

# Research Data Management and Data Management Plans (DMP)

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# Why?

## «The Researcher Benefits»



- The digitale age
- Increased possibilities for sharing and reuse
- New collaborations
- Increased overview of own and research group's research data/ results



# Why?

## «Data Management Plan (DMP) is required»

- NMBU guidelines for Research Data Management
- NMBU PhD regulations
- Research Council of Norway - as of 1 jan 2018.
- Has been an EU requirement for several years

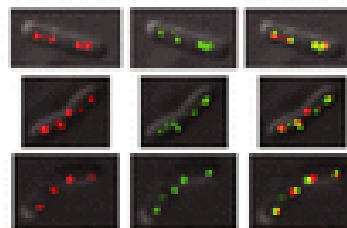
# What is Research Data?



Research data are all registrations/records/reports of numbers, texts, pictures and sounds generated or created during research projects.



Questionnaire

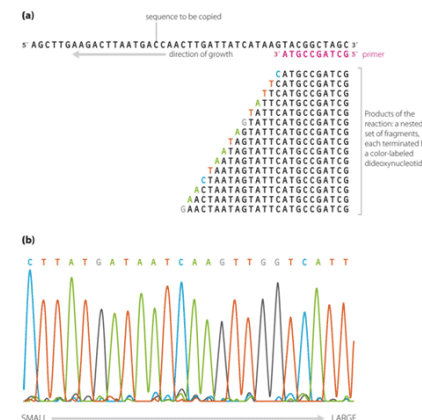
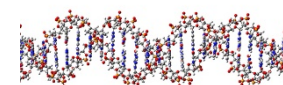
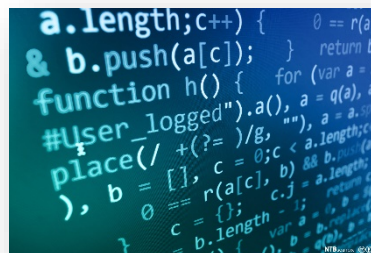


Pictures



Data from the field

Algorithms



Sequencing data

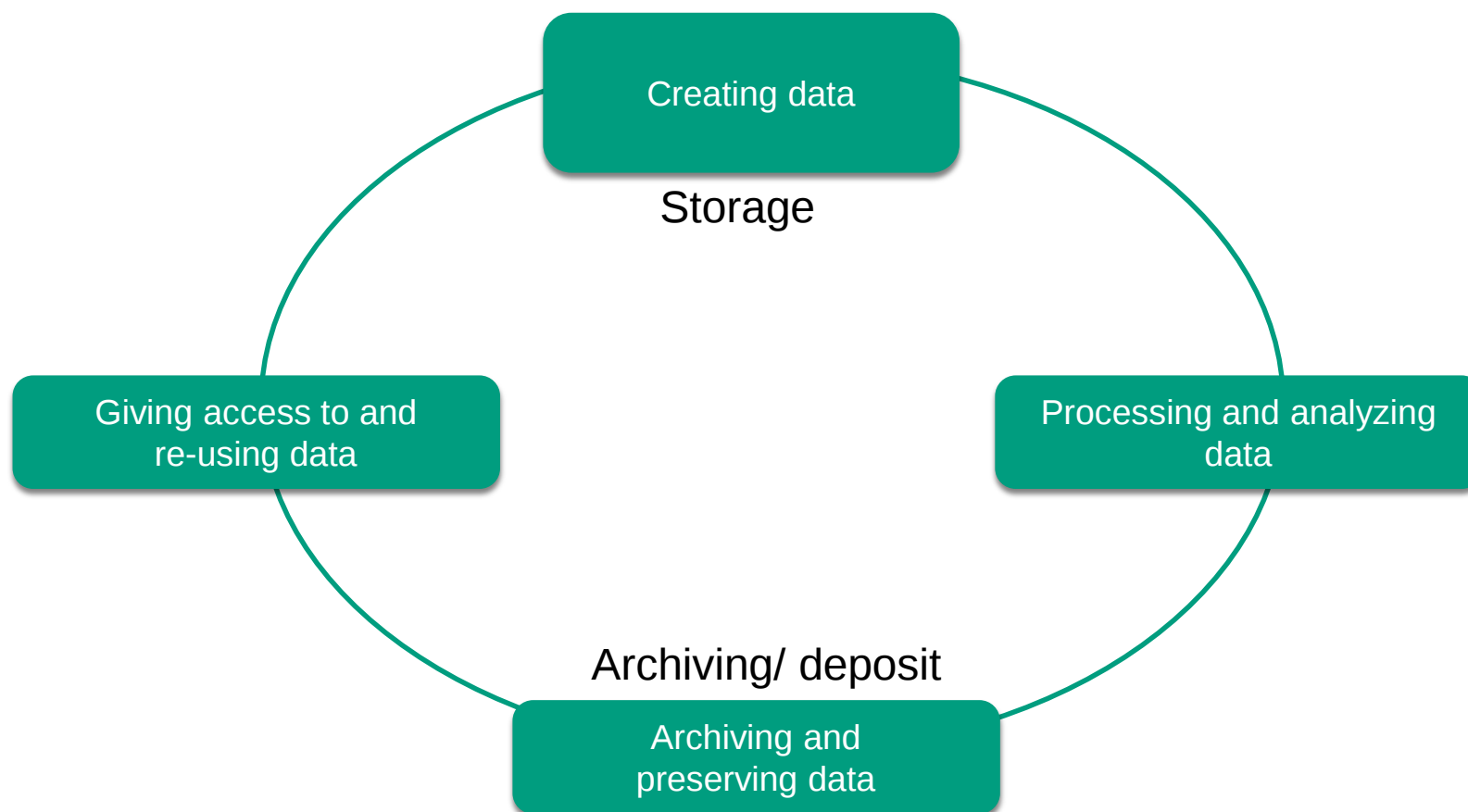
And more...

