

Guidelines for policy for Open Science

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1. Purpose of the document

This document describes how NTNU's Policy for Open Science is to be followed in practice. Simpler revisions and updates to these guidelines can be made as circumstances require. [The associated Development Plan for Open Science 2023-2025](#) describes development goals with associated measures and activities that will contribute to the implementation and fulfillment of the Policy for open science.

2. Applies to

This document applies to all activities at NTNU, and to all employees who use university resources to carry out their work, as further described in Policy for Open Science.

3. Guidelines

The aim is that all types of results and resources from research, education and other activities at NTNU should be "as open as possible, as closed as necessary". At the same time, NTNU's results must be managed in compliance with Norwegian law and regulations (such as the Personal Data Act, the Health Research Act, the Export Control Act and the Security Act), and safeguard NTNU's financial interests where there are opportunities for commercialization (see also [Policy for intellectual property rights](#)).

- All research results should be assessed and managed based on their value.
- Research results that are subject to limitations or restrictions on sharing (export control, GDPR, sensitivity, commercial considerations, etc.) are handled accordingly.
- Research results that can be shared openly are managed appropriately, considering when (should an embargo be set), where (which platform or medium), how (any conditions or licences), and with whom (degrees of publicity).

3.1 Licensing

In Open Science, the employee/researcher determines the conditions for dissemination and reuse of their research results. This is done through the use of licences. There are different types of licences for the management of open research results. The appropriate licence depends on the type of research result and subject area. NTNU strives to ensure that employees retain copyright of open publications, and that rights should not be transferred to the publisher as has been the norm in "traditional" publication in closed journals.

Licensing of research results, learning material and other resources from activities at NTNU can be complex. NTNU, through the University Library, offers support to researchers who need help in choosing the right licence.

Where there are financial agreements with specific licence terms, the required licence must be used. This applies, for example, to the use of [CC BY](#), [CC BY-SA](#) or [CCO](#) as a rule when publishing research results and datasets funded by the Research Council of Norway or Horizon Europe.

For book publishing, the Research Council of Norway and Horizon Europe also allow the use of CC-BY-NC. In special cases, and based on a specific, academic justification in each case, the Research Council of Norway also allows the use of the licences as [CC BY-ND](#).

NTNU does not want to restrict commercialization opportunities linked to our research activities (see our [IPR policy](#), as well as [Kielland 2019](#)). Use of clauses restricting commercial use (such as [CC BY-NC](#) and [CC BY-NC-ND](#)) is discouraged.

NTNU has the following principles for licensing:

Scientific publications, artistic works and designs

Creative Commons licences are the standard for Open Access scientific publications. The licence policy of the publishing channel might govern the choice of licence, but in general, licences that do not require explicit consent from the author for dissemination and adaptation are recommended (thus avoid licences such as [CC-BY-ND](#) and [CC-BY-NC-ND](#)). Nevertheless, in some cases, as artistic works or in some interpretation-based outputs in social sciences or humanities, much of the value in the research work will lie in the design of the work itself. In such cases it may be appropriate to restrict the entire research result from further processing by using a clause that limits the possibility to modify the material, such as [CC-BY-ND](#).

Research data

For research data, the choice of licence will depend on the type of data. Individual data from research such as measurements, facts and information are normally not protected by copyright, but processed compilations of data that involve a significant investment can be subject to database protection (§24 of the Copyright Act; see also [Openscience.no](#)). Nevertheless, an open licence or a free status declaration (for example [CC-0](#)) is generally recommended unless there are special considerations relating to privacy or datasets originating from already copyright-restricted databases. In such cases, subject-specific licences may be applicable.

Software and source code

When sharing software, it should be made available with a licence that allows reuse and further modification, has wide legal recognition and is certified by the [Open Source Initiative \(OSI\)](#). Where there are no overriding instructions, NTNU-produced software should be licensed with the [European Union Public Licence](#). For software projects in subject areas with special needs or specific licensing practices, other licences that meet the [OSI requirements for open source](#) (for example, the [MIT license](#), the [Apache license](#) or the [GNU GPLv3](#)) may be used.

3.2 Research data management

In these guidelines we use a definition of research data similar to the one in the Research Council's policy for making research data available: *registrations/records/reports in the form of numbers, texts, images, sound and other information that is generated or arises and/or used as material in research projects*. This also includes various types of resources and material such as source code, models, simulations, algorithms, archive material etc.

