

Webinar 08.09.2023



University Library Research Data Team



Courses and guidance:

- Open Science
- Open Data: why, how and where?
- Data Management Plans
- Finding & reusing research data
- UiB Open Research Data

More information on our web pages:

Open Access to Research data
Data Management Plans

Contact us: research-data@uib.no

The library provides guidance



UNIVERSITY OF BERGEN

Education

Research

Library

For students

For employees

About UiB

Norsk



University of Bergen Library

Your subject

Using the Library

Research and publish

Open Science

About the Library

UiB



Publishing
strategies for
researchers

DMP

OA publishing,
Publishing deals,
Publication Fund

Open Access to
Research Data

SEARCH IN ORIA

Go to Oria

Databases

Help

WHAT is a Data Management Plan?

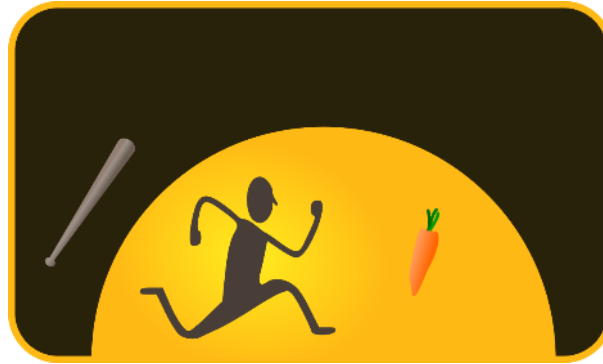


- Describes **what** you will do with your data **during** and **after** you complete your research
- Ensures your data is safe for the **present** and the **future**



WHY write a Data Management Plan?

- **Requirement** by funding agencies and institutions



Wikimedia, Nevit Dilmen, CC-BY-SA 3.0

- A **means of support** to ensure good data handling practice
- A **guide** to publication of high-quality data



WHY write a Data Management Plan?

Research Council of Norway



Policy for open access to research data

- Mandatory since 2018
- Hand in DMP with revised application, and final version at end of project

European Commission



Horizon Europe

- Mandatory Open Science practices
- Hand in full, initial DMP after 6 months, revisions required



UiB's policy for Open Science

"All research projects lead by researchers at UiB will have a data management plan"



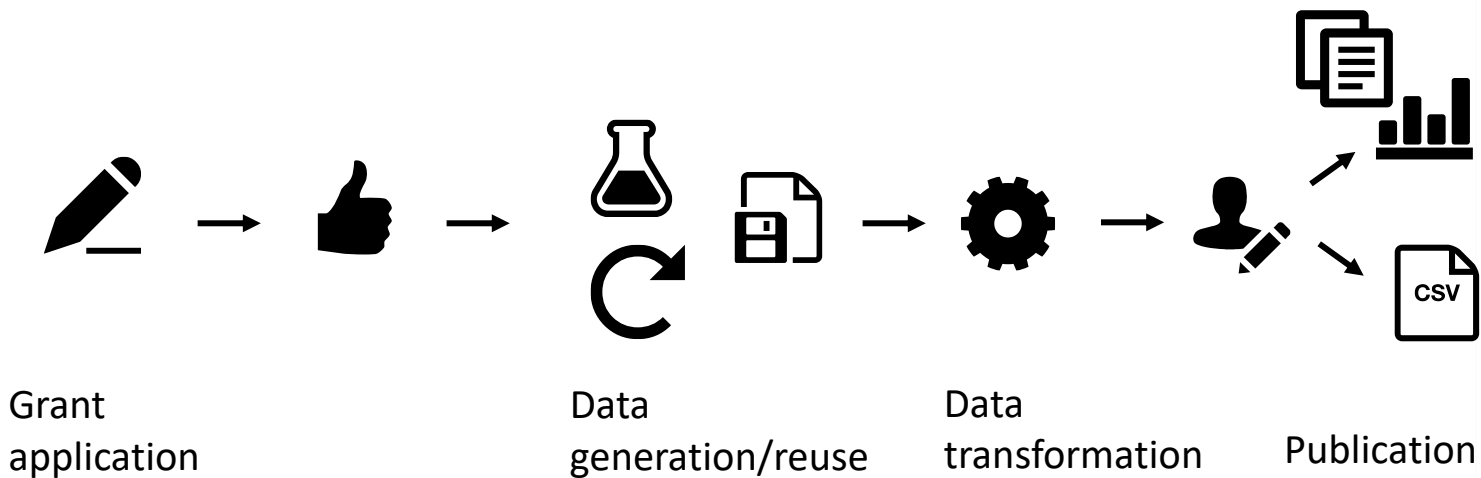
WHY write a Data Management Plan?

