

# Research Data Management and Data Management Plans (DMP)

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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)

National strategy on access to and sharing of research data



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
Publiserings - ABC	Juridisk bistand	Dokumenter og retnin...	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 pågåande 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 inneberer 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 mer om datahåndteringsplaner og hvordan få grunnleggende ferdigheter i datahåndtering.



## Personvern i forskinga

På denne sida finn du meir informasjon om kva du gjer når du skal handtera (behandla) forskningsdata som inneheld 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.

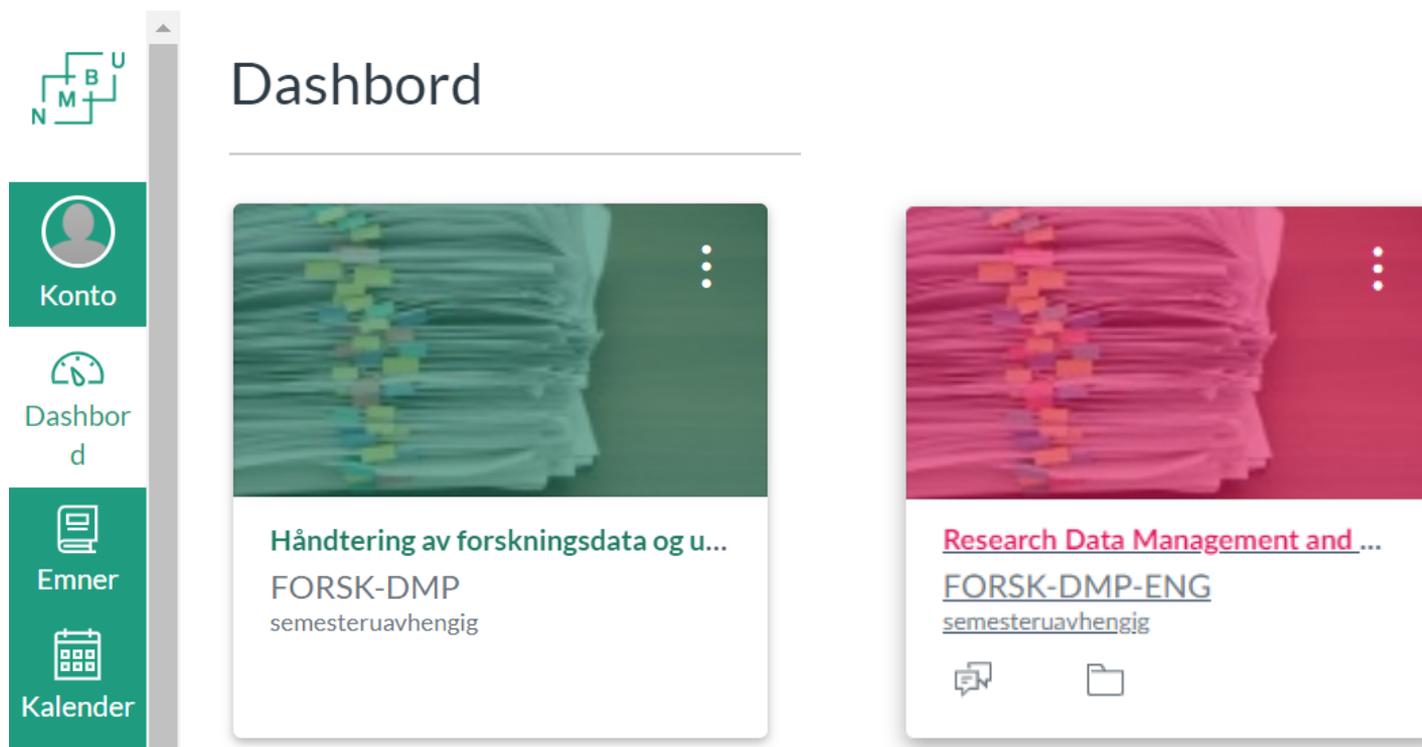


## How to handle and process personal or sensitive research data?

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 navigation menu with icons and labels for 'Konto', 'Dashboard', 'Emner', and 'Kalender'. The main area is titled 'Dashbord' and contains two course cards. The first card has a green background and is titled 'Håndtering av forskningsdata og u...' with the course ID 'FORSK-DMP' and 'semesteruavhengig'. The second card has a red background and is titled 'Research Data Management and...' with the course ID 'FORSK-DMP-ENG' and 'semesteruavhengig'. Both cards include a three-dot menu icon in the top right corner and icons for chat and a folder at the bottom.



# 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),*

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- 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

# Storage of Research Data without personal information - tools



LargeFile  
server W:

- **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



# 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.sigma2.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)



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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!



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# 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)

## 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.

The screenshot shows the DataverseNO interface. At the top, there's a navigation bar with the DataverseNO logo and 'Certified by CORE TRUSTEE'. Below that, the 'NMBU Open Research Data' logo for the Norwegian University of Life Sciences is displayed. A search bar is present with the text 'Search this dataverse...'. The main content area shows search results for '1 to 10 of 21 Results'. On the left, there are filters for 'Dataverses (0)', 'Datasets (21)', and 'Files (336)'. Below the filters, there are sections for '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)), and 'Keyword Term' (Alpine ecology (3)). The search results list includes entries like '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' by Klønderud, Karl, 2021, and 'Replication Data for: 3D atlas of the pituitary gland of the model fish medaka (Oryzias latipes)' by Royan, Muhammad Rahmad, Siddique, Khadeeja, Csucs, Gergely, Puchades, Maja A., Nourizadeh-Lillabadi, Rasoul, Bjaallie, Jan G., Henkel, Christiaan V., Wietzian, Finn-Arne, Fontaine, Romain, 2021.

# Sharing Research Data



- NMBU is compliant with the **FAIR-principles** (**F**indable, **A**ccessable, **I**nteroperable and **R**esuable) 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

The screenshot shows a notification form with the following sections and questions:

- Prosjektinformasjon**
- Behandlingsansvar**
- Utvalg og detaljer**
  - Utvalg 1
  - + Legg til utvalg
- Tredjepersoner**
- Dokumentasjon**
- Tillatelser**
- Behandling**
- Sikkerhet**
- Vårighet**
- Tilleggsopplysninger**
- Send inn**

Questions and response options:

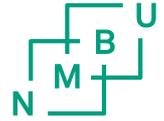
- Hva er behandling?** (Name, also with signature/consent)  Ja  Nei
- Fødselsnummer eller andre nasjonale identifikasjonsnumre**  Ja  Nei
- Fødselsdato**  Ja  Nei
- Adresse eller telefonnummer**  Ja  Nei
- E-postadresse, IP-adresse eller annen nettidetifikator**  Ja  Nei
- Bilder eller videoopptak av personer**  Ja  Nei
- Lydopptak av personer**  Ja  Nei
- Gps eller andre lokaliseringsdata (elektroniske spor)**  Ja  Nei
- Bakgrunnsopplysninger som vil kunne identifisere en person**  Ja  Nei
- Genetiske opplysninger**  Ja  Nei
- Biometriske opplysninger**  Ja  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?

