

# Research Data Management and Data Management Plans (DMP)

ELIXIR course 26th September 2022

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# Policy and guidelines

- National strategy on access to and sharing of research data  
(Ministry of Education and Research  
Aug 2017)
- Policy for Open Access to Research Data  
~~(The Research Council of Norway~~  
Dec 2017)
- Guidelines Research Data Management at NMBU (Apr 2018)

The Research Council  
of Norway



Approved by the rector 10 April 2018

## Guidelines Research Data Management at NMBU

- The Norwegian University of Life Sciences (NMBU) is compliant to the principle "standard" – for research data generated in projects financed through public mo
- This will contribute to:
  - The development of a global research community where the research d



- Requirements from the funding agencies (NFR, EU)
- From July 2020 - all new PhD candidates at NMBU should have a Data Management Plan (DMP)
- NMBU Guidelines for Research Ethics

# Data Management Plans (DMP) - tools

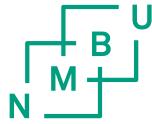


**NMBU recommends students and employees to make use of:**

- The DMP made available at the Norwegian Centre for Research Data (NSD) (DMP+)
- ELIXIR Data Stewardship Wizard might be used for research data management within life sciences.

**Examples of national and international systems to generate DMPs:**

- National e-Infrastructure for Research Data (NIRD/Uninett Sigma 2) (easy DMP)
- FAIRDOM Data Management
- Digital Curation Senter - DMP online



# Webpages

NMBU / Forskning / For forskere / Forskningsdata

Finansiering	Forskningsutvalget	Mobilitet	<b>Forskningsdata</b>	Åpen forskning
Publisering - ABC	Juridisk bistand	Dokumenter og retning...	Kurs og møter	Rekruttering
Postdoktor				



## Policy og retningslinjer for handtering av forskningsdata

Les meir om policyar/ strategiar og retningslinjer for handtering av forskningsdata vedteke av NMBU, Forskningsrådet, Kunnskapsdepartementet og EU. Med handtering av forskningsdata meiner vi lagring av data i pågående prosjekt, arkivering av data ved publisering/ prosjektslutt og eventuell deling og tilgjengeleggjering av data.



## Informasjon for studentar om behandling av forskningsdata og persondata

I denne artikkelen kan du lese om retningslinjer og rutiner for handtering av forskningsdata. Handtering av forskningsdata innebefører innsamling, lagring, arkivering og eventuell deling av forskningsdata. I artikkelen finner du også informasjon om handtering av data med ikke-sensitive og sensitive personopplysningar (persondata).



## FAIR datahandtering

FAIR er eit akronym for orda findable, accessible, interoperable og reusable. Forskningsdata må vera tilgjengelege, gjenfinnbare og gjenbrukbare. Les meir om FAIR datahandtering, metadata og filformat her.



## Datahåndteringsplaner (DMP)

Forskningsrådet og EU krever nå datahåndteringsplaner (DMP) i prosjekter de finansierer. NMBU krever også at alle ph.d.-kandidater har en datahåndteringsplan. Les meir om datahåndteringsplaner og hvordan få grunnleggende ferdigheter i datahåndtering.



## Personvern i forskinga

På denne sida finn du meir informasjon om kva du gjør når du skal behandle (behandle) forskningsdata som inneholder personopplysningar eller anna sensitiv informasjon. Informasjonen gjeld for både studentar og tilsette.

NMBU / Frontpage / Research / For researchers / Research Data

EU Research Funding	Postdoctoral fellow	<b>Research Data</b>	Research Excellence	Publishing ABC
Courses and meetings	Researcher mobility	Guidelines and docum...		



## Research Data - guidelines and policies

Read more about the policies/ strategies and guidelines for handling research data laid down by The Norwegian University of Life Sciences (NMBU), The Norwegian Research Council, The Ministry of Education and by EU. The term "handling research data" implies what has to do with storage of data in ongoing projects, archiving data when publishing or at end of project, any data sharing and making data available.



## Information for students about processing research data and personal data

Read more about the guidelines and routines for handling and processing research data. The term "handling and processing research data" implies what has to do with collection, storage, archiving (depositing) and any sharing of research data. In the article you can also read about processing data with non-personal and personal information (personal data).



## FAIR Data Management

FAIR is an acronym for the words findable, accessible, interoperable and reusable, i.e research data must be available, and able to be refound and reused. Research data must be stored and archived in the correct file format, and also be tagged as metadata. Read more here.



## Data Management Plan (DMP)

The Norwegian Research Council and EU are currently demanding Data Management Plans (DMP) for all projects they are funding. Read more about the DMPs and how to attain basic skills in data management through Software carpentry.