# Who owns research data?

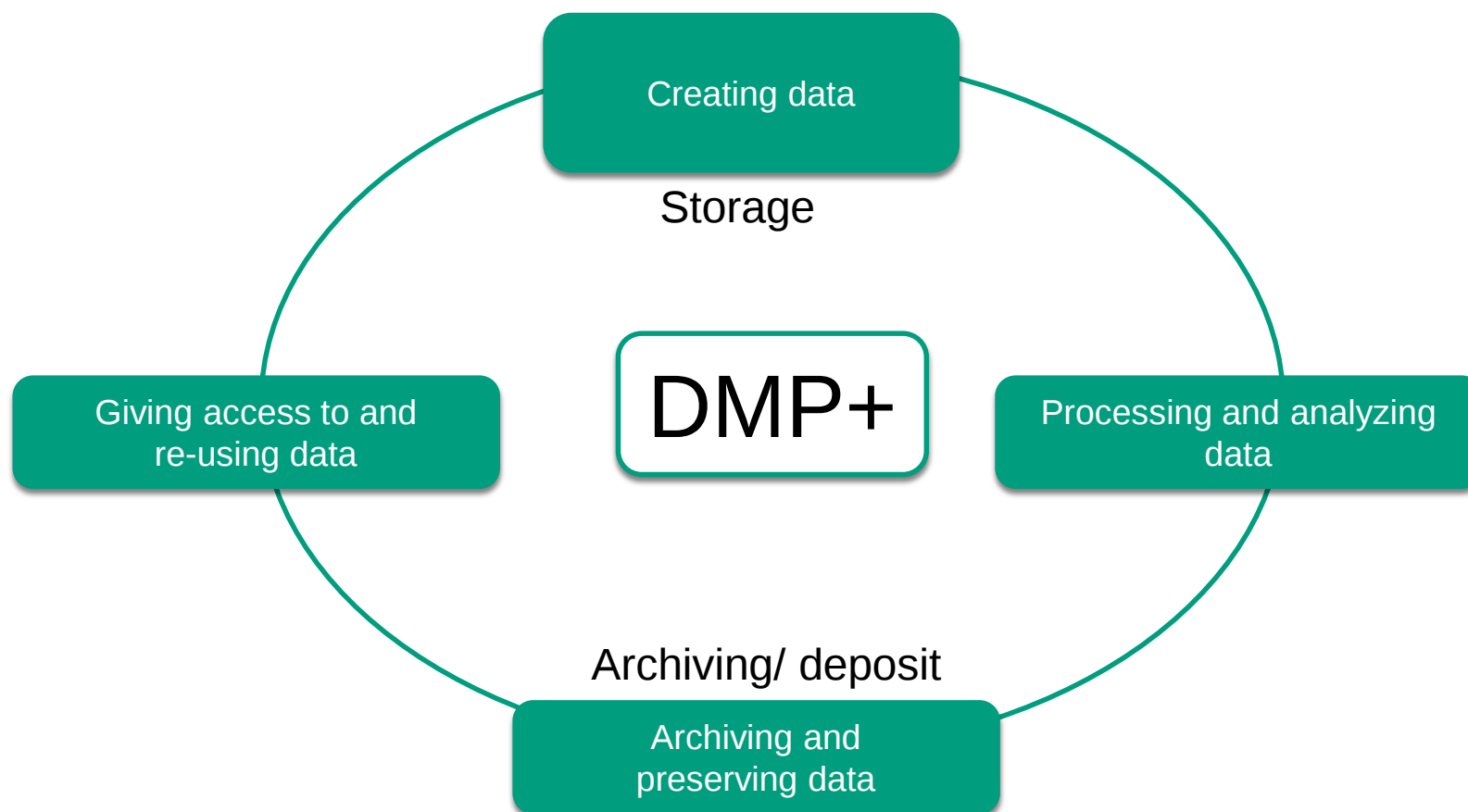
- Students own their own research data - can transfer ownership to the supervisor / NMBU
- NMBU owns all data generated by employees