- ✓ **Be efficient and organized** – be able to find your files (data inputs, analytic scripts, outputs at various stages of the analytic process, etc.)
- ✓ **Avoid data loss** – be sure about data backups
- ✓ **Increased reproducibility** – match your outputs with exact inputs and transformations that produced them (data provenance)
- ✓ **Be prepared to share** – have your data ready for reuse (by yourself and others)

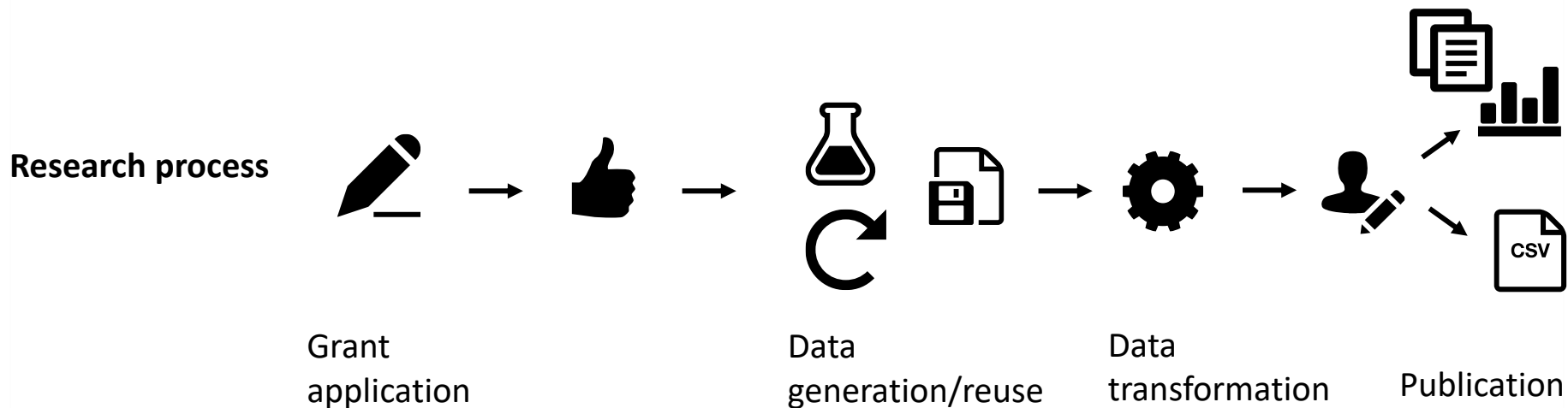


A living document!

Research process



A living document!



DMP

Key aspects

1. version



Revisions
(reporting depends on funding body)



Final

How to write
a DMP????



Pro-tip: Use a DMP tool!

- ✓ Helps you to fill out the DMP (questions or checkboxes)
- ✓ Compliant with the funder requirements
- ✓ Easy to update, export & share DMPs

- [DMP online](#) (Digital Curation Centre)
- [Data Stewardship Wizard](#) (ELIXIR)
- [argos](#) (OpenAire)
- [easyDMP](#) (Sigma2)
- [Sikt DMP](#) (Sikt/Old NSD)



Data
description

Metadata &
data quality

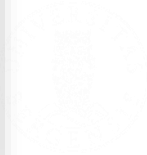
Storage &
Backup

Legal &
ethical issues

Long-term
preservation
& sharing

Responsi-
bilities &
resources

Science Europe – Practical Guide to the
International Alignment of Research Data
Management





How will new data be **produced/collected** or will existing data be **reused**?

- Methodology? Software/workflows used to analyze the data?
- Kind of data (e.g. numeric, textual, image, audio, video)?
- Data, file formats? Data volume (MB/GB/TB range)?
- How will **data provenance** (data lineage) be maintained?





What **documentation** and **metadata** will accompany the data?