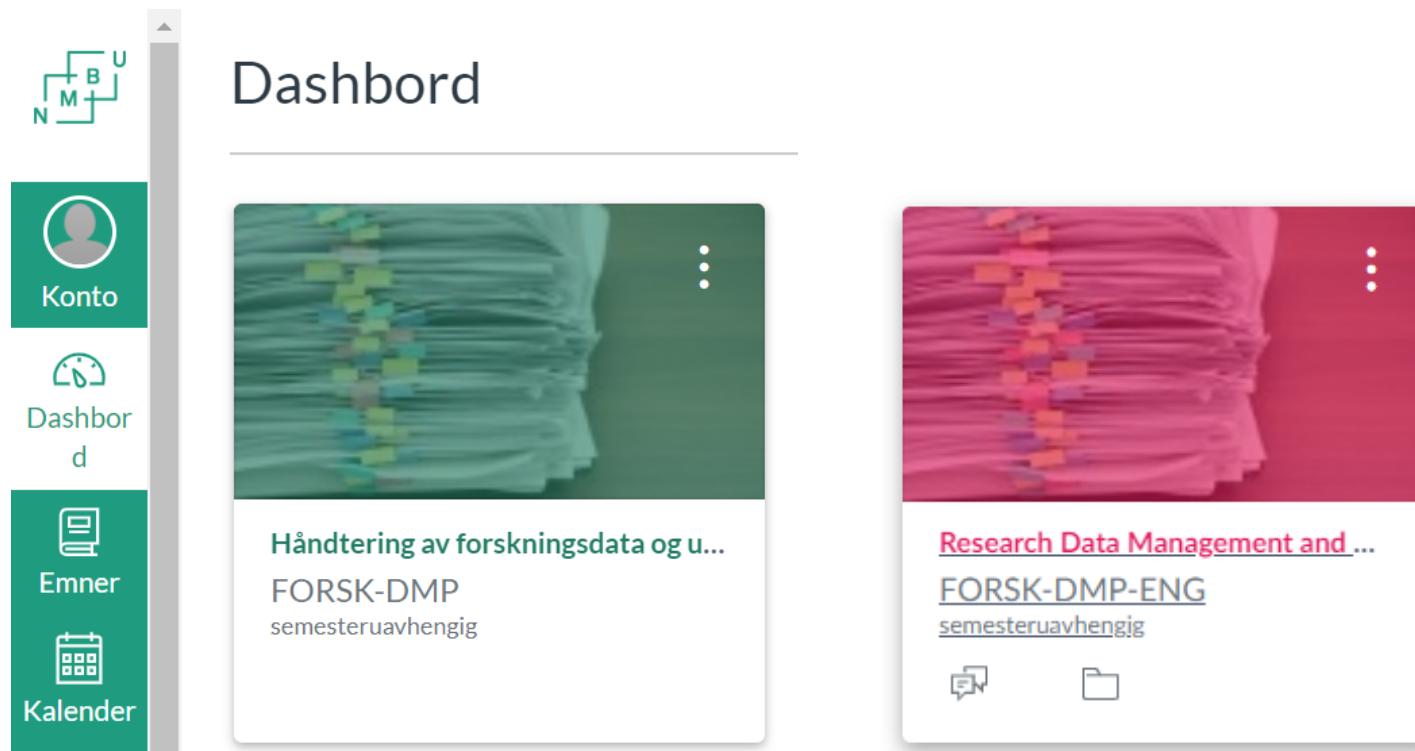


## How to handle and process personal or sensitive research data?

On this page you will find more information about what to do when handling and processing personal data in research projects. The information applies to both students and employees.

# Canvas course

- <https://nmbu.instructure.com/courses/4825>
- <https://nmbu.instructure.com/courses/6249>



The screenshot shows the Canvas LMS dashboard. On the left is a vertical sidebar with icons for Konto, Dashboard, Emner, and Kalender. The main area is titled "Dashbord". It displays two course cards:

- Håndtering av forskningsdata og u...**  
FORSK-DMP  
semesteruavhengig
- Research Data Management and ...**  
FORSK-DMP-ENG  
semesteruavhengig

Each card has a three-dot menu icon on the right.



# Storage of Research Data - in ongoing projects

# Storage of Research Data without personal information – what do the guidelines say?

1. Research Data (raw data) must be

stored at the NMBU server or in approved servers nationally or internationally

2. You might take out a copy of the raw data and store it at your OneDrive server or personal computer for processing and analyzes.

