Appendix vice-chancellor's decision 148/22

Prioritised open science areas at Karlstad University 2023–2024

Introduction

The goal set by the Swedish government is for higher education institutions to transition to an open science system by 2026 at the latest. To support this, the Association of Swedish Higher Education Institutions (SUHF) presented a roadmap for open science in March 2021 (REK 2021:1, REV 2022)[1]. The roadmap contains eight general recommendations for action and what kind of expertise higher education institutions need in order to achieve an open science system. In June 2022, the association also created a guide on how to implement the roadmap for open science[2].

The purpose of open science is to make research more accessible and transparent for both other researchers and the wider community. The aim is to create a system where the principle of transparency can be upheld, which in turn would promote research. Research that is conducted in the most transparent manner possible and presented in digital forums contributes to higher quality research. It also provides more opportunities for reproduction of results and facilitates critical assessments of the research process. Transparency also contributes to quicker progress by facilitating knowledge transfer both within academia and to the wider community.

The road towards open science is not without its challenges, and requires changes in many of our current methods and activities throughout the entire research process. This includes necessary adjustments of mechanisms for rewarding and stimulating new behaviour in research and academia. It is important to acknowledge differences between different disciplines and thereby enabling variations in priorities and the pace of implementation, while still maintaining the established course. The changes include many aspects of research and involve all interested parties, including partners that participate in research projects. The development towards open science is partly organic in nature, as in it is driven by the needs of the researchers, but it is also governed by external factors such as societal development, politics, funding and the academic community at large.

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[1] National Roadmap for Open Science
[2] Guide for implementation of the National Roadmap for Open Science

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Against the background of what has been described above and the aim of open science regarding the university's systematic work within HRS4R[3], the following is a presentation of prioritised areas, and the division of responsibilities related to these areas, at Karlstad University for the period 2023-2024. Documentation for decision-making has been drafted by a working group consisting of representatives from the Grants and Innovation Office and the University Library, and is based on the University's current situation with the ambition to meet the recommendations included in SUHF's roadmap for open science and the supplementary guide.

Prioritised areas and division of responsibilities for open science 2023-2024

The establishment of prioritised areas for continued work ensures that the University considers and implements measures required to be part of an open science system.

SUHF's roadmap for open science and related guide provide useful support for continued development work at Karlstad University. They clarify the University's responsibilities as well as making it easier to define prioritised areas as we move forward. Below we have summarised prioritised areas together with a description of the overall responsibilities of the university and its staff. The selection of prioritised areas are based on the University's current situation with the aim of meeting the majority of the recommendations established by SUHF.

In order for Karlstad University to successfully implement open science at all levels of the organisation, this undertaking should be seen as a joint effort that goes hand in hand with the University's strategy and vision for 2030.

Prioritised areas:

- The strategic development work regarding open science is a university-wide undertaking. Karlstad University participates in the national and international development of open science. University management, the faculties and Central Services are all involved in these efforts.
  In charge: The Research Strategy Team

- A policy for open science shall be drafted. The policy shall detail the University's objectives related to open science. In addition, guidelines for publication and management of research data will also be included.
  In charge: The Research Strategy Team

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[3] HRS4R Karlstad University

- The faculties promote an open science culture, in order to implement it into the everyday work of researchers. Researchers shall possess knowledge about transparent practices in their own field, and what this means in terms of quality research and good research practice. Open science and its practices are implemented into Master's level courses and programmes, as well as doctoral education.
  In charge: Deans and subject heads

- Data management plan for doctoral projects, to be established in conjunction with the individual study plan (ISP).
  In charge: Doctoral student supervisors

- The University provides researchers with a digital infrastructure and user support for processing and analysing research data. Looking into a model for control, funding and administration.
  In charge: Research Administration Team

- The University is actively monitoring and taking into consideration the national and international development related to assessment of open research qualifications in research.
  In charge: The Quality Council and the HR Office

Clarification:
The Research Data Group and University Library shall continue to function as an operative help and support service for researchers in matters related to management and access to research data, as well as open access publication. The functions shall also continue to ensure compliance with legislation and regulations within their areas of responsibilities. The functions shall also continue to monitor the development nationally and internationally, and when applicable, participate in and contribute to networks in the area.