- methodology, analytical & procedural information, variable/unit definitions etc.
- How will this documentation/metadata be recorded/created? (e.g. [electronic] notebooks, readme text files, database, file catalogues)
- Data organization in the active phase of the project: folder structure, file naming, data conversions, versioning
- What metadata standards will be followed (if applicable)?

Documentation: ReadMe files

Text file (.txt) that describes your data and documents and how you have processed them.

- Helps you to remember details about your data
- Ensures other people can read and understand your data

A ReadMe file should contain:

- A short description of data, tables, figures etc.
- Tabular data: definitions of column headings and row labels, data codes, measurement units
- Any data processing steps that may affect result interpretation

```
1 This file was generated on YYYY-MM-DD by NAME.
2 <help text can be deleted before saving>
3
4 GENERAL INFORMATION
5
6 1. Title of dataset: ExpNo
7
8 2. Dataset information <Novel data or secondary data>
9   A. Novel data
10      1. Date of data collection: YYYY-MM-DD
11      2. Geographic location of data collection: <if relevant: latitude, longitude or city/region, State, Country>
12      3. Experimental protocol: <if relevant>
13      4. Codebook: <if relevant>
14      5. Ethics approval: <if relevant, e.g. REK>
15   B. Secondary data:
16      1. Dataset citation
17      2. Access date: YYYY-MM-DD
18
19 3. File list: <data, tables, figures, analysis scripts etc.>
20   A. Readme.txt
21   B. YYYY-MM-DD_ExpNo_Method1.csv
22      1. Column headings, measurement units: <explain all abbreviations>
23   C. ExpNo_Analysis_v1.R
24   D. ExpNo_Analysis_v1_plot1.png
25   E. ExpNo_Analysis_v1_plot2.png
26
27 4. Data processing steps: <explain>
28   A. Experiment executed on YYYY-MM-DD with parameters X.
29   B. Data acquired on YYYY-MM-DD with instrument Y, settings Z.
30   C. Data analyzed with R script ExpNo_Analysis_v1.R.
31      1. Inputs: YYYY-MM-DD_ExpNo_Method1.csv
32      2. Outputs: ExpNo_Analysis_v1_plot1.png, ExpNo_Analysis_v1_plot2.png
```

Tabular data: Definitions of column headings/row labels, data codes, measurements units

Any data processing steps that may affect interpretation of the results



What measures are taken to ensure **data quality** and **consistency**?

Examples:

- experimental/study design
- repeated samples, measurements
- standardised data capture
- data entry validation
- peer review of data, inter coder reliability measures
- thick descriptions of data and analyses





How will data and metadata be **stored and backed up**?

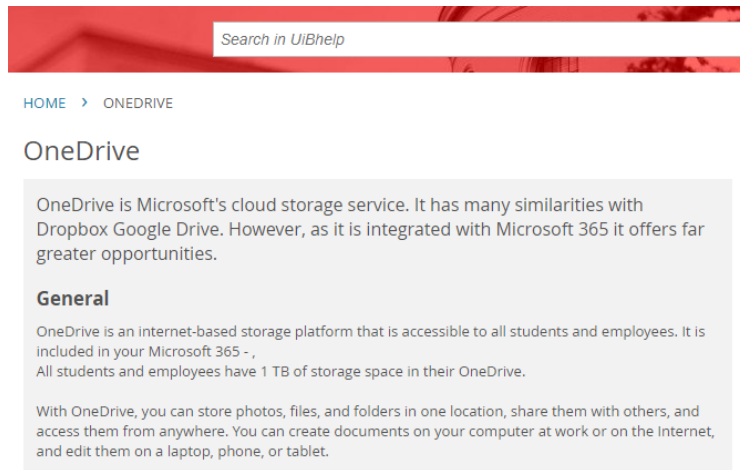
- use institutionally managed storage with automatic backup
(**NOT**: laptops, stand-alone hard drives, USB sticks!
Follow **3-2-1 rule** if you cannot rely on managed storage)

- Do you have sufficient storage resources?