3. However, research data  
~~should NOT only be stored on a~~  
personal computer (C-drive),  
external hard drives, dropbox etc



Approved by the rector 10 April 2018

## Guidelines Research Data Management at NMBU

- The Norwegian University of Life Sciences (NMBU) is compliant to the principle "Open as standard" – for research data generated in projects financed through public money.
- This will contribute to:
  - The development of a global research community where the research data is widely shared
  - Improved quality of research through a better way to build upon earlier work and to consolidate research data

# Storage of Research Data without personal information - tools

- **Research Data** generated in ongoing projects should normally be stored at the LargeFile server (W:).
- **External cooperation (should not be used as the primary place for storage):**  
Sharing data using Office365 and OneDrive – NMBU services



LargeFile  
server W:



# Storage and computing power (calculations) large datasets - tools



- Orion-cluster at NMBU or
- NIRD - UNINETT/ Sigma 2 service.

## NMBU Orion HPC Cluster

Orion is a High-Performance Computing (HPC) cluster infrastructure available to employees, PhD and master students at NMBU. Orion can handle small-scale projects, but if you need more CPU-hours, please consider applying for national infrastructure resources:

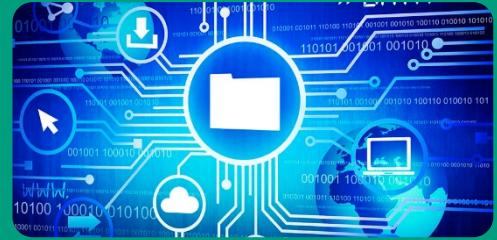
<https://www.sigmap2.no/> If you want to apply to access Orion, please fill out [this file](#) and submit it using the [following form](#).

Contact: For any Orion compute cluster related enquiry: [orion-support@nmbu.no](mailto:orion-support@nmbu.no)



The Norwegian e-infrastructure for research and education.

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# Archiving (Deposit) and Sharing Research Data



# Archiving (Deposit) – what do the guidelines say?

- Research data upon which scientific publications is based must be archived in domain specific, national or international data archives.
- The data archives must be compliant to international standards (FAIR).
- Recommendation - Do not deposit your data via journals!

Approved by the rector 10 April 2018



**Guidelines Research Data Management at NMBU**

- The Norwegian University of Life Sciences (NMBU) is compliant to the principle "Open as standard" – for research data generated in projects financed through public money.
- This will contribute to:
  - The development of a global research community where the research data is widely shared
  - Improved quality of research through a better way to build upon earlier work and to consolidate research data in new ways

# Archiving (Deposit) - services

## The NMBU Data archive:

- [NMBU Open Research Data](#) – NMBU service (University Library)



## Examples of national data archives:

- [Norwegian Centre for Research Data \(NSD\)](#) (all type of data)
- [National e-Infrastructure for Research Data \(NIRD\)](#). Is operated by UNINETT/ Sigma2 (large data sets)
- [The Norwegian Bioinformatics Platform \(NELS\) og ELIXIR NO](#) (biological and medical data)

DataverseNO Certified by CORE DATASEARCH

NMBU Open Research Data  
Norwegian University of Life Sciences

Search this dataverse... Advanced Search

Dataverses (0) Datasets (21) Files (336)

Publication Year  
2021 (10)  
2020 (6)  
2019 (4)  
2018 (1)

Distributor Name  
NMBU Open Research Data (21)

Subject  
Earth and Environmental Sciences (10)  
Medicine, Health and Life Sciences (6)  
Agricultural Sciences (4)  
Other (3)  
Business and Management (2)

Keyword Term  
Alpine ecology (3)

More...

1 to 10 of 21 Results

Replication Data for: Ontogenetic niche shifts in a locally endangered tree species (Olea europaea subsp. cuspidata) in a disturbed forest in Northern Ethiopia: implications for conservation  
Sep 20, 2021  
Klanderud, Kari, 2021, "Replication Data for: Ontogenetic niche shifts in a locally endangered tree species (Olea europaea subsp. cuspidata) in a disturbed forest in Northern Ethiopia: implications for conservation", <https://doi.org/10.18710/20GLUX>, DataverseNO, V1  
Data to examine ontogenetic shifts between seedlings, saplings and adults of Olea europaea ssp. cuspidata related to environmental variables in Hugumberda forest.