# Data lifecycle



# Data lifecycle





# Data Management Plans (DMP)



- A Data Management Plan (DMP) should describe:
  - Type and scope of research data generated in a project
  - How the data will be stored
  - How the data will be archived
  - How data will be made available (if possible) after the project is completed
- DMP's must be according to the [FAIR principles](#).
- NMBU recommends [NSD's Data Management Plan](#) (Feide login)

# 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 research
- This will contribute to:

# Webpages

skere/forskningsdata

researchers/researchdata

valg: Univ... NMBUs styrer, råd... Forskning | Norges... Forskningsutvalget... Forskerutda

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



## Policy og retningslinjer for håndtering av forskningsdata

Les mer om policyer/ strategier og retningslinjer for håndtering av forskningsdata vedtatt av NMBU, Forskningsrådet, Kunnskapsdepartementet og EU. Med håndtering av forskningsdata mener vi lagring av data i pågående prosjekter, arkivering av data ved publisering/ prosjektslutt og eventuell deling og tilgjengeliggjøring av data.



## Datahåndteringsplaner (DMP)

Forskningsrådet og EU krever nå datahåndteringsplaner (DMP) i prosjekter de finansierer. Les mer om datahåndteringsplaner og hvordan få grunnleggende ferdigheter i datahåndtering.



## Personvern i forskningen

På denne siden finner du mer informasjon om hva du gjør når du skal håndtere personopplysninger i forskningsprosjekter. Informasjonen gjelder for både studenter og ansatte.



## Metadata og filformat

Forskningsdata må lagres og arkiveres i riktig filformat og også merkes med metadata. Metadata er data som tjener til å definere eller beskrive andre data.



## Lagring av forskningsdata i pågående prosjekter

Forskningsdata som genereres i pågående prosjekter skal lagres på en sikker måte. Les mer informasjon her om lagring av "vanlige" forskningsdata, store datasett og forskningsdata med personopplysninger eller annen sensitiv informasjon.

NMBU / English 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.



## 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 personal or sensitive research data?

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



## Metadata and formatting

Research data must always be stored and archived in the correct format, and also be tagged as metadata. This data serves to define or describe other data.