File storage at UiB IT

- Default: 1TB on OneDrive
- Price list active storage:
<https://it.uib.no/Prisliste IT tjenester>
- Long-term storage (cold storage):
<https://it.uib.no/Billy>
- Contact via UiBhjelp



The screenshot shows the 'OneDrive' page on the UiBhjelp website. At the top is a red header with a search bar containing the text 'Search in UiBhjelp'. Below the header is a breadcrumb trail: 'HOME > ONEDRIVE'. The main heading is 'OneDrive'. The text describes OneDrive as Microsoft's cloud storage service, noting its similarities with Dropbox and Google Drive, and its integration with Microsoft 365. A section titled 'General' provides more details: it states that OneDrive is an internet-based storage platform accessible to all students and employees, included in their Microsoft 365 license, and that all students and employees have 1 TB of storage space. It also mentions that users can store photos, files, and folders in one location, share them, and access them from anywhere, including on a laptop, phone, or tablet.



Large datasets (TB range) and HPC

Sigma2 & NIRD

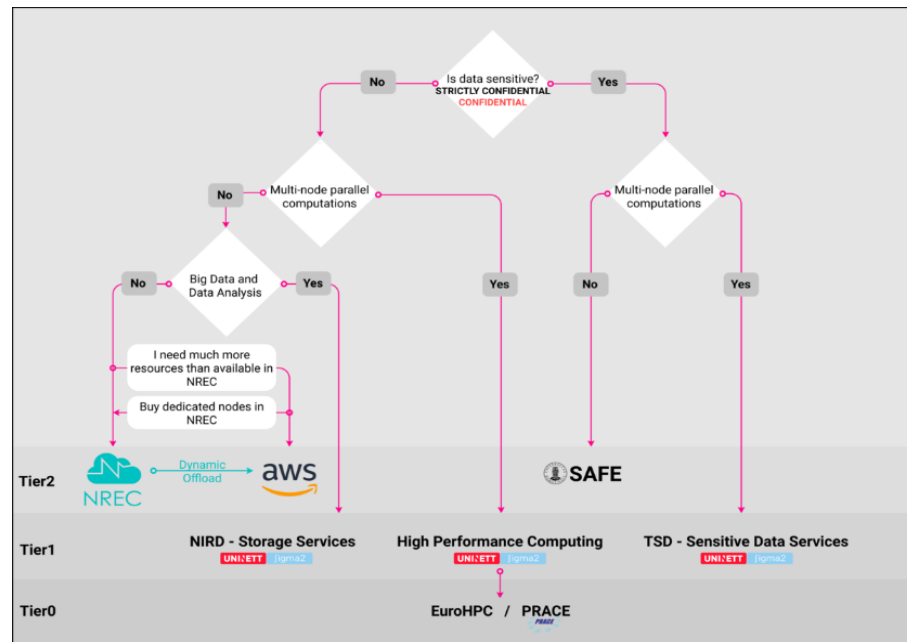


Subject-specific platforms (storage based on NIRD)

NeLS

Norwegian e-Infrastructure for Life Sciences

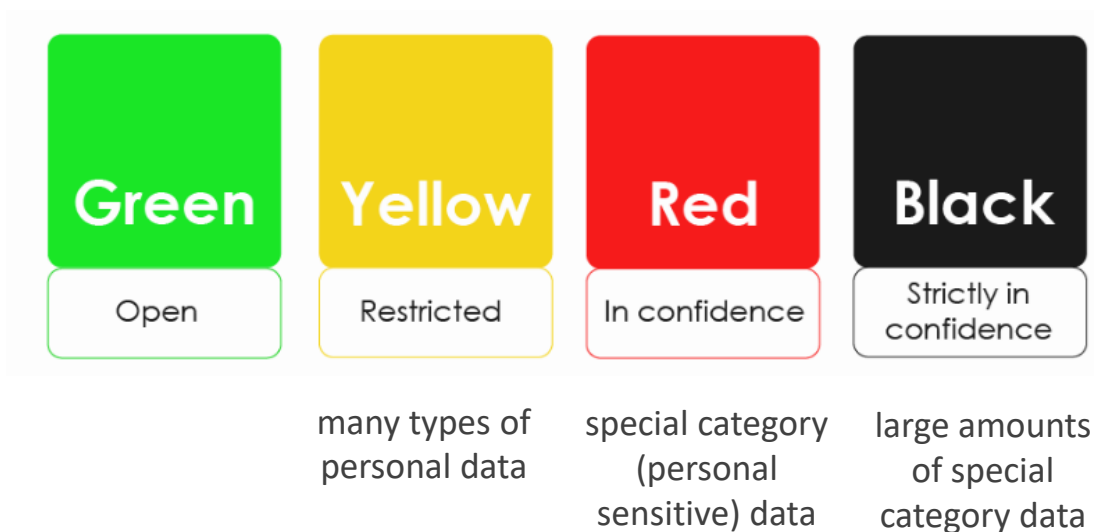
INES



https://wiki.uib.no/hpcdoc/index.php/Main_Page



How is **data security** and protection of sensitive data taken care of?

