

The basics of open research



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DSC
Digital Scholarship Centre
at the University of Oslo Library



Time and place: Sep. 14, 2026 12:15 PM–1:00 PM, Zoom

Learn the basics of open research

Learn about what open research is and how to make your own research more transparent and reproducible.

Time and place: Sep. 16, 2026 1:15 PM–2:00 PM, Zoom

Learn about preprints, self-archiving, and Open Access

Learn about preprints, self-archiving, and Open Access, and choosing the best way to publish your results openly.

Time and place: Sep. 16, 2026 2:15 PM–3:00 PM, Zoom

Assign persistent identifiers to research outputs

Learn about different persistent identifiers, and how to assign them to your research outputs

Time and place: Sep. 23, 2026 1:15 PM–2:00 PM, University of Oslo, Blindern, Georg Sverdrups Hus, DSC

Learn the basics of preregistration

Learn about what preregistration is and how it can benefit your own research.

Time and place: Sep. 23, 2026 2:15 PM–3:00 PM, University of Oslo, Blindern, Georg Sverdrups Hus, DSC

Create preregistration for your project

Join us for a workshop where you will learn how to create a preregistration for your research project!

Open and reproducible research courses

September 2026

<https://www.ub.uio.no/english/courses-events/courses/research-reproducibility/>

Roadmap for today

- Why open research?
- Open research plans, materials, data, analyses, publishing: why, how and where?
- Open research and reproducibility
- Q&A and take-aways

COMMENTARY

Open Access

Open science saves lives: lessons from the COVID-19 pandemic



Lonni Besaçon^{1,2*} , Nathan Peiffer-Smadja^{3,4}, Corentin Segalas⁵, Haiting Jiang⁶, Paola Masuzzo⁷, Cooper Smout⁷, Eric Billy⁸, Maxime Deforet⁹ and Clémence Leyrat^{5,10}

Abstract

In the last decade Open Science principles have been successfully advocated for and are being slowly adopted in different research communities. In response to the COVID-19 pandemic many publishers and researchers have sped up their adoption of Open Science practices, sometimes embracing them fully and sometimes partially or in a sub-optimal manner. In this article, we express concerns about the violation of some of the Open Science principles and its potential impact on the quality of research output. We provide evidence of the misuses of these principles at different stages of the scientific process. We call for a wider adoption of Open Science practices in the hope that this work will encourage a broader endorsement of Open Science principles and serve as a reminder that science should always be a rigorous process, reliable and transparent, especially in the context of a pandemic where research findings are being translated into practice even more rapidly. We provide all data and scripts at <https://osf.io/renxy/>.

Keywords: Open science, Peer review, Methodology, COVID-19

TECHNOLOGY FEATURE | 24 April 2020

Open science takes on the coronavirus pandemic

Data sharing, open-source designs for medical equipment, and hobbyists are all being harnessed to combat COVID-19.

[Mark Zastrow](#)



A student in Warsaw assembles 3D-printed protective masks. Credit: Jaap Arriens/NurPhoto/Getty

“**Open Science** has the potential of making the scientific process more **transparent, inclusive** and **democratic**. It is (...) a true game changer in bridging the science, technology and innovation gaps and fulfilling the **human right to science**.”



UNESCO Recommendation on Open Science

<https://youtu.be/l3Wkvx> ZaFo

<https://www.unesco.org/en/natural-sciences/open-science>



“**Open Science** is becoming the modus operandi for carrying out research and innovation by **sharing knowledge, data and tools** as early as possible, in open collaboration with all relevant knowledge actors and society.”

Open science means transparency and **knowledge-sharing** in research processes to make knowledge **accessible** across academic groups, sectors and national boundaries. The concept of open science encompasses the entire research process [...].

- The Research Council of Norway. Policy for open science 2020

The Research Council Policy for Open Science

In effect from 2020



Assessment of open science in grant applications

From 2023, open research will be incorporated into the assessment criteria for Researcher Projects and Collaborative and Knowledge-building Projects on open science practice. Here we explain how you can best respond to these assessment criteria when applying for funding.

Through the panel assessment of grant applications, the referees determine how well the grant applications satisfy the various assessment criteria. The assessment of what constitutes good and appropriate open science practice will be made by experts in the various subject areas. The referees often have experience from Horizon Europe and are used to assessing open research in grant applications on the basis of their subject areas.