Replication Data for: 3D atlas of the pituitary gland of the model fish medaka (Oryzias latipes)  
Aug 9, 2021  
Royan, Muhammad Rahmat, Siddique, Khadeejah, Ceucs, Gergely, Puchades, Maja A., Nourizadeh-Lilabadi, Rasoul, Bjaalie, Jan G., Henkel, Christian, V., Weltzien, Finn-Arne, Fontaine, Romain, 2021, "Replication Data for: 3D atlas of the pituitary gland of the model fish medaka (Oryzias latipes)", <https://doi.org/10.18710/0NQGJ2>, DataverseNO, V1  
The imaging files are the supplementary figures for paper entitled "3D atlas of the pituitary gland of the model fish medaka". The files are hyperstack TIFF files images showing channels corresponding to endocrine cell markers, including blood vessels, in the pituitary of juvenil

Replication Data for: Long-term trends of Nordic power market: A review  
Jul 7, 2021  
Chen, Yikuan, 2021, "Replication Data for: Long-term trends of Nordic power market: A review", <https://doi.org/10.18710/5EJYH>, DataverseNO, V1

## Examples of international data archives:

- [re3data.org](#) is a global registry of research data repositories that fulfil the FAIR principles
- [FAIRDOM](#) helps you to be in control of collecting, managing, storing, and publishing your data, models, and operating procedures.
- [CESSDA - Consortium of European Social Science Data Archives](#) provides large scale, integrated and sustainable data services to the social sciences.
- [DRYAD](#) is a data sharing system.
- [Zenodo](#) is a EU based data sharing system, widely used in humaniora.

# Sharing Research Data



- NMBU is compliant with the **FAIR-principles** (Findable, Accessible, Interoperable and Resuable) and the principle that

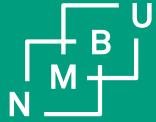
**"Research data should be as open as possible, as closed as necessary"**

## Reasons for not sharing data:

- *Safety measures*
- *Personal data/ personal information*
- *Legal matters*
- *Commercial provisions*
- *Other conditions*

«It should be known that you have a data set, but others should not necessarily have full open access to the (raw) data»

**Data Management Plan (DMP)**



If you are handling personal data in a research project – certain rules, guidelines and routines apply

# Do you need personal data?

- The first question to ask is
  - Could you manage your project without collecting personal data?
  - Have you explored alternatives?
  - Has anyone collected similar data to yours?



# Notification form at NSD

- Take test on NSDs webpage
- If only one “yes” you must notify

## NSD will ask for:

- Purpose – why this study?
- What kind of personal data do you collect?
- Processing – what’s the plan?
- Information letter
- Interview guide
- Erasing/ anonymizing data

Prosjektinformasjon	Hva er behandling?
Behandlingsansvar	Navn (også ved signatur/samtykke) <a href="#">?</a>
Utvalg og detaljer	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
Utvalg 1	Fødselsnummer eller andre nasjonale identifikasjonsnumre <a href="#">?</a>
+ Legg til utvalg	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
Tredjepersoner	Fødselsdato
Dokumentasjon	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
Tillatelser	Adresse eller telefonnummer
Behandling	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
Sikkerhet	E-postadresse, IP-adresse eller annen nettidentifikator <a href="#">?</a>
Varighet	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
Tilleggsopplysninger	Bilder eller videooppakt av personer <a href="#">?</a>
Send inn	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
	Lydoppakt av personer <a href="#">?</a>
	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
	Gps eller andre lokaliseringsspor (elektroniske spor) <a href="#">?</a>
	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
	Bakgrunnsopplysninger som vil kunne identifisere en person <a href="#">?</a>
	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
	Genetiske opplysninger <a href="#">?</a>
	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei
	Biometriske opplysninger <a href="#">?</a>
	<input type="checkbox"/> Ja <input checked="" type="checkbox"/> Nei

# Obligation to notify to NSD

- If you are handling personal data in a research project you must notify NSD.
- Notifying NSD ensures required documentation on handling personal data.
- NSD is NMBU's Data Protection Advisor and will be your guide.



# Collection of personal data - tools



- Nettskjema is the primary tool for collection of personal data such as surveys and interviews  
(Nettskjema  
Dictaphone)

# Roles and responsibility

## The project leader is:

- PhD candidates
- Employees at NMBU
- Supervisor in student projects

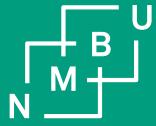
Important to remember:

- Is it necessary to have personal data?
- According to GDPR?
- [Research ethics](#)
- Notification to NSD
- Data Management Plan
- Report any discrepancy

# Summary NMBU guidelines



- The project leader have filled in a Data Management Plan (DMP) at the start of a project (continuous process)
- Data is stored at NMBU server or at national/ international platforms in ongoing projects.
- Data is tagged with metadata.
- Data is deposited in archives at the end of a project/ publication.
- Data is made open and available when/ if possible.
- Data is only stored at the local hard drive (C: disk).
- Data is only stored at Office365
- Data is only stored at an external hard drive.
- Data is stored in Dropbox.



# Questions and comments?