Research data management at NTNU is based on the following principles:

- Research data should be "as open as possible, as closed as necessary". Reasons that data must be kept confidential may be related to security, privacy, legal or commercial considerations.
- Research data should be made openly available as early as possible in the research process, as long as it does not come in conflict with the researcher's use, quality assurance or any commercial use of the data.
- Data that may be of long-term value should be curated¹ and archived to ensure responsible management and preservation. Associated metadata and documentation must follow international standards as far as possible, and formats must, if necessary, be updated over time.
- Research data that is published must have clear description of origin and ownership and be equipped with a licence (cf. section on licensing).
- NTNU adheres to the FAIR and CARE principles for research data management and preservation. This means that research data must be findable, accessible, understandable, and reusable to the greatest extent possible within responsible and ethical frameworks.
- Research data management throughout the life cycle must be in accordance with current legislation and requirements from research funders, authorities and relevant stakeholders.

3.2.1 Data management plan

A data management plan describes how data is to be organized and documented, including plans for achieving FAIR data and if possible, data sharing, as well as safe and secure management of research data. If data cannot be made openly available, this should be explained in the plan. See the [Data Management Plan wiki](#) for practical advice and guidance on setting up a DMP.

Research projects led by researchers at NTNU must have a data management plan (DMP) that satisfies the requirements of any relevant funders. The data management plan should be set up early in the research project, and no later than six (6) months after commencement. As a minimum requirement, the data management plan should contain the core elements defined by Science Europe and describe the following:

- Data collection/generation and methods
- Formats, organization and metadata,
- Storage during the project
- Archiving and sharing
- Rights, licences, privacy and ethics
- Costs and responsibilities

¹ Curation: Handling and processing intended to maintain or increase the reuse potential in the short or long term

3.2.2 Information security and digital stewardship

Research data and other materials, results and information from research projects must be classified with regards to confidentiality to ensure good management and stewardship of digital assets. Considerations related to privacy, export control, trade secrets, IPR and commercialization may make it necessary to ensure that data is not accessed by unauthorized persons. Research projects must judge the need to carry out a risk assessment, which should include appropriate measures to secure research data and other information.

Steering documents and resources include NTNU's [Policy for information security](#) and [Guidelines for the processing of personal data](#), as well as the wiki for [Risk assessment of research projects with personal data](#).

3.2.3 Storing and processing research data

Choosing tools for the collection, storage, transfer, processing and analysis of research data during projects will largely depend on the type of data and project. A confidentiality classification of data must always be carried out in order to be able to choose appropriate and secure storage solutions.

NTNU offers a number of tools and services that ensure confidentiality, integrity and availability. NTNU shall at all times have an updated overview of [solutions for active data storage](#).

3.2.4 Archiving and publishing research data

Data that might have long-term value, should be archived and made available as early as possible, if legally, ethically and practically feasible. Artistic development work should be stored in suitable archive solutions (repositories), for example the Research Catalogue. Datasets should be archived and made available in suitable repositories (preferably certified), depending on the type of data and field of study. See the [Research data repository wiki](#) for more info.

3.2.5 Documentation and metadata

Research data should be equipped with documentation in the form of metadata, method descriptions and permanent identifiers that enable other researchers to search for and reuse the data.

Metadata must follow international standards where these exist and include a description of origin and content. If possible, metadata should be made available in cases where the research data itself is confidential and cannot be made openly available.

3.2.6 Roles and responsibilities

NTNU will ensure that researchers have access to the necessary infrastructure, and shall offer information, advice and guidance on these solutions. NTNU will offer training and support to researchers so that they can document, archive and publish their data according to best practice.

Researchers and students

The individual researcher and student is responsible for managing research data in line with NTNU's policy and guidelines, as well as other relevant laws, requirements and principles.

The researcher (or project manager/supervisor) is responsible for ensuring that a data management plan is prepared for each research project, and for data to be archived and made available in compliance with current guidelines. For projects where several researchers participate and joint research data is generated, the project manager is responsible for a data management plan being written.

When employees leave NTNU, arrangements must be made for the institution (NTNU) to manage data after termination.

Faculties and departments

The faculty is responsible for ensuring that researchers and other employees are familiar with NTNU's policy and guidelines for Open Science. The faculty must also ensure that students and PhD candidates receive the necessary training.