The referees are to assess open science practice through two subsections of the criterion 'Impact':

- [potential impact of the proposed research](#)
- [communication and exploitation](#)



Open Science

Changing research assessment system



Towards a reform of the research assessment system

Scoping Report

Read final agreement here: https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/reforming-research-assessment-agreement-now-final-2022-07-20_en

<https://op.europa.eu/en/publication-detail/-/publication/36ebb96c-50c5-11ec-91ac-01aa75ed71a1/language-en/>

Changing research assessment system – in Norway

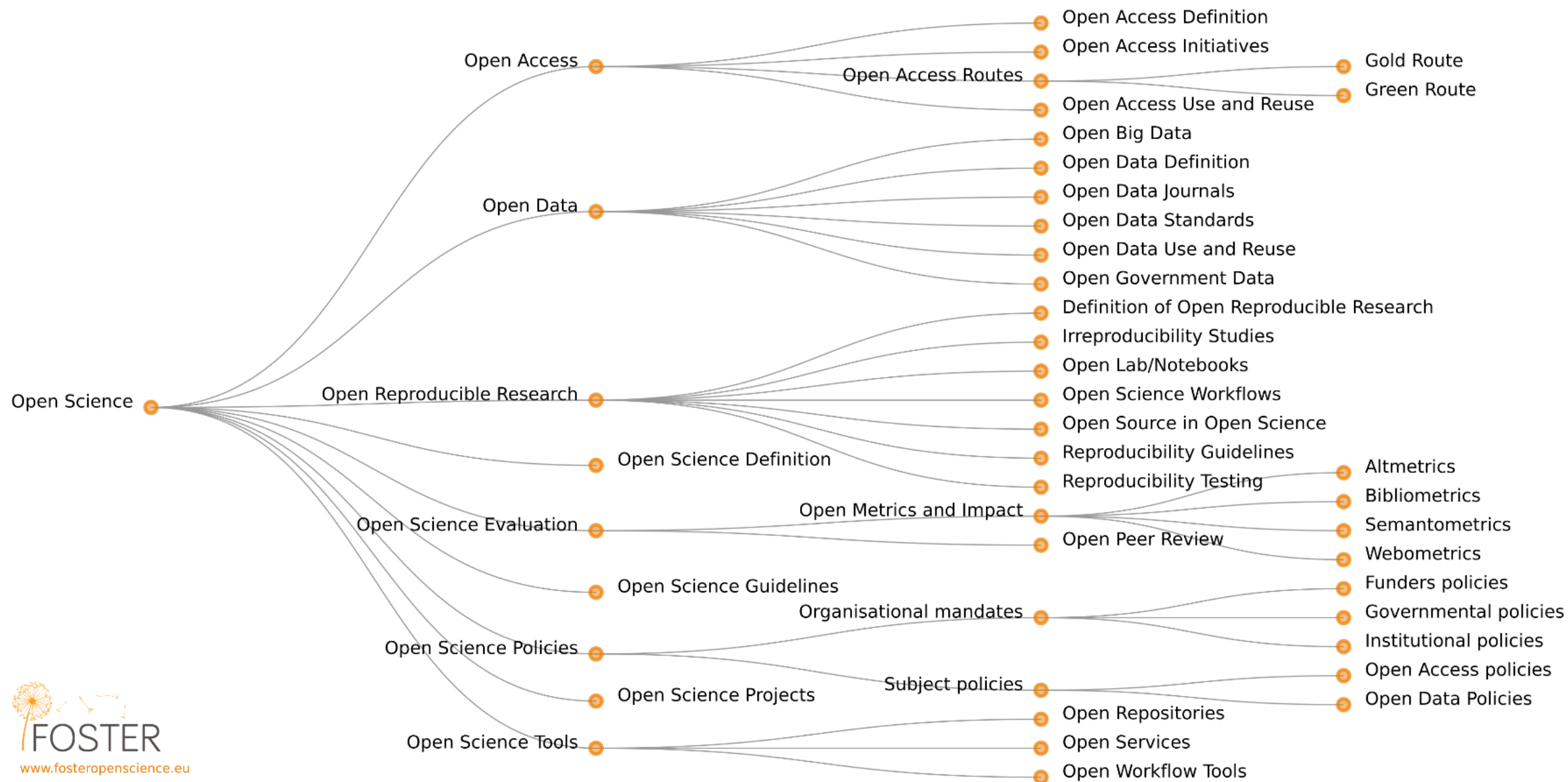
e.g. guidance matrix
at UiO



**NOR-CAM - A toolbox
for recognition and rewards
in academic careers**

U:R Universities
Norway

Open Science Taxonomy



Open research plans



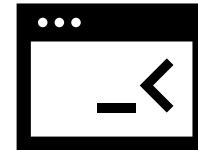
Open methods and tools



Open data



Open analyses



Open publishing



Open research plans



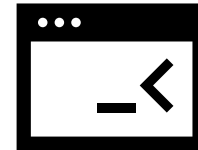
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Open research plans: why?



