

# Open science and research in the Tampere higher education community

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## 1. Openness as a strategy for responsible science and impactful research

Essentially, open science means that in principle, research data and results are made accessible to and usable by all. Research methods may also be opened. Moreover, the openness of science also entails the work of researchers as experts and social commentators, as well as the involvement of non-academic people in research processes (in the form of “citizen science”).

Openness promotes science and the development of the scientific community by improving and ensuring the quality of scientific knowledge, enhancing the reliability and transparency of research, and enriching cooperation between researchers. Openness facilitates and accelerates the utilisation of scientific knowledge in solving national and global problems – in other words, fulfilling the missions of the higher education community.

In its strategy, the Tampere higher education community emphasises the impact of its activities on driving the sustainable renewal of society. In its research strategy, the community undertakes to promote responsible and open science. Responsibility in doing science requires that research is open to free evaluation; however, confidentiality should not be compromised. Science should be as open as possible, but as closed as necessary.

Making research data and results open and easy to access and use contributes to the good reputation of the higher education community.

## 2. Principles of openness

### General principles

The Tampere higher education community highly values the openness of science and supports its implementation.

The higher education community promotes open access to digital research data, scientific publications and research methods, and the use of open source codes, standards and interfaces in research.

The higher education community uses the means of open publishing to increase the impact of its research, development and innovation (RDI) activities.

The research data produced at Tampere University and Tampere University of Applied Sciences, scientific publications and theses, and the research methods used are in principle shared and open.

Carefully compiled, organised and described research data that is opened for retrieval and re-use contributes to a researcher's scientific merit.

Machine-readable licences that permit re-use are utilised in the opening and open publishing of research data.

Open publishing and systematic data management are important research skills. As such, the Tampere higher education community highly values these skills and supports their development. Competence related to open science is taken into account as an academic merit in recruitment and career advancement. The higher education community also introduces other incentives to increase openness.

The researcher actively works as a scientific expert in his/her field and participates in social debate. The researcher also actively communicates about his/her research in general media, professional publications, online platforms and social media at all phases of the research process.

Each researcher should acquire an international ORCID researcher identifier and use it in all scientific activities.

In order to implement the joint open science and research policy of the Tampere higher education community, action plans will be drafted for Tampere University and Tampere University of Applied Sciences. The action plans are supplemented with instructions concerning, e.g. self-archiving and open source codes.

### Openness of research data

The Tampere higher education community ensures that the researchers who produce the data have sufficient priority over other users to access their data.

For justified reasons, the degree of openness of research data may vary. The commercial utilisation of research data and the protection of rights are taken into account in the implementation of the principles of openness.

The essential metadata describing the research data is always open. The metadata include information on the structure of the data and details concerning its production, producers, owners, and terms of use, as well as the unique persistent identifier of the data.

The researcher ensures that the research data to be produced is findable, accessible, interoperable and re-usable (the FAIR principles). The possibility that the data may be shared and re-used requires that the data are in a machine-readable format and appropriately licensed. The researcher should also ensure that the research data produced is referable.

Every member of the Tampere higher education community is responsible for the implementation of good data management practices, i.e. for systematic research data management and the observance of the principles of research ethics, legislation and agreements throughout the data life cycle. The higher education community provides education and support on good data management practices.

The higher education community provides researchers and research groups with a data service that enables good data management in research and data sharing. The data service includes data support and systems that are necessary for data management.

The researcher should make a data management plan at the research planning phase, regardless of whether the data being produced will be opened. The funder's requirements must be taken into account in the drafting of the plan. The researcher should update the data management plan as the research progresses.

The research work and the possible re-use and further utilisation of the data that are produced will be ensured by agreeing at the earliest possible juncture on the authorship, ownership and conditions of use of the research data and the transfer of rights. In principle, the research data produced in the Tampere higher education community are owned by Tampere University or Tampere University of Applied Sciences. When the data form a work as stipulated in Section 1 of the Copyright Act, the copyright belongs to the producer of the data.

The higher education community offers researchers support in the identification and resolution of legal issues related to research data, and in negotiating agreements on them.

The collection, management and sharing of research data entail costs. When a researcher prepares a funding application, he/she should also include data management costs in the budget.

To the greatest extent possible, data are to be stored and opened up in a major reliable national or international archive or storage service in the field of study.

The Tampere higher education community defines the principles for identifying particularly valuable research data and creates a systematic procedure for their long-term preservation according to national policy.

## Open access publishing

In the Tampere higher education community, researchers publish their research results in the most feasible and appropriate publishing channels, which are of the highest quality and have significant impact.

As part of preparing the research process, the researcher should draft a publication plan where he/she defines how his/her publications will be opened. The publication plan takes into account the funder's requirements and the costs that may arise from open publishing.

Scientific publications may be opened in three ways. Gold Open Access means that the article or book is immediately published as open. Hybrid Open Access means that a published research article can become openly accessible by paying an extra fee. Green Open Access means that a publication is self-archived in an institutional or a subject-based repository. Publishers stipulate a possible embargo, after which a parallel version may be opened.

In the Tampere higher education community, scientific publications are opened up either in parallel versions or in high-quality Gold Open Access channels, if the latter exist in the field.

If the publisher does not allow self-archiving or the embargo set by the publisher is unreasonably long, a researcher may, in exceptional cases, publish his/her article as a hybrid.

In the Tampere higher education community, all scientific publications are self-archived unless the publisher prevents it.

Tampere University publishes doctoral dissertations and other theses openly unless prohibited by the terms of an external publisher.

Tampere University of Applied Sciences publishes theses openly in the Theseus Repository.

### 3. Follow-up and evaluation

The Tampere higher education community systematically follows up on and evaluates the progress and impact of open science and research. Furthermore, it makes the necessary decisions in order to reach the desired goals.

In particular, the higher education community monitors the realisation and development of open publishing, the opening of research data, and good data management practices.

For the purpose of monitoring and evaluation, the higher education institution develops open evaluation methods. The follow-up indicators are public.

The progress and impact of open science are also assessed by external evaluation.

The action plans on open science and research in the Tampere higher education community are updated as necessary.