The departments are responsible for creating supplementary guidelines for data management within the disciplines that need it. The departments should have routines for archiving and managing research data when employees quit or change jobs, to ensure that the material is available in a suitable way.

NTNU University Library

NTNU University Library (UB) is given the operational responsibility for long-term management of the institution's research data. NTNU's institutional archive for research data in DataverseNO should be used where appropriate, but UB can also give advice and recommend other national and international repositories for archiving and sharing. UB offers courses and training in Open Science and data management for staff and students at NTNU.

3.3 Learning resources

NTNU's educational content is intended to benefit the public. Even those who do not achieve any kind of degree or educational accreditation can benefit from access to learning resources of high quality. Teaching is largely exempt from the restrictions in the Copyright Act, but these will often apply when learning resources are made publicly available. These guidelines therefore largely apply to self-produced material. Here, too, privacy considerations may limit access – for example, when lectures or similar activities are recorded.

However, where no copyright or other ethical or legal restrictions apply, it is desirable for learning resources to be stored in the University's [learning object repository](#),

Employees are encouraged to use material with open licences in their teaching and in their production of learning resources.

3.4 Scientific publications

3.4.1 Open Access

The EU, the Research Council of Norway and other research funders demand immediate and open access to all scientific publications from projects they have funded. This means that the articles must be made available without delay (embargo) and with an open licence that allows reuse of the publication. Requirements for Open Access publication are in line with [Plan S](#).

From 2023, open access requirements from the Research Council of Norway also apply to [scientific books](#), which include monographs, book chapters and anthologies.

There are several ways to ensure [open access to scientific publications](#). The individual author has the academic freedom to choose where to publish and is responsible for deciding which route is best for making publications openly available. Choosing the way to open access publishing may depend on how any publication fees (Article Processing Charges, APC) from the publisher are financed.

Rights Retention Strategy

[NTNU's Rights Retention Strategy](#) (RRS), ensures that researchers at NTNU can always make the latest version of their peer-reviewed, accepted manuscript openly available in the institutional repository without an embargo period (so-called self-archiving or Green OA), regardless of any restrictions from the publisher.

Researchers retain the copyright to their work, while NTNU assumes the legal responsibility for distribution via the institutional repository. Each individual author/researcher does not have to inform the publisher about NTNU's Rights Retention Strategy.

NTNU's Rights Retention Strategy applies to scientific articles accepted for publication and published after 1 October 2022.

The strategy is in line with the requirements for research funders such as the Research Council of Norway and the EU (Plan S). Researchers who do not have such requirements from external funders have the right to reserve themselves against RRS.

3.4.2 Self-archiving and registration

All scientific publications are registered and uploaded in Cristin to be archived in NTNU's institutional science archive, NTNU Open. For publications where the version from the publisher is openly available, the published version (Version of Record) can be uploaded. For publications without open access at the publisher, the author must upload the peer-reviewed, accepted manuscript (Author Accepted Manuscript).

3.4.3 Roles and responsibilities

NTNU will ensure that researchers have access to the necessary infrastructure, and shall offer information, advice, and guidance on these solutions. NTNU will offer training and support to researchers so that they can document, archive, and publish their results according to best practice.

Researchers

The individual researcher is responsible for following normal, good scientific practice regarding collaboration with other authors, and role clarifications are encouraged as early in the collaboration as possible.

The individual researcher is responsible for choosing an appropriate publication channel. This includes considering how to fulfill the requirements and expectations for Open Access publication. The individual researcher is responsible for registering and uploading their scientific publications in Cristin so that they can be archived in NTNU's institutional archive NTNU Open.

Faculties and departments

The faculties and departments must, with support from the NTNU University Library (UB), ensure that researchers and other employees are familiar with NTNU's policy and guidelines for Open Science, various paths to Open Access, the "Rights Retention Strategy" (RRS), tools for green Open Access, as well as funding for gold Open Access.

The faculties and departments should regularly follow up the self-archiving at NTNU, with support from the NTNU University Library.

NTNU University Library

NTNU University Library (UB) is responsible for managing the institutional repository (NTNU Open) and for controlling and ensuring that the correct full-text version is self-archived. UB enters into and manages agreements with publishers and takes responsibility for informing relevant publishers about NTNU's policy and rights retention strategy. UB will contribute with advice, guidance and training related to publishing and open access.