- More **visibility** to research ideas and plans early in the process as well as null results
- Clearer **distinction** between what was planned and what was not planned ahead (e.g. your *post hoc* analyses)
- Reduced researcher **biases** (less data/statistics manipulation)
- You will **think more deeply** about your research design and planned analyses
- You can claim credit for your **research ideas!**

Open research plans: how?



Preregister!

Specify **research questions**, **methods**, and/or **analysis plan** prior to observing the outcomes of a study.

Typically in a form of a time-stamped, frozen document made available on an online platform.



Open Science Framework

<https://osf.io/>

Open research plans



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Open research plans



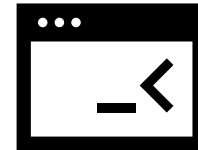
Open methods and tools



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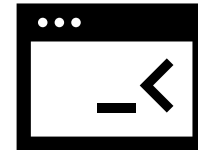
Open methods and tools



Open data



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Open publishing



Open methods: why?



- Enable **re-use** of different materials used in research (and reduce resources for development of tools, instruments, stimuli, etc)
- Make it easier for others to see **how (exactly) your study looked**
- Allow for **validating** your research
- Allow for **replicating** your research by other investigators or research groups

Open methods: how?



- Make sure that the materials are not **copyrighted** (when you make them fully open)
- Provide all materials with clear, consistent **names**
- Create comprehensive **documentation**
- Provide detailed **instructions** on how to use the materials and tools (including a **license** for reuse)

Open methods: where?



- Upload on your personal/lab/institutional website
- Upload in an online repository



Open research plans



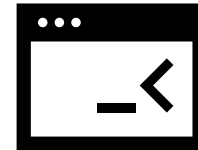
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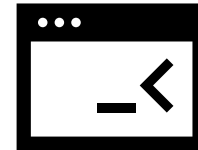
Open methods and tools



Open data



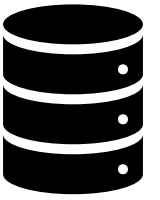
Open analyses



Open publishing



Open data: why?



External Factors

- Funder requirements
- Publisher requirements

Career Benefits

- Increased visibility
- More data reuse
- New collaborations
- Increased citations

Scientific Progress

- More robust research
- Enables verification of results
- Enables new collaborations across disciplines and borders
- Opens up for new uses of data
- Avoids duplication
- Easier to use data in teaching

Research Data Policy

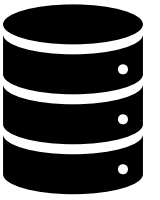
Research data at the University of Oslo shall:

- be made **openly available** for further usage
- be made available at an **early stage**
- have a **data management plan**
- have **metadata** and be **documented**
- must be securely **archived**
- have **licenses** for access, reuse and redistribution
- made **freely available**



Source: <https://www.uio.no/english/for-employees/support/research/research-data-management/policies-guidelines.html>

Open data: how?



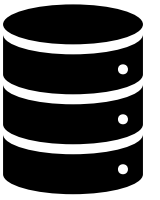
MadScientist
@MadS100tist



"Data will be available upon request"

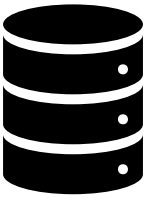


Open data: how?



- Deposit data in a reliable **data archive** (data repository)
- Apply consistent, meaningful, and compatible **file naming**
- Choose accessible, patent-free, and open **file formats**
- Make sure you have the necessary **documentation** (and metadata) so that others can understand the dataset

Open data: where?

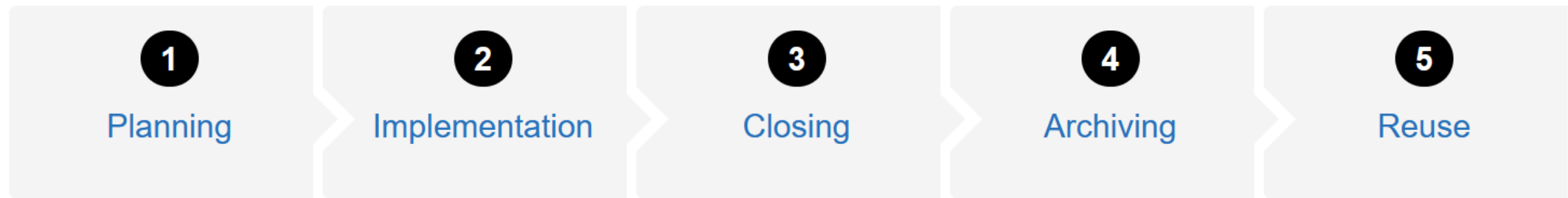


- General purpose repositories (Zenodo)
- National or institutional repositories (DataverseNO, Sikt)
- Discipline-specific repositories
- Data papers
- Supplementary materials to an article

Research data

Research data management includes documentation, organising, licensing, sharing, archiving and reuse.