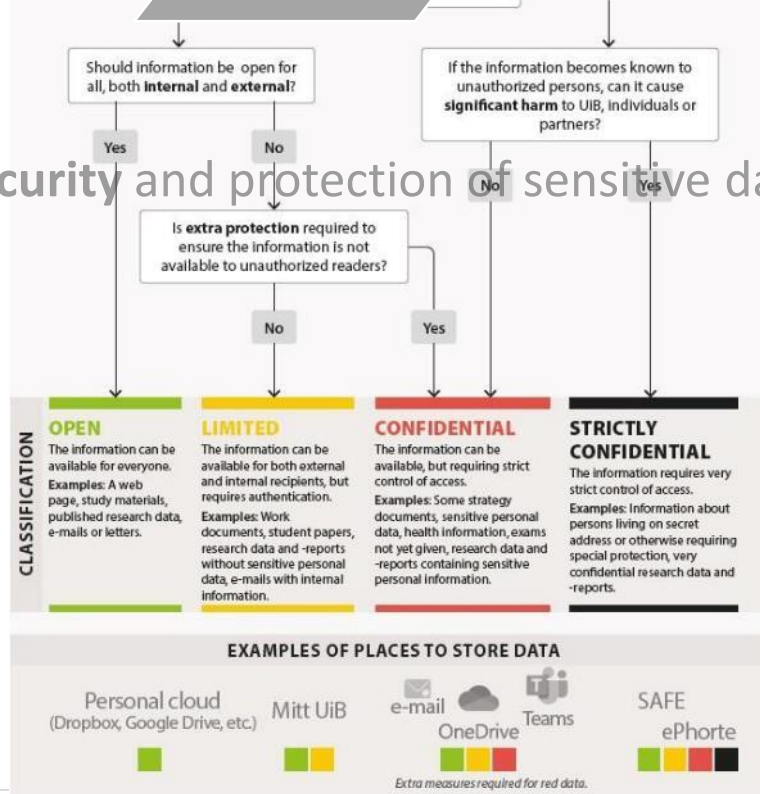


WHAT DATA CAN BE STORED WHERE?

You are responsible for protecting and securing information!



How is **data security** and protection of sensitive data taken care of?





What **legal/ethical issues** are there and how will they be taken into account? Which legislation is applicable?

- Processing of personal data, how will compliance with legislation and data security be ensured?
- How will intellectual property rights (IPR) and ownership be managed?
- What ethical issues and codes of conduct need to be considered?

Personal Data and Privacy Gateway (Personvernportalen)

UNIVERSITETET I BERGEN

Utdanning Forskning Bibliotek For studenter For ansatte Om UiB

English

Personvernportalen

Personvernerklæring ▼ Behandling av personopplysninger ved UiB ▼ Personvern i forskning og utdanning ▼ Avvikshåndtering og informasjonssikkerhet ▼

UiB > Universitetsdirektørens kontor >

Behandling av personopplysninger ved UiB

Ved UiB behandles personopplysninger for administrative formål, for arkivformål og for forskningsformål. I [personvernerklæringen](#) redegjøres for hvem som er behandlingsansvarlig, hvilke personopplysninger som behandles, formålet med behandlingen, den registrertes rettigheter og kontaktinformasjon.

[Personvernerklæring for UiB](#) [Personvern i forskning ved UiB](#)

[Informasjonsmøte om RETTE](#)

[Registrer prosjektet ditt i RETTE](#)

- UiB's data protection officer (Personvernombud):
[Janecke Veim](#)
- Mandatory registration: RETTE

Your projects User manual

RETTE

System for Risk and compliance. Processing of personal data in research and student projects at UiB.

Login

Can the project be registered directly in RETTE?