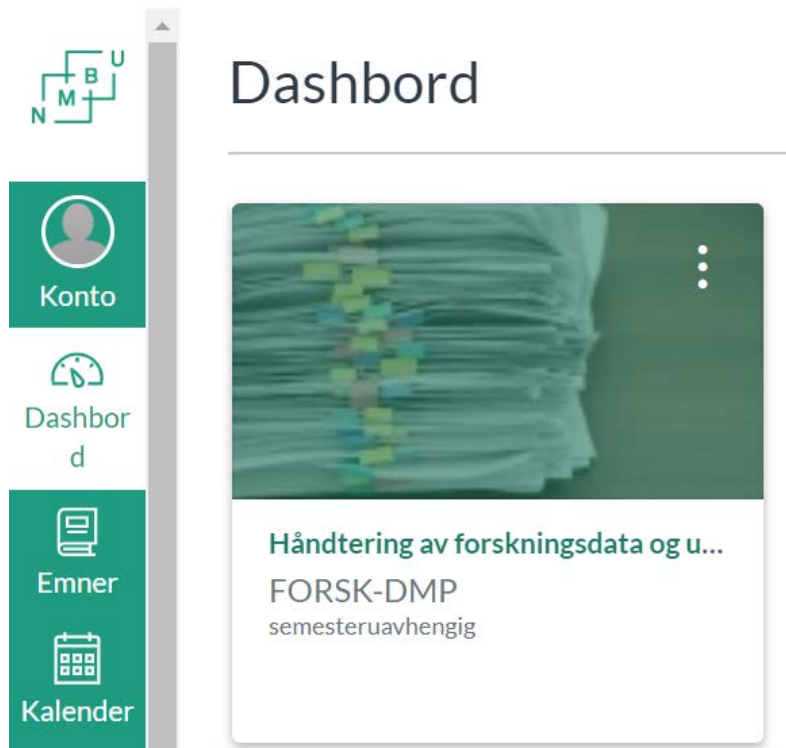


## Storage of research data in ongoing projects

Research data generated in ongoing projects must be stored in a secure matter. Read more about storage of "normal" research data, big data and research data with personal information or other sensitive information.

# Canvas course

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



# Storage of data in ongoing projects



- **Datasets without personal information:** NMBU server (LargeServer W:).
- **Sharing data with external parties:** Office365/ OneDrive/ Teams (should not be used as the primary place for storage) – NMBU services
- **Large datasets and calculations (computing power):** NMBU Orion cluster og [NIRD](#) - UNINETT/ Sigma 2 service
- **Personal data:** [Tjenester for Sensitive Data \(TSD\)](#) – UiO service
- **Survey data og interviews:** [Nettskjema](#) – UiO service

# Deposit or archiving data



- Research data upon which scientific publications is based must be archived in national or international archives.
- **Datasets without personal information:** [Open Research Data](#) – NMBU service (University Library)
- **Large datasets:** [NIRD](#) - UNINETT/ Sigma 2 service
- **Personal data:** Deposit at [Norsk Senter for Forskningsdata \(NSD\)](#)
- It is also possible to deposit data in other national, international and domain specific archives compliant to international standards (FAIR).
- Recommendation - Do not deposit your data via journals!



# Making data available - data sharing



All research data must be archived, however not all data COULD be made openly available.

- *Safety measures*
- *Personal data*
- *Other 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)**

# FAIR principles



- FAIR is an acronym for the words Findable, Accessible, Interoperable og Reusable (gjenfinnbare, gjenbrukbare, skal kunne håndteres maskinelt og ha et konsistent vokabular)
- Research data must be of a quality enabling it to be found and possible to reuse.
- Both **data and metadata** must be designed for mechanical handling and consistent vocabulary must be used (interoperable).
- The Archives must fulfill the [FAIR principles](#).
- The Data Management Plans must be according to the [FAIR principles](#).

# Privacy and research



## Privacy advisor for NMBU:

- [Norsk senter for forskningsdata \(NSD\)](#) works as a **privacy advisor** for projects undertaken by students and employees at NMBU and who will handle research data with [personal information](#).
- The NMBU contact person for research with personal information is [Jan Olav Aarflot](#) from the Research Support Office.
- NMBU also has a Data Protection Officer (Deliotte)



# Data protection in research

## Duty to report

If you are to handle personal data in a research project this has to be reported to NSD. [Check if you are required to report your project here.](#)

**Storage of research data** with personal information (personal data) may be done at [Tjenester for Sensitive Data \(TSD\)](#).

**Research data** with personal information may be **archived/ deposited** at NSD.

# 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?