Data throughout the research project



Topics

- Citations of research data
- Data management plan
- Documentation of research data
- Metadata
- Open sharing
- Organisation of research data
- Research data (definition)
- Storing research data

Principles

- FAIR principles
- CARE principles



November 16th – 20th

Digital Scholarship Center

Monday	<i>Morning:</i> <u>Plan Your Research Data Management (Module 1)</u>
Tuesday	<i>Morning:</i> <u>Share, Archive, and Reuse Research Data (Module 2)</u>
Wednesday	<i>Morning:</i> <u>Introduction to NVivo</u> <i>Afternoon:</i> <u>Create a Data Management Plan with FAIR Wizard Norway</u>
Thursday	<i>Morning:</i> <u>NVivo in TSD</u> <i>Afternoon:</i> <u>ReproducibiliTea@UiO - Hands-on ReproHack: Learn how to reproduce research!</u>
Friday	<i>All day:</i> <u>Carpentry@UiO Workshop: Databases and SQL</u>

Need help with research data?

Send an email to
research-data@uio.no

Open research plans



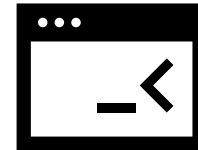
Open methods and tools



Open data



Open analyses



Open publishing



Open research plans



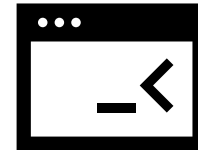
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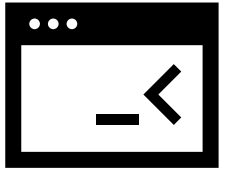
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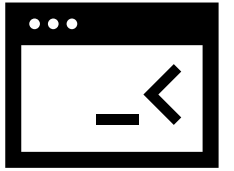


Open analyses: why?



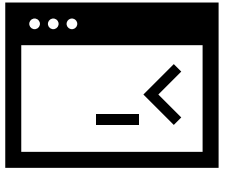
- Makes it easier for you to **re-use** your analyses/code
- Makes it possible for others to **re-run** or **follow** your analyses
- ...and spot mistakes (if there are any)
- ...or use your workflow or code as an inspiration!
- Allows for **verification** of the results (e.g. during peer-review process)

Open analyses: how?



- If you use point-and-click software (Excel, SPSS) write notes that reflect your **workflow**
- If you do qualitative analyses, take care of **annotations** and **notes** reflecting your **reasoning process**
- If you use code, **comment** it clearly
- Use **version control** system if you can (e.g. Git)
- If applicable, consider using **containers** (capture computational environment)

Open analyses: where?



- Share analysis workflow, code or annotations as a **text file**
- Share your analyses through **GitHub** (especially if you use Git as your version control system) or GitHub and **Zenodo** integration
- Use **shareable notebooks** (e.g. Jupyter Notebook)
- If you use containers, share a 'frozen' version of your code through any platform/repository you use



Carpentry@UiO

Carpentry@UiO is a community of people who are passionate about learning, teaching, and sharing best practices and digital skills for making the research process more reproducible and effective. If you want to get involved, or join one of our workshops, check us out!



The Unix Shell

Shell speeds up repetitive and tedious processes. It is also essential skills needed to use high-performance computing (HPC) resources.



Version Control with Git

Git helps you to keep track of what you've done, for a better collaboration and for yourself in future. In the workshop we use GitHub as well.



Programming in Python

Python is now widely used in scientific computing with various powerful packages. Carpentry@UiO runs workshops for participants with no programming experience ("Plotting and Programming in Python" lesson) and for participants at intermediate level ("Programming with Python" lesson, episodes 10-12).



R for Reproducible Scientific Analysis

R is commonly used for statistical analysis, but it is also a powerful programming language. Workshops on R focuses on teaching best practices for scientific computing: breaking down analyses into modular units, task automation, and encapsulation. Workshops on R may use lessons from Data Carpentry instead.



Using Databases and SQL

Databases include powerful tools for search and analysis, and can handle large, complex data sets. The lesson will show how to use a database to explore research data by using SQL.