Working group
Sofia Andersson, Linda Ryan Bengtsson, Magnus Åberg and Samieh Eskandari

Background

Open science in the EU
Since 2016, open science is a prioritised area within the EU with a policy for open science covering eight overall target areas[4]. As part of the upcoming programme, Horizon Europe, several powerful initiatives are implemented to promote the transition to open science. The development is clarified through, for example, Coalition for Advancing Research Assessment, CoARA[5], that aims to support the transition to open science by changing the assessment and definition of merit of scientific contributions. Work has been led by the European Commission, together with the European University Association (EUA)and Science Europé. As of 1 December 2022, work is governed by the members of the coalition. In Sweden, SUHF, the research councils, the Knowledge Foundation as well as individual higher education institutions have joined.
Another example is the investment in support structures such as the creation of the research cloud European Open Science Cloud (EOSC)[6]. EOSC aims to enable open collaboration by creating a common, open and virtual environment for well-documented and, when possible, open research data and other digital research objects such as software. The plan is for the EOSC ecosystem to be launched and accessible to researchers by 2025.

In parallel, EUA, which represents more than 850 universities in 48 European countries (Swedish higher education institutions are members through SUHF), recently adopted the Open Science Agenda 2025, which aims to support the implementation of open science in Europe. EUA has identified three prioritised areas for the implementation of open science. One of these areas is institutional approaches to research assessment, and the other areas cover open access to scholarly outputs via a just scholarly publishing ecosystem and FAIR research data.

Other stakeholders connected to the research community have also initiated concrete measures that contribute to the transition to open science. European higher education institutions have, for example, through *League of European Universities,* LERU and *Young European Research Universities*, YERUN, but also individually, led many initiatives to further develop and implement a common practise for open science.

The FAIR Principles
A central part of open science is that research data shall be findable, accessible, interoperable and reusable. These principles have come to be known as the FAIR Principles. The FAIR Principles are a key concept for good data processing and open access to research data, now and in the future. They were presented in the above mentioned

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[4] EU Open Science Policy
[5] Coalition on Advancing Research Assessment, CoARA
[6] European Open Science Cloud, EOSC

Council conclusions from June 2016 and the member states are called upon to comply with the FAIR Principles in their research programmes and research funding.

Open science in Sweden

The Swedish government's goals for open science is in line with those of the EU. In the research bill *Forskning, frihet, framtid – kunskap och innovation för Sverige* ([Prop. 2020/21:60](#)) (*Research, freedom, future – knowledge and innovation for Sweden)* stipulates that "the transition to open access to research output, including scientific publications, research data and art work, should be fully completed by 2026 at the latest". In the transition to an open science system, Swedish higher education institutions should, in line with EUA's Agenda for Open Science 2025, form part of a scientific ecosystem characterised by:

- Academic ownership of scientific communication and publishing.
- A fair ecosystem for scientific publishing.
- FAIR research data as the norm for producing and sharing scientific know-how.
- New professional profiles for data-intensive careers.
- Active involvement in the EOSC.
- A responsible, transparent and sustainable research evaluation system.
- Open science as an integral part of research evaluation methods.
- Evaluation methods that balance qualitative and quantitative metrics.

The National Library of Sweden[7] has several government assignments that relate to the development of an open science system. This includes surveys and analyses of parts of such a system, but also drafting general national guidelines. In June 2022, the National Library of Sweden was commissioned by the government to create national guidelines for open science. This includes identifying common goals and priorities, mapping the distribution of roles and areas of responsibility and defining the need for support and guidance. Work is conducted in broad collaboration and dialogue with the actors concerned.

In 2017, the Swedish Research Council[8] was tasked by the government to coordinate Sweden's work on introducing open access to research data. The Swedish Research Council has also been appointed by the government to represents Swedish interests and priorities in EOSC. SUHF's member universities are also tied to EOSC Association via the host organisation Stockholm University. In the same way, the university-owned digital infrastructures Swedish National Data Service (SND) and Swedish National Infrastructure for Computing (SNIC) are members through University of Gothenburg and Uppsala University. In addition, Chalmers, Karolinska Institutet, Linnaeus University, Umeå

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[7] [National Library of Sweden - open science](#)
[8] [Swedish Research Council - open science](#)

University and the research council Formas as well as the research infrastructure European Spallation Source (ESS) are also members of EOSC.