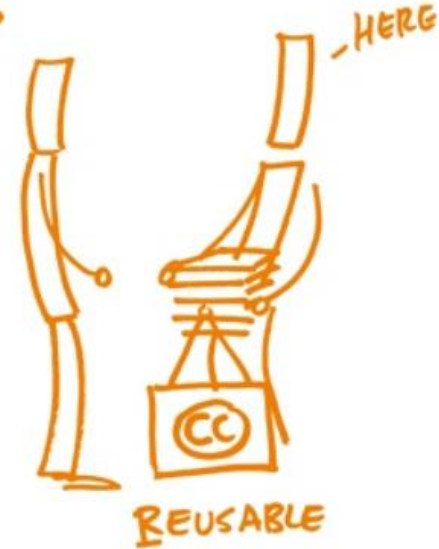
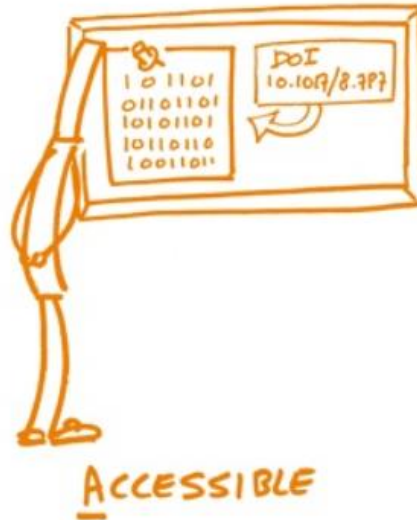


Which data **repository/archive** are you planning to submit to?

- Compliance with **FAIR principles** → Describe persistent identifiers, file formats, metadata standards, controlled vocabularies...
- Restrictions to data sharing? (sensitive data, information security, IPR,...)



FAIR DATA PRINCIPLES



- ✓ Unique and permanent identifier, preferably a DOI
- ✓ Rich metadata



<https://identifiers.org/>



- ✓ Available in an «approved» repository/archive
- ✓ Methods/tools for access is described and made available



re3data.org
REGISTRY OF RESEARCH DATA REPOSITORIES



UIB Open Research Data

zenodo

- ✓ Standardised metadata
- ✓ Standardised (open) file formats
- ✓ Controlled vocabularies



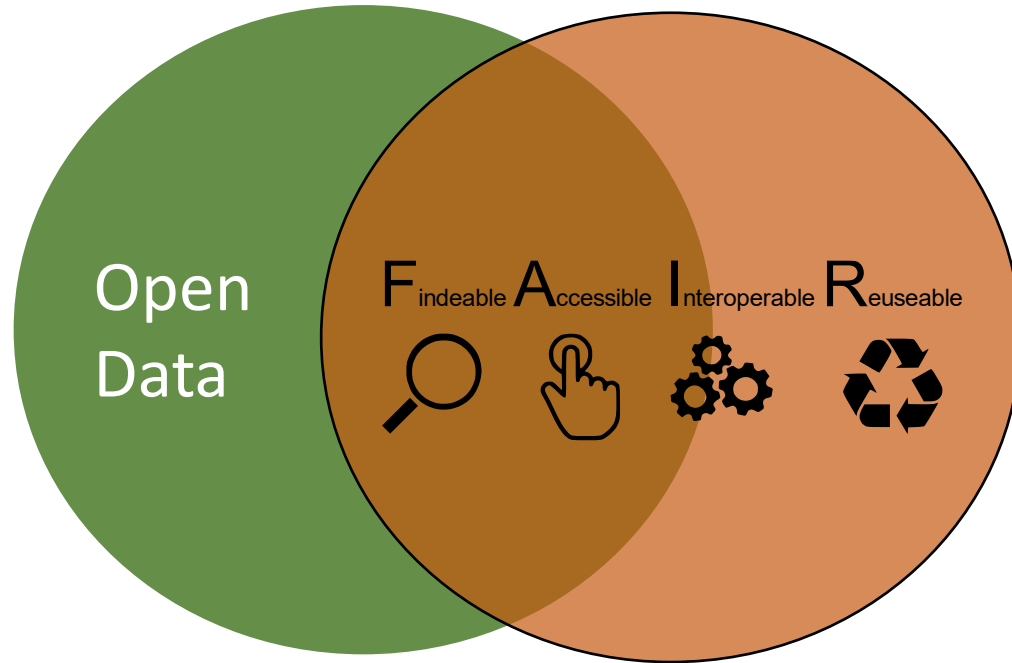
fairsharing.org
standards, databases, policies

- ✓ Licenced for reuse, preferably CC0
- ✓ Embargo, if necessary



<https://www.go-fair.org/fair-principles/>

Open data and FAIR data



“As open as possible – as closed as necessary”





Who will be **responsible** for data management?