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Learn, teach, and share digital skills and best practices

Be a part of an interdisciplinary community

Make use of and contribute to community-built teaching materials

Open research plans



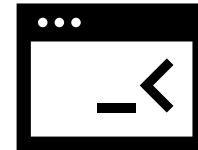
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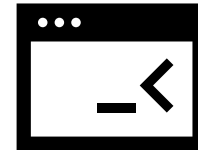
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Open publishing



Open publishing: why?



Open Access Policy

The following applies to peer-reviewed scientific articles:

- 1) Mandatory **institutional archiving** of all peer-reviewed articles in UiO's institutional repository
- 2) Making scientific articles deposited into the institutional repository **openly available**
- 3) Choosing where to publish: UiO recommends that all employees select **journals** that allow the article to be openly available



Open Access

[Norwegian
version of this
page](#)

Open Access

- [Self-archiving](#)
- [Plan S](#)
- [Publishing deals and discounts](#)
- [Publish Open Access](#)



It is the University of Oslo's goal that research results shall be openly available to individuals, the public sector, trade and industry, and the global research community.

Publishing Open Access? →

How do I publish Open Access, and how do I avoid fraud?

Requirements for Open Access →

Open Access requirements from University of Oslo, Plan S / Research Council of Norway, EU and the Government.

Open Access-agreements →

UiOs deals and discounts for Open Access publishing.

Research Data Management →

The UiO policy and guidelines. Help and advice on managing research data.

Self-archiving →

How to self-archive in DUO research archive via Cristin. Information on self archiving and other archives.

About Open Access →

What is Open Access? Which advantages does it give you? The paths to Open Access.

Open publishing



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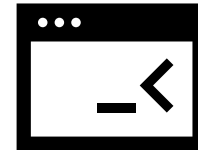
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Open publishing



**Sharing methods, data
and analyses is essential
for reproducibility**

Reproducible does not
(have to) mean fully **open**

**As open as possible,
as closed as necessary**

Digital Scholarship Centre (DSC)

The Digital Scholarship Centre (DSC) gathers and highlights digital resources from the University Library and UiO that can enhance your research activities. On this page, you will find an overview of methods and tools. We also offer specialized courses and workshops for PhD candidates, instructors, researchers, and other employees at UiO and OUS.

Find resources and courses about:

Open research and research data	+
Science visualization	+
Digital tools and methods	+
Literature search for systematic reviews	+

Open and reproducible research

Learn about how to make your research more open and reproducible and get involved in initiatives and communities that are interested in sharing and improving research at UiO.

More and more researchers and students across disciplines are implementing open research practices, preregistering their hypotheses, methods, and analysis plans and sharing research materials, data and analysis scripts. Digital Scholarship Center can help you learn about and implement these practices in your own research as well as advise on the policies and requirements from funders.

Open Science Lunch



Every last Thursday of the month we meet at noon to discuss topics related to open research.

ReproducibiliTea@UiO



Join us for a Journal Club where we read and discuss papers on open research and meta-science.

Norwegian Reproducibility Network



Join a broader community that aims to promote and enable rigorous, robust and transparent research practices in Norway

Courses and workshops



Click here for the list of upcoming and previous courses and workshops on open and reproducible research at UiO.



Open Science Lunch

Each last Thursday of the month at 12:00 we invite you to join us for a lunch seminar to hear about how to make your research more open. We will discuss research transparency and visibility, open publishing, data sharing, and more!

ReproducibiliTea

Journal Club

**JOIN IN AND DISCUSS WITH FELLOW
STUDENTS AND RESEARCHERS**

**OPEN RESEARCH, REPRODUCIBILITY
and RESEARCH IMPROVEMENT**



Join us

Everyone is welcome to join us - whether you are an enthusiast of open and reproducible research, a skeptic, or a cautious explorer. Currently, all meetings are hybrid with the possibility of joining on-site at Blindern or via Zoom. Grab a cup of tea (coffee?) and join us!

Subscribe to our mailing list



Det senteret for digitalforskerstøttes nyhetsbrev,
en del av Universitetsbiblioteket i Oslo

The Digital Scholarship Centre's Newsletter,
part of the University of Oslo Library

DSC NEWS

Senter for digitalforskerstøtte
Digital Scholarship Centre



<https://sympa.uio.no/ub.uio.no/subscribe/dsc-news/subscribe>

Thank you!



- Be **transparent** about the research process (e.g. by preregistering your studies)
- Share the exact research **materials** you use (if you can)
- Share **data** (ideally raw data if you can)
- Make sure you have good **documentation** for all stages of the research process: methods, data, analyses/code
- **Verify** your own work: try to repeat and reproduce your own results (or have others do it)
- **Publish openly**

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