SUHF's National Roadmap for Open Science
As part of the transition to open science, SUHF has presented a national roadmap for open science[9]. The roadmap and related guide aim to clarify the responsibilities of the higher education institutions and the measures needed to speed up the work with open access to research data and research output. The objective is to create greater opportunities for the higher education institutions and other stakeholders to work together on common issues, encourage increased cooperation and jointly create conditions for researchers at Swedish higher education institutions, regardless of higher education institution affiliation, to have similar access to services and support in the transition to a open science system.

A general goal is that all researchers at Swedish higher education institutions should have the right support and prerequisites to conduct research of the highest standard and with greatest possible transparency and openness, regardless of which higher education institution they belong to. All higher education institutions have a responsibility to contribute to ensuring that their researchers have access to relevant support and needs-oriented services that help them integrate in a future open scientific ecosystem. The guidelines should encourage and promote national coordination and greater collaboration between the higher education institutions and other relevant actors, but also leave room for the higher education institutions' own adaptations based on specific needs.

Responsibilities of higher education institutions (SUHF's roadmap):
1. to create research and education environments that support, encourage, inform and educate about Open Science as a practice by adopting, implementing and supporting local steering documents or frameworks
2. to provide relevant research and education support services relating to Open Science that can meet researchers' needs for support throughout the research process, i.e. before, during and after a research project, in a resource-efficient manner
3. to aim to ensure that research data and research results are compliant with the FAIR principles as far as possible
4. to provide researchers with affordable, adequate and secure infrastructural services – compliant with the applicable regulatory framework (in particular the Freedom of the Press Act, the Public Access to Information and Secrecy Act, the Archives Act and the GDPR) and the FAIR principles – for management, storage, publication and retention of research data and research results, archiving and deletion forming an integral part of the research process and open access work

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[9] SUHF's National Roadmap for Open Science

5. to actively collaborate with other HEIs, infrastructures and funders to find resource-efficient and cost-effective joint national solutions regarding steering documents, frameworks and infrastructural services
6. to promote, participate and collaborate with international stakeholders and initiatives such as the European Open Science Cloud Association (EOSC-A) and the San Francisco Declaration on Research Assessment (DORA)
7. to develop an incentive structure that promotes and assesses Open Science, such as in performance assessment and performance-based allocation of funds
8. to work to ensure that copyright for the publication and re-use of research results is not transferred exclusively to commercial scientific publishers.

Open science at Karlstad University
Karlstad University is already engaged in continuous efforts to develop infrastructure and support regarding issues related to open access to scientific publications and open research data. Work is conducted within the framework for the activities of the Research Data Group and the University Library. To support this work, a policy and guidelines for research data management have been[10][11] established. The importance of open and transparent research is also included in the University's principles for good research practice, which form part of the University's quality assurance system[12]. There is, however, no specific strategy for continued work with open science.

The *Research Data Group* at Karlstad University constitutes a coherent and efficient operative help and support service for researchers in matters related to research data management, storage, publication and archiving. The support function can complement domain-specific expertise and assist in the areas of archiving, publication, GDPR, law, financial support and e-infrastructural services.
The Research Data Group works actively to develop a functioning e-infrastructure that will enable both short- and long-term storage and sharing of data and the establishment of data management plans.
The *University Library* constitutes a coherent and efficient operative help and support service for researchers in matters related to open access publication. The library also provides support for teachers to find open educational resources that can be used in teaching.
As a result of existing efforts, agreements, frameworks and governing document as well as demands of the surrounding community for open access publication, the majority of researchers at Karlstad University are now familiar with open access publication and publish their work accordingly.

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[10] Policy for Research Data Management at Karlstad University
[11] Guidelines for Research Data Management at Karlstad University
[12] Quality Assurance System at Karlstad University, C2019/1027