
| American University of Beirut (AUB)                                  | ✓                             |
| Appalachian State University   |                               |
| Arizona State University (ASU)                                       | ✓                             |
| Augusta University   | ✓                             |
| Auraria Library (UCD, MSU Denver, CCD)                               |                               |
| Baylor University  | ✓                             |
| Binghamton University  | ✓                             |
| Boise State University   | ✓                             |
| Boston College (BC)  | ✓                             |
| Boston University (BU)   | ✓                             |
| Brandeis University  | ✓                             |
| Brown University   | ✓                             |
| California Institute of Technology                                   | ✓                             |
| California Polytechnic State University-San Luis Obispo (CalPolySLO) | ✓                             |
| California State University, Chico (CSU Chico)                       | ✓                             |
| California State University, Fresno (CSU Fresno)                     | ✓                             |
| California State University, Fullerton (CSU Fullerton)               | ✓                             |


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## My dashboard

[Create plan](#)

The table below lists the plans that you have created and that have been shared with you by others. You can edit, share, download, make a copy, or remove these plans at any time.

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|--|---|---------------|-------------|-------------------------------------|------------|--------|---------------------------|
| DMPRoadmap: Making Data Management Plans Actionable        | NSF-GEN: Generic  | 02-27-2018    | Owner       | <input type="checkbox"/>            | Public     | Yes    | <a href="#">Actions ▾</a> |
| data revise new dmptool bco-dmo                            | BCO-DMO NSF OCE: Biological and Chemical Oceanography       | 02-12-2018    | Owner       | <input checked="" type="checkbox"/> | N/A        | No     | <a href="#">Actions ▾</a> |
| UCSF test plan   | NIH-GDS: Genomic Data Sharing                               | 06-08-2017    | Owner       | <input checked="" type="checkbox"/> | N/A        | No     | <a href="#">Actions ▾</a> |
| My First DOT DMP   | U.S. Department of Transportation Public Access Guidance v1 | 11-02-2016    | Owner       | <input checked="" type="checkbox"/> | N/A        | No     | <a href="#">Actions ▾</a> |
| NOAA template 28 Oct test                                  | NOAA Data Sharing Template                                  | 10-28-2016    | Owner       | <input checked="" type="checkbox"/> | N/A        | No     | <a href="#">Actions ▾</a> |
| Experiments on atmospheric concentrations of CO2 (NSF-AGS) | NSF-AGS: Atmospheric and Geospace Sciences                  | 09-27-2016    | Owner       | <input type="checkbox"/>            | Private    | No     | <a href="#">Actions ▾</a> |

## University of California, Office of the President (UCOP) Plans

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| Project title ▾                              | Template ▾   | Owner                | Last edited ▾ | Download            |
|--|--|----------------------|---------------|---------------------|
| A unified approach to preserving cultura ... | NEH-ODH: Office of Digital Humanities                      | dmpcurator@gmail.com | 06-05-2014    | <a href="#">PDF</a> |
| Peer Power                                   | NSF-CISE: Computer and Information Science and Engineering | dmpcurator@gmail.com | 05-30-2014    | <a href="#">PDF</a> |
| Arthropod responses to grassland nutrien ... | NSF-GEN: Generic   | dmpcurator@gmail.com | 05-30-2014    | <a href="#">PDF</a> |
| Atmospheric CO2 Concentrations, Mauna Lo ... | NSF-AGS: Atmospheric and Geospace Sciences                 | dmpcurator@gmail.com | 05-30-2014    | <a href="#">PDF</a> |

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Personal details

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Please note that your email address is also your username. If you change this remember to use your new email address on sign in. If your account is created with your institutional credentials you must contact us to change your email or organization.

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stephanie.simms@ucop.edu

First name

Stephanie

Last name

Simms

Organization ?

University of California, Office of the President (UCOP)

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Super Admin

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**Save**

# Create a new plan

Before you get started, we need some information about your research project to set you up with the appropriate template.

## What research project are you planning?

DataONE webinar plan



Mock project for testing, practice, or educational purposes

## Select the primary research organization

University of California, Office of the President (UCOP)



- or -

My research organisation is not on the list or no research organisation is associated with this plan

## Select the primary funding organization

National Science Foundation (NSF)

- or -

No funder associated with this plan

## Which template would you like to use?

NSF-EAR: Earth Sciences



We found multiple templates corresponding to your funder.

[Create plan](#)

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# DataONE webinar plan

[Project details](#)[Plan overview](#)[Write plan](#)[Share](#)[Download](#)**Project title**

DataONE webinar plan

 mock project for testing, practice, or educational purposes**Funder**

National Science Foundation (NSF)

**Grant number (optional)****Project abstract**

B I <img alt="Text-decoration

# DataONE webinar plan

[Project details](#)[Plan overview](#)[Write plan](#)[Share](#)[Download](#)[expand all](#) | [collapse all](#)

0/5 answered

**+ Types of data (0 / 1)****+ Data and metadata standards (0 / 1)****+ Policies for access and sharing (0 / 1)****+ Policies and provisions for re-use, re-distribution (0 / 1)****+ Plans for archiving and preservation of access (0 / 1)**

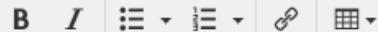
# DataONE webinar plan

[Project details](#)[Plan overview](#)[Write plan](#)[Share](#)[Download](#)[expand all](#) | [collapse all](#)

0/5 answered

## – Types of data (0 / 1)

The Division of Earth Sciences requires that full data sets, derived data products (e.g. model results, output, and workflows), software, and physical collections must be made publicly accessible within two (2) years of final collection.



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NSF

DMPTool

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### + Data collection

### – Data sharing

- How will you share the data, e.g., deposit in a data repository, use a secure data service, handle data requests directly, or use another mechanism? The methods used will depend on a number of factors such as the type, size, complexity, and sensitivity of the data.
- When will you make the data available? Research funders expect timely release. They typically allow embargoes but not prolonged exclusive use.

# Redefining success

Not just creating DMPs that respond to funder requirements

But achieving goals of those requirements

Alleviating burden and making DMPs a useful exercise for everyone

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# Summary

Think of DMPs as key elements of a networked data management ecosystem:

- connected via a shared vocabulary
- actionable by humans and software
- versioned
- public



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Build your Data Management Plan

Website [dmptool.org](http://dmptool.org)  
Twitter [@TheDMPTool](https://twitter.com/TheDMPTool)  
Blog [blog.dmptool.org](http://blog.dmptool.org)  
GitHub [CDLUC3/dmptool](https://CDLUC3/dmptool)  
[DMPRoadmap/roadmap](https://DMPRoadmap/roadmap)

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- T Miksa, S Simms, S Jones, and D Mietchen. 2018. Ten simple rules for machine-actionable data management plans (preprint). <https://zenodo.org/record/1172673>
- DMPRoadmap GitHub <https://github.com/DMPRoadmap/roadmap>  
DMPTool GitHub <https://github.com/CDLUC3/dmptool>
- RDA Active DMPs Interest Group <https://www.rd-alliance.org/groups/active-data-management-plans.html>  
Common Standards for DMPs Working Group <https://www.rd-alliance.org/groups/dmp-common-standards-wg>  
Exposing DMPs Working Group <https://www.rd-alliance.org/groups/exposing-data-management-plans-wg>
- [activedmps.org](http://activedmps.org)