- Consider to use controlled vocabulary for role definitions (e.g. DataCite Metadata Schema contributorType)

What **resources (cost & time)** will be allocated to data management and ensuring that data will be FAIR?

- Resources:
Utrecht University – Costs of data management
UK Data Service - Costing data management



Public DMPs

- [Example DMPs and guidance](#) from DCC
- [Curated collection of Horizon 2020 DMPs](#) from University of Vienna
- [DMP Catalogue](#) from LIBER Europe
- [Public DMPs](#) from Argos Openaire

Title: NewSiest_DMP
Template: Horizon 2020

Dataset Description

1 Data Summary

1.1 What is the purpose of the data collection/generation and its relation to the objectives of the project?

Purpose of data collection/generation: To study the optimal nanoparticle (NP) concentration and thermal modification conditions to improve the UV stability of wood surfaces. Data will be useful for academic and scientific readers and also has construction, industrial importance. Relation to objectives of project: The main research objectives of the action are: i) to introduce and optimize envelope treatment of wood with UV protecting nanoparticles ii) to set up the process of heat treatment of wood with nanoparticles in the envelope iii) to evaluate UV and fungal resistance of the novel wood-based material for industrial/commercial application. The collected data will therefore include: i) Experimental procedures and reaction conditions to achieve wood envelope treatment. Data on basic liquid properties of NP dispersion, retention and depth of penetration of the nanomaterial onto wood, ii) the generated data includes standard methodology of thermal modification of wood and data on percent mass loss, mechanical properties, contact angle variations, colour and chemical changes. iii)

Data from eval
will be accesse
chemical const

DMP title

Project Name Synthetic Chemistry / EPSRC example

Description This research project involves the development of a new chemical reaction for incorporating [your atom of choice] into [your molecule / compound of interest]. An experimental procedure will be developed that will allow the preparation of a range of compounds.

Funder Engineering and Physical Sciences Research Council

Institution University of Glasgow

Data Collection

What data will you collect or create?

The data produced from this work will fall into two categories:

1. The various reaction parameters required for optimisation of the chemical transformation.
 2. The spectroscopic and general characterisation data of all compounds produced during the work.
- I anticipate that the data produced in category 1 will amount to approximately Z MB and the data produced in category 2 will be in the range of X - Y GB.

How will the data be collected or created?

The reaction conditions will be recorded and collated using Excel spreadsheets and named according to each generation of reaction.

The various experimental procedures and associated compound characterisation will be written up using the Royal Society of Chemistry standard formatting in a Word document. The associated NMR spectra will be collated in chronological order in a .pdf document.

These are standard practices for synthetic methodology projects.

Documentation and Metadata

What documentation and metadata will accompany the data?

The data will be accompanied by the following contextual documentation, according to standard practice for synthetic methodology projects:

1. spreadsheet documents which detail the reaction conditions.

Further resources



openscience.no
[incl. event calendar](#)



[PhD on Track - Open
Science](#)



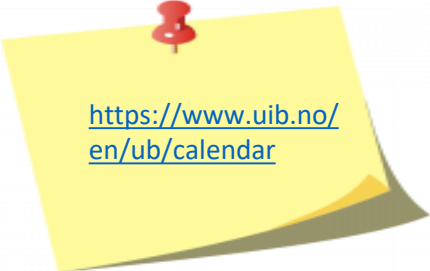
[CESSDA Data Management
Expert Guide](#)



[ELIXIR RDM Kit](#)



Open Science webinars autumn 2023



<https://www.uib.no/en/ub/calendar>

Open Access

[Open Access – step by step](#) - 22.09.2023

Open Research Data & Data management

~~[Introduction to data management plan \(DMP\)](#)~~ – 08.09.2023

[Research data management in the active phase of research](#) - 06.10.2023

[How to make your data open & FAIR](#) - 03.11.2023

[Finding & reusing research data](#) – 17.11.2023

[Introduction to data management plan \(DMP\)](#) - 01.12.2023

Publishing strategy & Researcher profiles

[Make your research visible using researcher profiles](#) - 20.10.2023



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